Journal of Agricultural Science and Food Research

OPEN ACCESS Freely available online

Research Article

Patterns and Determinants of Farm and Non-Farm Employment among Youths in Nigeria

Adedotun Seyingbo*

Department of Agriculture, University of Benin, Benin, Nigeria

ABSTRACT

This research work examined youth employment dynamics in Nigeria's agricultural sector and its determinants using the Living Standards Measurement Study Integrated Surveys on Agriculture (LSMS-ISA) from Nigeria conducted for 2010/2011 and 2015/2016. Specifically, it focuses on understanding the pattern of youth employment transitions between the rural farm and rural non-farm sector, giving special attention to the contributory role of access to land, credits, ICT and infrastructure. Overall, the findings study corroborates findings that youths are transited more from the farm sector to the non-farm sector in the period considered. More males are likely to leave than their female counterpart, while there is increased likelihood of youths in the North East and North West to leave the farm compared to the North central region. Key determinants of the observed transition pattern include land access, gender, and educational level, access to internet and mobile phones, infrastructure development proxied by access to electricity, road networks, farm size, household size, asset size and shocks. Youths who have more assets and more land are not likely to go to farm, justifying the severity of their disinterest in the farm sector. Also, education appears to play a major role in the effect of increased land, while access to credit does not play a significant role in the transition decision. Government will need to do more to fix structural issues such as infrastructure; development of the land rental markets as well as introduction of strategies to help youth mitigate shocks that hinder sustainability of their businesses will go a long way in stimulating the youth back to farm and addressing the country's lingering unemployment problem.

Keywords: Dynamics; Lingering; Agriculture; Unemployment; Strategies

INTRODUCTION

Understanding the dynamics of youth employment and its determining factors in developing countries has continued to attract the interest of researchers in recent times, due to the long unabated unemployment crises in the continent tipped to be home to 50% of the world's young population. Africa's workforce is growing much faster than any other region in the world, at about 3% per year, a situation which presents both opportunities and challenges. Between 2017 and 2030, labour supply (for all ages) will increase by another 198 million in the region with the youth contributing significantly to this growth [1-3].

Helping the continent's bulging youth leaving school and entering labour market has remained a major policy challenge for governments in the continent. More youth are in the rural areas where farming is fast becoming less attractive due to crude practices, and the fact that there are little or no alternatives in formal non-farm jobs makes this quite worrisome. The continent's agricultural sector is tipped by researchers and development experts as one out of many, having capacity to absorb this increasing number of youths, providing employment thereby reducing the burden of unemployment and it's attending socioeconomic implications. Newly emerging evidence developed over the last twenty years however are now pointing to the importance of rural non-farm income and employment in the developing countries, marking a major departure from

Correspondence to: Adedotun Seyingbo, Department of Agriculture, University of Benin, Benin, Nigeria, Tel: 08059437106; E-mail: seyingboadedotun@gmail.com

Received: 31-Mar-2023, Manuscrip No. JBFBP-23-22724; **Editor assigned:** 03-Apr-2023, PreQC No. JBFBP-23-22724 (PQ); **Reviewed:** 17-Apr-2023, QC No. JBFBP-23-22724; **Revised:** 02-Apr-2024, Manuscript No. JBFBP-23-22724 (R); **Published:** 09-Aug-2024, DOI: 10.35248/2593-9173.24.15.171

Citation: Seyingbo A (2024) Patterns and Determinants of Farm and Non-Farm Employment among Youths in Nigeria. J Agri Sci Food Res. 15:171.

Copyright: © 2024 Seyingbo A. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

studies that have treated agriculture as a single aggregate employment sector, most of which overlook secondary jobs (e.g., seasonal off-farm work in rural and urban centers). Reardon shows that 30% to 50% of rural household income in sub-Saharan Africa is gotten from non-farm income sources, explaining dynamics for youth employment rarely explored by researchers in recent times [4,5].

According to a world bank and IFAD study, 23 percent of household income generated from agricultural activities is accounted for by rural nonfarm activities in African countries, in Asia, 37 percent from Rural Non-Farm Sector (RNFS) and 13 percent from transfers, while rural and rural nonfarm activities account for equal share of household income of 43 percent each. Similarly, Nagler and Naude reported the prevalence and pattern of non-farm enterprises studying their performances in terms of labour productivity in six Sub-Saharan African countries including Nigeria.

Rural household diversify their sources of income to minimize household income variability, reduce adverse effects of seasonality and provide additional income, as a strategy for livelihood improvement.

In doing this, they either switch employment move between sectors within the agricultural sector, or outside the agricultural sector, or hold employment in both sectors concurrently farm and non-farm. This is often recognized as one favorable dimension of structural change. As household characteristics improve or worsens, inter-sectoral adaptation occurs, spurring interesting dynamics in the rural agricultural sector. While some stay in a sector, others opt for transition among sectors either permanently or temporarily, re-allocating labour to sectors. Mollers capture this as a dynamic socioeconomic process in which households expand the range of activities, they engage in for income generation [6-8].

Several factors influence household's decision to either transit between employments over time or stay within an employment. Escobal; Dimova and Sen; Abdulai and CroleRees; Sendaza; Akaakohol and Aye; in their various works on different countries found education, access to credit, access to physical infrastructure, household size, land holding, gender and other actors as important determinants, influencing household's decision to shift employment. Lanjouw, et al., found that regional effects are significant in a country like India in addition to the other factors identified; Demisse and Workneh noted that asset ownership, especially livestock plays a major role [9,10].

On African countries, a handful of studies have been carried out on different regions of Ethiopia likewise in Nigeria. For example studied the contribution of off-farm income in the livelihood of farm households in Tigray regional state of Ethiopia. Similarly, Abebe and Carswell studied prevalence of livelihood diversification in Southern Ethiopia. While a few focuses on the Sub-Saharan African countries as a whole, there have been some country specific studies, such as on Ghana, and some other countries, however less attention has been paid to Nigeria. The few studies that exist have focused on select locations such as Southwest Nigeria, Niger state, and Adamawa state, Michael, et al., using primary data administered to household heads. Oluwatayo and Ghebru focus on Nigeria as a whole, using primary and secondary data respectively to explore income and employment dynamics in the country [11-13].

There are, however, several limitations as most studies only regard the household head as the only decision making member of the household, leaving out the spouse (wife or youth children above the age of 15 years). While it may be right to assume that priorities for children are dependent on that of their parents, this may be wrong for youth, especially for those between the age of 15 years-35 years who in typical rural communities have started engaging in economic activities in form of both informal and formal employment. While this gap seems to be addressed by Ghebru, et al., their methodology the use of dummy does not capture the dynamic transition of youth between sectors, a gap that is built upon in this research. Youth, within the household also make employment decisions, which in most cases are independent of the opinion of the household head and mostly reflective of their peculiar characteristics, constraints and incentives. Studies therefore need to factor in the heterogeneity of farm households to properly understand the behavior of the different demography within the household. This research, in line with studies that explicitly seek to consider differences in behavior by farm wife or husband and children's contribution due to the importance of child labour and schooling work trade-offs focuses on the youth as a major contribution to this gap [14].

Secondly, most studies on Nigeria, due to data limitation have used location based samples, thereby making their findings a weak reflection of situations in the country. Nigeria has six geo political zones broken into 36 states with over 250 ethnicities; a nationally representative study should necessarily derive from a national survey, which is the focus in this study. As a way of contribution, quantitative data from the nationally representative General Household Survey (GHS) implemented in three waves 2010/11, 2012/13 and 2014/15 by the Nigerian National Bureau of Statistics (NBS) in collaboration with the world bank Living Standard Measurement Study (LSMS) team is used to study the inter-temporal employment dynamics of youth between 2010 and 2015 by tracking youths, aged 15-35 in 2010 and profiling their employment decisions in the period considered under this study and then investigating key determinants of the observed dynamics revealed. The use of longitudinal data affords the tracking of youth between periods, thereby helping to explore the dynamic process of employment shift among youth. The use of primary data, which is more of cross sectional, does not allow such. To complement the location based studies and determine the role of geography in the observed dynamics, spatial patterns to the dynamics are also investigated [15].

Given the gaps identified above, the study is built on the theory of agricultural households, based on the works of Mellor, Sen, further extended by Nakajima and explained as the subjective equilibrium theory. This theory provides an approach for understanding the nature of response and adjustments of farm household and firm units to policies by examining the complex interactions between the alternative perspectives of the

household *vis-a-vis* production, consumption and labour allocation. The theory is particularly useful for gaining insights into farm household-unit decisions, which in this case relates to decision on what employment to engage in or not. As important diversification strategy for smoothening income and stabilization of livelihood, farm households engage in different economic activities, which include off farm wage or salary employment, non-farm businesses (that may or may not be related to the farm), and on farm activities. Applying the theoretical constructs to understanding employment dynamics in agriculture in developing countries has suffered majorly due to researchers' inclinations to study households in aggregate terms thereby not reflecting peculiarities of some specific household members such as the youths. This study therefore focuses on the youth, aged 15 years-35 years.

As in Bezu and Holden, different youth employment transitions are analyzed to describe the dynamics movement from non-farm activities to farm activities, from farm activities to non-farm activities. Also, the study profiles those youths who stayed in farm employment (did not leave farm activities between two periods) or non-farm employment and factors influencing such decisions. We build on the work of Ghebru, et al., and paid specific attention to how access to credit, increase in technological awareness and usage and access to land impact on the dynamics.

Consequently, this study examines youth employment patterns how youths transit between farm and non-farm activities and what determines the employment choice decisions. Specifically, the study seeks to;

- Analyze transition patterns of employment between farm and non-farm activities among Nigerian youth.
- Examines significant determinants of the observed pattern of employment among youths.
- Profile youths who stayed in either farm and/or non-farm activities between 2010 and 2015 and investigate factors influencing youths' decision to stay either in farm or non-farm activities between the periods.
- Investigate whether gender and geography have any pattern with youth employment dynamics.

Review of the study

Very few studies have been conducted on youth employment dynamics in the agricultural sector in Nigeria. This study therefore benefits from a vast body of literature on other countries focusing with some focusing on other age groups aside from the youth. The focus of this study is to examine youth employment pattern in the agricultural sector and its key determinants, hence the relevant literatures are mainly those that deal with factors affecting youth decisions to transit sectors or employment activities. Specifically, we look at these determinants from two categories determinants that impact on employment transition decisions by creating incentives for youth (pull and push factors) and those that impacts on transition decision through capacity enhancement. Table 1 shows a summary of the determinant and their reference [16].

The below Table 1 summarizes the literature review and points to the fact that only few literatures explore the pattern and determinants of employment dynamics among youths, even in Nigeria, to the best of our knowledge. This limitation further adds to the gap in literature, which makes it difficult to proffer policy recommendations on youth engagement in agriculture.

Table 1: Summary of literature.

S/N	Factors	Description	Source(s)
1	Capacity variables	Mostly relates to variables that affect the decision to perform in a sector and include factors related to human, physical and financial factors.	Bezu and Barrett.
2	Incentives variables	Grouped into push and pull factors motivating transition decision.	Bezu and Barrett, Lewis; Harris and Todaro; Nadler and Naude, Ahaibwe, et al.; Bogue and Akpan.
3	Demographic and human capital factors	Age, gender, education, and household size.	Ruben and Van Den Berg; Pham, Tuan and Thanh; Berdegue, et al. Abdul-Hakim and Che-Mat; Senadza; Idowu, et al.; Adebayo; Akaakohol and Aye, Abdulai and Delgado, Lanjouw, et al. and Abdulai and CroleRees, Bezu and Barrett.
4	Land ownership	How much land a household holds, and individuals expect both determine individuals man hours	Bezu and Holden; Kosec, et al.; Lanjouw; Chaplin, Daldova, and Gorton, Ghebru, et al.

		allocation decision. Larger land holdings reduce the tendency to participate in rural non-farm activities has a negative relationship with individual's decision to participate in rural non-farm.	
5	Access to infrastructure and proximity to markets (location)	Service provision and access by households and individuals also affect employment decisions. Location can influence household's decision to transit, as individuals leave the rural communities due to lack of basic amenities, this migration decision, sometimes translate to employment transition.	Smith et al., Davis et al.
6	Access to credit	Access to credit affects household or individual's decision to transit between employment sectors.	Escobal; Smith et al.; Abdulai and CroleRees; Senadza.

MATERIALS AND METHODS

Data

Quantitative data from the nationally representative General Household Survey (GHS) implemented in three waves 2010/11, 2012/13 and 2014/15 by the Nigerian National Bureau of Statistics (NBS) in collaboration with the world bank Living Standard Measurement Study (LSMS) is used in this study. The survey covers both urban and rural Enumeration Areas (EAs) in all the 36 states including the Federal Capital Territory (FCT). Although, the wave three post planting visit is yet to be conducted, the panel data provided from this survey provides an opportunity to understand the patterns of youth employment and factors influencing the dynamics in youth employment in agriculture [17].

Variables and measurement

Four employment transition decision types, which could involve 'to move' or 'to stay' are considered in this study those who moved between non-farm employment and farm employment and those who stayed in either non-farm or farm employment between 2010 and 2015. The following categories are profiled:

- Those who were in farm in 2010 and are engaged in non-farm employment (any type) by 2015.
- Those who were in non-farm employment in 2010 and are engaged in farm employment (any type) by 2015.
- Those who were in non-farm employment in 2010 and are still engaged in non-farm employment by 2015.
- Those who were in farm employment in 2010 and are still engaged in farm employment by 2015.

Employment transition decisions can be studied, given the nature of the GHS, which involves repeated observations of the same household or individuals over a period of time. The study focuses mainly on those who were 15 years as at 2010.

Based on the review of the theoretical and empirical literature, the determinants of employment diversification can be summarized into the following categories:

- Household variables (household size and composition such as age, gender, education).
- Location variables (zones of operations, distance to markets and towns, availability of electricity, access to infrastructure Information and Communication Technology (ICT) etc).
- Financial assets (access to credit, land access etc).
- Risk indicators (exposure to shocks). We therefore investigate how these factors influence youths' decision to either shift employment between sectors or stay in their sector of employment in the period considered.

Econometric model

In line with Bezu and Barret, we investigate the effect of household characteristics (household size, age, gender, education), access to land, assets, shocks, access to ICT gadgets and infrastructure (internet and mobile phones) and disposition to adoption of improved technology on youth's employment transition decision using a multinomial logit model derived from a random utility framework. This framework allows for the formulation of individual's choice among alternative options (employment), with the utility treated as a random variable. Let U_{ijt} denote, utility of individual i associated with an employment activity j at time t. Hence, the utility function is given as:

$$U^*_{ijt} = \mathbf{X}_{it}\Phi_j + e_{ijt}$$

X is a vector denoting individuals' characteristic age, sex, education, which varies across individuals and over time. The

coefficients Φ_s are therefore different for each employment alternative or outcome. The error term e_{ijt} shows uncertainty in the random utility model. An indicator variable, which links the expected utility from the different employment activities with the choice made by the individual, can be observed as:

$$D_{ijt} = 1 \; if \; j = \arg\max U^*_{ijt} \epsilon \{U^*_{i1t}, U^*_{i2t} \ldots\ldots U^*_{ijt}\}$$
$$D_{ijt} = Otherwise$$

A probability choice model can be derived assuming that the error terms are independently and identically distributed with a type I extreme-value distribution, invariably, a multinomial $\log_{it}$ model as we have several unordered but mutually exclusive categories used to categorize youth decisions to transit employment or not: A youth can either move from farm to non-farm and vice versa or choose to stay in farm or non-farm between periods. Our interest essentially is to explore how a change in the explanatory variables affects the individual's decision to engage in any of the activities. The multinomial $\log_{it}$ model therefore can be given as:

$$pr(Y_{ikj} = 1) = \frac{\exp(X_{ik}\,\Phi_j + Z_k\,\mu_j + \alpha_i + \eta_k)}{\sum_{j=1}^{5} \exp(X_{ik}\,\Phi_j + Z_{kt}\,\mu_j + \alpha_i + \eta_k)}$$

X_{ik} denotes characteristics of individual i in household k (gender, age, education etc.), some of which vary with time like age while others are time invariant, like gender. The vector Z_k refers to household level variables (land owned, which individuals have access to, dependency ration, household size etc.). The terms α_i and η_k capture unobserved individual and household heterogeneity, respectively (Table 2). These unobserved effects are assumed to have each a normal distribution and to be mutually independent, and independent of the error term. There are four employment transition decisions as earlier highlighted. Youths' decision to stay on farm is used as the reference category for other transition decision outcomes. X_{ij} is a vector of control variables. These variables are; X_i=age of youth (Years), gender of the youth (dummy 1 for male, 0 otherwise), educational level of youth (none=0, primary education=1, secondary education=2, tertiary education=3 and non-formal education=4), asset size (amount in naira), access to land (dummy 1 access, 0 for otherwise), access to credit (dummy 1 for yes, 0 for otherwise), household size (actual number), age category of youth (younger youth=1, older youth=2), located in North West zone of Nigeria (dummy 1 for yes 0 otherwise), located in North central zone of Nigeria (dummy 1 for yes 0 otherwise), located in North East zone of Nigeria (dummy 1 for yes 0 otherwise), located in South East zone of Nigeria (dummy 1 for yes 0 otherwise), located in South West zone of Nigeria (dummy 1 for yes 0 otherwise), located in South zone of Nigeria (dummy 1 for yes 0 otherwise). Table 3 presents description of the variables [18-20].

RESULTS AND DISCUSSION

The multinomial logistic regression results in Table 2 presents the determinants of youth employment transition pattern between farm and non-farm sectors. The effect of variables, such as age, education level, access to credit, access to internet, access to electricity, access to mobile phone, farm size, asset size, distance between farm and road and market, household size, poverty status, and shocks, such as death and land loss on the likelihood of youths staying or moving between farm and non-farm activities between 2010 and 2015 were investigated. How the results vary by geo-political zones in the country (North Central, North East, North West, South East, South South and South West) was also explored as well as gender [21-23].

Table 2: Regression results for determinants of transition decisions between farm and non-farm employment among Nigerian youth.

Variables	Stayed in non-farm	Left farm for non-farm	Moved to farm from non-farm
	Panel I	Panel II	Panel III
Sex (female)	-1.656*** (0.406)	-1.989*** (0.381)	0.373 (0.628)
Education (none)			
Primary	-0.127 (0.387)	-0.778*** (0.361)	0.680 (0.617)
Secondary	-0.247 (0.394)	-1.409*** (0.370)	0.909 (0.617)
Tertiary	0.385 (0.703)	-1.207 (0.685)	0.107 (1.020)
Interacting education with gender			
Primary#female	0.866*** (0.438)	1.111*** (0.412)	0.529 (0.660)
Secondary#female	1.194*** (0.438)	1.853*** (0.416)	0.042 (0.658)
Tertiary#female	-0.284 (0.811)	0.857 (0.768)	0.107 (1.099)

Household size	0.146*** (0.019)	0.056*** (0.020)	0.053*** (0.024)
Age	-0.030*** (0.009)	-0.018*** (0.009)	-0.002 (0.011)
Poverty status (non-poor)	0.526*** (0.120)	0.158 (0.115)	0.015 (0.147)
Access to credit (Yes)	1.403 (1.070)	1.169 (1.101)	0.068 (1.439)
Access to internet (Yes)	1.616*** (0.513)	-0.150 (0.599)	1.769*** (0.523)
Access to mobile phone (Yes)	0.291*** (0.130)	0.310*** (0.128)	0.250 (0.167)
Farm Size	0.399 (0.334)	-0.120*** (0.339)	0.677 (0.396)**
Interacting farm size with education			
Primary	-0.626** (0.335)	-0.473 (0.345)	-0.812*** (0.404)
Secondary	-0.549 (0.342)	-0.323 (0.348)	-0.777** (0.409)
Tertiary	-0.428 (0.907)	-0.275 (0.917)	-0.706 (1.140)
Asset ownership	0.000*** (5.62e-06)	0.000*** (5.72e-06)	3.83e-09 .0000109
Distance to road	-0.011*** (0.004)	0.0002 (0.003)	-0.012*** (0.005)
Distance to market	-0.004** (0.002)	-0.001 (0.002)	0.003 (0.002)
Access to electricity (Yes)	-0.934*** (0.125)	-0.587*** (0.125)	-0.920*** (0.155)
Shock: Land loss (Yes)	0.061 (0.630)	0.458 (0.623)	1.298*** (0.627)
Death shock (Yes)	0.837*** (0.317)	0.749*** (0.321)	0.862*** (0.354)
Land access (Yes)	-0.216** (0.120)	-0.222** (0.119)	-0.348(0.147)
Technology adoption (Yes)	1.338*** (0.301)	0.506 (0.320)	0.212 (0.424)
Zone			
North East	0.264 (0.191)	0.607*** (0.182)	1.148*** (0.287)
North West	1.134*** (0.203)	0.609*** (0.209)	1.704*** (0.291)
South East	-0.623*** (0.172)	-0.081 (0.167)	1.034*** (0.248)
South South	0.082 (0.213)	-0.077 (0.229)	1.513*** (0.280)
South West	0.273 (0.254)	0.024 (0.263)	1.030*** (0.349)

Note: *** ≤ 1%; **≤ 5%; *≤ 10% level of significance. Number of observations: 3,050. Standard errors in parenthesis.

What determines youth transition from farm to non-farm employment? The pooled result in Table 2 (panel I) shows that gender, age, education (primary and secondary) access to mobile phone, farm size, asset size, access to electricity, death shock and land access are important determinants of the likelihood of youth transiting from farm to non-farm employment.

The more youths have access to mobile phone, more assets and increased exposure to shocks, the more they are likely to transit from farm employment to non-farm employment. Apparently, more assets potentially create a positive wealth effect for the average youth, thereby informing decision to transit from farm employment. Exposures to shock especially the death of a member of the household have a high likelihood of inducing this decision as well. Similarly, more youths are likely to transit into non-farm employment if they had primary and secondary school education compared to those who do not have any formal education, fewer land allocation (in hectares), limited

access to electricity and restricted access to the use of land as collateral. The fewer the land size an average youth has access to, the higher the likelihood of leaving farm employment.

There appears to be interaction effect between female who had primary and secondary education as their highest level of education attained and their transition decisions. Primary and secondary education makes it more likely that young females will not transit from farm to non-farm compared to male. The interaction term coefficient is significant implying that education does impact on young females' decision to move from farm (Table 3).

Table 3: Variable descriptions.

Variable	Definition	Year	Measurement and codes
Employment transition decisions	Employment transition decisions of youth between farm and non-farm (2010-2015)	2010/2015	Stayed in non-farm btw 2010 and 2015=0 left farm for non-farm between 2010 and 2015=1 moved to farm from non-farm between 2010 and 2015=2 stayed on farm between 2010 and 2015=3
Sex	Gender of the respondents between 15 years and 35 years	2010	Male=1; Female=0
Age	Years of the respondent (in completed years)	2010	Measured in number of years
Education	Highest educational level completed by respondent recoded into four categories	2010	Non-formal=0; Primary=1; Secondary=2; Tertiary=3
Zone	Geographical area of respondent	2015	North Central=1; North East=2; North West=3; South East=4; South South=5; South West=6
Household size	Size of the household surveyed	2010	Measured by number of people in the household as at the time of survey
Credit access	Respondents who have access to credit or loan	2010	Yes=1; No=0
Farm size	Number of hectares of farm land available to respondents	2010	Measured in number of hectares
Poverty status	Status of the respondents whether poor or non-poor.	2010	Measured using 2/3 of mean of the total household expenditure. Poor when less than and non-poor when more than the value
Land access	Defined as respondents who can either use land as collateral or not.	2010	Yes=1; No=0
Access to electricity	Defined as those who have access to electricity supply	2010	Yes=1; No=0
Distance to road	Defined as distance of household/ farm to road	2010	Measured in KM
Distance to market	Defined as distance of household/ farm to market	2010	Measured in KM
Asset size	Total size of household assets	2010	Measured in the value of all assets owned by household

Land loss shock	Those who responded yes or no to whether they suffered land loss shock	2010	Yes=1; No=0
Death shock	Those who responded yes or no to whether they suffered death shock	2010	Yes=1; No=0
Improved technology adoption	Defined as youths more disposed to use of improved technology measured as the use or otherwise of hybrid and improved seedlings as well as irrigation	2010	Yes=1; No=0
Access to mobile phone	Defined as youth who have mobile phones (proxy for ICT access)	2010	Yes=1; No=0
Access to internet	Defined as youth who have access to internet (Proxy for ICT access)	2010	Yes=1; No=0

Access to mobile phone as used in this study proxies youths' awareness of the use of ICT, describing some level of sophistication. The more an average youth has access to mobile phones, the more the likelihood of leaving farm employment. Youth in the North East and North West are more likely to leave farm employment than stay on farm compared to youths in North Central. This corroborates the findings of Adelaja and George that the Boko Haram conflict in Nigeria reduced the hours of hired labour for men and women, which significantly impacts on outputs and productivity. Age is negatively related to the likelihood of leaving farm the older, the lesser the likelihood of leaving farm, implying that an average youth is more open to exploring employment opportunities outside the farm sector than older respondents.

What determines youth transition from non-farm to farm employment? Result in Table 2 (Panel II) shows that, household size, farm size, access to internet, distance to road, access to electricity, and exposure to shocks especially those related to land loss and death are key determinants of youths' transition decisions from non-farm to farm employment.

The larger the youth's household size and the more exposed to shocks (land loss and death), the more likely the youth's decision to leave non-farm for farm employment. Although, the percentage of youth leaving non-farm to farm is relatively low, increased access to internet and farm size will increase the likelihood of youths taking this decision. The interaction effect of education and farm size is found to be significant in determining youths transition decision the less educated an average youth is, the more the effect of increased farm size on the likelihood of transiting from non-farm to farm. On the other hand, the more educated an average youth is, the lesser the effect of increased land size on the average youth's decision to move to farm. There is a high likelihood that with more education, the average youth have more understanding of how to deploy the land asset for more productive use given the fact that agriculture is considered less productive.

Similarly, increased difficulty in access to electricity and shorter distance between the farm and road has a high likelihood of influencing youths to move to farm. Relative to the North Central, youths in the other regions are also more likely to move to farm from non-farm employment. Youths on average are turning away from farming. However, that they are likely to transit to farm could be due to limited job opportunities in the non-farm sector and search for sustenance.

Why are more youths staying in non-farm employment? Investigating the determinant of youths staying on the farm, the result in Table 2 (panel III) above indicates that gender, household size, age, access to internet and mobile phones, asset size, distance to road and market, access to electricity, land access, and exposure to shock such as death are important determinants of youths staying in nonfarm relative to staying in farm.

Compared to male youth, the female youth are less likely to stay in non-farm employment relative to staying in farm. This effect is further buttressed by education. The more educated the female is, the higher the difference in the females' decision to stay compared to the male. Education does have effect on transition decision between male and female youth. Similarly, on average, the chances of staying in non-farm employment is higher for the youth, the more land is inaccessible. Addressing the incidence of global squeeze on farm land in commercial quantity for the youth is therefore important to incentivize return to farm. More assets mean an average youth will stay on farm, corroborating the earlier finding that more assets accumulation can increase the likelihood of youth leaving farm for non-farm. Also, shorter distance between farm and road and markets can increase the likelihood of youths staying in non-farm compared to staying in farm.

However, the effect of access to new technology and information is shown to affect youths continuous stay in non-farm employment the more difficult it is for youths to access new technology, information and knowledge, the less they are likely to remain in non-farm employment.

CONCLUSION

The study evaluated the determinants of youth employment dynamics in Nigeria's agricultural sector, focusing on employment transitions between the rural farm and rural non-farm sectors of employment. In examining the determinants, the study considers four employment transition decision types, under those who 'moved' between non-farm employment and farm employment and those who 'stayed' in either non-farm or farm employment between 2010 and 2015.

Data from the nationally representative General Household Survey (GHS) and by the Nigerian National Bureau of Statistics (NBS) in collaboration with the world bank Living Standard Measurement Study (LSMS) is used in this study. A multinomial logit model derived from a random utility framework in line with the works of Bezu and Barret, was employed to investigate the effect of household characteristics (household size, age, gender, education), access to land, assets, shocks, access to ICT gadgets and infrastructure (internet and mobile phones) and disposition to adoption of improved technology on youth's employment transition decision.

The findings of the study present an offering for both formal and informal job opportunities at various skills level, especially the non-farm sector. More youths are likely to stay on farm, if there is guaranteed internet, electricity and roads to market linkage as well as measures for youths to contain shocks such as death, land loss that impact on the sustainability of their businesses. Policies, targeted at creating jobs for the youths will need to emphasize more on the non-farm sector, which is shown to attract more youth than the farm sector and policies in agriculture and job creation will need to acknowledge and reflect structural changes in the employment pattern in Nigeria and other African countries.

Findings from this research present some interesting implications for agricultural and employment policies, not just for Nigeria, but for Africa. First, is further confirmation of the important role agricultural plays in absorbing the teeming young population, offering both formal and informal job opportunities at various skills level, especially the non-farm sector. Policies, targeted at creating jobs for the youths will need to emphasize more on the non-farm sector, which is shown to attract more youth than the farm sector. Policies in agriculture and job creation will need to acknowledge and reflect this significant structural change in the employment pattern in Nigeria and other African countries.

This study is an attempt to profile and investigate the determinants of youth employment pattern in farm and non-farm sectors in Nigeria and its determinants. As with research works, there are limitations encountered in the course of the research, which include limited time and lack of data to better profile the pattern. For example, it would have been more interesting to explore patterns between farm and non-farm sectors within the agri-food system to properly locate the discussion within the agricultural sector. The definition of the non-farm sector as used in the study covers all activities outside the farming sector. Although 70% of the youth surveyed in the research are from the rural area where agricultural and agro-allied activities is predominantly their economic activity.

REFERENCES

1. Adelaja A, George J. Effects of conflict on agriculture: Evidence from the Boko Haram insurgency. World Dev. 2019;117:184-195.
2. Adesugba MA, Mavrotas G. Delving deeper into the agricultural transformation and youth employment nexus: The Nigerian case. Int Food Policy Res Inst; 2016.
3. Akaakohol MA, Aye GC. Diversification and farm household welfare in Makurdi, Benue state, Nigeria. Development studies research. Open Access J Sci. 2014;1(1):168-175.
4. Abdulai A, CroleRees A. Determinants of income diversification amongst rural households in Southern Mali. Food Policy. 2001;26(4):437-452.
5. Babatunde RO, Qaim M. Patterns of income diversification in rural Nigeria: Determinants and impacts. Q J Int Agric. 2009;48(4):305.
6. Barrett CB, Reardon T, Webb P. Nonfarm income diversification and household livelihood strategies in rural Africa: Concepts, dynamics, and policy implications. Food Policy. 2001;26(4):315-331.
7. Bezu S, Barrett C. Employment dynamics in the rural nonfarm sector in Ethiopia: Do the poor have time on their side?. J Dev Stud. 2012;48(9):1223-1240.
8. Block S, Webb P. The dynamics of livelihood diversification in post-famine Ethiopia. Food Policy. 2001;26(4):333-350.
9. Deichmann U. Spatial specialization and farm-nonfarm linkages. World Bank Publications; 2008.
10. Ellis F. The determinants of rural livelihood diversification in developing countries. J Agric Econ. 2000;51(2):289-302.
11. Escobal J. The determinants of nonfarm income diversification in rural Peru. World Dev. 2001;29(3):497-508.
12. Haggblade S, Hazell P, Reardon T. The rural non-farm economy: Prospects for growth and poverty reduction. World Dev. 2010;38(10): 1429-1441.
13. Ibrahim HI, Onuk GE. Analysis of rural non-farm diversification among farming households in Doma area of Nasarawa state. Nigeria. PAT. 2009;5(1):49-54.
14. Idowu AO, Aihonsu JOY, Olubanjo OO, Shittu AM. Determinants of income diversification among farm households in South-West Nigeria. Econ Finance Rev. 2011;1(5):33-34.
15. Idowu AO, Ojiako IA, Ambali OI. Participation and wage of rural female headed households in Nigeria non-farm employment. Eur Sci J. 2013;9(13).
16. Lanjouw JO, Lanjouw P. The rural non-farm sector: Issues and evidence from developing countries. Agric Econ. 2001;26(1):1-23.
17. Lemi A. Determinants of income diversification in rural Ethiopia: Evidence from panel data. Ethiop J Econ. 2009;18(1).
18. McNamara KT, Wetzstein ME, Douce GK. Factors affecting peanut producer adoption of integrated pest management. Appl Econ Perspect Policy. 1991;13(1):129-139.
19. Mellor JW. The use and productivity of farm family labor in early stages of agricultural development. J Farm Econ. 1963;45(3):517-534.
20. Sen AK. Peasants and dualism with or without surplus labor. J Pol Econ. 1966;74(5):425-450.
21. Senadza B. Non-farm income diversification in rural Ghana: Patterns and determinants. Afr Dev Rev. 2012;24(3):233-244.
22. Tasie CM, Offor US, Wilcox GI. Determinants of off-farm income diversification in rivers state, Nigeria. J Agric Sci Technol. 2012;1(8):331-334.

23. Woldenhanna T, Oskam A. Income diversification and entry barriers: Evidence from the Tigray region of northern Ethiopia. Food Policy. 2001;26(4):351-365.