

THE ROLE OF INCENTIVES IN ENHANCING VENTURE DECISION OF YOUNG ENTREPRENEURS IN BENUE STATE, NIGERIA

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ABSTRACT

The study analyzed incentives and socioeconomic characteristics as factors behind venture decisions into agribusiness by young would-be entrepreneurs in Benue State, Nigeria by use of the ex-post facto research design. The population was made up of registered persons who had been trained or were undergoing agribusiness trainings at business [school](#), [university](#), government agencies or non-governmental organizations within the ages of 15-35 for the 2019 and 2020 cropping season totaling 10320. The sample size of 385 was determined from the population using Taro Yamane formula. Primary data was collected through the use of structured questionnaires. Descriptive and inferential statistics were used to analyze the data collected. The result of the Ordered Logit Regression analysis showed that for 3 categories of incentives, agricultural infrastructure and technological incentives were significant in explaining venture decisions. The study recommended that priority and attention should be paid to incentive programmes and how they are conceived, packaged, delivered to encourage venture into agribusiness by young people and trainees.

Keywords: incentives, venture decision, Ordered Logistic Regression, Young Entrepreneurs

Introduction

Agriculture in its present underdeveloped state appears to be unattractive to young people that they are turning away from agricultural or rural futures (White, 2012). The success of getting youths to aspire and venture into agribusiness activities rests on the nation's ability to motivate and inspire her youth to be passionate on subjects such as agribusiness entrepreneurship, food security and rural development. Thus, understanding the influence of incentives on prospective entrepreneurs' likelihood to venture into agribusiness is critical in achieving the intended outcomes of the State and nation's sustainable development goal activities.

According to Proctor and Lucchesi (2012), given the dependence on small-scale farming for domestic, regional and global food production, agriculture's capacity to absorb labor specifically in regions with increasing youth populations where alternative employment is limited, young people's response to opportunities will be critical in terms of both future employment and food security.

Ikenwa *et al.* (2017) and Success *et al.* (2017) all opined that transforming the Nigerian agricultural sector into an agribusiness model and creating sustainability in agribusiness development through increased youth involvement was the way forward but also a great challenge for Nigeria. Benue State as a subset of Nigeria doesn't fair better, since its activities to influence youth involvement in agricultural activities and development are poorly understood and documented.

Consequently, the rapidly expanding population within Nigerian states such as Benue represents a challenge because providing food security now increasingly requires a lot on availability of skilled manpower as well as agribusiness incentives such as innovative solutions, technologies, infrastructure and institutional support. Yet, as pointed out by researchers, our most educated and entrepreneurial young people, whose superior innovativeness should put them at the forefront of changing the agribusiness narrative, are not aspiring to careers or venturing into agribusiness. Young people are the key to the future of agriculture, both as small-scale producers and as part of the labor market for different scales of agriculture (Proctor and Lucchesi, 2012).

The specific objectives of this study were to: describe incentives and analyze the influence of incentives on prospective entrepreneurs' likelihood to venture into agribusiness in the study area.

Statement of Hypotheses

H₀₁: There is no significant relationship between the respondent's characteristics and incentives in promoting the likelihood of prospective entrepreneurs venturing into agribusiness in the study area.

LITERATURE REVIEW

The literature for this study is reviewed under theoretical framework, conceptual framework and related empirical studies

Theoretical Framework

The theory of incentives

Incentive theory began to emerge during the 1940s and 1950s, building on the earlier drive theories established by psychologists such as Clark Hull. This theory suggests that behavior is motivated by reinforcement or incentives. It proposes that behavior is motivated by the “pull” of external goals such as rewards, money or recognition (Hockenbury and Hockenbury, 2003; Shrestha, 2017). The theory is concerned with the problem that a planner (alternatively called a designer, principal or government) faces when his own objectives do not coincide with those of the members of society. The planner thus pursues his objectives by the choice of an incentive scheme which specifies in advance the planner's behavior on the basis of his perceptions of agent's information and actions (Laffont and Maskin, 1982). The planner's choice of an incentive scheme entails a double maximization: He chooses that scheme which maximizes his payoff subject to the constraint that, given this scheme, agents will maximize their own objective functions.

Laffont and Maskin (1982), went further to present a model consisting of a planner and n agents (indexed $i = 1, \dots, n$). Each agent i has private information represented by $\Theta^i \in \Theta^i$. On the basis of this information, he sends a message $m^i \in M^i$ to the planner. The planner replies to this message with response $r \in R$. The agent then chooses action $a^i \in A^i$. The planner cannot, in general, observe a^i directly but observes the outcome $y^i \in Y^i$ of a^i , Θ^i , and his own response r , where y^i is, in general, the value of the realization of a random function $y^i(a^i, \Theta^i, r)$. Finally, the planner selects decision $d \in D$.

An incentive scheme is a choice by the planner of message space M^1, \dots, M^n (the other space A^i, R, Y^i and D are exogenous) with a response function $p: M \rightarrow R$ and decision function $\delta: M \times Y \rightarrow D$, where $M = \prod M^i$ and πY^i . Thus, an incentive scheme can be represented by:

M = Message spaces

p = response function

δ = decision function.

To view in essence how this model fits, let us suppose that agents are crop producers; each crop producer i produces output from capital and labour according to his knowledge Θ^i . The planner (government who wants food production and employment in agriculture) asks each crop producer (agent) for information (m^i) about his production process (Θ^i = low technology and use of traditional practices). Based on this information, the planner (government) generates a response r (this could be subsidies, credit etc) and p (the response

function i.e. allocation of r). In the light of this, the crop producer (agent) chooses a course of action a^i (a^i = may be take up agriculture more seriously, allocate more time etc). the agent then combines:

a^i = action chosen

Θ^i = Knowledge

r = government response (subsidies or credit) to produce an output y^i . Therefore, the producer's output can be represented as: $y^i(a^i, \Theta^i, r)$. Finally, the crop producer will be rewarded by the government (planner) with d (decision) according to the earlier established rule δ (δ = decision function = maybe patronage at higher value or better markets) based on their output (y^i) and the information (m^i) they had provided.

Influence of incentives on young prospective entrepreneurs.

Incentives have been known to be major influencers of agricultural production around the world, either by encouraging more production or the engagement of persons in the trade and distribution of agricultural inputs.

Sergo (2014) thus revealed that 42.6% of his respondents asserted that modernization of the agricultural sector and improvement of agricultural productivity influence youth likelihood to venture into the sector. He went further to list problems such as structural issues (land shortage), assets (shortage of money), agricultural input, (attitudinal perceptions), and backwardness of agricultural tools (technology) as major constraints the youth face in embarking on farming as their means of livelihood. Therefore, improving the condition of rural life by increasing, incentivizing or improving access to basic services, modernizing the practice of agriculture and improving the perception of the community will go a long way in encouraging youth involvement in the sector.

Akpan *et al.* (2015), in their study of determinants of decision and participation of rural youth from Southern Nigeria in agricultural production, agreed with the fact that incentives (better technology, infrastructure and support) can ameliorate constraints facing youth in agricultural communities. He mentioned insufficient initial capital (88.41%), insufficient credit facility (86.59%), poor storage facility (85.98%), poor access to tractors (84.76%) and inadequate farm land (80.49%) among others as constraints to youth involvement in agricultural activities.

Jensen (2016) also agreed with the summations of Sergo (2014) and Akpan *et al.* (2015) as stated above. His ordered logit analysis found among other things that people who

are employed in the private sector and those within urban areas are more likely to perceive capital, land and access to property as a larger hurdle in the agriculture sector. He concluded that providing incentives such as institutional support in educating, training and providing experience to young prospective entrepreneurs and farm operators will improve perceptions of business entry and such initiatives should be pursued further by government and other organizations.

Kerwegi (2016)'s study using correlations and linear regressions in the northern Ugandan district of Gulu revealed that there is a significant relationship between technology and youth employment ($r=.340^{**}$, $p<.01$), and technology was a predictor of youth employment. Likewise, a significant relationship was observed between agricultural infrastructure and youth employment where agricultural infrastructure ($r=.464$, $p\text{-value}<0.01$) was seen to also be a predictor of youth employment. Furthermore, the relationship between institutional support and youth employment showed a significant relationship ($r = 0.562$, $p<.01$). In concluding, he posited that technology, agricultural infrastructure and institutional support, as dimensions of agribusiness incentives, determine youth employment in the district and recommended that the government should make efforts to ensure that there is adequate use of technology, and that the required agricultural infrastructure is available. He also recommended that the government should offer institutional support to farmers so as to promote youth employment in the agricultural sector.

METHODOLOGY

study area

The study area is Benue state; it lies between Latitude $6^{\circ} 25'$ and $8^{\circ} 8'N$ of the Equator and Longitude $7^{\circ} 47'$ and $10^{\circ} 0'E$ of the Greenwich Meridian. The state is bounded by Nasarawa State to the North, Taraba State to the East, Enugu State to the South-west, Cross River State to the South and Kogi State to the West. Benue State, which is located in the North Central region of Nigeria, had a total population of 5.6m in 2015 (NBS 2016). Agricultural and Agribusiness entrepreneurs abound in the state among which are seed suppliers, farm equipment and agro-chemicals suppliers, livestock and crop producers, rice Millers etc.

Sampling design and procedure

The study made use of a Purposive and Random Sampling Technique. The first stage involved the purposive selection of Organizations and Institutions with young participants within the ages of 15-35 running agribusiness courses and trainings. The Taro Yamane method for the sample size calculation was employed in the second stage to randomly determine the sample size from the population of 10320 young would-be entrepreneurs.

Using the Taro Yamane formula for sample size as shown below:

$$y^* = X' \beta_1 \text{Technological_incentive} + \beta_2 \text{Agricultural_infrastructure_incentive} + \beta_3 \text{Institutional_support_incentive} + e$$

Where:

y^* = unobserved tendency to perceive incentives as influencers to agribusiness venture and ranked 1 for 'disagree', 2 for 'not sure' and 3 for 'agree'

X = vector of observed variables

β_i = vector of the estimated coefficients/log-odds

e = error term

It is assumed that the error term follows a logistic distribution and assigns the following categories of response for y :

$$y \begin{cases} 1 & \text{if } y^* \leq \mu_1, \\ 2 & \text{if } \mu_1 < y^* \leq \mu_2 \\ 3 & \text{if } \mu_2 < y^* \end{cases}$$

The μ_i are cutoff parameters to be estimated.

From the above, the probabilities of prediction odds can be estimated as:

$$\Pr(y^* = 1) = F(u_1 - x_i' \beta)$$

$$\Pr(y^* = 2) = F(u_2 - x_i' \beta) - F(u_1 - x_i' \beta)$$

$$\Pr(y^* = 3) = 1 - F(u_2 - x_i' \beta)$$

Table 1: Variable Specification

Variables	Measurement
Gender (GEN)	Dummy: 0 for male, 1 for female
Age Group (AG)	Years
Family Size (FS)	Number of persons
Farm Size (FMS)	Hectares
Livestock holding (LH)	Number of Livestock
Years in Agribusiness (YIA)	Years
Occupation (OCC)	Dummy: 1=student, 2=public sector, 3=private sector, 4=self-employed, 5=unemployed
Future occupation (FOCC)	Dummy: 1=public sector agro, 2=self-employed agro 3=private sector agro, 4=public sector non-agro, 5=self-employed non-agro, 6=private sector non-agro
Level of Education (LE)	Dummy: 1=non-formal, 2=primary, 3=secondary, 4=certificate, 5=diploma, 6=degree, 7=post grad
<i>E</i>	Stochastic error term

RESULTS AND DISCUSSION

Model Results:

Coefficients in table 2, 3 and 4 are interpreted as expected changes in the individual log-odds of disagreeing versus agreeing as a result of one-unit change in the predictor variable while other variables in the model are held constant. Because the dependent outcomes are ordered from disagree to agree, a positive coefficient indicates that an increase in the corresponding variable increases acquiescence of the influence, while the opposite is true for a negative coefficient. The odd ratio indicates the number of times that chance for respondents in the agree category is multiplied when there is a unit change in the specific predictor variable. Worthy of note is that, even though model indicates very low pseudo R^2 the significant chi-squares denotes the model's fit statistically to explain the relationships.

Technological incentive influence on decisions

Table 2 indicates significant coefficients for livestock holding (LH), Years in Business

(YIA) and occupation (OCC) variables, but age group (AG) are negative. This posits that LH, YIA and OCC are associated with agreeing with the influence of technology incentives on their decisions to venture into agribusiness while increasing AG by one unit is associated disagreeing with the influence of technology incentive on decisions to venture into agribusiness. This result is in conformity with layman expectations that younger persons are more techno centric and as such accept and incorporate technology more easily than older people.

The odd ratio measures proportional chances that young entrepreneurs disagree or agree on the influence of technology incentives on their decision to venture into agribusiness with a unit increase in the predictor variable. From the table, for one-unit increase in AG reduces the chances of agreeing the technological incentives influence decisions by $(0.608 - 1 * 100 = -39.2)$ 39.2% while it increases for LH, YIA and OCC by 51.9%, 50.6% and 51.2% respectively.

Table 2: Ordered Log istics Regressions in the influence of Technological incentives on young entrepreneurs' decision to venture into agribusiness

Technology Incentive			
Variable	Coefficient (std. Err)	Odd ratio (std. Err.)	p> z
AG	-0.487 (0.149)	0.608 (0.090)	0.001
FS	-0.271 (0.209)	0.763 (0.160)	0.196
FMS	0.214 (0.132)	1.239 (0.163)	0.105
LH	0.418 (0.126)	1.519 (0.191)	0.001
YIA	0.409 (0.131)	1.506 (0.197)	0.002
OCC	0.413 (0.086)	1.512 (0.130)	0.000
FOCC	-0.109 (0.144)	0.897 (0.129)	0.450
LE	0.077 (0.075)	1.080 (0.081)	0.308
Chi-sqaure =0.0000 Psuedo R² =0.0863			

Source: Field Survey 2020

Agricultural infrastructure incentive influence on decisions

In table 4, indicates significant odd ratios for FS, FMS, YIA, OCC and FOCC variables, interestingly results show that one-unit increase in FS almost doubles the odds that respondents agree that agricultural incentive infrastructure influenced their decision to venture into agribusiness. This can be attributed to how larger families require greater aid/motivation in order to attempt careers they consider with less opportunities to improve the family's standard of living.

Table 3: Ordered Logistics Regressions in the influence of Agricultural Infrastructure incentives on young entrepreneurs' decision to venture into agribusiness

Agricultural Infrastructure Incentive			
Variable	Coefficient (std. Err)	Odd ratio (std. Err.)	p> z
AG	-0.006 (0.145)	0.994 (0.144)	0.964
FS	1.095 (0.238)	2.988 (0.710)	0.000
FMS	-0.287 (0.137)	0.750 (0.103)	0.036
LH	-0.011 (0.124)	0.989 (0.123)	0.929
YIA	-0.221 (0.130)	0.801 (0.104)	0.088
OCC	0.294 (0.088)	1.324 (0.118)	0.001
FOCC	-0.281 (0.145)	0.755 (0.110)	0.053
LE	0.013 (0.080)	1.013 (0.081)	0.871
Chi-sqaure =0.0000 Psuedo R² =0.0881			

Source: Field Survey 2020

Institutional support incentive influence on decisions

Table 4 indicates that only AG is statistically significant, the result posits a 36.9% decrease in the chances of agreeing that institutional support influenced their decision to venture into agribusiness with every unit increase in age. This could be as a result through this incentive is being made available to the public, too much bureaucracy or complicatedness in accessing these kinds of incentive usually hampers its effectiveness.

Table 4: Ordered Log istics Regressions in the influence of Institutional Support incentives on young entrepreneurs' decision to venture into agribusiness s

Institutional Support Incentive			
Variable	Coefficient (std. Err)	Odd ratio (std. Err.)	p> z
AG	-0.369 (0.135)	0.691 (0.094)	0.006
FS	0.170 (0.196)	1.185 (0.232)	0.385
FMS	-0.116 (0.124)	0.891 (0.111)	0.352
LH	0.176 (0.109)	1.193 (0.130)	0.106
YIA	0.052 (0.123)	1.053 (0.130)	0.675
OCC	0.128 (0.079)	1.137 (0.090)	0.106
FOCC	0.073 (0.136)	1.076 (0.146)	0.592
LE	0.045 (0.072)	1.046 (0.076)	0.534
Chi-sqaure =0.1471 Psuedo R² =0.0196			

Source: Field Survey 2020

It is interesting to note that LE did not come up as statistically significant variable for influencing any category of incentives, this could probably be because of the positive native of incentives and one does not necessarily need formal education to comprehend its value.

CONCLUSION AND POLICY IMPLICATIONS

Incentives as an influencing factor in young entrepreneur's decision to venture into agribusiness is evident from the findings. The study also indicates that Technological, Agricultural infrastructure and Institutional support are likely to influence decisions to venture into agribusiness with technological and agricultural infrastructure incentives being the most impactful.

The following recommendations were drawn based on the study's findings:

- i. Due to the strong relationship between incentives and decisions to venture into agribusiness more attention should be paid to how incentive programmes are conceived, packaged, delivered to the public and the response that is gotten from its reception by the populace while this response forms a basis for its modification to

better tailor/ answer the intent for which it was created.

- ii. Bureaucracies and complicated methods or requirements for accessing incentives also needs to be eliminated or brought down to the barest minimum because an incentive that cannot be accessed is no incentive.

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