CHALLENGES OF AGRICULTURAL ENTREPRENEURSHIP IN URBAN KANO, NIGERIA: A MULTINOMIAL LOGISTIC REGRESSION APPROACH

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Abstract:

This paper analysed the determinants of agricultural entrepreneurial intentions of the unemployed in urban Kano, Nigeria, using three different multinomial logistic models fitted to the primary data obtained via structured questionnaire from the 173 out of 200 targeted respondents. The results suggest that age explains the likelihood of starting or engaging in agricultural business. Gender and educational levels were not significant in explaining the likelihood of starting the business. Inadequate capital was found to explain the likelihood. Family and cognitive ability (self) as motivational variables were insignificant in explaining the likelihood. Risk tolerance was found to explain the likelihood of starting the agricultural business. Employment status was found significant in explaining the likelihood. Innovative ability was insignificant in explaining the likelihood. The paper recommends that entrepreneurial support should be geared toward young ages as against old age; as the size of youth unemployed outweighed that of old age in the study area. Promoters of entrepreneurship could use risk tolerance behaviour in selecting people to support. Capital should be made available by the concerned institutions to enable persons preparing to start the agricultural business to start. Researchers could also incorporate other predictor variables in analysing the determinants or employ different models, like nested models against non-nested models used in this study.

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1. Introduction

Entrepreneurship, agricultural or otherwise is one of the most important forces shaping the changes in the economic landscape (Baumol, 1968). Entrepreneurship regardless of whether it occurs within the framework of the formal economy or takes place informally outside state regulatory systems changes in the economic landscape (Carree and Thurik, 2010).

For example several studies show that good institutions and a high level of economic development and technology advancement are positively related to national rates of entrepreneurship (Havrylyshyn, 2001; Kaufmann et al., 2006; and Nyström, 2008). A growing body of research also emphasises the role of entrepreneurs and the development of a vibrant small and medium enterprise sector in the process of economic development (World Bank, 2003).

However, what calls for this was the considerable labour unemployment in the area under study, that is, urban Kano. Some reported statistics on the level of unemployment country-wide indicated that, the tune of unemployment was 20.3 million people (NBS, 2011) and it showed further that, the rate was increasing upward, at about 16 percent per annum. The youths of the country according to the source were the most affected, covering over 50 percent. The specific case of the area under study in terms of the problem reports that, Kano topped all Nigerian states with about 369,139 unemployed persons (ibid).

Based on the foregoing, it is important to explore the determinants of the intentions of the unemployed in the area under study to start one agricultural venture or another. The intention here refers to the factors that drive people to engage in agriculture. The findings of this study will serve as an avenue for policy makers and many concerned institutions in entrepreneurship to understand what makes and what impedes people to start agricultural business. According to both theories and empirics by scholars argued that factors such as culture, economic conditions, institutions, technology advancement, and education level are important determinants (Bettignies and Brander, 2007; Shane, 1996, etc.). These theories and empirics would be highlighted in the literature review section.

2. Literature Review

The study of agricultural entrepreneurial intention using multinomial logistic regression not much reported to the knowledge of the researcher. Despite that, there were many studies that studied determinants of entrepreneurship in general using different methodologies at different places. For example, in a study by Sergeant and Crawford (2001) identified training and communication as important sources of

entrepreneurial influence. In a related study by Czuchry and Yasin (2008) reported that risk aversion to be a major factor influencing student's business interest in Wales with females being more risk averse. In another study by Czuchry and Yasin (2008) concluded that, gender plays important role in explaining entrepreneurship with males more entrepreneurial than females.

However, another study by Stella (2008) on the influence of family and community background on entrepreneurship reported that, family and community background is one determinant of entrepreneurship.

3. Methodology

The study design of the paper was cross-sectional and the sample size was 200 respondents selected via non-probability sampling, in this case quota sample. The data collection technique used was structured questionnaire. The data was collected in the year 2013 from the sampled areas in urban Kano, Nigeria with response rate of almost 87 percent (173 out of 200). The data was analysed with multinomial logistic regression (MNL) using STATA12 software. The choice of MNL was as a result of dealing with dependent variable that is categorical or dichotomous in nature as adopted from Wooldridge (2008).

4. Discussion of Findings

This section reports the results of the three (3) different multinomial logistic regressions models (MNL). The 3 different MNL models were used based on the reason that, a single model failed to estimate all the available predictor variables.

Table 1: Result of the Estimated MNL Model I

Dependent variable	Constant	Education	Gender	Age
$Log_e(P_2/P_1)$	0.25	5.00	0.20	1.05
	(640.53)	(4.30)	(513.00)	(0.05)
$Log_e(P_3/P_1)$	0.00	0.04	562796.10	1.05
	(0.34)	(0.04)	(1.15)	(0.45)
$Log_e(P_4/P_1)$	0.00	3.91	745737.40	0.77
	(0.27)	(3.96)	(1.52)	(0.72)

Source: Author's Estimation using Stata12

Where: 1= Not interested, 2= preparing to start, 3= Have started and 4= Never thought of it.

4.1 Discussion of the Result of MNL Model I
The result of the model I report the respective coefficients and their corresponding standard errors at 5% level of significance. The model converged at the 9th iteration. The

results indicate that, gender has no influence on the likelihoods of those preparing to start (P_2/P_1).

Educational level also as the second socio-demographic variable included in the model I reports the following results. In the first equation (P_2/P_1), the coefficient is 5.00 and suggested that a unit increase in educational level has the likelihood of increasing preparing to start agricultural business by 5 times but the standard error of 4.30 renders the coefficient insignificant.

Age as the third predictor variable included in the first equation (P_2/P_1) has coefficient 1.05 and indicated that age has influence on the likelihood of both preparing to start the business and as well the reference category of not interested in the business. The standard error of the coefficient is 0.05 and it renders the coefficient statistically significant.

Table 2: Result of the Estimated MNL Model II

Dependent variable	Constant	Inadequate capital	Motivation	Risk-tolerance
$\text{Log}_e(P_2/P_1)$	6.42	3.62	27.30	2.00
	(4.46)	(2.52)	(67668.55)	(1.39)
$\text{Log}_e(P_3/P_1)$	4.98	2.03	28.11	1.38
	(3.46)	(1.41)	69671.99)	(9.59)
$\text{Log}_e(P_4/P_1)$	2.44	0.27	2.15	1.84
	(0.68)	(0.43)	(0.00)	(1.28)

Source: Author's Estimation using Stata12

Where: 1= Not interested, 2= preparing to start, 3= Have started and 4= Never thought of it

4.2 Discussion of the Result of MNL Model II

This model converged at the 13th iteration. The inadequate capital coefficient in the first equation (P_2/P_1) is 3.62 with standard error 2.52 and suggests that, a unit increase in inadequate capital is associated with 3.62 times likelihood of preparing to start agricultural business and standard error value indicates significance of the coefficient. But this coefficient expected to report a negative relationship but has positive sign which proves difficult to conclude on it.

Motivation as another categorical predictor variable reports the following coefficients for the two equations. In the first equation (P_2/P_1), the motivation coefficient is 27.30 with standard error 67668.55 and this indicates that, a unit increase in motivation has the likelihood of increasing preparing to start agricultural business. The higher standard error value renders the coefficient statistically insignificant.

Risk-tolerance is the last predictor categorical variable included in the above model. The coefficient associated with the first equation (P_2/P_1) is 2.00 with standard error 1.39 indicates that, a unit increase in risk tolerance is associated with relative risk or likelihood of preparing to start agricultural business and the value of the standard error renders the coefficient significant.

Table 3: Result of the Estimated MNL Model III

Dependent variable	Constant	Innovative ability	Employment status
$Log_e(P_2/P_1)$	1.92	185.37	7.46
	(6.81)	(193.91)	(0.00)
$Log_e(P_3/P_1)$	1.53	141.81	5.47
	(7.81)	(152.80)	(1.40)
$Log_e(P_4/P_1)$	0.27	0.27	2.85
	(0.35)	(035)	(1.84)

Source: Author's Estimation using Stata12

Where: 1= Not interested, 2= preparing to start, 3= Have started and 4= Never thought of it.

4.3 Discussion of the Result of MNL Model III

This model III converged at the 11th iteration. The obtained coefficients with respect to predictor variable of innovative ability was 187.37 in the case of the likelihood to start the business (P_2/P_1) and the standard error of 193.91 obtained, and this renders the coefficient insignificant. But this contradicts the normal theoretical precept of innovation as one of the determinant of entrepreneurship.

The coefficient associated with employment status with regard to those preparing to start the business reports value of 7.46 with standard error of 0.00. The result can be interpreted as; employment status was a factor that can push 7 persons to prepare in engaging in agricultural business.

5. Conclusion

This paper has analysed the agricultural entrepreneurial intention of the unemployed Urban Kano people, Nigeria in terms of their level of education, age, gender, capital inadequacy, motivation, risk-tolerance, innovative ability and employment status. The paper concludes that, variables to include gender, age, innovative ability, risk-tolerance and employment status were significant in explaining the intention of the Unemployed Urban Kano people to start agricultural business.

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