AN ASSESSMENT OF ENTREPRENEURIAL DYNAMICS OF PALM OIL PRODUCTION N ANAMBRA STATE

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Abstract

The inquiry of what drives palm oil entrepreneurship and its dynamics, particularly entry and enterprise growth, is of long-standing interest to the researchers as well as policymakers in both the progressive and emerging Anambra state economy. The study therefore, assessed the entrepreneurial dynamics of the palm oil sector on the Anambra State economy. The data for the study were collected with the aid of a questionnaire administered a total of two hundred and fifty-eight (258) Palm tree grower's respondent across the state. The logistic regression model was used for data analysis. The findings indicate that entrepreneurial dynamics has significant effect on Palm oil production in Anambra State. It is therefore recommends that each agricultural zone be allocated land and sprout nut growing center and bi annually training be introduced in the palm oil sector of the state as this will bring increase productivity, thus increase employment and framers income in the state

Keywords: Palm oil, Entrepreneurial Dynamics, Oil palm Growers

1. Introduction

Entrepreneurial dynamics is fast developing as a transformational megatrend of the 21st century given its capacity to reshape economies and industries throughout the world. As key drivers of economic growth, entrepreneurs are the life-blood of any expanding economy, generating jobs, introducing new goods and services, and promoting greater upstream and downstream activities that are referred to as value-chain (Hormiga, Xiao, & Smallbone, 2018). The concept of entrepreneurship and its dynamism existed and was known for centuries, it was not until the middle of the 20th century that economists seriously attempted to incorporate it into their conceptualizations and modelling.

Historically, the idea that entrepreneurial dynamics and economic growth are closely linked together undoubtedly owes its origin to the early works of Schumpeterian. The seminar works introduced the concept of entrepreneurial dynamics in relations with the act of creation of new businesses through innovations by entrepreneurs who dare to bear most of the risks and enjoy most of the rewards and vice versa (Heriyanto, Febrian, Andini, Handoko & Suryana, 2021). The entrepreneur is commonly seen as an innovator, a source of new ideas, goods, services, and business/or procedures. These people have the skills and initiative necessary to anticipate current and future needs and bring good new ideas to market.

Many countries have acknowledged the significance of entrepreneurship and its dynamics with the national economic growth because of the important link between entrepreneurship and Gross domestic product (GDP) market share, and generation of job opportunities, particularly in the palm oil market where Nigeria has a great opportunity to gain a share of expanding world markets, as well as meet its own rapidly increasing demand. The palm oil industry is labour-intensivein nature as such, has a vital role to play in the growth of the nation's economy given the population density. In a country at an early developmental stage, the sector employs far more people with its values chain having the capacity to employ a total workforce of 60-70 percent of the rural community (Ojo, 2015), the majority of who are poor farmers.

Consequently, a well-developed palm oil sub-sector has an immense capacity for employment generation, creation of added value, and contribution to the GDP (Wellschmied & Yurdagul, 2017). Furthermore, the crude palm oil sub-sector in a developing economy can be a major source of foreign exchange and thus spur growth and development. It thus becomes very important for a country's strategic interest to develop its palm oil sub-sector rather than rely on imports. Therefore, the importance of the sectors in Nigeria's aspiration to achieve economic growth cannot be overemphasized.

Hence, the study aimsto examine the role of entrepreneurial dynamics of the palm oil sector as the driver of economic growth in Anambra State.

H_0: There is no significant effectof the entrepreneurial dynamicsof the palm oil sector on the economy of Anambra State.

Consequently, the rest of the paper is divided into the following section; literature review, methodology, data analysis, discussion of result, conclusions and recommendations

2. Literature Review
2.1 Conceptual Issues

Entrepreneurial Dynamics: Entrepreneurial dynamics refers to entrepreneurs actively and constantly seeking changes, or making the most appropriate strategic choices as a means of overcoming challenges and influences that the ventures face, leading to business success (Hormiga, Li Xiao & Smallbone, 2018).This is the process by which Business Creation (new venture creation) fills gaps by offering theories, ideas, and measures that can be used to explore and understand the factors that encompass and influence the creation of new businesses.

2.2 Empirical Review

Hamdani (2021) identify the factors that affect entrepreneurial Dynamics. The study used survey data of 60 individuals from different companies from various sectors in Tunisia. The theoretical model was tested and confirmed via Structural Equation Modelling (SEM). The Results indicate that an Innovative environment, Knowledge, Professional competence, and Personality trait have significant positive effects on entrepreneurial Dynamics. Marketing implications of the study are discussed.

Shehu, Salleh, and Syahadat, (2021), explores the challenges facing the palm oil industry in Nigeriausing qualitativedata through a document and thematic analysis.Thesemi-structured interviewwasanalyzed.The findings of the paper show that challenges are facing the palm oil industry in Nigeria such as access to technology confirmed thatnumerous challenges are facing the palm oil industry in Nigeriawhich requires aids from the government from allocation ofa huge amount of its budget to agricultureand establishbetter policies for the palm oil industry that will attractmorepublic and private investment.

Giacomin (2018), investigates the transformation of the global palm oil cluster: dynamics of cluster competition between Africa and Southeast Asia. This includes activities of scientists and businessmen exchanging information, knowledge, and practice between Africa and Asia for almost a century. It shows that cooperation among communities of practice helped to advance palm oil knowledge, but also created an increased rivalry

between the two locations. Thanks to the mobility of experts, and to knowledge exchange in colonial and early post-colonial times, multinationals were able to replicate clusters across locations with similar climates, taking advantage of a business environment more conducive to foreign investment.

Nwalieji and Ojike (2018), examined the characteristics of a Small-Scale Palm Oil Production Enterprise in Anambra State. A multi-stage sampling technique was used to select 120 respondents for the study. Data were collected from a primary source through a validated interview schedule. Data were presented and analyzed using percentages, mean scores, and factor analyses. Findings show that: mean age was 48.67 years, household size, 7.00 persons, and palm oil processing experience, 18.3 years. The majority (93.3%) processed palm fruits as individual or family enterprises, 51.7% pounded cooked palm fruits in large wooden or concrete mortars, 55.8% used hand pressing, and 85.0% used Nigerian Institute of Oil- Palm Research andStork hydraulic hand press. The findings further showed the mean annual quantity (174.67 liters), revenue (N 163,417), cost (N 68,000), and profit (N 88,417) of palm oil production implied that palm oil production in the area was profitable. The major constraints to palm oil production were related to incentive/infrastructure, productivity, and socio-economic. This study did not look at the enterprise's dynamics and there are obvious differences in terms of the underlining theory between this study and most of that literature.

Ofoka and Nwalieji (2019), examined the technological dynamics (capabilities) of mill operators in palm oil processing enterprise in Anambra State. Purposive and simple random sampling techniques were used to select three agricultural zones and a total sample of 48 mill owners/operators, respectively. The findings revealed that the majority (87.4%) of mill operators operated semi-automated oil mill systems, had digester (97.9%), had no capability in terms of investment in equipment (75%), and had no investment capability in human resource development (89.6%), acquired production (97.9%) and linkage (95.8%) capabilities. The extension should liaise

with oil palm processors for the dissemination of information on the existing new technologies, tools, and knowledge in oil palm processing to minimize the drudgery in oil palm processing.

Omoruyi, Olamide, Gomolemo, and Donath (2017), discussed entrepreneurial dynamics as one of the factors that influenced the economy of a nation, either directly or indirectly. The main objective of the paper was to show the significant effect of entrepreneurs on economic prosperity. The paper argues that entrepreneur is positively correlated to economic growth than foreign aid. The paper shows that entrepreneurship positively explains the variations in the growth of African countries but failed to show the cause of this variation.

Korez-Vide and Tomic (2016), explored country competitiveness and entrepreneurial dynamics as drivers of economic growth. The research used secondary data for the period 2008–2014 which was collected from the World Economic Forum's Global Competitiveness Reports and Eurostat Database. The research method was based on the Global Entrepreneurship Monitor (GEM) indicators. The analysis shows that economic growth as measured by GDP per capita growth rates, and the global competitiveness of a country as measured by the World Economic Forum's (WEF) Global Competitiveness Index scores' growth rates, are positively related to each other. When testing the hypothesis on the relationship between the average growth of quality of early-stage entrepreneurship indices and average growth of GDP per capita, no significant relationship was found. This finding is by the general thesis that entrepreneurial activity supports economic growth only as part of a favorable broader business environment

Susan Martin, Alison Rieple, Jane Chang, Bonaventure Boniface, Amran Ahmed, (2015), explore the societal and institutional challenges that influence the investment and innovation decisions of a micro and small enterprise (MSE) palm oil smallholders in Sabah, Malaysia. Based on interviews with 38 smallholders, the study identifies some factors that reduce the smallholders' propensity to invest in more sustainable practices. discussed why more

effective practices and innovations are not being adopted using the concepts of, firstly, institutional logics to explore the internal dynamics of smallholder production systems, including attitudes to sustainability and innovation; and, secondly, institutional context to explore the pressures the smallholders face, including problems of access to land, labor, capital, knowledge and technical resources. These factors include limited access to global market information, corruption, and uncertainties of legal title, weak economic status, and social exclusion. In discussing these factors, the study seeks to contribute to wider theoretical debates about the factors that block innovation and investment in business improvements in marginal regions and marginalized groups.

2.3 Theoretical Framework

The study is anchored on Joseph Schumpeter theory on innovation and Dynamic Capabilities-based entrepreneurial theory (DC).Schumpeter believed economic growth is a process which involves reformation on various equipment's of productions, outputs, marketing and industrial organizations. He describes entrepreneurs as innovators, implementing change within markets. These entrepreneurs are showed by five dynamics: (i) the ability to introduce new methods of production; (ii) the ability to introduce or develop new (or already existing) goods; (iii) the ability to identify new markets; (iv) the ability to exploit new sources of supply; (v) the ability to reorganize business processes. Schumpeter represents a synthesis of different notions of entrepreneurship that we refer as entrepreneurial dynamics.

Dynamic Capabilities-based entrepreneurial theory (DC). This explains a firm's ability to build, reconfigure, and integrate external and internal competencies and be able to respond to the rapidly changing business environment. The term "dynamic" underscores firms' "capacity to renew competencies" and achieve congruence within their changing business setting. Capabilities highlight the influence of strategic management in reconfiguring, adapting, and integrating external and internal resources,

functional competencies, and organizational skills and match the demands of their business environment.

3. Methodology

Anambra state is located in the South-Eastern part of Nigeria and comprises 21 Local Government Areas. The state is subdivided into four (Onitsha, Aguata, Awka, & Anambra) agricultural zones to aid planning and rural development; with twenty (20) local governments registered with the Palm Oil Growers Association Anambra State Chapter.

The descriptive research design is used in this study, and the survey method adopted given its' suitability for the study because it is a very valuable tool for assessing entrepreneurial dynamics. It consists of a predetermined set of structured questionnaires built to collect information from a representative sample of the population which is selected Palm oil growers in Anambra State. However, it would be unrealistic to study this large group of people whose population may be undetermined due to the inaccessibility of information. Using non-probability sampling technique, the registered growers of 265 respondents in the Palm Oil Growers Association Anambra Chapter forms the sample size of the study.

Focus group interaction was held in the four agricultural zones of the state. This help to get first-hand information that was not captured through the administration of the questionnaire. Two Assistance (Field officers from the Ministry of Agriculture) help in the distribution and collection of the questionnaire. Out of the 265 sampled, 258 Palm Oil Growers responded by filling the questionnaire correctly. The logistic regression was employed to predict the probability that entrepreneurial dynamics fall into one of two categories of the dichotomous dependent variable (Anambra Economic Growth) based on the five (5) entrepreneurial dynamic variables.

3.3 Model Specification

Based on the logistic regression approach, the study seeks to examine the efficiency of entrepreneurial dynamics ratios as a prediction index for Anambra economic growth. Anambra State Economy (AE) is a proxy for income and employment in palm oil.

Thus, the logistic regression model is given thus:

$$Y_{it} = \varphi_0 + \varphi_1 NMP_1 + \varphi_2 NW_2 + \varphi_3 SRM_3 + \varphi_4 Tech_4 + \varphi_5 ES_5 + V_t$$

Where: $Y = log\left(\frac{p}{1-p}\right)$ for $0 < p < 1$.

Thus, the link function is termed as the logit function as shown below:

$$logit\ E(Y) = \varphi_0 + \varphi x \quad \ldots\ldots \quad 2$$

Y_{it} is the Anambra State Economy (AE)

NMP is introduction of new methods of palm oil production.

NW is New market for palm oil products.

SRM is the Source of supply of raw material (palm oil fruit) for palm oil production

Tech is Technology used (new methods) in palm oil production

ES is Training and skill development in palm production.

V error term

The explanatory variables are fitted using the logit of the probability of success. Using the exponential function, the forecasted value of the logit is converted back into forecasted odds. While the dependent variable in logistic regression is either 0 or 1, the odds are then estimated as continuous variables using logistic regression. In some research, only the odds are required in the study. While, in some, an exact yes or no prediction is desirable whether the dependent variable is the case or not, this categorical estimate may be centered on the success which is derived from calculating the odds, based on this, the study categorized projected odds above the estimated cutoff value to be good performing stock, while, below are termed poor performing stock.

3.4 Method of Data Analysis

The primary data was collected using questionnaire and was analyzed with SPSS 25 Statistics software package and the variable analyzed areEntrepreneurial Dynamics

in the Palm Oil sector (introduction of new methods of palm oil production) (NMP), sources of supply of raw material (palm oil fruit) for palm oil production (that is, New source of palm oil sprout nut) (SRM), Newmarket for palm oil output (NW), Technology used (new methods) in palm oil production(Tech) and Training and skill development in palm production (ES) which was captured in our questionnaire with three questions each for the variable mentioned. The dependent variable is the Anambra Economic growth proxy as income and employment while the independent variable is NMP, SRM, NW, Tech, and ES.

4. Presentation and Discussion of Result

Variance Explained

To understand how much variation in the dependent variable can be explained by the model (the equivalent of R^2 in multiple regression).

Table 1:Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke-R Square
1	335.645[a]	.008	.011
a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.			

Source: Field Survey (2020)

Table 1 contains the Cox and Snell R Square and Nagelkerke R Square values, which are both methods of calculating the explained variation. These values are sometimes referred to as *pseudo R^2* values (and will have lower values than in multiple regression). However, they are interpreted in the same manner, but with more caution. Therefore, the explained variation in the dependent variable based on the model ranges from 0.8% to 1.1%, depending on whether reference the Cox and Snell R^2 or Nagelkerke R^2 methods, respectively. Nagelkerke R^2 is a modification of Cox and Snell R^2, the latter of which cannot achieve a value of 1. For this reason, it is preferable to report the Nagelkerke R^2 value.

Category Prediction

Logistic regression estimates the probability of an event (in this case, sig. increase in income & employment) occurring based on the highlighted entrepreneurial factors. If the estimated probability of the event occurring

is greater than or equal to 0.5 (better than even chance), the model classifies the event as occurring (e.g., sig. increase in income and employment being present). If the probability is less than 0.5, the model classifies the event as /not occurring (e.g., no sig. increase in income and employment). It is very common to use logistic regression to predict whether cases can be correctly classified (i.e., predicted) from the independent variables. Therefore, it becomes necessary to have a method to assess the effectivenessof the predicted classification against the actual classification.

Table 2: Classification Table

	Observed		Predicted		
			AEG		Percentage Correct
			No Sig. Increase in Income & Employment	Sig. Increase in Income & Employment	
Step 1	A E	No Sig. Increase in Income & Employment	161	0	35.9
		Sig. Increase in Income & Employment	92	5	64.1
	Overall Percentage				100.0
a. The cut value is .500					

Source: Field Survey (2020)

The classification table shows that the model accurately categorized the dependent variable Anambra state economy (that is increase in income and employment in the palm oil sector) with 64.1%, this indicates that the probability of the respondents is in line with the cut off 0.5 (that is 50%) is well classified at the rate of 0.641

Goodness of Fit

Table 3: Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	5.686	8	.682

Source: Field Survey (2020)

The Hosmer and Lemeshow test (5.686) statistics test proves that the model is fit since the test is not statistically significant, that is the p-value (0.682) is greater than the 0.05 level of significance. Note that, the null hypothesis stipulates that the model is fit, while, the alternative states that the model is not significant or not fit.

Variables in the Equation

Table 4: Variables in the Equation									
		B	S.E.	Wald	Df	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	NMP	-.153	.145	1.112	1	.292	.858	.645	1.141
	SRM	-.047	.138	.116	1	.733	.954	.728	1.250
	NW	.098	.154	.403	1	.525	1.103	.815	1.492
	Tech	.016	.161	.010	1	.919	1.017	.741	1.394
	ES	.016	.146	.012	1	.911	1.016	.764	1.353
	Constant	-.134	.620	.046	1	.830	.875		
a. Variable(s) entered on step 1: SRM, NW, Tech, ES.									
Source: Field Survey (2020)									

The "Variables in the Equation" table shows the contribution of each independent variable to the model and its statistical significance as shown below in table 4.The result in table 4, gives the coefficients (i.e. B),

Wald coefficients, p-values and odd ratio (i.e. EXP(B)) for each entrepreneurial dynamic variable under study.The coefficientsshow that NW, Tech, and ES have a positive impact on the Anambra State economy proxy by income and employment in the palm oil That is, an increase in the NW, Tech and ES variable will have 0.098,0.016 and 0.016 respectively on the income and employment in the palm oil industry in Anambra State. Also, the result indicates a negative value of 0.047 and 1.53 on SRM and NMPrespectively, which implies that inadequate SRM and NMP impacted negatively on employment and income of palm oil growers in the state. 1% increase in NW will bring about 0.098 increase in the income and employment of palm oil growers in the state while 1% increase on Tech and ES will bring about 0.016 respectively increase in the income and employment of palm oil growers.

The Exp(B) which indicates the odd ratio in table 4 show that NW, Tech and ES has impacted on the income and employment of palm oil growers in Anambra State as compared to NMP, SRM as shown in the odd ratio coefficient of 1.103, 1.017 and 1.016 respectively given that they are greater than one. The result further shows the ranking of impacted based on the odd ratio value for NW, Tech and ES, that is an increase of 1units of NM will increase the income and employment in palm oil sector by 10.3% while increase in 1unit of Tech, ES will increase income and employment by 1.7% and 1.6% respectively.

The Wald test ("Wald" column) is used to determine statistical significance for each of the independent variables. The statistical significance of the test is found in the "Sig." column. From this result, theNMP and SRM did not significantly to the model/prediction, as all p-values are greater than 0.05 level of significance. The information in the "Variables in the Equation" table can be used to predict the probability of an event occurring based on a /one-unit change in an independent variable when all other independent variables are kept constant.

Discussion of Findings

The results from data analysis indicate that there is entrepreneurial dynamics in the production of palm oil in Anambra State, Nigeria. The result agrees with *apriori* expectation. The entire variables, Introduction of new methods of palm oil production (NMP), sources of supply of raw material (palm oil fruit) for palm oil production(SRM), Newmarket for palm output (NW), Technology used (new methods) in palm oil production (Tech) and Training and skill development in palm production (ES)considered in the study are its statistical significance. These variables can improve palm oil production and consequently improve the state economy. The results agree with the findings ofOmoruyi et al (2017).

Variable in the equation, Table 3 ("Wald" column) is used to determine statistical significance for each of the independent variables, this includes 1.112, .116, .403, .010 and .012 respectively. The statistical significance of the test is found in the "Sig." column. From these results, theNMP did not addsignificantly to the model/prediction (i.e..292, .733, .533, .525, .919, .911, and .830 respectively), as all p-values are greater than the 0.05 level of significance.

The introduction of new methods of palm oil production (NMP) has no statistically significant effect on the Entrepreneurial dynamics of the palm oil production sector and consequently on employment and income generation in Anambra State. The introduction of new methods of palm oil productioncan be improved which may further increase the number of palm bunch cultivated thereby increasing the income of the farmers and staff employed. Thus, increase their productivity and improve the well-being of the framers. The finding agrees with the work of Purnomo, et al (2020) and Liew, (2015)who observed that methods of palm oil productionaffect the yield which has an impact on productivity and improves state economic capability.

A new source of palm oil (sprout nut) (SRM) shows no statistically significant effect on the Entrepreneurial dynamics of palm oil production in Anambra State. This is not unconnected to the fact that the Nigerian Institute for Oil Palm Research (NIFOR) has not been able to

meet its demand for sprout nuts and it is very essential for palm oil in every aspect of the palm sector. This gap has an effect replanting of palm nuts and has a significant effect output.

Availability of New-market for palm output (NW) exists but yet to be maximized due to the capability of the farmers to reach this market. This study shows no statistically significant effect of NW on the Anambra state economy. Furthermore, Technology used (new methods) in palm oil production (Tech) had no statistically significant effect on the Entrepreneurial dynamics of palm oil production in Anambra State. This is not distinct from the findings of Ofoka and Nwalieji's (2019) semi-automated production system, which had no capability in terms of investment in equipment etc. which has a negative impact on the growth sector.

Training and skill development in palm production (ES), has no statistically significant effect on the Entrepreneurial dynamics of the palm oil production in Anambra State. The training needs identified during the focus group discussion include planting improved sprout palm oil, improves palm oil extraction methods, sterilization methods, stripping skimming, and clarification activities in palm oil extraction are all palm farmers require training on amongst others. This agrees with the findings of Akangbe, et al., (2011) and Ugwu, (2009).

5. Conclusion and Recommendations

The objective of this paper is to establish a model that explains entrepreneurial dynamics in Palm oil and its effect on the Anambra state economy, with specific variables (NMP, SRM, NW, Tech, and ES) as a proxy for Entrepreneurial dynamics on the Anambra state economy. Based on the results obtained from the analysis of the primary data collected from the study area, it is observed that this variable has statistically significant effect on palm oil production as relates to the Anambra economy. Hence, it can be concluded that Entrepreneurial dynamics in palm oil have positive effect on the state economy. Given the foregoing, the study, therefore, recommends thus:

i.   Stakeholder and the state government should focus on how palm sector meets universally accepted standards of sustainability and skills on sprouted seeds and seedlings production, installations of mechanical handling systems forreception of fresh fruit bunches from the plantations, sterilizing and threshing of the bunches to free the palm fruit, mashing the fruit and pressing out the crude palm oil andthe value chain research improvement. This will significantly enhance productivity in palm output, income, and employment in the state Thus, establish a training center/ institution where palm farmers can learn new. These training needs which include planting, modern palm oil extraction methods, sterilization methods, stripping skimming, and clarification activities in palm oil extraction are all palm farmers require training on amongst others.

ii. The state should establish a unit in the Federal Ministry of Agriculture saddled with responsible to research and grow high variety and innovative sprout nuts. Given that these seeds often require pretreatments to obtain rapid and uniform germination, thus required experts in their planting and management which might be difficult for individual farmers to handle. This will bridge the current gap identified in this study.

iii. Newmarket for palm output (NW) should be encouragedgiven that palm oil is now a major source of sustainable and renewable raw material for the world's food, oleochemical and biofuel industries. Involvement in cultivation or downstream activities can uplift the quality of life of people (i.e. increased income) and bring about employment in the state. Thus the state should bridge the gap existing between these sectors and also protect the palm oil smallholders from exploitation via price ceilings

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