

Determinants of Entrepreneurship Decision for Agricultural Business among Graduates in Abia State, Nigeria

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Abstract—This study on determinants of entrepreneurship decision for agricultural business among graduates was conducted in Abia state, Nigeria. The research described selected socio-economic characteristics of graduates involved in agri business in Abia State; identified agricultural business enterprises operated by graduates in the study area; determined factors that influenced graduates decision to take to entrepreneurship in agricultural business in the study area and identified factors that constrain graduates from investing in agricultural business in the study area. Multistage random sampling technique was employed in collecting data from 120 graduates. Data generated were analyzed descriptively and by inferential statistics using probit regression model. Results indicated graduates operated diverse agricultural businesses. Age, employment status of respondents and access to credit positively influenced graduates decision to take to entrepreneurship in agricultural business at varied levels of significance while, gender and access to land negatively influenced graduates decision to take to entrepreneurship in agric business at 1.0% level of significance. Inadequate capital to start up the business, possible market for produce and land procurement issues were identified as constraints to decision to embark on agric business. It is therefore recommended that lending institutions should be established by the government to grant soft loans to graduates who want to embark on agricultural business.

Keywords— Entrepreneurship decision, agricultural business.

I. INTRODUCTION

THE important role small businesses and entrepreneurship play in stimulating job creation, economic growth, poverty alleviation and general uplifting of living standards has been recognized both internationally and in Nigeria. Entrepreneurs drive innovation and speed up structural changes in the economy thereby making an indirect contribution to productivity (Herrington et al, 2008).

There is wild spread agreement on the importance of entrepreneurship for economic development, more so in the agricultural sector given that entrepreneurship is the single largest sector globally and with its many facets, is possibly the most complex of all sectors. A large part of poverty reduction strategies in developing countries, particularly in Africa is predicated on expanding agricultural production and improving the output and capabilities of small farmers

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(Humphrey, 2006). Entrepreneurship is one of the means through which innovation in the agricultural sector can be fostered, thereby improving the output and capabilities of small scale farmers.

According to World Bank (2008) there is evidence that the political economy has been changing in favour of agriculture. Democratization and the rise of participatory policy making have increased the possibilities for small holders and rural poor to raise their political voice. New politically powerful actors have entered agricultural value chains and they have an economic interest in dynamic and prosperous agricultural sectors.

With the transformation of agriculture from subsistence to commercial and its globalization, the challenges facing agriculture is unprecedented. As the relative proportion of graduates seeking employment in the public sector increases continually, more jobs should thereby be created in the private sector. This however, necessitates fine tuning the entrepreneurial skills of the graduates (World Bank, 2008)

Nigeria, the most populous country in Africa, is naturally endowed with millions of hectares of arable land, 38.5 billion barrels of stated oil reserves, vast gas reserves, a variety of unexploited minerals and wealth of human capital by virtue of its estimated population of 162 million (World Bank, 2011). It is the world's eighth largest exporter of oil and Africa's second largest economy, after South Africa. Nigeria accounts for 15 percent of African's population and more than two thirds of the input for the resolution of many political challenges in Africa. However Nigeria still falls far short of the economic and social progress required to impact the well being of the average Nigerian given that over half of Nigeria's population live on less than one dollar a day (World Bank, 2011) The enormity of the challenges is corroborated by Nigeria's low score (ranking 158) on the human development index (HDI), an index that measures the average achievement of a country in terms of the welfare and quality of life of its people.

The prosperity and progress of a nation depends on the entrepreneurial quality of her people. If they are enterprising, ambitious and courageous enough to bear entrepreneurial risk the community/society will develop quickly. Such people are identified as entrepreneurs and their character reflects entrepreneurship. Entrepreneurship is no monopoly of any

religion or community. Entrepreneurial potential can be found and developed anywhere irrespective of age, qualification, experience or socio - economic background. Entrepreneurs are people who realize new opportunities and channel effort in the proper direction (Herrington et al, 2008). Entrepreneurship ought to be the life blood of the Nigerian economy. It is the cradle of Job and wealth creation in the most innovative ways.

Unemployment in Nigeria is one of the most critical problems the country is facing. The years of corruption, civilian military rule have hindered economic growth of the country. Regardless of the diverse and infinite resources (human and material), years of negligence and adverse policies have led to the under utilization of these resources in order to yield maximum economic benefits. Young graduates with potential to work continue to roam about the street seeking for jobs which are very limited in number (UNDP, 2009).

Many graduates in Nigeria wander the streets without anything reasonable to do for a living. The government is unable to provide jobs for all of them. Employment in Nigeria is usually not based on merit but depends on how connected you are with people that have power. This leaves many highly qualified people in poverty as seemingly no one cares to know what they are capable of achieving. These people are missing out on the income they would have gotten if they were employed. The number of quality jobs in the economy is low and many government resources are misallocated (Chimobi, 2010). Unemployment-induced poverty tends to increase the crime rate and violence in the country. Most unemployed youths resort to crimes such as armed robbery, kidnapping for ransom, internet fraud and other forms of fraudulent activities. The reservation wage they get from these activities is typically barely enough to take care of their basic necessities (Chimobi, 2010).

The economic reforms have not been sufficient enough to reverse years of economic decline, deterioration capacity, weakened institution and inadequate infrastructure investment and the recent dramatic stock market decline, banking crisis, global economic crisis, ethnic crisis, sporadic bombing crisis, fuel subsidy removal and flood crisis have accentuated the situation. Job creation for example is currently one of the key political and economic issues in Nigeria in general and Abia State in particular, yet there is currently insufficient data on barriers to entrepreneurial start ups, especially barriers pertaining decision determinants in agricultural business.

In Abia State, the presence of other commercial business activities and natural resources have made Abian graduates to rely on these other means of livelihood rather than investing in agricultural business. Largely because they do not perceive agricultural business as being lucrative and innovative and as a result of these factors agricultural entrepreneurial skills has hardly been developed in the state.

A. Research Objectives

The broad objective of this study is to analyze the determinants of entrepreneurship decision for agricultural business among graduates in Abia State. The specific

objectives are to:

- i. identify agricultural business enterprises operated by graduates in the study area;
- ii. determine factors influencing graduates to take to entrepreneurship in agricultural business in the study area;
- iii. identify factors that constrain graduates from investing in agricultural business in the study area

B. Research Hypothesis

The following hypothesis in the null form will be tested.

H01: There is no significant relationship between selected Socio-economic characteristics (age, household size, gender, access to credit, employment, status, marital status, income of sponsor, primary occupation of sponsor, access to land) of graduates and their decision to establish agricultural business.

II. RESEARCH METHODOLOGY

A. Study Area

This study was carried out in Abia State of Nigeria. Abia State has a land area of 7,677.20 square kilometers, with a total population of 2,833,999 persons, made up of 1,434,193 males and 1,399,806 females (NPC, 2006).

Abia State is located between latitudes $5^{\circ}47' N$ and $6^{\circ}12' N$ North of the equator and between longitudes $7^{\circ}23' E$ and $8^{\circ}02' E$ East of the Greenwich Meridian (NRCRI, 2003). It is bounded on the North and North-east by the states of Anambra, Enugu and Ebonyi, to the south by Rivers state, to the East and South-East by Akwa Ibom and Cross River states, and to the West by Imo state (INEC, 2008).

Abia as an agrarian State is richly endowed with land suitable for growing various tropical crops. The climate is essentially tropical humid with annual rainfall of 1500-2600mm distributed evenly throughout the wet season (April to October). The mean elevation is 122m. Diurnal temperature varies between $27^{\circ}C$ and $31.9^{\circ}C$ (NRCRI, 2008).

B. Sampling Techniques

Both purposive and simple random sampling techniques were used for the study. Six Local Government Areas were randomly selected from the 17 LGA's in the State. Twenty (20) graduates involved in agricultural business were purposively selected from each of the six LGA's. The Grand Sample size was 120.

C. Analytical Techniques

Objective i, and iii were analyzed using descriptive statistics such as mean, percentages and frequency tables.

Objective ii was realized using probit regression analysis objective iii was first arranged by the use of a five point likert scale to determine the mean decision level for agricultural entrepreneurship (where decisions will be graded thus: high = 2, moderate = 1, and No = 0). The likert scaling is a method of ascribing quantitative values to qualitative perception to make it amenable to statistical analysis. Graduates with decision score of 1.0 and above will be regarded as having made entrepreneurial decision but graduates with decision score of

less than 1.0 made no such decision.

To determine the mean of decision level = \bar{X}

$$\bar{X} = \sum x/N \text{ (the mean score)}$$

Xs of each item will be computed by multiply the frequency of each response pattern with its appropriate value and the sum will be divided by the sum of the number of the respondents to the items this can be summarized with the exination below:

$$\bar{X} = \sum fn/N$$

Where

\bar{X} = mean

\sum = Summation

F = Frequency

N = Number of respondents

D. Model Specification

The probit regression model is presented as below as expressed by Gujarati (2003)

$$Fz_i \text{-----} (1)$$

Where

$$Z_i = \beta_0 + \beta_1 X_1$$

$$Y_i = \beta_1 + \beta_2 X_{2i} \text{---} \beta_k X_{ki} + \eta_i \text{-----} (2)$$

Y is unobserved but $Y_i = 0$ if $Y_i = 1$ If $Y_i > 0$

$$P(Y_i = 1) = P(Y_i \geq 0)$$

$$P(U_i \geq -\beta_1 - \beta_2 X_{2i} \text{-----} \beta_k X_{ki} \text{-----})$$

(3)

Where $i = 1, 2 \text{-----} (60 \text{ respondents})$

Where $Y_i =$ entrepreneurship decision for agricultural business (Dichotomous dependent variable 1 = yes, 0 = No)

$\beta =$ A factor of unknown coefficients

$X_1 =$ Age (years)

$X_2 =$ Household size (number)

$X_3 =$ Gender (male =1, female=0)

$X_4 =$ Access to credit (Naira)

$X_5 =$ Employment Status (employed=1, unemployed=0)

$X_6 =$ Marital Status (married =1, otherwise=0)

$X_7 =$ Income level of sponsor (Naira)

$X_8 =$ Access to land (hectares).

III. RESULTS AND DISCUSSION

A. Involvement of graduates' in Agricultural entrepreneurship business

Table I identified different agricultural business activities operated by Agricultural graduates in Abia state, Nigeria. The table shows that the respondents were moderately involved in arable crop production mainly cassava (50.83%) and vegetable production (20.0%). Also, 35.0% of the respondents were involved in animal production which includes poultry production, pig production, goats and sheep among others. Meanwhile a fairly good proportion of the respondents operated a fish farm while 20.83% of them were into Consultancy service for farmers. Graduates in the study area were lowly engaged in fruit production (17.5%), rice production and processing (13.33%), Designing of machines

and equipment for processing(0.83%), Transportation of farm production from different farms (15.83%), Processing of different agricultural produce (value addition) (20.0%), Packaging of finished agricultural produce (18.33%), Supplying of improved seed varieties of farm/farmers (13.33), marketing/distribution of different agricultural produce (16.67%), Supplying animal feeds to farmers (15.83%) and flower production (4.14%).

TABLE I
DISTRIBUTION OF RESPONDENTS BY LEVEL OF INVOLVEMENT IN AGRICULTURAL ACTIVITIES

Agricultural activities	Frequency*	Percentages
Pomology (fruit production)	21	17.5
Olericulture (vegetable production)	24	20.0
Cassava production	61	50.83
Rice production /processing	16	13.33
Designing of machines and equipment for processing	1	0.83
Transportation of farm production from different farms	19	15.83
Processing of different agricultural produce (value addition)	24	20.0
Packaging of finished agricultural produce	22	18.33
Supplying of improved seed varieties of farm/farmers	16	13.33
Consultancy service of farmers	25	20.83
Marketing/distribution of different agricultural produce	20	16.67
Supplying animal feeds to farmers	19	15.83
Floriculture (flower production)	5	4.17
Fish rearing (aquaculture)	38	31.67
Animal production (poultry ,snail, glasscutter or pig)	42	35.0

Source: Field survey data, 2013

* Multiple responses recorded

The finding implied that agricultural graduates were more involved in crop production and livestock production. Gwary, Pur and Bawa (2008) in their study reported that young agricultural entrepreneur are more interested in crop production, probably due to the short gestation period of the crop varieties produced, which ensures quick turnover. In line with the view of Akpantaku *et al.* (1998) participation in livestock production may be attributed to the protein needs of the farmers.

In addition to the view of Gwary, Pur and Bawa (2008), livestock production could be more capital intensive than crop production, hence the preference for crop.

Meanwhile, the low involvement of agricultural graduates in Flower production could be attributed to the perceived low and seasonal/occasional demand of the product which attracts low and seasonal income.

B. Determinants of entrepreneurship decision for agricultural business among agricultural graduates

The probit regression model of the factors influencing the decision of agricultural graduates for entrepreneurship in agricultural business in Abia State Nigeria is presented in table II. Overall, the model predicted 58.32 percent of the sample correctly and posted a log likelihood value of -35.051181 and a goodness of fit chi-square value of 54.2 which was statistically significant at 1.0% level.

In the model, five out of nine explanatory variables were statistically significant at given levels and these include gender, access to land, access to credit, age and employment status of respondents. In this table, a positive sign on the variable's coefficient indicates that higher values of the variable increase agricultural graduates' entrepreneurship decision for agricultural business and vice versa when a negative sign is obtained.

Specifically, The coefficient (-0.3903819) of gender was negative and statistically significant at 1.0% alpha level. The sign of the variable is not in conformity with a priori expectation. It implies that being a female agricultural graduate would increase the likelihood to decide for entrepreneurship in agricultural business. This may be due to the fact that female generally make greater responsibilities for agricultural production and enhanced economic contributions to family needs as the male abandon farming and other related entrepreneurship in agricultural business to seek for white collar jobs in the cities. Also the posture of this result may be due to the dominance of female in agricultural business in the study area. Meanwhile, this is not in tandem with Okwoche (2012) that female youth have less likelihood to embark on agricultural business because of its tedious nature.

The coefficient (0.0032198) of age was positive and statistically significant at 99.0% confidence level. The sign is in conformity with a priori expectation. It implies that as the agricultural graduate advances in age, the more the tendency to decide for entrepreneurship in agricultural business. This is expected because an older entrepreneur is considered economically and emotionally matured to bear the rigours involved in agricultural business enterprise. This result is in agreement with Nwojo (2005) that older agricultural entrepreneurs are considered better credit risks in the sense that they are rational decision makers. Also, Graham (1999) opined that older agro-entrepreneurs have very high efficiency in their production and are more confident that they can handle difficulties/problems that can occur in the farm business hence, are not worried about the risks.

The coefficient of employment status (0.3118966) was positive and statistically significant at 10.0% probability level. The sign of the variable is in tandem with a priori expectation. The implication is that being an employed agricultural graduate will increase entrepreneurship decision for agricultural business. This is probably because an employed graduate is likely to have some experience, savings and income needed to finance agricultural entrepreneurship business. Also employed graduates have greater access to investment capital than the unemployed. However, Weissleder and Heckeley (2008) inferred that lack of knowledge or

experience gained from being employed is responsible for inability to recognize opportunities, for failure to plan with sufficient accuracy, or for fear of not being able to execute plans properly.

TABLE II
BINARY PROBIT REGRESSION COEFFICIENTS OF FACTORS INFLUENCING THE DECISION OF AGRICULTURAL GRADUATES FOR ENTREPRENEURSHIP IN AGRICULTURAL BUSINESS IN ABIA STATE NIGERIA

Variable	Estimated coefficients	Standard errors	Z	P> z
Gender	-0.390381***	0.1362944	-2.54	0.011
Age	0.003219***	.0008419	4.61	0.000
Marital status	-0.1451205	0.1506549	-0.92	0.356
Household size	-0.0018493	0.016645	-0.11	0.911
Employment status	0.3118966*	0.2222324	1.50	0.134
Fathers' occupation	-435987	0.5749992	-0.73	0.463
Income level of sponsor	-9.61e-07	7.40e-07	-1.23	0.220
Access to micro credit	0.251090***	0.010162	11.73	0.000
Access to land	-1.169886***	0.01104	-7.19	0.000
Number of observations at one: 67				
Number of observations at zero: 53				
Log likelihood: -35.051181				
Wald chi2 = 54.52				
Cases predicted correctly (%): 58.3				

Source: Field Survey data, 2013.

* Significant at 10.0% level

** Significant at 5.0% level

*** Significant at 1.0% level

Agricultural graduates' micro credit access gave a positive coefficient of 0.2510901 and was highly significant at 1.0% alpha level, indicating that agricultural graduate with access to agricultural micro credit had increases chances for entrepreneurship decision in agricultural business. The sign identity of this variable makes sense for this study and conforms to a priori expectation. Access to credit is regarded as one of the key elements in raising agricultural productivity, income and entrepreneurship decision (DBSA, 2005).

Conversely, the coefficient of access to land (-0.1169886) had significant effect on agricultural graduate' decision to embark on entrepreneurship in agricultural business. This is evident from its negative coefficient and its significance at 1% (P<0.01). The sign of the variable is at variance with normal expectation. It implies that decision of taking entrepreneurship in agricultural business increases among agricultural graduate with no access to land. In as much as this result contradicts normal expectation, however it is expected in this study considering the few number of agricultural graduates that have access to land in the study area. This however accounted for the posture of this result.

C. Perceived constraints to investment Decision in agricultural business

Table III shows the constraints hindering agricultural science graduates from investing in agricultural business in Abia State. Respondents identified a wide range of constraints

they perceived to militate against their investment in agricultural entrepreneur business. The Table revealed that inadequate startup capital (76.67%) was the major constraints that have militated against respondents' decision to invest in agricultural business in the study area. Other serious constraint identified by agricultural graduates is possible market for agricultural product (60.0%). This is due to the fact that the size of market explains how massive the product of an agribusiness firms could be consumed. It equally implied better prospects for an investor since it equates to a greater demand for its goods and services, and offers the investor economies of scale. This was in consonance with the finding of Weissleder and Heckelei (2008) and does not corroborate Dauda (2007), who noted that market is not a constraint to growth in an agribusiness investment.

A Land procurement issue was identified (60.0%) as a problem facing graduate entrepreneurship in agricultural business. Access to land is still mediated via patrilineal systems (Aluko and Amidu, 2006), in spite of the intentions of the 1978 Land Use Act. User rights often follow marriage, inheritance or borrowing. Land access is severely curtailed by the way land is inherited, owned and passed on.

The degree of risk associated with agribusiness investments was also identified (52.0%) as a strong inhibitor for agribusiness and decision to invest in agribusiness. The level of risk associated with a business has the capacity to sway-off many investors as many entrepreneurs attempt to avert risk by venturing into a less risky business. Agriculture across the board is notorious for the volatility of its returns. Environmental factors such as drought, disease and natural disasters - as well as volatility in commodity prices and costs, including oil prices affecting the cost of transportation can severely reduce the return on investment. The finding is justified by that of Miguel, *et al.* (2004) who inferred that investors face significant economic risks due to the instability of political and financial institutions, uncertainty about government policy, incomplete or non-existent markets, war, corruption, and social issues in the region, among other factors.

TABLE III
PERCEIVED CONSTRAINTS TO INVESTMENT IN AGRICULTURAL BUSINESS IN ABIA STATE

Constraints	Frequency*	Percentage
Inadequate capital to start up the business	92	76.67
Identification of agro-enterprise	32	26.66
Possible market for product	72	60.00
Land procurement issues	72	60.00
Water availability	42	35.0
Poor perception	24	20.00
Climate and other related risk factors	63	52.5

Source: Field survey data, 2013

* Multiple responses record

The table also revealed that 26.66% of agricultural graduate complained of Identification of agro-enterprise while 35.0% and 20.0% others complained of Water availability and poor perception of agricultural business respectively.

IV. CONCLUSION

50.83% of the respondents are involved in cassava production. This showed the growing recognition of cassava as a good income generator in Nigeria. From the probit regression result five out of nine explanatory variables were statistically significant at given levels and signs. These include gender, access to land, access to credit, age and employment status of respondents. Main constraints to agric business start up include; inadequate capital, land procurement issues and possible market for sales of produce.

V. RECOMMENDATION

In light of the results the study posits the following:

- 1) Lending institutions should be established by the government to grant soft loans to graduates who want to embark on agricultural business.
- 2) The 1978 land use decree should be fully implemented.
- 3) Agricultural marketing boards should be established to help graduate farmers market their produce.

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