



LEVERAGING ON TECHNICAL AND VOCATIONAL TRAINING (TVET) FOR ACHIEVING FOOD SELF-SUFFICIENCY IN NIGERIA: A STUDY OF OGUN STATE

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Abstract

The greater numbers of the youth, who have the potential to change the Agricultural landscape of the country, are enrolled in the tertiary institutional system. This study attempts to investigate the role of TVET in ensuring food sufficiency in the country. The study employed statistical tool for data analysis and Multi-stage sampling techniques was used for data collection. Responses were drawn from questionnaires administered to 250 students of Agricultural technology from Federal Polytechnic, Ilaro and Moshood Abiola Polytechnic situated in Ogun State. The findings from the study shows that majority of the respondents are youth of age range of 20 years and 40 years. The study also revealed that most of the students are ready to engage in agriculture after graduation if adequate facilities are available. The findings from the regression analysis revealed that agricultural technology education and training have positive significant impact on agricultural productivity in Nigeria. on this note, the study the paper suggests, inter-alia, increase in government expenditure on technical institution, and encourage the participation of youth into agriculture after graduation through free interest agricultural loan facilities.

Keywords: Food Self-sufficiency, Agricultural productivity, technical and vocational training

Introduction

In developing economies, food insecurity remains a serious concern, driven by weather-related events, trade restrictions, and conflict, including the Russian invasion of Ukraine (World Bank, 2023). However, technical education and training is widely acknowledged as a means of achieving food self-sustainability. In many advanced economies, agriculture is incorporated in the formal TVET system where the curriculum is designed for learners to study agriculture in TVET. It has been argued that higher agricultural productivity can only be achieved when the majority of farmers are ready to adapt modern farming techniques. Hence, to increase the productivity of farmers, there is the need for adequate provision of modern agricultural training. Such comprehensive training for agriculture is not available in most developing countries including Nigeria. What has been available historically in Nigeria is the service rendered by agricultural extension workers who rarely have practical experience. The services offer to farmers by extension workers is mostly theoretically based (Brown and Majumdar, 2020).

Consequently, high level of illiteracy among rural farmers in Nigeria over the years has been a great challenge to agricultural productivity of the country. Although most farmers usually have basic knowledge of local traditional agriculture, they require sophisticated innovative information that can improve their productivity.

Existing studies suggest that information about mechanized agriculture could enhance the farmers' productivity when they are ready to adopt it into practice. This could be achieved through agricultural formal technical and vocational training not only to access the information but also provide them with the potentials to achieve productivity.

Formal training in agriculture is needed to turn farming and agribusiness into skilled entrepreneurship who competitive and sustainable enterprises. The focus Agricultural TVET in most sub-Saharan countries including Nigeria is designed to educate students on agriculture and its sub-disciplines as a subject in Schools. Other important agro-business aspects like processing, value addition, and packaging are neglected. These agribusinesses are essential for the growth of agro-allied industries as well as their competitiveness in the global markets (Oliver and Marta, 2018). According to Steve et.al (2014), technical innovations in agriculture can only be affective where farmers are educated. This is because agricultural innovation involves a series of technical training that can be better understood by educated farmers. More so, a greater numbers of the youth, who have the potential to change the Agricultural landscape of the country, are enrolled in the tertiary institutional system .Technical and vocational education and training (TVET) has the potentials to leverage on recruiting youth into agriculture as a tool of increasing agricultural productivity in Nigeria. Therefore, this paper is designed to investigate the potentials of technical and vocational



training in increasing agricultural productivity in Ogun State with a view of accessing its potentials in achieving food self-sufficiency. In order to achieve this objective the paper is structured as follows: This first section provides the introduction of the paper, section two reviews the literature on the link between education and agricultural productivity. Section three specified the data collection and methodology of data analysis. Section four provides the presentation of the empirical results and analysis of data. Lastly, section five provides the conclusion of the study and possible recommendation from the study.

LITERATURE REVIEW

Oduro-Ofori et.al (2015) studied the impact of education on agricultural productivity and found that farmers' level of formal education increase their agricultural 'productivity. The study further revealed that higher level of education can enhance productivity through improvement in farmer's ability to make better decisions concerning the choice of farm inputs that can increase output. This simply implies that vocational education and training have positive impact on agricultural productivity. Nihn (2021) found that farmers education have positive impact of agricultural output. Similarly, Calixte et.al (2020) used phenomenological qualitative design to understand the impact of technical vocational education and training on agriculture in Haiti. Their findings revealed the important role of TVET providing employment opportunities for youth in agricultural sector. The study found that agriculture and TVET schools help the vulnerable young people by making them more competitive in the job market as well as making them self-employed after graduation. Haruna et.al (2019) investigates the role of youth participation in Agriculture for achieving sustainable food security and found that youth participation in agriculture will increase agricultural productivity. However, their findings also revealed several challenges hampered youth participation in agricultural education which includes poor public attitudes towards AE by stakeholders, poor infrastructural facilities, AE students being rated low in intelligence among their colleagues, no starter packs to start small agribusiness after graduation, etc. This implies that youth have the potentials of influencing agricultural productivity in the country if certain challenges that discourage their participation are properly addressed.

Steve et.al (2014) access the influence of educational training on agricultural productivity of rural female farmers in Potiskum local government area of Yobe State. The results revealed that education has positive impact on the agricultural productivity of small scale farmers in the area. This simply means that education of farmers has positive impact on farmers agricultural productivity.

Similarly, Salma (2015) examine the relationship between agricultural vocational education and training (ATVET) and food security in Egypt. The study revealed that the agricultural sector is short of educated farmers with the relevant knowledge and skilled that can maximize productivity. The study further concluded that effective vocational education and training have positive impact on food security. This provides a support to the view of FAO (2015) which argued that vocational education and training in agriculture play an important role in enhancing food security. UNESCO (2012) highlighted the role TVET can play in emerging green economy as a means of economic sustainability. It argued that higher education levels of individual will in agricultural TVET will enhance agricultural productivity.

AFDB (2015) posits that Technical and vocational education and training can play a key role in reducing youth unemployment and increased agricultural productivity.

Methodology

This study was conducted in two TVET institutions in Ogun State, Federal Polytechnic, Ilaro and Mashood Abiola Polytechnic, Abeokuta, which were selected from the main Polytechnics offering Agricultural technology and related courses in the State. Primary data were collected from the Agricultural technology and Agric related students in Federal Polytechnic, Ilaro and Mashood Abiola Polytechnic, Abeokuta. The data was obtained using a multi-stage random sampling technique. The first stage was the purposeful selection of Federal Polytechnic, Ilaro and Mashood Abiola Polytechnic, Abeokuta from the TVET institutions that takes Agricultural technology and related courses. Both Institutions were purposely selected from two senatorial zones of the State. The second stage was the purposeful selection of Agricultural technology and related courses students handled from both Institutions. A total of 250 students were selected from the two Polytechnics. The data were collected through the administration of well structured questionnaire.



The perception of respondents about the perception of the students on how TVET helps in enhancing agricultural productivity and achieving food self-sufficiency were measured on a five-point Likert of “strongly agree”, “agree”, “undecided”, “disagree”, and “strongly disagreed”. The study explored descriptive statistics for the analysis of the data.

The data were subjected to reliability test using the Cronbach’s Alpha. The reliability coefficient obtain from the Cronbach’s coefficients were greater than 70%. This indicates that the sets of the data were statistically reliable. The logit regression equation is specified as follows:

$$AGP = \beta_0 + \beta_1 TV + \beta_2 CR + \beta_3 K + \beta_4 PP + U_t$$

Where

AGP= Agricultural productivity

TV= TVET Agricultural skill

CR= Credit facilities to farmers

K= Initial Capital

PP= Public Perception about farming

Results and Discussion

Table 1: Socioeconomic characteristics of the respondents

Age	Percentage (%)
18-25	50.00
26-35	49.60
36-45 years	0.40
Sex	
Male	53.20
Female	46.80
Marital Status	
Single	98.00
Married	2.00
Educational Level	
ND	78.40
HND	21.60

Source: Autors’ computation with the aid of STATA 23

The result on the socioeconomic characteristics of the respondents is shown on table 1. It showed that the age of the respondents ranged between 18 and 35 years, with a mean score of 26.5 years, 50 percent of the respondents were of the age range between 18 and 25 years, 49.6 percent were between 26 and 35 years, while the remaining 0.4 percent were of the age range between 36 and 35 years. This implies that all the respondents were young and matured to participate in productive activities. 53.2 percent of the respondents were male while the remaining 46.8 percent were female. This revealed that males had higher participation than females in the programme. This may be due to the nature agricultural activities which require more physical efforts in the production process. A larger percentage of the respondents (98%) were single while the remaining 2 percent were married. This implies that most of the youth who enrolled for Full time ND and HND programme are not married. Furthermore, 78.4 percent of the respondents run ND programme while the remaining 21.6 percent run HND programme in agricultural technology and related programme.



Table 2: Constraints of Students Participation in Agriculture and Agribusiness after graduation (mean responses)

Constraints	Mean	SD
Insufficient initial capital	1.904	0.4021
Inaccessibility to farm land	1.824	0.8706
Inaccessibility to farm inputs	1.936	0.4601
Public perception about farming	1.912	0.4089
Inaccessibility to credit facility	1.988	0.0963

Source: Autors' computation with the aid of STATA 23

The data in table 2 indicates that the respondents agreed with all items listed as constraints of students' participation in agriculture and agribusiness. The mean scores ranged between 1.824 and 1.988 with weighted average mean (M=1.89) which were all above the average Mean point of 1.50. The standard deviation ranged between 0.0063 and 0.8706 which implies that the responses were not far from each other. This implies the factors limiting students' involvement in agriculture production and agribusiness after their graduation in Nigeria includes insufficient initial capital, inaccessibility to farm land, inaccessibility to credit facility, public perception about farming and its influence to move out of agriculture, lack of agricultural insurance, insufficient access to farm inputs e.g tractors. This is in line with the findings of Haruna et.al (2019) who identified some of these as the challenges of youth participation in sustainable food security.

Table 3: Mean and Standard deviation of response of Respondents on how TVET enhance agricultural productivity

Response	Mean	SD
Agricultural skills acquired through TVET will enhance agricultural productivity	1.872	0.8342
Agricultural skills acquired through TVET will enable students to engage in Agriculture after graduation	1.657	0.0896
TVET helps to build agribusiness spirit among students	1.736	0.6770
TVET help to boost the morale of students towards agriculture	1.042	0.0708
TVET provides practical knowledge on mechanized farming	1.988	0.0997

Source: Autors' computation with the aid of STATA 23

The data in table 3 revealed the role of TVET in enhancing agricultural productivity and ensuring food sustainability through Students' participation in agriculture after graduation. The respondents agreed on all items identified by this research. The mean scores of all responses are above the cut-off means score (M=1.50). The standard deviation also ranged between 0.04 and 0.09 which implies that the responses were not far from each other. This implies that agricultural skills acquire through TVET will enhance agricultural productivity and ensure food self-sustainability in the country. This finding in tandem with the work of Ninh (2019) who found positive impact of education on agricultural productivity in Vietnam.



Table 3: Logit Regression Results

Dependent Variable: AGP				
Method: Least Square				
Variable	Coefficient	Std. Error	t-statistic	Probability
TV	0.231743	0.007487	3.395444	0.6089
CR	0.030323	0.017163	1.766732	0.0865
K	0.037596	0.072711	124.2943	0.0700
PP	-.0000675	.567377	3.030956	0.87764
Constant	41.98823			
R-squared	0.566699			
Adjusted R-squared	0.564740			

Source: Authors' computation with the aid of STATA 23

The results from the logit regression analysis revealed that Technical and vocational educational training has positive and significant impact on agricultural productivity. This provides a support for the work of Steve et.al (2014) which found a positive relationship between educational training and agricultural productivity in Potiskum Local government area of Yobe State.

Conclusion and Recommendations

This study examines the role of technical and vocational education and training in promoting agricultural productivity and ensuring food self-sufficiency in the country. It discovered that the country can leverage on TVET to promote youth participation in agriculture in order to achieve food sustainability. The findings from the study revealed that TVET has an important role to play in enhancing agricultural productivity and promoting agribusiness in the country. However, the study identified the major factors that limit the youth in participation in agriculture after graduation. The factors include; insufficient capital, inaccessibility to farm land, inadequate credit facility, inadequate farm input for mechanized farming, and public perception about farming. On this note, the study provides the following recommendations;

- The government should make special loan facilities available for graduate who come up with innovative proposal agriculture and agribusiness.
- There is need to formulate policy that will facilitate easy access to land for students who are ready for agriculture after graduation.
- The media and ICT should be used to better the image of agriculture by sharing information and experiences of successful young farmers.

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