

Determinants of Agripreneurship among the Rural Households of Ishielu Local Government Area of Ebonyi State

Nwibo, S. U.¹ Mbam, B. N.¹ Biam, C. K.²

1. Department of Agricultural Economics, Management and Extension, Ebonyi State University, Abakaliki, Nigeria

2. Department of Agricultural Economics, University of Agriculture, Makurdi, Benue State, Nigeria

Abstract

Despite the abundance of agripreneurial opportunities in rural communities of Ishielu Local Government Area of Ebonyi State, studies seem not to have captured the determinants of agripreneurship in the area. The study employed an *ex post facto* research design to generate relevant data using structured questionnaire administered as interview schedule on 120 purposively selected rural households. Data collected were analysed using descriptive and inferential (Logit regression analysis) statistics. Results showed that most of the agripreneurs (64.20%) were male who are within the mean productive age of 46 years and average household size of 7 persons. Meanwhile, the major agripreneurial activity of the people was farm production – arable crops, livestock, and fisheries from where they earn an average annual income of ninety-eight thousand, three hundred and forty three naira, twenty kobo (₦98,343.20). The study identified access to credits and loans, tax rates, agripreneurial training, income level of the agripreneur, geographical location, availability of market, fertility of the soil, number of competitors, quantity of agricultural output, availability of social amenities, and the type of farming system practiced as having influence on agripreneurship drive among rural households. Similarly, land tenure system, lack of investment infrastructures, lack of technical know-how, poor training of rural households by extension agents, lack of access to research results, high interest rate on loan, high competitive market, poor returns to agricultural investment, and lack of access to loan as the major constraints to agripreneurship among rural households. Based on the findings, the study recommended provision of key investment infrastructures such as electricity, good roads, organised; and proper information dissemination to the rural households on how to identify viable agripreneurial opportunities.

Keywords: agripreneurship, agripreneurs, investment, drive, rural, households, constraints

INTRODUCTION

The problems of unemployment, underemployment and disguised unemployment have swamped the rural areas of Nigeria thereby creating a wide gap between citizens (Narendran and Ranganathan, 2015; Shoji *et al.*, 2014). In a bid to bridge the gap and ensure increased economic opportunities and food security for the rural households has necessitated the adoption of agripreneurship (Uneze, 2013). Agripreneurship which simply means entrepreneurship in agriculture can be seen as a process whereby farmers become determined, creative, innovative, willing to take calculated risk, always looking for opportunities to improve and expand their farm business (Sancho, 2010). Agripreneurship is the profitable fusion of agriculture and entrepreneurship as it turns farm into an agribusiness. It is synonym with entrepreneurship in agriculture and refers to agribusiness establishment in agriculture and allied sector. Agripreneurship is a concept specific to agriculture and drawn from wider entrepreneurship. The concept is used to describe dynamic process of creating incremental wealth from agricultural sector (Shailesh *et al.*, 2013). The wealth is created by individuals who take the major risks in terms of equity, time and carrier commitment of providing value to some products or services. The product or service itself may or may not be new or unique but value must somehow be infused by an agripreneur who secures and allocates the necessary skill and resources (Olatomide and Omowumi, 2015). Agripreneurs are innovators who drive change in the economy by initiating new idea and creating new ways of carrying out different activities in input supply, production and marketing in agriculture. In fact, agripreneurs should be proactive, curious, determined, persistent, visionary, hardworking, honest, integrity with strong managerial and organizational skills in order to identify and exploit available opportunities in agriculture. Despite the participation of rural households in agripreneurial activities, its development has not been fully embraced. Employing entrepreneurship skill in farming lead to reduction in poverty among the rural households, but the extent of poverty reduction is still very insignificant, which is an indication that farmers have not fully taken advantage of some of the agripreneurial activities or have participated to a less extent. Hence, if the current transformation agenda of the federal government on poverty reduction through farming activities must be actualized, there is urgent need to provide adequate entrepreneurship programme for farmers in order to address factors that hinder the growth and development of farmer entrepreneurs (Mbam and Nwibo, 2013).

Considerably, the peculiarities of Nigeria's agricultural sector have provided further insight on the need for *agripreneurship* to ensure efficient utilization of available resources and optimum exploitation of opportunities that abound in the agribusiness value chain. Agripreneurship entails the process of making

agriculture more attractive and profitable venture. This ensures that agricultural land requires the development of entrepreneurial and organizational competency in farmers. A lots of opportunities abound in agricultural land, which according to Sudarshan (2013) include: production of agricultural produce by making best use of the technology, resources and demand in the market; procurement and distribution, hiring of implements and equipment like tractors, seed drills, sprayers, harvesters, threshers, dryers and technical services such as installation of irrigation facilities, weed control, plant protection, harvesting, threshing, transportation, storage, etc. At input production level, there are many potential agripreneurial opportunities - bio-fertilizers, bio-pesticides, soil amendments, plants of different species of fruits, vegetables, ornamentals, root media for raising plants in pots, agricultural tools, irrigation accessories, production of cattle feed concentrate, plants in pots, agricultural tools, irrigation accessories, production of cattle feed concentrate, mineral mixture and complete feed. Again, agripreneurial opportunities to support sericulture, fishery and poultry still abound. At small scale agri-processing units, post harvest, marketing, Narendran and Ranganathan (2015) opined that electronic marketing, cold supply chain, advisory and consultancy services provide immense scope and opportunity for the rural youths to function as agripreneurs for agricultural development and prosperity. Electronic marketing directly connects farmers with the customers and minimizes the role of middlemen in the supply chain. Cold supply chain integrates the whole supply chain for perishable products and minimizes the wastage at the production centre, logistics and storage. Consultation and advisory services are very much necessary for implementing contract and corporate farming at the field level.

Therefore, for our agriculture to remain competitive in the global economy there is need to inject new ideas and creative processes for value creation in a sustainable manner. Sustainable agriculture requires the development of agripreneurial and organizational competency in farmers since the need for an entrepreneurial culture in agricultural sector has been recognized in recent decades. But despite the preponderance of agripreneurial opportunities in agriculture, it seems that available studies have not been able to posit the determining factors for agripreneurship among the rural households in Ishielu Local Government Area of Ebonyi State. To fully address the problem, the study analysed the following objectives: describe the socio-economic characteristics of farmer agripreneurs; characterized the various agripreneurial opportunities available and ventured by the rural households; analyze the factors that influence rural households in becoming agripreneurs; determine the effect of the socio-economic characteristics of the rural households in becoming agripreneurs; and analyze the constraints to agripreneurship among the rural households.

METHODOLOGY

The study was carried out in Ishielu Local Government Area (LGA) of Ebonyi State which is located between latitude 0.67°N and longitude 0.95°E and bounded in the North and West by Enugu State, in the east by Ohaukwu Local Government Area and in the South by Onicha Local Government Area. The area has twelve communities, namely: Ntezi, Amazu, Ezillo, Okpoto, Nkalagu, Ezzagu, Iyonu, Obeagu, Agba, Azuinyaba, Umuhuali and Nkalaha. The population of people living in the area is 151,048 persons (NPC, 2006). The area which is located in the rainforest area of Ebonyi Central Zone has annual rainfall of 1770mm to 2000mm and a mean temperature of 19.73°C - 30°C (Enugu State Blue Prince on Agricultural Policy and Programme, 1992; ENADEP Annual Report, 1995). There are four major markets found within the communities in Ishielu Local Government Area which includes: Nkwo-Nkalagu, Afor-Ezillo, Orié/Ode-Ntezi and Eke-Ohafia markets. The area which is predominantly agrarian has the major stable food crops grown as yam, cassava, cocoyam, potatoes, rice, groundnut, maize, vegetables.

The study employed an *ex post facto* research design which is a systematic empirical enquiry in which the researcher does not have direct control over the variables because their manifestations have already occurred or because they cannot be inherently manipulated. Therefore, to generate relevant data for this study, a combination of multi-stage and purposive random sampling techniques were adopted. The first stage was the random selection of six communities out of the twelve (12) communities. The second stage involved the random selection of two villages from each of the six communities selected. Thus, a total of twelve villages were selected. The last stage was the purposive selection of ten (10) agripreneurs from each of the twelve villages. Thus, a total of one hundred and twenty agripreneur households were selected and used as the sample size for this study.

Data for analysis were collected only from the primary source with the aid of structured questionnaires administered as the interview schedule to the purposively selected agripreneur households. Data collected were analysed using descriptive and inferential tools. Specifically, descriptive statistics such as mean, frequency distribution, table and percentage were employed to realise objectives i and ii. Meanwhile, inferential tool involving factor analysis was used to achieve objectives iii and v as Logit regression analysis was employed to achieve objective iv.

Logit Regression Variable Specification

The socio-economic characteristics of rural households were regressed against the decision to become agripreneurs. The model is expressed explicitly as:

$$AD = \beta_0 + \beta_1AG + \beta_2GE + \beta_3HS + \beta_4ES + \beta_5AI + \beta_6HH + \beta_7AE + \mu t$$

Where,

AD = Decision to be agripreneur

β_0 = Constant

$\beta_1 - \beta_7$ = Coefficients of regression

AG = Age of farmers (years)

GE = Gender of farmers (dummy: 1 = male, 2 = female)

HS = Household size

ES = Educational status (years in formal school)

AI = Annual income

HH = Head of household (man=1, female=2)

AE= agripreneurship experience

μt = stochastic error term

RESULTS AND DISCUSSION

Socio-economic characteristics of agripreneurs

The socio-economic characteristics of the rural agripreneurs analyzed and discussed include; age, gender, educational level, household size, marital status, total annual income, head of household, agripreneurship experience, farm size and membership to farmers' association (Table 1). Result indicates that most of the agripreneurs (64.20%) were male. The high proportion of male agripreneurs in the area can be attributed to the fact that in Africa, males are regarded as stronger vessels that have the ability to get engaged in tedious jobs like agricultural activities whereas the females are regarded as the weaker gender whose major role is to take care of children and keep domestic chores alive. This finding is consistent with Mbam and Nwibo (2013) who opined that male gender are more involved in agricultural activities than the female gender. The age of farmer is an important factor that affects the effectiveness and productivities of farms and farm families. From the analysis, it was observed that the mean age the agripreneurs was 46 years which implied that they still within the active productive age. The result slightly fall short of FAO (2008) report which posited that the active age of agricultural work force is between 31 – 40 years but was consistent with Nwibo and Okorie (2013) who reported that the mean age of active entrepreneurs in southeast Nigeria was 43 years. Meanwhile, 71% of the agripreneurs are married with an average household size of 7 persons who constitute bulk of family labour force. This finding justified Erenstein (2003) who posited that the occurrence of relatively high household size could serve as a source of farm labour which if it is in lack can be regarded as one of the major constraints affecting rural agriculture. Further analysis of the socioeconomic attributes of the agripreneurs revealed that more than half (56.7%) of them only completed primary education. This was justified by mean years of schooling of 8 years. Again, it was observed that the agripreneurs earned an average annual income of Ninety-eight thousand, three hundred and forty three naira, twenty kobo (₦98,343.20) which was far below the annual income of general entrepreneurs in southeast, Nigeria which was found to be Five hundred and seventy three thousand, seven hundred and seventy nine naira (₦573, 779) (Nwibo and Okorie, 2013). The low annual income can be attributed to the small scale agripreneurial activities in farm implement supply – cutlass and hoe; arable crop production; and small scale processing and distribution of cereals and root crops. The result further revealed that the agripreneurs have reasonably stayed in agribusiness as justified by the 9 years mean agripreneurial experience. This is quite encouraging as higher experience in business exposes an individual to strategies for effective management and marketing.

Table 1: Socio-economic characteristics of the Agripreneurs

Socioeconomic Attributes	Frequency	Percentage	Mean
<i>Gender</i>			
Male	77	64.2	
Female	34	33.8	
<i>Age</i>			
<30	3	2.5	
31 – 40	63	52.5	
41 – 50	26	21.7	46
51 – 60	18	15.0	
>60	10	8.33	
<i>Marital status</i>			
Married	85	70.8	
Single	23	19.2	
Divorced	3	2.5	
Separated	9	7.5	
<i>Household Size</i>			
< 3	9	7.5	
3 -6	41	34.2	
7 – 9	58	48.3	7.4
> 9	12	10.0	
<i>Educational level</i>			
No formal education	33	27.5	
Primary education	68	56.7	
Secondary education	15	12.5	8
Tertiary education	4	3.3	
<i>Total annual Income</i>			
< 50,0000	34	28.3	
51,000 – 80,000	59	49.2	98,343.20
81,000 – 110,000	21	17.5	
>110,000	6	5	
<i>Agripreneurial Experience</i>			
<5	17	14.20	
5 – 10	40	33.30	
11 – 15	34	28.30	9
>15	29	42.30	

Agripreneurial Opportunities

Agribusiness environment is diverse, complex, and full of opportunities. Effort to thoroughly exploit the opportunities that abound in the tri-aggregates of agribusiness will amount to growth in agricultural sector. Opportunities in agribusiness constitute what is known as agribusiness tri-aggregates – farm input supply, farm production, and the processing-distribution. On this note, Table 2 presents the analysis of agripreneurial opportunities available and that which are ventured by the agripreneurs.

The result showed that the agripreneurs invariably ventured on the three major agripreneurial investment areas - input supply (63.33%), production (80.83%) and processing /distribution (53.33%). This implied that majority of the respondents were into production component of agripreneurship. However, individual analysis showed that from the input supply component, the agripreneurs invested more in the supply of farm implements (67.10%), brooding stock (36.84%), agro- chemicals (25.00%) and the least being investment in veterinary services (9.21%). The low investment in veterinary services could be attributed to the fact that veterinary services required higher educational qualification to operate as few of the respondents were observed to have spent above 12 years in formal education. The production component of agripreneurship revealed high investment in arable crop and livestock production. This arguably justified that arable crops like rice, yam, maize, and cassava were the major staple foods eaten by the people of the area and its production is not dependent on educational qualification as farmers do not require special training to start producing arable crops unlike production of fisheries which requires special training to practice from the juvenile production to the table size. Finally, 73.44% of the agripreneurs who were into processing and distribution were into processing of roots and tubers (cassava and yam), nuts and legumes while 37.50% were into the processing and distribution of cereal (rice); whereas 23.44% were mainly involved in the processing and distribution of nuts and legumes (beans and bambranut).

Table 2: Agripreneurial Opportunities available and ventured

Agripreneurial components	Opportunities/investment areas	Frequency	Percentage
Farm input supply 76(63.33)	Agro chemicals	19	25.00
	Breeding stock	28	36.84
	Farm implements	51	67.10
	Veterinary services	7	9.21
Farm production 97(80.83)	Arable crops	74	76.29
	Livestock	43	44.33
	Fisheries	16	16.49
Farm processing/Distribution 64(53.33)	Roots and tubers	47	73.44
	Cereals	24	37.50
	Nuts/legumes	15	23.44

Factors Influencing Agripreneurship Drive among rural households

Based on the dynamics of our agribusiness environment and the agripreneurs, it has become pertinent to examine those drivers of agripreneurship among the rural households of Ishielu L.G.A. That is to say, why do rural households become agripreneurs? From the analysis, the drivers were categorised into three principal factors – institutional, socio-economic, and political/cultural. The naming of the factors were based on the Kaiser’s rule of thumb as applied by Nwibo and Okorie (2013) in which a factor that loads 0.4 and above was accepted to have influence on agripreneurship drive. Individual analysis of the factors revealed that the identified institutional factors were access to credits and loans, tax rates, and agripreneurial training. This finding was justified as a farming household with good access to credit, a favourable tax regime, and who has undergone agripreneurial training will be more driven to establish his/her agripreneurial outfit than the one that has poor access to the factors. The result further showed that the socio-economic factors that influence agripreneurship drive of rural households are the income level of the agripreneur, geographical location, availability of market, fertility of the soil, number of competitors, quantity of agricultural output, availability of social amenities’ and the type of farming system practiced in the area. This finding justified the earlier findings of Jancikova (2004) who categorised economic factors influencing household’s participation in agricultural enterprises into two broad factors - measurable and immeasurable. Accordingly, the measurable factors include geographic location, quality of land, size of household, and attractiveness of the agricultural enterprise. The immeasurable factors comprised of the quality of management, leadership style, staffs' attitudes and non-financial incentives for employees.

Table 3: Factors Influencing Agripreneurship Drive among Agripreneurs

Response factors	Institutional	Socioeconomic	Cultural
Access to credits and loans	0.760	0.041	0.023
Tax rates	0.581	-0.532	0.053
Availability of market	0.352	0.463	0.212
Income level	0.092	0.763	0.143
Geographic location	0.060	0.512	0.129
Soil fertility	-0.514	0.457	0.083
Number of competitors	0.198	0.872	-0.321
Quantity of agricultural output	0.073	0.613	0.102
Land tenure system	0.194	0.012	0.714
Social amenities for farming communities	0.090	0.634	0.013
Farming system practiced	-0.199	0.915	0.075
Agripreneurial training	0.622	-0.098	0.032

Effects of the Socio-economic Attributes of Rural households in becoming Agripreneurs

Logit regression analysis was used to elicit the effects of socio-economic attributes of the rural households on their decision to become agripreneurs. The socioeconomic attributes analysed include gender, age, educational status, household size, annual income, head of household, and agripreneurship experience. Results of the analysis revealed that the coefficient of age was inversely related to agripreneurship drive of rural households but was statistically significant at 1% (P=0.01) level of significance. This shows that the drive to become an agripreneur declines with age. Hence, the younger household heads are more eager to become agripreneurs as such investment acts as a buffer against negative eventualities of retirement but such quest tends to decline with age. The result further showed that the coefficient of gender was negative and not significant at any level. This implies that being a man or woman has not effect on one being an agripreneur. The coefficient of household size was positive and significant at 5% (P=0.05) level of significance. This was *in tandem* with the *a priori*

expectation because large household size can be good source of labour at reduced cost. Again, as the size of a family increases; the household head begins to think of how to make the consumption demand of the family to be met. In doing this, making agriculture a business comes to mind so as to raise enough to the rising demand of the household. Education has been noted to be a driving force in agripreneurial success (Nwibo and Okorie, 2013). This was justified by the coefficient of education which was positive and significant at 1% (P=0.01) level. Hence, education is prerequisite to understanding the nitty gritty of entering any venture for profit maximisation. The coefficient of annual income was positive and significant at 10% level of probability. This implies that as the income profile of a household is increasing, the drive to diversify into agripreneurship venture becomes higher. This was in line with the *a priori* expectation since it has been observed that higher income warrants higher investment into different ventures. The result further showed that the coefficient of head of household was positive and directly related to agripreneurship drive of farm households though not significant at any level of probability. This finding was not consistent with the *a priori* expectation as it was expected that male headed households do have higher drive for agripreneurship than female heads as reported by Lichtenstein, Lyons, and Kurtzhanoro (2004) who posited that males are stronger than females and so are more business driven than the female counterparts. Again, the coefficient of years of agripreneurial experience was positive and significant at 1% (P=0.01) level. This entails that the agripreneurial experience gathered by a farmer has strong influence in making him/her to establish similar enterprise within the area or elsewhere where similar opportunity is located. The overall effect of the socioeconomic attributes of the agripreneurs showed that among the three pseudo R² (Cox and Snell, Nagelkerke, and Mcfadden), the Nagelkerke R² gave the best impression of the model as its R², Z-value, and Pearson Goodness-of-fit stood at 0.202, 18.188, and 8887.020 respectively which signified that the socio-economic variables of the rural households have significant effect on the agripreneurship drive at 1% (P = 0.01) level of significance.

Multi-Logit analysis on the effect of Socio-economic attributes on rural households in becoming agripreneurs

Variable name	Variable symbol	Coefficient estimates	Standard error	Z-value
Constant	β_0	7.265	17.561	18.188
AG	β_1	-0.918	3.847	0.003*
GE	β_2	-16.870	7.848	0.006
HS	β_3	5.205	2.070	0.043**
ES	β_4	2.046	1.206	0.005*
AI	β_5	5.876	1.542	0.060***
HH	β_6	12.970	2.962	-0.684
AE	β_7	0.224	0.781	0.330*
Pseudo R ²				
Cox and Snell (0.143)				
Nagelkerke (0.202)				
Mcfadden (0.126)				

** p = 0.05 (95%), * p = 0.0 (99%), *** p = 0.10 (90%)

Constraints to Agripreneurship among Rural households

Despite the abundance of agripreneurial opportunities in rural communities of Ishielu L.G.A. of Ebonyi State, it was observed that some factors still hinder some rural households in becoming agripreneurs. These constraints were categorised into socio-cultural, knowledge-base, and economic factors. Employing the Kaisers rule of thumb (0.4), the identified socio-cultural factors include land tenure system and lack of investment infrastructures. This finding is arguably justified because one of the greatest challenges to effective agricultural development in the southeast, Nigeria is the system of land ownership – land tenure. Land tenure has led to fragmentation of agricultural land which in turn impedes large scale investment in farm production. Lack of investment infrastructures such as electricity, motorable and portable water has been noted to have inverse effect on agripreneurship development; as they impede processing and distribution of agricultural products. This corroborated the report of Kahan (2012) who posited that what blocks starting and growing profitable farm businesses is basic infrastructure. These infrastructures include poor roads leading to markets, inadequate storage and market facilities, and even irregular supplies of electricity create very real and practical barriers to developing farm businesses.

Further analysis shows that the identified knowledge-base factors are lack of technical know-how, poor training of rural households by extension agents, and lack of access to research results. Lack of technical competence has been observed as one of the banes to agripreneurship. Rural households are agrarian and as such, to have a healthy agripreneurship development, agripreneurial training facilities and support must be easily available. Effective institutions need to be developed to provide education and training at the right time, in the right place, and with the right balance of technical knowledge and practical skills. Similarly, to bring the gap in knowledge-base of the rural households, Ndirangu and Bwisa (2016) posited that service providers, and

extension agents should help the rural households in identifying, preparing, designing and implementing efficient agribusinesses. Advice and support to rural households should cover areas beyond the traditional production-led services to other areas – covering all aspects of running a profitable, market- oriented agribusiness. Again, lack of access to research results can be attributed to lack of information on research findings. Thus, justifying European Commission (2004) report that the bane for poor entrepreneurship spirit among rural farmers was poor information dissemination.

The identified economic factors that constraints rural households in becoming agripreneurs include *inter alia* high interest rate on loan, high competitive market, poor returns to agricultural investment, and lack of access to loan. This finding justified the earlier report of Ezike, *et al.* (2008) that agribusiness environment is complex and dynamic. Hence, it is characterised by high competition which most of the rural households cannot withstand. Lack of access to investment credit coupled with high interest rate as a bane to agripreneurship have been noted by Kahan (2012) as a major stumbling block for many rural dwellers especially farmers to expand production or diversify into new high value enterprises. Agriculture is characterised by risks and uncertainties and considering the low returns to its investment compared to other income generating activities – oil and gas, politics, mining, and cooperate businesses, many rural households are now shifting attention to non-agricultural investment.

Constraints to Agripreneurship among Rural households

Variable name	Factor 1 Socio-cultural	Factor 2 Knowledge – Base	Factor 3 Economic
Land tenure system	0.558	0.225	0.153
High interest rate on loan	0.023	-0.055	0.732
Lack of investment infrastructures	0.832	0.039	0.221
Lack of technical know-how	-0.006	0.508	0.006
Language barrier	0.216	0.119	-0.135
High competitive market	0.042	0.212	0.481
Poor policy recommendation	-0.114	0.024	0.085
High rate of disease and insect infestation	0.129	0.154	0.370
Poor return from agricultural investment	-0.002	-0.079	0.458
Poor training by extension agents	0.006	0.670	0.007
Lack of access to research results	0.075	0.946	0.056
Lack access to loan	0.114	-0.069	0.756
Poor access to education	0.093	0.025	0.023

Conclusion and recommendations

Agripreneurship has been seen as the driver of wealth and income generation among the rural households and are driven by institutional, socio-economic, and cultural factors though venturing into it is constrained socio-cultural, knowledge-base, and economic factors. Based on the findings, the study recommended adequate provision of key investment infrastructures such as electricity, good roads, organised; and proper information dissemination to the rural households on how to identify viable agripreneurial opportunities.

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