ROLE OF ENTREPRENEURIAL ACTIVITIES
FOR NIGERIA'S ECONOMIC RECOVERY AND GROWTH
(A CASE OF STUDYING NIGERIAN ENTERPRISES)

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Abstract. The paper presents the empirical analysis of the effect of entrepreneurship activity on the economic recovery and growth using SMEs in Nigeria. Two cities from each of the six geopolitical zones and four sectors of the economy were selected for the study. The total number of the selected four sectors form the population of the study while the sample size is seven hundred and twenty. The analysis employs the Ordinary Least Square techniques and time-series data for the economic recovery. The study adopts the Phillips-Perron test procedure to examine the stationarity of the study variables. The Johansen Cointegration test was employed to establish the cointegration of the variables and the unrestricted Error Correction Model was used to examine the speed of the alteration to the equilibrium. It has been inferred that the entrepreneurship activity and ERG are integrated of order (1(0)). This is established by the explanatory power of the models result of R value of 0.274 and R^2 approximated to 0.075. The result shows a low positive impact of entrepreneurial activities on ERG. The study proves that, despite the crash in oil industry, the entrepreneurship has contributed positively to the Nigerian economy although at a low level. The study suggests that the government should support the development of entrepreneurship.

Key words: productivity, export, self-employment, innovation, capital formation, knowledge spill over, economic recovery and growth.

Introduction

Nigeria is the largest economy in Africa with population of about 177 mln [1]. The Nigerian economy is among the middle mixed economy and a developing market that promises a large market for any prospective business. Nigeria ranks the 30th largest economy position in the world and 23rd largest in terms of purchasing power parity [2]. The report ranked Nigeria 21st among 181 countries with the unemployment rate of 18.8% (2017), 23.1% (2018), and 33.3% (2020) [3]. Nigeria has also been rated as the poverty capital of the world with estimated 87 million people living on less than $2 a day [1]. Also, the annual ranking report of the economy based on the ease of doing business in 2018 ranked Nigeria 131 among 190 studied countries of the world. The economic slowdown has pushed up the level of unemployment which increased from 23.9% in 2011 to 25% in 2014, though the human development index (HDI) shows a small increase of 8.1% from 2005 to 2013 while the income inequalities keep degenerating, thereby placing Nigeria at 152 out of 187 countries. Stimulating Economic Recovery and Growth (ERG) in the COVID-19 era becomes very crucial to scholars, policy-makers and analysts. Although, the Nigerian government had earlier instituted the Economic Recovery and Growth Plan (ERGP) which is a medium-term planned for 2017-2020. The objectives are: 1) to restore growth through macro-economic stability and economic diversification; 2) to build a globally competitive economy through investment in infrastructure, improvement in the business environment, etc.; 3) to invest in the Nigerians through the program on social inclusion, job creations, etc. The ERGP was established to restore Nigeria' economic growth before the COVID-19 pandemic crises, however, the economic impact of the COVID-19 pandemic is substantially more serious in Sub-Shaharan Africa compared to other parts of the world due to the pervasive poverty in many economies [4]. Entrepreneurs can revitalize the economy by creating jobs and new technologies and increasing productivity. Entrepreneurship breeds entrepreneurial activities, but entrepreneurial activity is not dependent upon entrepreneurship only. Entrepreneurship and entrepreneurial activity, therefore, are used interchangea-

bly. Some authors see the entrepreneurship as *"an activity directed towards the creation of new enterprises"* [5, p. 58], while the other define it as *"the creation of new economic activity"* [6, p. 27]. Entrepreneurship, therefore, is an activity that makes positive changes in the economy of a nation and improves the quality of life. Entrepreneurial activities in whatever form (within or outside the firm) refer to the activities that create social and economic and cultural values through recognition and exploitation of opportunities. Entrepreneurial activity impacts more on economic growth than production effect in the long run. This definition focuses attention on the entrepreneurial outcome, it emphasizes what they do or achieve, rather than who they are. New enterprise or venture's start-up is a vital component of the economic growth and one of the main indicators of the entrepreneurship. The entrepreneurs through the new ventures perform a vital role in employment, innovation, knowledge spillover, capital formation, export activity, productivity, etc., all of which are also the indicators of macroeconomic growth. The link between the entrepreneurship and economic growth is, therefore, equated to that between hen and egg.

Objectives of the Study

The main objective of the study was to determine the extent of entrepreneurial activities impacts on the EGR in Nigeria in the COVID-19 era. The other specific objectives include:
- determining the extent entrepreneurial productivity significantly affects ERG in Nigeria;
- finding out the extent entrepreneurial export activity significantly affect Nigeria?
- examining the extent to which entrepreneurial self-employment significantly affects ERG in Nigeria?
- evaluating the extent entrepreneurial innovation and development activity significantly affects ERG in Nigeria;
- analyzing the extent entrepreneurial capital formation activity significantly affects Nigeria ERG in Nigeria;
- entrepreneurship knowledge spillover does not have a significant positive impact on the EGR in Nigeria.
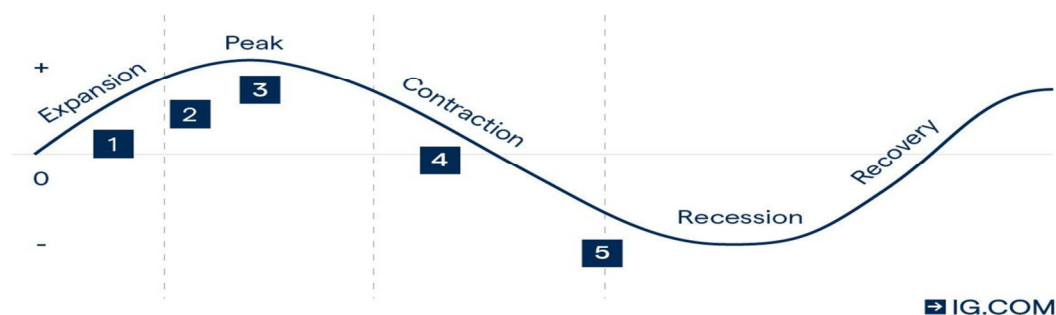
Dimensions of Entrepreneurial Activity

Nadim Ahmad and Anders Hoffman [7] sees entrepreneurship activities as innovation, productivity, self-employment, job creation and human capital formation, knowledge spillover, technical knowledge, etc.

Productivity is the ratio of the value of output to labour input. Measures of productivity growth are a core indicator of the analysis of ERG and economic growth. Productivity is traced to technical change. Technology is the well-known way of converting resources into output desired by the economy. Efficiency shows that the production process has achieved the maximum amount of output that is physically achievable with current technology. It indicates the elimination of firm's technical inefficiency [8]. Firm's degree of export increases the scope of the market beyond the domestic scale and compels firms to enrich and expand their knowledge-based innovation opportunities. The export scope indicates the number of foreign countries to which the firm products are exported to. The intensity shows that the firm is willing to absorb the risk through proactive opportunity exploitation to be the pioneer firm to export goods and commit assets to extend business abroad. Entrepreneurs are firms' creators and new ventures' initiators. They are very vital in the worst economic conditions of a country when unemployment is high and the economy is contracting or stagnating. The measure of self-employment activity of entrepreneurs is widely accepted [5]. Entrepreneurial activity is aimed at reducing unemployment and under-employment among both the skilled, semi-skilled and unskilled workforce of a country. The innovative activity [6, 9] involves any form of change or newness, imitating foreign or local products, introducing new ways of production, or using new resources in production, which can lead to value creation in the marketplace. The innovation reveals the extent to firms involved in the introduction of new or modified products and processes. This involves Research and Development activity (R&D), the number of patent inventions and new product/services and recent business processes introduced into the market using new technological equipment [8, 10]. Entrepreneurial Capital Formation Performance refers to the proportion of present income saved and invested to augment future output and income. It involves the acquisition of a new factory along with machinery,

equipment and all productive capital goods. The determinants of capital formations are savings. If savings are high, the economy will have large capital stock and high level of output while, if it is low, the economy will have small capital stock and a low level of output. Knowledge spillover activity shows that the entrepreneurs create new opportunities for the competitive advantages and commercializing the opportunities resulting in higher economic growth [11]. Knowledge spillover is measured with the extent of uncertainty, a larger extent of asymmetries and a greater cost of transacting new ideas, knowledge of opportunities, benchmarking of ideas. Knowledge has been measured by investment in R&D, human capital and patent inventions.

Nigeria Economic Recovery and Growth

The ERG is the business cycle stage following a recession, which is characterized by a sustained period of improving business activity. It attracts GPD growth, an increase in income and a rise in employment rate and level. ERG begins when the recession bottoms out and ends once the economy starts flourishing. It passes through a shakeout stage characterized by a loss in redundant jobs, investment shifts and businesses taking corrective measures. New innovative businesses, start-up ventures emerge and create jobs for the unemployed and those who lose their jobs. It leads to the promulgation and implementation of improved policies that would encourage self-employment and assist MSMEs. The economic recession enables the government, policymaker, businesses and the general society to reflect the causes and provide solutions that drive the type and speed of economic recovery (Figure) [12].

Nigeria Economic Recovery and Growth (The Federal Republic of Nigeria's economic recovery & growth plan over 2017-2020. The Ministry of budget & national planning)

ERG can be of different shapes or patterns, e. g. V-shape as in sharp economic contraction and recovery. This is the best form of recovery. The U-shape shows a sharp fall and a gradual and slower recovery. It signifies a long period of economic depression or recession. Then the W-shape indicates a double-dip recession when the investor is under the illusion of the economic recovery before another dip. Finally, the L-shaped recovery represents the worst case of recession and recovery, because it takes a much longer time to recover. ERG can easily be measured through lagging and principal indicators in the country. The principal indicators predict market movement, while lagging indicators show the existing trends of ERG. The main lagging indicator commonly used across the country is the GDP. The dependent variable for the study was the annual GDP growth rate. GDP is the most widely accepted indicator for measuring the economic performance of a country, although it provides only a limited snapshot of the economy.

Research Methodology

The main objective of this study was to analyse the impact of the entrepreneurship on ERG in the Nigerian context. The study necessitates the use of both primary and secondary instruments to achieve the objective of this study. Data for entrepreneurial activity were subjectively gathered through the primary instrument using an email questionnaire to the business owners who are the respondents of the study. The annual series data of the Nigerian real GDP as the proxy of ERG was gotten from the central bank statistic bulletin covering the period of 2017-2020 and the World Bank resources for reliability and accuracy.

Table 1 also shows the different economic sectors and cities in each zone, which were conveniently selected due to their high business activities concentration and for proximity sake.

Table 1

Sampling Distribution*

Economic Sectors	Employment % Contributed	Total	Zones	States	No Sent Per Zones	No Collected	Used
Manufacturing	27.73	3,440	North Central	Kaduna Plateau,	120	45	20
Wholesale/Retail Trade	17.42	5,999	North-West	Kano, Kaduna	120	75	50
Agriculture	4.69	276	North-East	Gombe Araba	120	35	19
Food, Beverages	8.54	3,774	South-South	River, Edo	120	110	61
Total		13 489	South-East	Anambra, Abia	120	70	45
			South-West	Lagos, Oyo	120	140	80
		13,489	–	–	720	474	275

* Source [13].

The total number of the SMEs in the selected economic sectors in the two states chosen from each zone is 13,489 [13] form the population, while 720 samples were used for the study, as indicated in the table above. The interest in mass sampling is necessary because some of these SMEs may be facing challenges due to the COVID-19 pandemic and difficulties in accessing the internet. The low response rate is expected due to COVID-19 pandemic influence on businesses. Most of these businesses might be shut down or have no internet access. From the gathered questionnaire 274 questionnaires were used for analysis.

Variables Measurement

The basic feature of the collected data in this study is illustrated via descriptive statistics, as shown in Table 2. The statistical measures like mean media or standard deviation have been selected to get a brief overview of each variable individual. Table 2 shows that 475 were used for the analysis. The productivity activity shows a mean of 14.0021, median of 14.0000, SD of 3.38120 and variance of 11.432. The employment activity depicts a mean of 11.3747, median of 12.0000, SD of 3.60652 and variance of 13.007. Also innovation has a mean = 12.0126, median = 13.0000, SD = 3.64278 and variance = 13.270. The statistics of capital formation shows a mean of 7.3642, median of 7.0000, SD of 2.09379 and variance of 4.384, and knowledge spillover has a mean = 7.7832, median = 8.0000, SD = 7.00 and variance = 2.70749. Overall, all the variables show a high variability suitable for analysis. The table shows the reliability for the research based on the Cronbach alpha, composite reliability and average variance extracted (AVE). Cronbach's alpha was used to determine the internal consistency of the elements of the study. The reliability of 6.0 and higher indicates adequate internal consistency [14]. The table indicates an adequate value of < 0.7 of the composite reliability and AVE values of more than 0.5.

Table 2

Descriptive Statistics, Validity and Reliability

Entrepreneurial Activity	Frequencies & (Percentages)					Descriptive Statistic			
Indicate the level of the following items for the past three years	Great Extent	Small Extent	Moderate Extent	Slight Extent	Not At All	Mean	Median	SD	Var
Productivity Activity (Cronbach's Alpha = 0.841, CR = 0.905, AVE = 0.756)						14.002	14.000	3.3812	11.432
Increased investment	78 (16.4)	69 (14.5)	73 (15.4)	80 (16.8)	175 (36.6)				
Investment in capital	94 (19.8)	62 (13.1)	65 (13.7)	49 (10.3)	205 (205)				
Application of new technology	107 (22.5)	71 (14.9)	74 (15.6)	58 (12.2)	167 (34.5)				
High efficiency	58 (12.2)	62 (13.1)	87 (18.3)	95 (20.0)	173 (36.4)				
Export Activity (Cronbach's Alpha = 0.799, CR = 0.933, AVE = 0.661)						12.9263	13.0000	1.98965	3.959
Extent/degree of export activity	130 (27.4)	180 (37.9)	45 (9.5)	54 (11.4)	66 (13.9)				
Export profitability	76 (16.0)	105 (22.1)	78 (16.4)	77 (16.2)	139 (29.3)				
Export intensity growth	102 (21.5)	84 (17.7)	99 (20.8)	41 (8.6)	149 (31.4)				
Export sales growth	47 (9.9)	42 (8.8)	29 (6.1)	61 (12.8)	296 (62.3)				
Self-Employment Activity (Cronbach's Alpha = 0.862, CR = 0.876, AVE = 0.616)						11.374	12.000	3.6065	13.007
Require the skilled employee	72 (15.2)	53 (11.2)	58 (12.2)	46 (9.7)	246 (51.8)				
Increment in firm employee	59 (12.4)	21 (4.4)	52 (10.9)	79 (16.6)	263 (55.4)				
Operations demand new expert	60 (12.6)	63 (13.3)	72 (15.2)	86 (18.1)	194 (40.8)				

Entrepreneurial Activity	Frequencies & (Percentages)					Descriptive Statistic			
Indicate the level of the following items for the past three years	Great Extent	Small Extent	Moderate Extent	Slight Extent	Not At All	Mean	Median	SD	Var
Innovation Activity (Cronbach's Alpha = 0.814 , CR = 0.865, AVE = 0.671)						12.012	13.000	1.9896	3.959
Incremental Innovation	65 (13.7}	56 (11.8)	15 (3.2)	50 (10.5)	289 (60.8)				
Imitation	51 (10.7)	43 (9.1)	26 (5.5)	22 (4.6)	333 (70.1)				
Radical Innovation	76 (16.0)	26 (5.5)	39 (8.2)	44 (9.3)	29 (61.1)				
Use of new technology	71 (14.9)	20 (4.2)	69 (14.5)	187 (39.4)	128 (26.9)				
Capital Formation Activity (Cronbach's Alpha = 0.876, CR = 0.934, AVE = 0.502)						7.364	7.000	2.0937	4.384
Savings	103 (21.7)	78 (16.4)	117 (24.6)	70 (14.7)	107 (22.5)				
Investments	23 (4.8)	11 (2.3)	158 (33.3)	67 (14.1)	216 (45.5)				
FDI	29 (6.1)	53 (11.2)	129 (27.2)	103 (21.7)	161 (33.9)				
Knowledge Spill Over Activity (Cronbach's Alpha = 0.785 , CR = 0.879, AVE = 0.547)						7.783	8.000	7.000	2.707
New knowledge and idea	121 (25.5)	178 (37.5)	26 (5.5)	72 (15.2)	78 (16.4)				
Exploiting new opportunities	88 (18.5)	145 (30.5)	118 (24.8)	32 (6.7)	92 (19.4)				
Benchmarking	71 (14.9)	20 (4.2)	69 (14.5)	187 (39.4)	128 (26.9)				
ERG (Cronbach's Alpha = 0.811, CR = 0.801, AVE = 0.519)						31.0295	31.0295	31.0295	31.0295
GDP	24 (5.1)	8 (1.7)	54 (11.4)	29 (6.1)	360 (75.8)				

Model Specification

The Ordinary Least Square (OLS) technique was used to determine the impact of entrepreneurship on ERG. The choice of OLS is mainly because it minimizes the error sum of a square and has several advantages such as unbiasedness, consistency, minimum variance and sufficiency. It is widely used and easy to understand. The model states thus:

$$Y = \int(X),$$

thus, Y – ERG (dependent Variable measured with real GDP); X – Entrepreneurial activity (independent Variable);

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon,$$

where α_0 – the constant or the intercept; β_1–β_6 – Regression Coefficients of the explanatory independent variables; X_1 – Productivity = PDV; X_2 – Export Activity = EXP; X_3 – Self-Employment = SEMP; X_4 – Innovative = INNOV; X_5 – Capital Formation = CAPF; X_6 – Knowledge Spillover = KSO; ε – Error term.

It has been agreed that a log-linear form is more likely to find evidence of a deterrent effect than a linear form (Ehrlich, 1996). We, therefore, log-linearized the equation in log stochastic form, this can be rewritten as:

$$logERG_1 = \beta_0 + \beta_1 logPDV_t + \beta_2 logEXP_t + \beta_3 logSEMP_t + \beta_4 logINNOV_t + \\ + \beta_5 logCAPF_t + \beta_6 logKSO_t + \varepsilon_t,$$

where, RGDP – log of proxy for ERG; PDV – log of productivity at the time (t); EXP – log of export at the time (t); SEMP – log self-employment at the time (t); INNOV – log of innovation at the time (t); CAPF – log of Capital formation at the time (t); KSO – log of knowledge spillover at the time (t). The coefficients relate to the independent variables. The intercept depicts the linearity of the regression. It explains the model when all the explanatory variables are 0. The standard error gives the deviation of each coefficient from X_1 to X_6.

Data Analysis Techniques

The study evaluates the stationary condition of the variables used in the model by adopting the Phillips-Perron (PP) test through a unit root test. The data plans show that the series in their undifferentiated form is typically constantly wandering about with no tendency to revert to a fixed means. This implies that the data series is non-stationary in levels and any regression involving such variables could lead to errors in inferences, that is spurious regression. The researcher therefore first tests for the stationary, without constant or trend. If the variables are not stationary, then the next step is to differ and test for the stationarity of the differenced variables. If the variables are stationary after the first differencing, then, the variables are integrated of order one (1-1), after that the co-integration regression will be obtained from the normalized coefficients of the model generated from the co-integrating vector. Based on this the Error Correction Mechanism which determines the speed of adjustment to the equilibrium will be estimated.

Unit Root

The stochastic properties of the series were tested through the Unit root test to avoid estimating spurious regression. This was carried out utilizing the PP test developed by [15, 16]. The test procedure encompasses testing the order of integration of the discrete series of the study since most time series are not stationary. The general form of the PP test is estimated as follows:

$$\nabla Y_T = \alpha_0 + \alpha_1 Y_{T-1} + \sum_{i=2}^{p} \alpha \nabla Y_T + \varepsilon T,$$

where ∇ – first difference operator; ε_T – a random error term; Y_T – time series, it is a linear time trend; T – linear time trend; α_0 – the constant.

The unit root test is then carried out under the null hypothesis $\alpha = 0$ against the alternative hypothesis of $\alpha < 0$.

The PP test is used to compare the computed test statistics with the relevant critical value. When the test statistics (in absolute value) > the critical value at (PV = 5% or at 1%), then the null hypothesis of $\alpha = 0$ is rejected and no unit root is present. But if the test statistic (in absolute value) < the critical value at (PV = 5% or 1%), this implies evidence of co-integration in the model, then the null hypothesis $\alpha = 0$ is accepted showing that the variables are non-stationary at the level form and integrated of the same order [17].

Table 3 shows that all variable are non-stationary but are all stationary at their first difference.

Table 3

The Unit Root Test Analysis

Differential Level	Entrepreneurial Activities						ERG
	logPDV	logEXP	logSEMP	IlogINNOV	logCAPF	logKSPO	GDP
PP-Level	−0.41826	−1.66573	−0.70334	−1.33244	−0.97067	−0.13124	−3.2967
1st difference	−8.09045	−6.49212	−4.91073	−7.90711	−5.25024	−764573	−7.109
PP-Sig Values							
1%	−3.998	−3.998	−3.998	−3.998	−3.998	−3.998	−3.998
5%	−2.910	−2.910	−2.910	−2.910	−2.910	−2.910	−2.910
10%	−2.021	−2.021	−2.021	−2.021	−2.021	−2.021	−2.021
PP-Level	Not Stationary	Not Stationary	Not Stationary	Not Stationary	Not Stationary	Not Stationary	Not Stationary
1st Difference	Stationary I(O)	Stationary I(0)	Stationary I(0)	Stationary I(0)	Stationary I(O)	Stationary I(0)	Stationary I(0)

This shows that all variables are integrated into order one. From the result we can confirm that the variables of ERG are integrated of order zero (1(0)) since the dependent variables are integrated of the same order. We then proceed to analyse that con-integrating relationship using Engle-Granger co-integration procedure. The null hypothesis of no unit root was therefore rejected for GDP, poverty reduction and job creation while the null hypothesis of no unit root was accepted for the independent variables.

Estimation Result of the Co-Integration Equation (Long Run)

As the difference between the co-integration is constant, there is the probability for two or more series to move closer together in the long run, not minding the trendiness of the series. By using the Johansen cointegration test there is built a co-integration equation to analyze the existence or non-existence of the co-integration between the series of the same order of integration. The existence of co-integration suggests a long-run equilibrium relationship in the lack of co-integration, which means that the meander distant away from each other implies the non-existence of a long-run relationship between these variables [14, 15]

$$[\Pi_m \log RPC_t = \alpha_1 + \sum_{i=2}^{p} \alpha_1 \Pi_m Z_t [\Pi_m \log RPC_t - \sum_{i=1}^{n} \beta X_{t-I} + V_{2t}]],$$

where $[\Pi_m IC - \sum_{i=1}^{n} \beta X_{t-I}]$ – the linear combination of the non-co-integrated vectors; X – a vector of the non-co-integrated variables.

Error Correction Model Equation (ERM)

We proceed to construct the error correction mechanism to the model dynamic association having satisfied the second stage on the existence of co-integration. The error correction mechanism shows the individual influence of the co-integrated variables. It also indicates the speed of adjustment from the short-run to the long-run equilibrium state. The higher speed of adjustment of the model from the short run to the long-run equilibrium implies a greater co-efficient of the parameter:

$$[Ŋ_m \log RPC_t = \alpha_1 + \sum_{i=2}^{p} \alpha_1 \, Ŋ_m \, Z_t - (\lambda ECM_{t-1} + V_{4t})],$$

where λECM is the Error Correction Mechanism; λ is the magnitude of error-corrected each period specified in its a priori form to restore $Ŋ_m \, Z_t$ to equilibrium, where Z_t represents the explanatory variable (RDI and FIW).

The optimum lag length was analyzed using the multivariate version of information criteria of Akaike's Information Criteria (AIC) and Schwarz's Bayesian Information Criteria (SBIC).

Data Analysis and Discussions

The time-series properties of the model variables were analyzed through the Phillips-Perron unit root test. We proposed the null hypothesis that the variables of the study have a unit root against the alternative that they do not have a unit root. The lag length of the variables was based on Akaike and Schwart-Bayesian information criteria. If the PP statistic value exceeds the critical value at a chosen significance level (in absolute term), we conclude that the variables have a unit root; we, therefore, reject the null hypothesis, and otherwise, we accept the alternative [17].

Result and Discussion from the Cointegration Test

From the unit root results of the variables, we implement the Engle-Granger co-integration procedure. The variables of ERG has the same order of (1(0)) of integration, we estimate their linear combination at their level form with intercept term and obtain their residual which is then subjected to co-integration test a shown in the table below. The table shows that the residual t-pp of 36.74249 at lag length 1 is greater than the 5% and 1% critical values of 9.061, 12.859 and 14.574 respectively. This implies that stationary is stationary at a level from and hence there is a linear relationship among the variables (Table 4).

Table 4

Co-Integration Residual Tests

Residual	t-pp	lag	1% PV	5% PV	10%
	36.74249	1	9.061	12.859	14.574

This shows the long-run equilibrium effects of entrepreneurship on ERG in Nigeria. Hence, we adopt the error correction model which was specified in case, co-integration was established among the variables.

Result of the Multiple Regression Model

Table 5 shows that firm productivity has a positive impact of COVID-19 on ERG with ($\beta = 0.327$, $t = 5.950$ and $p = 0.000$).

Table 5

Multi-Regression Result Dimensions of Entrepreneurial Activities and ERG

Model	Explanatory variables	Unstandardized Coefficients		Standardized Coefficients	t	P-Value	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIP
	Intercept	12.460	1.151	–	9.244	0.000	–	–
X_1	Firm Productivity	0.327	0.107	0.104	5.950	0.000	1.000	1.000
X_2	Export Activity	0.044	0.138	0.015	0.321	0.749	1.000	1.000
X_3	Self-Employment	0.490	0.240	0.238	6.472	0.000	1.000	1.000
X_4	Innovation	0.414	0.021	0.296	6.739	0.000	1.000	1.000
X_5	Capital Formation	0.063	0.047	0.080	1.340	0.181	1.000	1.000
X_6	Knowledge spillover	0.108	0.037	0.134	1.950	0.003	1.000	1.000
	F-statistic	116.410				0.024		
	ECM	158.59				12.34		
	R	0.274				0.000		
	R-Squared	0.075						
	Adjusted R Square	0.073						

This means that productivity is 0.104 at $p = 0.000$. The estimated regression line is $Y = 12.460 + 0.327X$, which shows that if $X = 0$, then $Y = 12.460$ and with 1% increase in X, there will be 0.327 increase in Y. Also, it can be seen in the table that there is an insignificant positive impact of the export activity on ERG, as the result indicates ($\beta = 0.044$ and $t = 0.321$) and reveals that export activity is 0.138 at $p = 0.00$. The estimated regression equation is $Y = 12.460 + 0.044X$. This shows that when x is 0, Y will be 12.460 and with a 1% increase in X, there will be a 0.044 increase in Y. The self-employment dimension of entrepreneurial activity, as shown in the table above, indicates also a positive impact on ERG with $\beta = 0.490$, $t = 6.472$. It means that entrepreneurial self-employment is 0.238 at $p = 0.00$. The estimated regression line there is $Y = 12.460 + 0.490X$, which indicates that if $X = 0$, then, Y will be 12.460 and with a 1% increase in X, there will be a 0.490 increase in Y. The table displays that the dimension of entrepreneurship innovation has a positive impact on ERG, as the result shows, that $\beta = 0.414$ and $t = 6.739$ indicating that entrepreneurial innovation is 0.296 at $p = 0.000$. The estimated regression line $Y = 12.460 + 0.414X$. This means that if $X = 0$, Y will be 12.460 and with a 1% increase in X there will be 0.414. Also it is shown in the table that beta = 0.063, $t = 1.340$, which proves that capital formation is 0.117 at $p = 0.181$. The regression equation line shows that $Y = 12.460 + 0.063X$. This means that when $X = 0$, then Y will be 12.460 and with a 1% increase in X there will be a 0.063 increase in Y. The knowledge spill over-dimension of entrepreneurial activity indicates a low positive impact on ERG as ($\beta = 0.108$ and $t = 1.950$). This proves that $Y = 12.460 + 0.108X$. Hence, when $X = 0$, then there will be a 12.460 increase in Y and with a 1% increase in X, there will be a 0.108 increase in Y. The result shows that the ECM for the estimated model is statistically significant at (258.59) which indicates that it will impact any deviation from the long-run equilibrium. The coefficient of determination ($R = 0.274$, $R^2 = 0.075$ and the adjusted R square 0.073) respectively. This implies that following the collapse of crude oil which has been sustaining the economy for a long time, entrepreneurs through the non-oil producing sectors could contribute about 27%, hence 27% of the variation in ERG is accounted for by variations in entrepreneurial productivity, export activity, self-employment, innovation, capital formation, and knowledge spillover. The overall regression is significant at a 5% level of significance implying that the joint effects of all the included variables were significant.

Conclusions and Summary

The purpose of this study was to examine the impact of entrepreneurial activities on economic recovery and growth, further, it determined the contributions of entrepreneurship activities dimension to ERG. Finally, the study attempted to identify the most important aspect of entrepreneurial activities (productivity, export, self-employment, innovation, technology, capital formation, and knowledge spillover activities) that influences Nigerian ERG through GDP. The result based on regression analysis proves that entrepreneurial activities have a low positive impact on Nigeria's post COVID-19 economic growth through GDP. At the 5% level of significance, we accept the null hypotheses. The study found a positive effect of entrepreneurial activities dimensions on the GDP of Nigeria. However, the result shows that export, productivity, and innovation more contribute to GDP than others for a period under study. The findings suggest the regression model of this study:

$$Y = \int (\beta_0 + \beta_1 PDV + \beta_3 EMP + \beta_4 INNOV + \beta_5 CAPF + \beta_6 KSO + \varepsilon);$$

$$ERG = 12.460 + 0.327 + 0.044 + 0.490 + 0.414 + 0.063 + 0.108 + \varepsilon.$$

The model estimate shows that entrepreneurship has a positive impact on GDP. The parameter estimate associated with these variables is statistically significant. This implies that Nigeria's COVID-19 economic growth is influenced by entrepreneurial activities. [1, 2, 10] notes that African entrepreneurs are the key players against poverty elevation and unemployment, although, [6, 18] are of opinion that the entrepreneurship does not affect low-income country due to the lack of large firms in these countries to embark on economies of scale and technological diffusion and also [6, 19] concludes that total entrepreneurial activities are positively related with a high rate of the economic growth in the developed countries but not in the developing countries. Firms need to embark on entrepreneurial activities in the period of the post-COVID-19 economy to assist the government in reviving the economy. The findings justify the previous findings like [2, 20]; [20] conclude that firms' activities directly relate to economic growth; [19] argued that economies that are abundantly supplied with entrepreneurs will tend to grow far more rapidly than those in which entrepreneurial talent is lacking. Greater entrepreneurial

activities are required to maximize the opportunities for ERG of the crashing economy of the pandemic era. The policymakers should design and implement national entrepreneurship policies that include the support for the firms, labour productivity, technological change, employment, innovation, capital formation and knowledge spillover.

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ВОССТАНОВЛЕНИЕ И РОСТ ЭКОНОМИКИ НИГЕРИИ: ИССЛЕДОВАНИЕ ПРЕДПРИНИМАТЕЛЬСКОЙ ДЕЯТЕЛЬНОСТИ НА ПРИМЕРЕ ПРЕДПРИЯТИЙ МАЛОГО И СРЕДНЕГО БИЗНЕСА

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Проведен эмпирический анализ влияния предпринимательской деятельности на восстановление и рост экономики Нигерии на примере малого и среднего бизнеса. В качестве материалов для исследования были выбраны данные по двум городам в каждой из шести геополитических зон, а также четыре сектора экономики. Общее количество выбранных четырех секторов составляет совокупность исследования, а выборка составлена на основе семьсот двадцати примеров. Использованы следующие методики: обычный метод наименьших квадратов, данные временных рядов, тест Филлипса – Перрона для проверки стационарности переменных, тест совместной интеграции Йохансена для установления совместной интеграции переменных, модель неограниченной коррекции ошибок для проверки скорости изменения равновесия. Сделаны выводы о том, что предпринимательская деятельность, восстановление и рост экономики интегрированы в порядке $(1(0))$, что установлено объяснительной силой результатов: значение R составляет 0,274, а значение R^2 скорректировано до 0,075. Результат свидетельствует о недостаточном положительном влиянии предпринимательской деятельности на восстановление и рост экономики. Исследование доказывает, что, несмотря на нефтяной кризис, предпринимательство оказывает положительное влияние на экономику Нигерии, поэтому правительство должно поддерживать предпринимательство и содействовать его развитию.

Ключевые слова: производительность, экспорт, самозанятость, инновации, накопление капитала, распространение знаний, восстановление и рост экономики.

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