

WHETHER SELF-EMPLOYMENT AFFECTS UNEMPLOYMENT: A NEW EVIDENCE FROM NIGERIA

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ABSTRACT

This study focused on whether self-employment reduces unemployment in Nigeria using the most recent and high frequency time series dataset for the period 1991Q1 to 2018Q4. It was revealed from a pre diagnostic test through Phillip-Perron unit root that all the variables are stationary after first difference. Johansen and Julius (1990) and Engle and Granger (1987) co-integration analysis validated the dynamic long run relationship running from self-employment, real gross domestic product and trade openness to unemployment. Empirical results from ordinary least square confirmed that, there exist positive link between self-employment and unemployment though statistically insignificant. By inference, any rise or fall in unemployment would lead to an increase or fall in the number of persons joining the self-employed sector. Since this study justified the plausible role entrepreneurial activity play in reducing unemployment, it however submitted that Nigeria should continue to promote self-employment by granting the sector soft loans as well as making the environment conducive for their business to thrive.

Keywords: unemployment rate; self-employment, Trade openness

JEL CODE: J64, O17, C32

1. INTRODUCTION

The importunately improved knowledge and understanding of whether self-employment affects unemployment set the striking bases for more effective targeting of economic policy and control measures. The paucity of reliable statistical and systematic evidence on self-employment posed major constraints to policy making and economic management in Nigeria over the years. However, there has been growing interest in “small business” as a source of economic growth in industrialized countries as well as interest in self-employment as a source of growth in less developed countries (Akiri, Odike and Apochi, 2016). Self-employment is viewed by some as a vehicle to exit from poverty; and a viable alternative to unemployment for displaced workers. On

the other hand, Unemployment occurs when people are without paid work and have actively sought for job within the past four weeks (International Labour Organization, ILO, 2007). Also, it is a situation where people who are willing and capable of working could not find suitable paid employment. By implication, this definition described unemployment as a situation in which people who are willing to work at the prevailing wage rate are unable to find jobs (Bello, 2003). In Africa and particularly Nigeria, it is a daunting challenge in the labour market. It did not only mar such economies from achieving economic progress and aspirations but tied them as nations with jobless youths.

The study intends to investigate whether self-employment affects unemployment in Nigeria. This can be justified by bringing to fore its decisive target of resolving the ambiguities initiated in the link between self-employment and unemployment by introducing simple multiple regression analysis since there is no any empirical evidence relating unemployment rates and self-employment found in Nigeria, hence this work will set the pace using updated and high frequency time series dataset for the period 1991Q1 – 2018Q4 with additional variable on trade openness which is the sum of exports and imports of goods and services measured as a share of gross domestic product.

2. THEORETICAL REVIEW

Schumpeterian Theory:

This approach was developed by David Alois Schumpeter in 1934. The theory identified innovation as a function peculiar to all kinds of entrepreneurs, suggesting that the entrepreneur under-takes new combinations of the existing factors of production by introduction of a new good; the use of a new method of production; the opening of a new market; the exploitation of a new source of raw material supply and the reorganization of any industry. In the Schumpeterian general theory, economic development occurs through a dynamic process of boom and depression (Business cycle) and therefore, economic development in the Schumpeterian model is an uneven and disharmonious process that ebbs and flows like the waves at the sea side. The determinants of entrepreneurship in the model according to Higgins (1978) can be symbolically summarized as follows:

$$E = E(Rx) \dots\dots\dots (1)$$

$$X = x\left(\frac{R}{w}\right) \dots\dots\dots (2)$$

Where, E = supply of entrepreneurship R = profit (return on investment) x = social climate w = wage level R/w = Ratio of profit to wages. Therefore the supply of entrepreneurship by this equation is a function of the rate of profit and the “social climate”. Which means a vibrant

profitable economy encourages entrepreneurship while a depressed economy discourages entrepreneurship. Mbaegbu (2008) justified the social climate to comprise of the educational system, the social values, the class structure, the nature and extent of prestige and other rewards that accompany business success, and the attitude of society towards business success. By this theory a pragmatic philosophy of education that is qualitative and purposeful, that encourages skills acquisition; self-reliance and self-employment will increase the pool of entrepreneurship.

Creative Imitation Theory

In consistent to Druker (1985), entrepreneurs in Less Developed Countries are not truly innovators but creative imitators. They seldom produce brand new products but rather imitate the products and production processes invented mostly by the developed countries. This takes place when the imitators better understand how an innovation can be applied, used or sold in their particular market places, their own countries and neighbours. According to Mbaegbu (2008), this type of entrepreneurial prowess in Nigeria is peculiar in the South East amidst Ibos. These brands of entrepreneurs imitate and adapt products of innovation. Most often, what underlines entrepreneurship is change. Hence, the entrepreneur always rummages around for change, reacts to it and make timely use of its.

The economic survival theory

It is underlined by this theory that, self-employment is common to people that are affected unfavorably by political upheavals or people mistreated by chauvinism or oppressed by marginalization. Hence, it is feasible for people who have lost their hard-earned jobs to corporate downsizing to become entrepreneurs. By this instance, they emerged as entrepreneurs not out of choice but by sheer will to survive. To Mbaegbu (2008), people unswervingly direct their creative will to entrepreneurship mostly after the initial period of inertia and dejection. This results to what Iguisi, (2008) term as the “movement from poverty to wealth”.

Entrepreneurship alertness theory

The discovery of unrecognized but available opportunities was the major concern of Kirzner (1984) of entrepreneurial alertness. The essence of alertness theory is to unravel the qualities someone is endowed with in recognizing something salient others could not. That is, there is an opportunity waiting to be exploited. It is generally believed that, this alertness is a trait successful self-employed and successful entrepreneurs possesses. The use of entrepreneurial development to generate employment, economically empower the people, reduce poverty and propel economic growth was postulated by Friedman (1953) based on an earlier General Theory of Employment by Keynes in 1938. The economic policy direction enshrined in the Nigeria Economic Empowerment and Development Strategy (NEEDS) I & II has entrepreneurship

development as its focal point. Entrepreneurship development aims at equipping the youth and school leavers especially the graduates of tertiary institutions with skills to create jobs for themselves and other people instead of hunting for non-existing jobs from the public sector. The spread of unemployment, underemployment, high competition in the labour market and the frustration of job seekers cannot be overemphasized (Kelechi, 2012). Thus, the clarion needs for re-orientation of undergraduates students from being job seekers to job-creators become expedient.

3. EMPIRICAL REVIEW

In a recent study conducted by **Ferda and Sema (2015)**, the impact of unemployment on self-employment was tested using empirical results from 28 OECD countries. The estimation results from auto regressive distributed lag (ARDL) bound test approach to co-integration for the period 1986 to 2013 attested that, the first hypothesis holds true in case of Belgium, Canada, Sweden and United Kingdom whereas the second hypothesis is valid in the case of Greece, Luxembourg and Portugal. The empirical results for the remaining OECD countries did not reveal any long-run relationship between the variables in question.

The dynamic relationship between self-employment and unemployment rates in 23 OECD countries between 1974 and 2002 was investigated by **Thurik, Carree, Vanstel and Audretsch (2008)**. The empirical results affirmed the existence of two distinct relationships between unemployment and self-employment termed as the “*refugee and entrepreneurial effects*”. From the results, high rates of self-employment indicate increased entrepreneurial activity thereby reducing unemployment in the subsequent periods (entrepreneurial effects). Thus, the entrepreneurial effects are stronger than the refugee effects. In investigating the dynamic relationship between self-employment and unemployment by **Audretsch et al (2001)**, two distinct relationships were confirmed. However, the study shows that “entrepreneurial” effect is stronger than “refugee effect”. They found a significant relationship with empirical support for the entrepreneurial effect both in higher and lower income regions. With reference to refugee effect, the evidence is mixed. The empirical support is only found in lower income regions. The study further revealed that, inconsistency in its conclusion is due to the lack of incentives for unemployed individuals in these regions to find paid employment.

Gadallah (2008) on the other hand examines the behavior of self-employment during the period 1980-2006. The empirical results from co-integration and error correction approaches reveal that, there exist long-run relationship among self-employment rate, real gross domestic product and unemployment rate in Egypt. On a policy brief introduced by The **OECD and European (2012)** on youth entrepreneurship, it is mentioned that youth entrepreneurship is unlikely to be a panacea for solving the problem of youth unemployment, although it can be a part of the

response. It is also pointed out that in order to maximize effectiveness and efficiency, policy should target young people with the best chance of success, providing those with the sufficient support that allow them to start businesses.

In the developed countries, **Parker (2004)** assessed a sharp decline in manufacturing industry and an expanding service sector that is often dominated by small enterprises; self-employment is expected to fall with the share of the manufacturing sector. On the opposite, in developing countries, where the manufacturing sector is still dominated by small enterprises, self-employment is expected to increase with the share of manufacturing in GDP. Entrepreneurial activity in terms of small enterprises is more likely to happen in urban areas in more developed countries. Based on firm data from 15 regions in East and West Germany, **Pfeiffer and Reize (2000)** compared firm survival and employment growth of start-ups by unemployed in their simultaneous models. They argue that with the emergence of new firms there will be greater opportunities for employment. Consequently, increase in entrepreneurial activities will lead to decrease in unemployment. Unexpectedly, the study results indicate that while firm survival is negatively affected by foundation from unemployment, no influence on employment growth is evident.

Fairlie (2011) indicates that higher local unemployment rates are found to increase the probability that individuals start businesses, assuring the positive relationship between unemployment and entrepreneurship. The results attest that business ownership may provide an important alternative to unemployment for many individuals facing poor labour market conditions.

In addition, **Blanchflower, Oswald and Stutzer (2001)** find that there are many human resources who would prefer to be self-employed with respect to those that are already self-employed and they claim that it is probably lack of capital that holds back potential entrepreneurs. It is therefore not clear what the a priori expectations on the relationship between the level of development of credit markets and the self-employment rate should be. Empirical evidence is also very miscellaneous on self-employment earnings, and therefore on the expected relationship between self-employment and its opportunity cost. Thus, the miscellaneous empirical results appear to confirm such 'dual' interpretation. Several studies contrast with the traditional view of self-employment as a temporary low productivity occupation for human resources who are searching for scarce, well-paid wage jobs.

Arguably also is the relationship between self-employment and trade openness which changes from country to country and industry to industry. The fiscal system can also influence self-employment choices, as observed by the **OECD (1992)** for developed countries. Cross-country analysis in OECD countries suggests that taxation and social security arrangements have an

important impact on the development of self-employment. In general, self-employment offers greater opportunities for a reduction in the burden of taxation by means of tax evasion. In fact, the OECD countries where the occurrence of self-employment is particularly high are often those where taxes are higher and job security legislation is more restrictive. In developing countries,

Yamada (1996) argues that if economic development enhances the government's capacity to collect taxes, then the size of the self-employment sector is likely to be reduced. Within the literature, the determinants of self-employment have been generally defined as 'push' and 'pull' factors. High levels of enterprise downsizing and outsourcing, privatization together with government programs to promote self-employments especially the New Enterprise Incentive Scheme which provides training and income support to the unemployed wishing to be self-employed formed some of the 'push' factors. Recognized 'pull' factors might include increasing cleverness and accessibility of computer technology, liberalization and new opportunities for entrepreneurship, attractive taxation arrangements.

Remeikiene and Startiene (2009) analyzed whether does the relationship between unemployment and entrepreneurship exists using historical data collected between the years 1998-2007 in Lithuania. According to their empirical results, both "push" and "pull" effects are recognized, where unemployment encourages taking business and business reduces unemployment. Although the level of entrepreneurship is more affected by economic factors such as GDP, inflation rate, exports and earnings, cultural factors such as differences in labour market, gender gap, regional characteristics and religion are justified.

4. METHODOLOGY

This study intends to unveil the dynamic interaction between the rates of self-employment and unemployment in Nigeria.

Model specification

To affirm how self-employment does reduce unemployment in Nigeria, its connection can be established as thus:

$$Unemr = f(Slfemp, Rgdp, Top) \text{-----} (3)$$

It can be streamlined in an estimable econometric equation to capture the dynamic link between self-employment and unemployment as:

$$Unemr_t = \theta + \varpi LSlfemp_t + \phi LRdgp_t + \beta LTop_t + \mu_t \text{-----} (4)$$

Where:

Unemr_t: Unemployment rate at time t

Slfemp_t : Self-employment at time t

Rgdp_t : Real Gross Domestic Product at time t

Top_t : Trade openness at time

L : denotes the natural log operator while

μ : is a stochastic error term.

According to economic principles and as reviewed from empirical studies, the explanatory variable (self-employment) is expected to have positive impact on unemployment in Nigeria as $\varpi > 0$ whereas trade openness and real gross domestic product are negatively related to unemployment that is $\phi, \beta < 0$. By implication, the higher the real output gotten from a country's exposure to external business and real output, the lesser the number of unemployment levels in the country. Also, when a significant degree of trade openness is recorded in a country, the rate of economic growth will increase since trade openness facilitates greater integration into the global economy capable of promoting growth through better channels of resource allocation, greater competition, innovation, transfer of technology and access to foreign savings will invariably reduce the soaring unemployment rate in the Country by creating job openings.

The residuals from equation 4 are assumed to be normally distributed and white noise. The co-integrating model can simply be specified as follows:

$$\Delta\mu_t = \delta \mu_{t-1} + \gamma_i \sum_{i=1}^k \Delta\mu_{t-1} + \varepsilon_t \text{----- (5)}$$

Where Δ is the first difference operator, ε_t as errors generated from co-integrating regression, μ_{t-1} as one period lag of the co-integrating regression error term, k described as the amount of lag used, ε_t is assumed to be normally distributed and white noise. The adopted Error-Correction Model (ECM) takes the following expression:

$$Unemr_t = \alpha + \beta_1 LSlfemp_t + \beta_2 LRgdp_t + \beta_3 LTop_t + \Omega ECM_{t-1} + \varepsilon_t \text{----- (6)}$$

Where ECM_{t-1} described one period lag of the residual term from the long-run relationship should there be co-integration; Ω is the speed at which shocks in the short-run can be absorbed in the long run ; $\beta =_{1-3}$ apportions the parameters of the independent variables while ε is presumed to be normally distributed and white noise.

Estimation Technique

Ordinary least square (OLS) technique was used in getting the numerical estimates of the coefficients in the equation. It was chosen because of its properties of being best linear unbiased estimator (BLUE). The time series properties of all the variables under inquiry have been assessed using Phillips-Perron (1988) to affirm the validity of the stationarity level in the data sets. The PP-test involves running the following regression as specified thus:

$$\Delta y_i = \alpha_1 + \alpha_2 t + \phi y_{i,t-1} + \sum_{i=1}^m \sigma \Delta y_{i,t-1} + \varepsilon_i \dots\dots\dots (7)$$

Where i represent the relevant variables under investigation, m is the maximum lag length of the dependent variable and ε is the white noise error term.

The study also employed Johansen (1988) co-integration test technique and Johansen and Juselius (1990) to ascertain whether the variables are co-integrated that is, if there is long-run equilibrium relationship among the variables. Also, an error correction mechanism was also employed using the error correction model (ECM). The coefficient of the error term must be negative and significant to ensure convergence of the long-run dynamics towards equilibrium. The value of ECM fluctuates between -1 and 0. When the coefficient is -1, there is a sudden and complete convergence while 0 implies no meeting after experiencing the shock.

5. DEFINITION OF VARIABLES AND DATA SOURCE

Owing to empirical analysis of the dynamic tie between self-employment and unemployment in Nigeria, the study employed annual dataset for the period 1991Q1 to 2018Q4 with 112 observations drawn from Central Bank of Nigeria (CBN, 2018) statistical bulletins and statement of accounts and World Bank Development indicators (WDI, 2018) with all the variables expressed in real terms. However, Unemployment rate will be used as the percentage of total labour force extracted from World Bank Development indicators (WDI, 2018). Self-employment proxied by the percentage of the manufacturing labour force that are working for themselves drawn from World Bank Development indicators (WDI, 2018); Economic performance measured by real gross domestic product (Rgdp) gotten from Central Bank of Nigeria (CBN, 2018) Statistical bulletin and statement of accounts; and Trade openness which is the sum of exports and imports of goods and services measured as a share of gross domestic product is extracted from World Bank national accounts data, and OECD National Accounts data files (2018).

6. RESULTS AND DISCUSSION

Unit root test

The pre-test analysis of the data began using Philips-Perron unit root tests with its results as shown in table 1 below:

Table 1: Summary of Philips-Perron unit root test results

Variables	Crit val @ 5%	PP t-stat	Prob val	Order of integ.
LUNEMR	-2.8892	-10.1905	0.0000	I(1)
LSLFEMP	-2.8892	-10.1966	0.0000	I(1)
LRGDP	-2.8892	-12.2029	0.0000	I(1)
LTOP	-2.8892	-10.9642	0.0000	I(1)

Source: Own compilation from Eviews 10, 2019

The Philips-Perron stationarity test of the variables from equation 4 affirms that all the variables are stationary at first difference; thus they are integrated of order one or all the variables are I(1) process at 5% level of significance. Since all variables have the same order of integration with unemployment (LUNEMP) at 5% level of significance, the need to conduct co-integration test turned out to be crucial.

Analysis of Co-integration between Unemployment and Self-employment

Firstly, the Johansen co-integration test was conducted in line with Johansen (1988) and Johansen and Juselius (1990). This method detects the number of co-integrating vectors in non-stationary time series as demonstrated in tables 2a and 2b below:

Table 2a: Unrestricted co-integration rank test (trace)

No. of cointegration equation	Eigen Val	Trace stat	Crit. Val @ 5%	Prob. Val
None	0.2414	59.9074	47.8561	0.0025
Atmost 1	0.2075	30.8971	29.7971	0.0372
At most 2	0.0508	6.4784	15.4947	0.6389
At most 3	0.0095	1.0038	3.8415	0.3164

Source: Own compilation from Eviews 10, 2019.

Table 2b: Unrestricted co-integration rank test (maximum Eigenvalue)

No. of Co-integration equation	Eigenvalue	Max-Eigen statistic	Crit.Val @ 5%	Prob. Val
None	0.2414	29.0102	27.5843	0.0326
At most 1	0.2075	24.4187	21.1316	0.0166
At most 2	0.0508	5.4746	14.2646	0.6811
At most 3	0.0095	1.0038	3.8415	0.3164

Source: Own computation from Eviews 10, 2019.

From the trace statistics and maximum eigen-values, there are two co-integrating equations at 5% level of significance. By simplification, there is a long-run relationship running from self-employment to unemployment.

Estimated Long-run coefficients of the Relationship

It became expedient to appraise the long-run relationships among the variables using equation 4 since co-integration ties were confirmed among the variables:

Table 3: Long-run coefficient estimates from equation 4

Dependent variable: Unemployment rate (LUNEMR)

Variable	Coefficient	t-statistic	Prob. Value
C	-8.3201	-1.2942	0.01984
LSLFEMP	0.7250	1.9630	0.0523
LRGDP	-0.2904	-1.8289	0.0703
LTOP	-0.6255	-6.3329	0.0000

Source: Computed from Eviews 10, 2019

From table 4 above, it is sparingly affirmed that self-employment proxied by the percentage of the manufacturing labour force working for themselves and unemployment exhibits a positive but insignificant association. This implies that, any 1 percent increase in unemployment could result to 73 percent rise in self-employment. By inference, rise in unemployment would lead to an increase in the number of persons joining the informal sector. This result supported the findings of Gadallah (2008); Evans and Leighton (1990). The coefficient of economic growth proxied by real gross domestic product is negative and statistically insignificant. This means that, any 1 percent rise or fall in real output could result to 29.04 percent fall or rise in unemployment. This result justified what is found in apriori though weak in influence due to poor production and over dependence on crude oil as a major source of Nigeria’s foreign

exchanges. Also, trade openness surrogated by the sum of exports and imports of goods and services measured as a share of gross domestic product is in line with economic postulate and is statistically significant. This means that, holding other variables constant, any 1 percent increase or decrease in output from international transactions could leads to 62.55 percent decrease or increase in unemployment. The significant impact could be due to gradual integration of Nigeria into the global economy capable of promoting growth through better channels of resource allocation, greater competition, and innovation, transfer of technology and access to foreign savings which will invariably reduce the soaring unemployment rate.

Since all the variables are co-integrated after the first difference, the need to restore any possible divergence liable of swaying the model in its drive to equilibrium becomes indispensable.

Short run Error correction model drivable from equation 6

Dependent variable: Unemployment rate (LUNEMR)

Variable	Coefficient	t-statistic	Prob. Value
C	-4.0458	-1.8784	0.0633
LSLFEMP	3.3986	2.9635	0.0038
D(LSLFEMP(-1))	0.3404	0.1916	0.8485
LRGDP	-0.0789	-2.7279	0.0076
D(LRGDP(-1))	-0.0692	-0.2467	0.8057
LTOP	-0.3127	-10.3134	0.0000
D(LTOP(-1))	0.0416	0.5934	0.5543
ECM(-1)	-0.7843	-2.4176	0.0000

R² = 0.86156

Adjusted R² = 0.84032

F-statistics = 39.2891

Prob. (F-statistic) = 0.0000

Durbin-Watson = 1.919380

Source: Own computation from Eviews 10, 2019.

It is crystal clear that, the coefficient estimate for the error correction term (-0.7843) is negative and statistically remarkable (-2.4176) revealing that, any modification in an attempt to reduce unemployment in Nigeria will be restored at a speed of 78 percent the next year The statistical significance of the error correction model reaffirms the existence of a long-run association running from self-employment, real gross domestic product and trade openness to unemployment rate in Nigeria.

The coefficient of determination R² (0.86156) reveals the collective influence of the explanatory variables in stimulating the fluctuation in the dependent variable (unemployment rate).

Therefore, changes in the unemployment rate are explained by 86 percent changes in the explanatory variables. The F-statistic (39.2891) and its probability (0.0000) are significant and robust in explaining the reliability of the model. Also, the Durbin-Watson statistic (1.919380) though weak but greater than the coefficient of determination R^2 (0.86156). By implication, the decided model is free from serial correlation.

7. CONCLUSION

The connection between self-employment and unemployment in Nigeria was investigated using the high frequency and the most recent time-series data for the period 1991Q1 to 2018Q4. In the study, fresh evidence on the relationship running from self-employment (SEM), real gross domestic product (RGDP) and trade openness (OPN) to unemployment rate (UNEMP) was offered for Nigeria. Empirical analysis from Ordinary least square began by pre-testing the data via Philips-Perron unit root test and the results disclosed that all the variables are stationary at first difference. Accordingly, all the variables were integrated of order one or all the variables are I(1) process at 5% level of significances. It was confirmed by Johansen and Julius approaches that, self-employment has long-run and dynamic association with unemployment rate giving rise to a valid error correction model ECM). In the estimated ECM, self-employment, real gross domestic product and trade openness appeared to be the most veritable determinants of unemployment in Nigeria. These results are quite consistent with what has been posited as well as what other empirical studies reported. In addition, the estimated coefficient of the error correction term (-0.7843) is negative and statistically significant (-2.4176) implying that, any modification in an attempt to reduce unemployment in Nigeria will be restored at a speed of 78 percent. The negative and statistically significant ECM term is a clear indication that, the response is useful in restoring any external imbalances. Since this study justified the plausible role entrepreneurial activity played in reducing unemployment, it however submitted that Nigeria should continue to promote self-employment by granting the sector soft loans as well as making the environment conducive for their business to proliferate. Also, the results of this paper further undeniably recommend that public policy should spotlight tenaciously on how to generate jobs to reduce unemployment most especially more innovative and high growth entrepreneurship than stirring up the unemployed to self-employment.

REFERENCES

Akiri, S.E; Odike, A.I & Apochi, M.P. (2016). Self employment as strategy for poverty reduction: Empirical evidence from Benue state. *International Journal of Economics and Business management*, Vol. 2,20-41.

- Audretsch, David. B. & Thurik, A. R. (2001). "What is New about the New Economy: Sources of Growth in the Managed and Entrepreneurial Economies," *Industrial and Corporate Change* 10(1), 267-315.
- Bello, T. (2003). Attacking unemployment hurdles in the fragile economies of the Sub-Saharan Africa: the experience of Nigeria. A paper presented at the –Economics for the Future-Conference; on the Occasion of the Celebration of 100 years of Cambridge Economics; Cambridge, United Kingdom September.
- Blanchflower, D., Oswald, A. & Stutzer, A. (2001). Latent Entrepreneurship across Nations', *European Economic Review*, 45, 680-691.
- Central Bank of Nigeria (2017) .Annual Report and Statement of Accounts for the year ended 31st December. Abuja: Central Bank of Nigeria.
- Drucker, P.F. (1985). Innovation and Entrepreneurship; Practices and Principles, New York: Harper & Row, Publishers.220-225.
- Engle, R. F. & Granger, C. W. J. (1987). 'Cointegration and Error-correction: Representation, Estimation, and Testing', *Econometrica*, 55, 251–76.
- Fairlie, R. (2011). Entrepreneurship, economic conditions and the great recession. *IZA Discussion Paper*, 5725, 1-45.
- Ferda, H. & Sema (2015). Testing the impact of unemployment on self-employment: Empirical evidence from OECD countries. Paper presented at World conference on Technology, Innovation and Entrepreneurship, 28 – 30 May 2015, Istanbul.
- Gadallah, Y. M. (2008). Self-employment and unemployment in Egypt: A Co-integration Approach, 1- 20.
- Higgins B (1978) Economic Development, Problems, Principles & Policies New York: Norton.
- Iguisi, O. (2008). Cultures, Poverty Alleviation and Small Business Development in Africa: A Research Paradigm Shift, Proceedings of the First Chike Okoli International Conference on Entrepreneurship, Nnamdi Azikiwe University, Awka, Nigeria.
- ILO. (2007). *The Promotion of Self-employment*, International Labour Office, Geneva.
- Johansen, S. & Juselius, K. (1990). "Maximum Likelihood Estimation and Inference on Cointegration-with Application to the Demand for Money", *Oxford Bulletin of Economics and Statistics*, 52(2):169-210.

Johansen, S. (1988), "Statistical Analysis of Cointegration Vectors", *Journal of Economic Dynamics and Control*, 12(1):231-254.

Kelechi, E. (2012). Experts identify entrepreneurial education as key to curb unemployment
Published in Business day Newspaper of 12th May.

Kirzner, I.M (1984). The Role of the Entrepreneur in the Economic Development System:
Available from <http://www.CIS.org.au/Events/JBL/jol84>. Accessed 13/9/2018

Mbaegbu, D.G.E. (2008). Entrepreneurship Development Theories: An overview and Critique.
Proceedings of the First Chike Okoli International Conference on Entrepreneurship, titled
"Entrepreneurship & Africa's Quest for Development Published by Chike Okoli Centre
for entrepreneurial Studies, Nnamdi Azikwe University, Awka Nigeria.

OECD & European Union. (2012). A Policy Brief on Youth Entrepreneurship-Entrepreneurial
Activities in Europe, Publications Office of the European Union, Luxembourg.

OECD. (1992). *Employment Outlook*, Paris.

Parker, S. C., (2004). *The Economics of Self-Employment and Entrepreneurship*, Cambridge,
UK: Cambridge University Press.

Pfeiffer, F. & Reize, F., 2000, Business Start-ups by the Unemployed - an Econometric
Analysis Based on Firm Data, *Labour Economics* 7 (5), 629-663.

Phillips, P. C. B. & Perron, P. (1988), "Testing for a Unit Root in Time Series Regression",
Biometrika, 75(2): 335-46.

Quadrini, V. (2000). 'Entrepreneurship, Saving, and Social Mobility', *Review of Economic
Dynamics*, 3, 1-40.

Remeikience, R. & Startiene, G. (2009). "Does the interaction between entrepreneurship and
Unemployment exist?", *Economics & Management*, 14, 903-911.

Thurik, A. R., Carree M.A., Stel, André van & Audretsch, D. B. (2008). "Does Self-employment
Reduce Unemployment?" *Journal of Business Venturing*, 23, 673-686.

Thurik, A. R., Carree, M.A., Stel, André van & Audretsch, D.B. (2008). "Does Self-employment
Reduce Unemployment?" *Journal of Business Venturing*, 23, 673-686.

WDI. (2018). *World Bank Development Indicators*, www.wdi.worldbank.org

[www.aercafrica.org/documents/china-africa relations/Nigeria.pdf](http://www.aercafrica.org/documents/china-africa%20relations/Nigeria.pdf)

Yamada, G. (1996). 'Urban Informal Employment and Self-employment in Developing Countries: Theory and Evidence', *Economic Development and Cultural Change*, 44, 289-314.