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# Entrepreneurship on Economic Sustainability in South-East Nigeria

**Jacobs, Chineze J. (P.hD.)**

Lecturer Department of Entrepreneurship Studies, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State, Nigeria | Email: [chineze4real@gmail.com](mailto:chineze4real@gmail.com) | Phone: 07036860589

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**Abstract:** *The study examined critically the effect of entrepreneurship on economic sustainability in South-East Nigeria; ordinary least square method of regression analysis was employed. The study spanned from 2006-2016, the source of data were from central bank of Nigeria statistical bulletin, the variables were on human capital index, assess to finance, entrepreneurship education, skill acquisition. The problems of this study arise because of chronic unemployment situation in Nigeria. Based on the variables used in the study to ascertain the effect of entrepreneurship on the economic sustainability, it was observed that the extent to which infrastructural development and entrepreneurship education contributed to economic sustainability was positively high. However, human development index, skill acquisition and access to finance was very low. This implies that they have not contributed significantly to economic sustainability in Nigeria. Specifically the study found out that Human development index has significant effect on economic sustainability in Nigeria. Access to finance has significant effect on economic sustainability in Nigeria. Entrepreneurship education has significant effect on economic sustainability in Nigeria. The study concludes that entrepreneurship has a significant effect on economic sustainability in South-East in Nigeria. It is recommended that the scope of the training programme should be extended to include technical skills, managerial skills and business skills. Adequate financial, physical and human resources should be provided by various stakeholders not only for potential but also for existing entrepreneurs. Government must ensure necessary modifications in the educational system in the country that would make graduates to be employers of labour and self-employed, instead of looking for scarce job opportunities. The acquisition of the right skills to fit the various needs of the society is imperative.*

**Keywords:** *entrepreneurship, economic sustainability, human capital index, assess to finance, entrepreneurship education, skill acquisition.*

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## 1 INTRODUCTION

Nigeria is naturally endowed with entrepreneurship opportunities; however the realization of the full potential of these opportunities has been dampened by the adoption of inappropriate industrialization policies at different times. Several policy interventions that were aimed at stimulating entrepreneurship development via small and medium scale enterprises promotion, based on technology transfer strategy, have failed to achieve the desired goals as it led to the most indigenous entrepreneurs becoming distribution agents of imported products as opposed to building in-country entrepreneurial capacity for manufacturing, mechanized agriculture and expert services (Thaddeus, 2012). With the collapse of the last vestiges of the socialist economic system in 1991, virtually the whole world has embraced free enterprise economic system. Entrepreneurship is the cornerstone and at the heart of the free enterprise economy (Popoola, 2014). The experiences of developed economies in relation to the roles played by entrepreneurship buttresses the fact that the importance of entrepreneurship cannot be overemphasized especially among the developing countries (Riti & Kamah, 2015).

Nigeria as a country has numerous business and investment potentials due to the abundant, vibrant and dynamic human and natural resources it possesses. Tapping these resources require the ability to identify potentially useful and economically viable fields of endeavours. Nigerians have made their marks in diverse fields such as science, technology, academics, business and entertainment. Thus, entrepreneurship activities and innovative ingenuity in Nigeria have developed enterprises in the following areas. Agricultural/agro-allied activities where there are foodstuffs, restaurants, fast food vending etc. In the area of solid minerals, there are quarrying, germ stone cutting/polishing and crushing engineering. In the area of information and telecom business, there are manufacturing and repairs of GSM accessories and the printing and selling of Recharge cards. In hospitality and tourism business, there are hotels, accommodation, resorts centres, film and home video production; in oil and gas business, there are construction and maintenance of pipelines, drilling, refining by products. In the area of environmental and waste management business, there is refuse collection/disposal, recycling, and drainage/sewage construction job. In the area of financial banking services, there are banking, insurance and stock trading. In engineering and fabrication work, there are machines and tools fabrications. There is also the building and construction, where there are plan and design services and material sourcing (Agbeze, 2012). These human and natural resources notwithstanding, Nigeria is still one of the poorest countries in the world and has one of the highest rates of youth unemployment in sub-Sahara Africa, and despite its alleged strong economic growth.

Salami (2011) noted that youth's unemployment rate for 2006-2008 was 55.9 percent, 4 time higher. Many other countries have been able to energize and transform entrepreneurship sub-sector to such a vibrant one that they have been able to reduce to the barest minimum their unemployment and poverty level because of the immense contribution of the sub-sector to their economic growth and development, but such cannot be said of Nigeria. In respect of the above sad and deplorable situation, the government has done little to reduce the misery and frustrations of the citizenry. This has foisted a state of hopelessness on majority of young people who have resorted to any means including crime to succeed in life. They resort to vices because they are not gainfully engaged. In other words, they are unemployed; unemployed, not because they lack the qualification but because the system has been crippled politically, economically, socio-culturally and even religiously especially youths and graduates became displaced economically (Kuratko, 2009), a situation that clearly negates the Millennium Development Goals for 2015, I and II: to reduce the proportion of people living in extreme poverty and to reduce the proportion of people suffering from hunger respectively. Entrepreneurship constitutes a vital engine for economic, social, political and all round development of any country.

Unemployment is one of the fundamental developmental challenges facing Nigeria in particular and Africa and developing countries in general at the moment. For instance, the creation of National Directorate of Employment (NDE) which its mandate is to create employment as seen through its many skills acquisition programmes has not been realized. National Poverty Eradication Programme (NAPEP), Poverty Alleviation Program (PAP), Subsidy Reinvestment and Empowerment Program (SURE-P), youth enterprise with innovation in Nigeria (YOUWIN) and others, are just few of the various intervention mechanisms and intervention programmes aimed at ensuring economic growth through full employment that is rich with job creation opportunities. Youths in Nigeria are faced with poverty and unemployment

for lack of capacity and essential productive skills for both creative employment in existing organizations and for self-employment (Savage, 2010). Many people are unemployed because they have not acquired the kind of skills that are frequently demanded in the environment they operate or the ones they find themselves. Others are unemployed because their skills have been rendered obsolete as a result of technological changes which have occurred over the last ten years or in other cases because they have no skills at all in the first instance (Kpakol, 2006).

### **Statement of the Problem**

One of the problems confronting many developing nations is how to combat the problem of unemployment with entrepreneurship development as seen by many as the lasting solution to it (Dandago, & Muhammad, 2014). However, after many years of entrepreneurship development implementations in Nigeria, there are still many youths (graduates of Universities and Polytechnics and Colleges of Education) with wrong mindset of searching for nonexistent jobs or jobs where they will be underemployed or extreme jobs which they have no training or skills for. Although, several attempts have been made at encouraging entrepreneurial activities in Nigeria in the past youths with entrepreneurial skills have not emerged. It is therefore, not totally surprising that only minimal success and achievement has been recorded particularly in areas requiring relatively low level skills. While none of the past initiatives is completely without merits, the truth is that they did not have a significant, lasting and sustainable positive effect on the larger economy (Cyril & Chijioke, 2010). According to Dandago (2014) this shows that without appropriate intervention to halt the unemployment situation in Nigeria, more youths will become unemployed with varying consequences to youth development, national development and National Security. It is against this backdrop that the study sought to examine the effect of entrepreneurship on economic sustainability in Nigeria.

### **Objectives of the Study**

The broad objective of this study is to examine the effect of entrepreneurship on economic sustainability in south-east, Nigeria. Specifically, the study intended to

1. Examine the effect of human development index on economic sustainability in Nigeria
2. Determine the effect of access to finance on economic sustainability in Nigeria
3. Evaluate the effect of entrepreneurship education on economic sustainability in Nigeria
4. Investigate the effect of infrastructural development on economic sustainability in Nigeria
5. Ascertain the effect of skill Acquisition on the economic sustainability in Nigeria

### **Scope of the Study**

This study titled the effect of entrepreneurship and economic sustainability South-East Nigeria. The study covered a period of 2000-2016 (16 years). The choice of this observation was because it witnessed the introduction of entrepreneurship education as a course in our tertiary institutions in Nigeria.

## **2. REVIEW OF RELATED LITERATURE**

### **Conceptual Framework**

#### **Entrepreneurship**

Entrepreneurship is more than simply “starting a business.” It is a process through which individuals identify opportunities, allocate resources, and create value. This creation of value is often through the identification of unmet needs or through the identification of opportunities for change. It is the act of being an entrepreneur which is seen as one who undertakes innovations with finance and business acumen in an effort to transform innovations into economic goods hence Entrepreneurs see problems as opportunities and then take action to identify the solutions to those problems and the customers who will pay to have those problems solved (Akinyemi, 2014). Entrepreneurial success is simply a function of the ability of an entrepreneur to see opportunities in the marketplace, initiate change and creates value through solutions.

Brijlal (2007) opines that entrepreneurship is known as the capacity and attitude of a person or group of persons to undertake ventures with the probability of success or failure (Dougason and Gbosi,2006). It demands that the individual should be prepared to assume a reasonable degree of risks, be a good leader in addition to being highly innovative. In business management, Entrepreneurship is regarded as the prime mover of a successful enterprise just as a leader in any organization must be the environmental change agent. Adebayo (2009) defines entrepreneurship as the process of increasing the supply of entrepreneurs or adding to the stock of existing small, medium and big enterprises available to a country by creating and promoting many capable entrepreneurs, who can successfully run innovative enterprises, nurture them to growth and sustain them, with a view to achieving broad socio-economic developmental goals. One of these goals is sustaining employment. Furthermore, Omoruyi (2004) noted that entrepreneurship revolves around the realization of existence of opportunities in combination with decision to commercialize them by starting a new firm.

#### **Economic sustainability**

Economic sustainability forms an important component of sustainable development. Economic sustainability is the maintenance and sustenance of a high real growth rate of the economy to achieve the development or economic objectives. Despite the huge resources in Nigeria, the country ranks low in economic performance. Nigeria has not been able to maintain the growth rate necessary to reduce poverty. Nigeria suffers from lack of balanced development where economic, social and environmental dimensions are given due consideration for long term sustainable development. Measuring and managing Nigeria’s sustainable development is key to achieving the Post-2015 Development Agenda. The multiple challenges to development in Nigeria necessitate the use of a holistic approach that integrates economic, social and environmental dimensions. As stated under the economic objectives of Nigeria, the State shall harness the resources of the nation and promote national prosperity, and an efficient, a dynamic and self reliant economy; control the national economy in such manner as to secure the maximum welfare, freedom and happiness of every citizen on the basis of social justice and equality of status and opportunity; manage and operate the major sectors of the economy; and

protect the right of every citizen to engage in economic activities. The State also pledge to direct its policy towards ensuring the promotion of a planned and balanced economic development; that the material resources of the nation are harnessed and distributed as best as possible to serve the common good; that the economic system is not operated in such a manner as to permit the concentration of wealth or the means of production and exchange in the hands of few individuals or of a group; and that suitable and adequate shelter, suitable and adequate food, reasonable national minimum living wage, old age care and pensions, and unemployment, sick benefits and welfare of the disabled are provided for all citizens. The fulfillment of these objectives requires a sustainable economic development.

### **Theoretical Framework**

The theoretical foundation of this study anchored on theory of unbalanced growth. The theory of unbalance Growth postulated by Hirschman (1958) states that advanced and deliberately unbalancing the economy according to pre-designed strategy is the best way to achieve economic growth in an underdeveloped country. According to this theory investment should be in selected sectors rather than simultaneously in all sectors of the economy.

Hirschman (1958), the leading exponent of the theory of unbalanced growth argues that a deliberate unbalancing of the economy in accordance with predesigned strategy is the best way to achieve economic growth. "An ideal situation obtains when one disequilibrium calls forth a development move which in turn leads to a similar disequilibrium and soon ad-infinitum".

Contrary to the theory of balanced growth, in Hirschman's opinion, the real bottleneck is not the shortage of capital, but lack of entrepreneurial abilities. Potential entrepreneurs are hindered in their decision-making by institutional factors: either group considerations play a - great role and hinder the potential entrepreneur, or entrepreneurs aim at personal gains at the cost of others and are thus equally detrimental to development. In view of the lack of entrepreneurial abilities there is a need for a mechanism of incentive and pressure which will automatically result in the required decisions.

According to Hirschman, not a balanced growth should be aimed at, but rather existing imbalances— whose symptoms are profit and losses—must be maintained. Investments should not be spread evenly but concentrated in such projects in which they cause additional investments because of their backward and forward linkages without being too demanding on entrepreneurial abilities. Manufacturing industries and import substitutions are relevant examples. These first investments initiate further investments which are made by less qualified entrepreneurs. Thus, the strategy overcomes the bottleneck of entrepreneurial ability. The theory gives no hints as to how the attitude of entrepreneurs and their institutional influence will be changed in time.

The theory noted that development has proceeded in this way with "growth being communicated from the leading sectors of the economy to the followers, from one industry to another, from one firm to another." Development process is a chain of disequilibrium that must be kept alive and the task of development policy is to maintain tension, disproportions and disequilibria. Hirschman's theory of unbalanced growth is based on the following propositions:

### **Empirical Review**

Prior studies on entrepreneurship and economic sustainability among scholars presented varied perspectives and findings.

Taiwo (2014) carried out an empirical research on impact of entrepreneurship development on job creation in Nigeria. He found out that in any giving economy, entrepreneurship development always give birth to job creation which will force people to do something that will better their lives and the country at large. He evaluated the relationship between job creation and entrepreneurship development in Nigeria. It was clear from his observation that job creation or employment opportunity in an economy can be traceable to entrepreneurship training and development.

Anyadike, Emeh and Ukah (2012) they took a study on Nigeria's growing unemployment situation and how it increasingly dwindles the potentials of the country, especially following official figures from the Bureau of statistics that puts the figure at about 40 million Nigerian youths captured in World Bank statistics in 2009 are unemployed. Having utilized the secondary source data, the paper remained extensively on current articles from ardent scholars on entrepreneurship development and government statistical documentations. The authors concluded that government should make entrepreneurship sellable to the people by inculcating it into the educational curriculum at every state of the educational sector and also utilize a re-modelled NYSC scheme educate the youths more on the importance, essences and need for entrepreneurship development.

Eme (2014) carried out research on unemployment rate in Nigeria: Agenda for Government. He found out that statistically speaking in the last couple of years, Nigeria's economy is one of the fastest-growing in the world while its people are the most impoverished in real terms. Nigeria in recent past experienced an event where millions of people scampered for about 4500 job vacancies advertised by the Nigeria Immigration Service leading to the death of about eighteen of them in an unwarranted stampede betray the idiosyncrasy of the Nation's nominal growth without corresponding development. With global unemployment projected to reach over 215 million by 2018, experts fear that Africa, particularly Nigeria's share of the global scourge might increase disproportionately, with attendant unsavoury consequences unless the country immediately adopts pro-active and holistic approach to halt the rising youth unemployment.

Akanwa and Akpanabia (2012) examined the need for promoting employment in Nigeria through the development of entrepreneurship. The work relies mostly on secondary data from scholars/ authors in the field. They concluded that, government and it's agencies should deliberately encourage entrepreneurial culture and skill in Nigeria in order to attack and eventually reduce the high level of unemployment situation in the country so that the nation will boost its economic development.

Salami (2013) carried out a research on youth unemployment in Nigeria: A time for creative and innovative intervention. He said that unemployment in Nigeria is a time bomb waiting to explode if effective interventions are not put in place to mitigate the unsavoury impact of high youth unemployment. His work establishes a link between entrepreneurship and youth unemployment if adequate attentions are focused on the creation of enabling socio-economic and political environment that can galvanize a culture where the youths think job creation away from the mindset of job seekers.

Bandal (2010) carried out empirical study on leveraging the relationship between entrepreneurship and job creation. He found out that individual talent, attitude, skills and knowledge along with several contextual variables such as social capital, access to credit, role of

government technology and infrastructure, access to information and access to markets work together to drive entrepreneurial activity.

Nwachukwu and Ogbo (2012) carried out empirical research on the role of entrepreneurship in economic development: The Nigerian perspective. The aim of the paper is to develop and analyse the contributions of entrepreneurship in the economic development through SME development in Nigeria. A total of 1000 SMES were randomly selected from a cross section of a population of all SMES spread around some states of Nigeria. The hypotheses of this research which were tested at 0.05 level of significance using chi-square statistics hinged on identifying the greatest problem which SMES face in Nigeria. The researcher found out that SMES have played and continue to play significant roles in the growth, development and industrialization of many economics the world over. They concluded that promoters of SMES should thus ensure the availability or possessions of managerial capacity and acumen before pursuing financial resources for the development of the respective enterprise.

Baba (2013) carried out research work on the challenges of Entrepreneurship development in Nigeria and way forward. He is of the view that in this era of shrinking economic activities, government should endeavour to provide the necessary infrastructures required for skills acquisition among its citizenry because without technological skills, entrepreneurial spirit which drives economic development through job creation will be lacking. He concluded that entrepreneurship is essential for rapid and sustained economic growth but there is urgent need to change the mind-set of the average Nigerian especially the youths towards embracing self-employment and de-emphasize the search for white collar jobs that are non-existent.

Okoye, Iloanya and Uduze (2014) carried out research on the extent to which entrepreneurship in Nigeria has helped to reduce youth unemployment. The study revealed that government policies and initiative has affected the “transformation question”. This is due to the increase of corruption, inadequate and maladministration. They concludes that entrepreneurship country is an engine for job creation, innovation and diversity and that Nigeria’s entrepreneurs have a long way to go before they can effectively drive changes in the economy. They recommend that government should genuinely recognize the essence of entrepreneurship to economic development by providing the enabling environment for the youth to be gainful employed for economic development.

Ebiringa (2012) examined entrepreneurship development and growth of enterprises in Nigeria he found out that several policy interventions in Nigeria that were aimed at stimulating entrepreneurship development via small and medium scale enterprises have failed. Instead of building in-country entrepreneurial capacity, entrepreneurs have become distribution agents of imported products. He recommends that government and the organized private sector should increase their support for entrepreneurial training programs as part of the tertiary education system.

Asad, Ali and Islam (2014) examined the need to reduce unemployment through entrepreneurship in Pakistan. The regression results indicate that 91 percent variations in entrepreneurship development have been explained by the explanatory variations in variables. The unemployment rate has been found to be negatively related to entrepreneurial development. High rate of unemployment has been associated with low level of entrepreneurial development in economy of Pakistan.

Baba, Dickson, & Kromtit (2014) uses ordinary least square techniques to study the

entrepreneurship and employment generation in Nigeria, using national directorate of employment as a case study. The variables were on national employment, which represents the dependent variables, entrepreneurship employment rate and capacity utilization which is used as the explanatory variables, co-integration approach, unit root and error correction model was also employed in the analysis. From the result it was observed that entrepreneurship has a significant impact on employment generation in Nigeria.

Imafidon (2014) studied the entrepreneurship development for sustainable economic growth in the third world nations. The researcher adopted survey method, using chi-square for the analysis. Questionnaires was design and administer among eighty entrepreneurship randomly selected in Edo north, Edo central and Edo south senatorial district of Edo state in Nigeria. The result indicates that the entrepreneurship contributes significant to employment generation in Nigeria and stimulates growth in the economy.

Orishede & Ezenwakwelu (2014) studied empirical analysis of entrepreneurship development and implication for Nigeria economic growth. The study was carried out in 6 (six) small and medium scale enterprises in Asaba, delta state. The study has population size of 90 out which sample size of 73 was realized using Taro Yamane's formula at 5% error to lerance and 95% confidence interval. Chi-square was used for the analysis and questionnaire was used for data collection. The study indicates that job creation and increase in national income are the contribution of entrepreneurship development to economic growth.

Adeoye (2015) used narrative textual case study to evaluate the effect of entrepreneurship on economic growth and development in Nigeria. The researcher used simple percentage, graph and chart in analyzing and interpreting the collected secondary data .the study discover that Nigeria economy has continues to grow over the last decade with the real GDP growth rate hovering around 7%.it was also found that entrepreneurship can enhance economic growth and development primarily by generating employment.

Ebiringa (2011) analyze the entrepreneurship venturing and Nigeria economic development, the manufacturing sector in focus. The study used large scale firm and small and medium output, while gross domestic product as an independent variables, the study indicates that large scale firms have great relationship in generating or creating job opportunities in Nigeria. The researcher further showed that SMEs provides more of the employment opportunities than the large scale firms.

### **Gap in literature**

There is no doubt that there exists much research work done on the aspect of entrepreneurship and economic sustainability, with lot of controversy and divergent findings. Though we have reviewed empirical literature of different authors both in Nigeria and offshore in the same or related work, certain areas that needed improvement have been noted.

Much attention should be given to scope; methodology and variables, for instance inadequacy of the statistical data used in some of the reviewed literature will be overcome through proxy variables. Again some writers failed to include in their work appropriate model, statistical and econometric tool, and variables. The study employed standard econometric model, the researcher employed unit root test to check for sationarity of the variables, the researcher also included these variables to compliment what other researchers used: human development index, access to finance, entrepreneurship educational, infrastructural development and skill acquisition.

### 3. METHODOLOGY

#### Research Design

The type of research design adapted on this study is Ex-post facto research, this is an aspect of research design where event that are being observed had taken place already. In other words data are collected after the event or phenomenon under investigation. Ex-post facto design usually involves the study of independent and dependent variables. Therefore, it gives no room for manipulation of independent variables and it does not randomize assignment

#### Sources of Data

Data for the study were obtained from secondary sources notably from publications of the Central Bank of Nigeria (CBN), Statistical Bulletin, Annual Reports and World Bank data (various issues) between 2000 and 2016. The following data were sourced: Real Gross Domestic Product as the dependent variable, Human capital index, access to finance, skill acquisition, infrastructural development, and entrepreneurship education as independent variables.

#### Model specification

The specification of a model is based on the available information relevant to the study in question. This is to say, the formulation of an economic model is dependent on available information as embedded in standard economic theory and other major empirical works or else, the model will be theoretical. The researcher model entrepreneurship and economic growth Thus, the functional form of the model is stated as

$$RGDP = F (HDI, ASF, EE, INFD, SA) \text{-----i}$$

Where;

- RGDP = Real gross domestic product
- HDI = Human development Index
- ASF = Access to finance
- EE = Entrepreneurship Education
- INFD = Infrastructural development
- SA = Skill acquisition
- F = Functional Notation

Our model can be restated in an econometric form as;

$$RGDP = \alpha_0 + \alpha_1 HDI + \alpha_2 ASF + \alpha_3 EE + \alpha_4 INFD + \alpha_5 SA + \mu$$

Where

- $\alpha_0$  = Autonomous or Intercept
- $\alpha_1 - \alpha_5$  = Being parameters of explanatory variables
- $\mu$  = Error term

Our model can also be stated in a Log form

$$LRGDP = \alpha_0 + \alpha_1 HDI + L \alpha_2 ASF + \alpha_3 EE + L \alpha_4 INFD + \alpha_5 SA + \mu$$

Log = where log values of the same of the same variables are stated

### Methods of Data Analysis

In evaluating the resulting of the regression, the economic test, first order statistical, second order economic test and econometrics test were adopted.

### Economic Apriori

The economic apriori test was used extensively to determine the meaningfulness of the equation with regards to meeting the apriori expected sign's of the parameters. The theoretical expected signs of the macro-economic variable are indicators in the model.

Variable	Sign
HDI	+
ASF	+
EE	+
INDF	+
SA	+

### Evaluation Based on Statistical Criteria

$R_2$  (coefficient of determination), this tends to measure the over all variations in the dependent variable caused by variation in the explanatory variables computed in the models. The test of significance approach is a procedural test used to test whether the variations are significant or not in the determination of the variables in the dependent variables.

### Decision Rule

Using a two- tailed at the 0.05 level of significances is 0.025. The decision role becomes.

$$H_0 = B_1 = 0$$

$$H_1 = B_1 \neq 0$$

The independent variables is statistically significant if  $t_{cal} > t_{0.025}$ , therefore, we reject the null hypothesis ( $H_0$ ) and accept the alternative hypothesis.

### The F test

The F-test is used to test the overall significance of the regression model.

Hence the F- test is positively slopped, it is one tail test using the same 0.05 significance level, the decision rule becomes  $H_0 = \text{if } F_{cal} < f_{tab}$ , we accept the null hypothesis ( $H_0$ ) and reject the alternative ( $H_i$ ) .

$H_i = F_{cals} > F_{tab}$  we accept the alternative ( $H_i$ ) and reject the null hypothesis ( $H_0$ ).

**Econometrics Test**

**i. Unit Root test**

The Test for Stationarity (Unit Root): The unit root test precedes the co-integration analysis due to the fact that majority of secondary economic data do exhibit a non-stationary trend which could lead to misleading result. A unit test, tests whether time series variable is non-stationary using autoregressive model. A common test and valid for large samples is the Augmented Dickey Fuller (ADF) and Phillips Perron (PP) test. They are used to determine the order of integration of variables. But the one used in this model is Augmented Dickey Fuller (ADF).

**Auto Correlation Test**

The term autocorrelation may be defined as the correlation of a time series data with its own past and future values. The classical model assures that disturbance term relating to any observation is not influence by the disturbance term relating to any other observation. Autocorrelation can be caused by several factors such as specification bias (excluded variables case), manipulation of data, data transformations and non- stationary of data. The most celebrated test for detecting autocorrelations is the developed by statistician Durbin and Watson it is popularly known As Durbin- Watson d- statistics.

**4. PRESENTAION AND ANALYSIS OF DATA**

**Introduction**

The method used was the ordinary least square (OLS) regression technique the method was adopted because it possesses unique estimating properties which includes unbiased, efficiency and consistency. When compared with other linear unbiased estimates.

**Testing for Unit Root**

Stationary of variables means that the mean and standard deviations does not change with time. This is used to investigation whether the mean value and variance of the stochastic process are constant over time. used for stationarity. The test was carried out on each variable separately and if the augmented dickey fuller test exceed the critical values in any percent (1, 5 or 10%) then the variables in question is stationary at the chosen level of significant and vice versa In oder not to obtain spurious result the variables were first tested for stationary by employing the augmented dickey fuller test (ADF). The Result obtained from the analysis is presented in the table 4.1 below.

**Table 4 .1 Unit Root Result**

Variable	ADF	Integration	Significance
RGDP	-4.743284	I (1)	1 %
HDI	- 4.766128	I (2)	1 %
EE	-6.211291	I (1)	1 %
ASF	-4.903329	I (2)	1 %

INDF	- 4.903329	I (2)	1 %
SA	-6.000000	I (2)	1 %

**Source:** Author's computation

Using the augmented Dickey-Fuller tests, the results as presented in Table 1 has shown that all the variables are stationary at the first & second difference. That is, the result indicates that the variables, are integrated of order one I(1,2).

#### 4.2 Descriptive Statistics

	LRGDP	INDF	HDI	EE	ASF	SA
Mean	10.02688	99.71882	4.524118	9.530000	0.529412	6829.203
Median	9.935825	93.83000	4.510860	10.40000	1.000000	3680.090
Maximum	11.45259	169.5600	4.744932	13.11000	1.000000	18675.47
Minimum	8.450885	40.09000	4.356709	5.300000	0.000000	431.1700
Std. Dev.	1.017706	43.12693	0.133685	2.869445	0.514496	6557.659
Skewness	0.074053	0.199165	0.241688	-0.320838	-0.117851	0.574290
Kurtosis	1.611499	1.729057	1.644818	1.528437	1.013889	1.805791
Jarque-Bera	1.381159	1.256557	1.466371	1.825549	2.833470	1.944639
Probability	0.501285	0.533509	0.480376	0.401409	0.242505	0.378205
Sum	170.4569	1695.220	76.91000	162.0100	9.000000	116096.5
Sum Sq. Dev.	16.57162	29758.92	0.285949	131.7394	4.235294	6.88E+08
Observations	17	17	17	17	17	17

**Sources:** E.view output

Table 4.1 shows the descriptive statistics of the variables for the study. It presents the standard deviation, mean maximum and minimum values of the data set obtained from the annual reports. Real gross domestic product measured the amount of good and service produce in a period of

time especially one year showed a maximum value of 11% and a minimum value of -8% with a mean value of 10% and standard deviation of 1%. The infrastructural development measured the government involvement in entrepreneurship. The maximum value of this ratio is 169% while the minimum value is 40%. The mean obtained from the computation gave 99% with a standard deviation of 43%. Human capital index showed a maximum value of 4.7% and a minimum value of 4.3% with a mean value of 4.5% and standard deviation of 0,1%. Educational qualification has a maximum value of 13% and a minimum value of 5%. The mean value obtained was 46% with a standard deviation of 2.8%. Entrepreneurship education has a maximum value of 1% and a minimum value of 0%. The mean value obtained was 0% with a standard deviation of 0%.. Access to finance The ratio has a maximum value of 18675% and a minimum value of 431%. The mean value is 6829% and the standard deviation is 6557%.

**Presentation of the Regression Result**

The time series properties of the variables used the logged and lagged values of the variables. The full part of our regression result is attached as an appendix to the study. However, diagnostic test or some key variables that needs to be explained is on the table below.

Table 4.3 Regression Result for the Model.

Variable	Coefficient	Std. Error	t- statistics	Prob
C	17.24866	5.915016	2.916079	0.0140
INDF	0.020163	0.006110	3.299902	0.0071
HDI	-2.002111	1.206192	-1.659861	0.1252
EE	-0.007117	0.045765	5.155515	0.0092
SA	0.047971	0.145457	0.329794	0.7478
ASF	1.193405	2.48E-05	0.481062	0.6399

**Sources:** E.view output

R- Squared	0.911065
Adjusted R- squared	0.907004
F – Statistics	244.0274
Prob (F- statistics)	0.000000
Durbin- Watson stat	2.161126

**Interpretation of the Result**

Coefficient of determination, This is also called the goodness of fit. This explains the percentages, proportion or total amount of variations in the regreesand or dependent variables as a result of changes in the regressors or independent variables included in the model. This will portray the usefulness significance of the regression. The closer its values is t0 1 the better the fit

since it is usually 0-1. From our regression result,  $R^2$  is 0.91%. This implies that the independent variables can explain about 91% of the variable in the dependent variable, leaving the remaining 9% which would be accounted for by other variable outside the model.

The adjusted  $R^2$  is 90% meaning that even with an adjustment in the independent variables, they can still account for about 90% of the changes in the dependent variables.

The F- statistics, this is used to test for the overall significant of the model. . From the result in table 4.3 above, our computed value of F- statistics is 244.0274, while the probability is 0.000000. Since the probability of the F- statistics in the computed output is less than the desired 0.05 level of significance, we accept and state that there is a significant relationship between the variable of the estimate and that of the dependent variable.

The a' priori criteria which is determined by the existing economic theories and indicates the signs and magnitude of the economic parameter under regression. in table 4.3 above, we find out that infrastructure has a positive sign given its value as 0.020163, this implies that a unit increase in infrastructure increases the real gross domestic product by 20%, this conform to our a' priori expectation. Human development index has a positive sign given its value as -0.002111, this implies that a unit increase in Human development index increases real gross domestic product by 2%, this confirm to our theoretical expectation. Entrepreneurship Education has a positive sign given its value as 0.0077117, this implies that a unit increases in entrepreneurship Education increase the real gross domestic product by 0.7%. This conforms to our a'priori expectation. Skill acquisition and access to finance has a positive sign and increase in any of the variables increases the real gross domestic product by 0.4% and 1.1% respectively.

T- Statistics, this is carried out to know the significant of individual explanatory variables in the model. That is to find out the significant influence of explanatory variables on the dependent variables at chosen level of significant. It was discovered that infrastructure and entrepreneurship education are statistically significant both at 5% level of significant respectively; this implies they are one of the determining factor of real gross domestic product. Meanwhile, the remaining variables are statistical insignificant.

Test for autocorrelation, this is to test whether errors corresponding to difference observation are uncorrelated. It checks the randomness of the residuals. If the value of the durbin-watson from the regression result is close to 2 no autocorrelation in that regression result but if it deviates significantly then there is autocorrelation. The Durbin-Watson statistic (D.W) of 2 reveals no autocorrelation in the models. Hence, the result is good for econometric analysis.

## **5. SUMMARY, CONCLUSION AND RECOMMENDATION**

### **Summary of the Finding**

The major intention of this study was to critically examine the effect of entrepreneurship and economic sustainability in South-East Nigeria between the periods of 2000-2016. This study specifically examined the impact of human capital index on economic growth. Meanwhile the result of the estimates reveals the following.

- i. Human development index has significant effect on economic sustainability in Nigeria.
- ii. Access to finance has significant effect on economic sustainability in Nigeria.
- iii. Entrepreneurship education has significant effect on economic sustainability in Nigeria.

- iv. Infrastructural development has significant effect on economic sustainability in Nigeria.
- v. Skill Acquisition has significant effect on economic sustainability in Nigeria

### **Conclusion**

The study focuses on effect of entrepreneurship on economic sustainability in Nigeria between the periods of 2000-2016. Entrepreneurship is seen as an engine of growth in the developmental processes of the economy. The study adopts unit root, descriptive statistics and ordinary least square method on a time series data from 2000 to 2016. The study regressed entrepreneurship on real gross domestic product. The regression result reveals that about 90.8% of the systematic variation in the dependent variable is explained by the five independent variables as such human development index, access to finance entrepreneurship education, infrastructural development and skill acquisition. The F-statistic is significant at the 5% level showing that there is a linear relationship between the real gross domestic product and the five independent variables.

The result revealed that infrastructural development and skill Acquisition have positive and significant effect on real gross domestic product, while human development index, entrepreneurship education and access to finance have positive and significant effect on real gross domestic product. The result also reveals that there is long-run relationship between, entrepreneurship and real gross domestic product. The researcher concluded that entrepreneurship has significant effect on real gross domestic product.

### **Recommendations**

In line with the findings of the study the following recommendations were made:

- ❖ The scope of the training programme should be extended to include technical skills, managerial skills and business skills.
- ❖ Adequate financial, physical resources as well as low interest rate fund should be provided by various stakeholders not only for potential but also for existing entrepreneurs.
- ❖ Government must ensure necessary modifications in the educational system in the country that would make graduates to be employers of labour and self-employed, instead of looking for scarce job opportunities. The acquisition of the right skills to fit the various needs of the society is imperative.
- ❖ Government must also urgently attend to the nagging issue of infrastructural deficits in the country especially that of power supply. The national economy need a strategic diversification from oil and gas to agriculture, aviation, tourism, manufacturing and these should become the real engine of growth and employment generation that will sustain the economic growth of Nigeria.
- ❖ People should be encouraged to learn a skill not just for making a living alone but also to create a means of backup for human sustenance and also for personal development because a skill acquired is a skill required.

### **Contribution to knowledge**

- Most studies done on this topic or related area are done outside the shore of Nigeria. Many studies done in Nigeria do not include the core variables, while most of them do not use the standard econometric methodology.
- This research modified the model adopted by Riti & kamah (2015), who studied the impact of entrepreneurship development on economic growth of Nigeria  $HDI_t = \alpha + \beta_1 EMPL_t + \beta_2 INPI_t + \beta_3 CAP_t + U_i$  and our model incorporates core variables such as access to finance, skill acquisition, entrepreneurship education, and infrastructural development
- The research extended the period to 2000-2016 because many of the revealed work did not cover such period, the period covered the different reforms and regulation in the Nigeria.
- The most interesting aspect of this work is that it contributes to existing literature and serves as an inspiration and consultation to authorities in the government and other related bodies when the needs arise.

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