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THE ROLE OF SMALL MEDIUM SCALE ENTERPRISES IN TACKLING UNEMPLOYMENT IN NIGERIA

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Abstract

This study evaluated the role of SMEs in tackling unemployment in Nigeria with particular emphasis on the sustainability of the employment generated by SMEs. Annual time-series data were sourced from World Development Indicators (2019) for the period between 1991 and 2018. The study employed the Dynamic Ordinary Least Square (DOLS), Fully Modified Ordinary Least Square (FMOLS) and Canonical Cointegrating Regression (CCR) methods to achieve the objective of this study. The results confirmed the existence of a long-run relationship among the dependent and explanatory variables of the study. Further, the DOLS, FMOLS and CCR coefficients of employment generated by SMEs which is approximately 0.5%, 0.9% and 0.9% respectively showed that employment generated in the SMEs subsector has a significant positive impact on unemployment in Nigeria indicating that the preponderance of SMEs has not really reduced unemployment in Nigeria as a result of the excess supply of labour in the economy. Hence, this study concluded that the employment generated by SMEs in Nigeria is not enough to permanently solve the unemployment conundrum in Nigeria. Based on the findings of this study, this study recommended that the Nigerian government formulate and implement population control policies as well as policies geared towards providing a conducive business environment where SMEs can thrive and also provide adequate infrastructure to ensure an increase in the ease of doing business index in Nigeria.

Keywords: SMEs, employment, CCR, DOLS, FMOLS, Nigeria
JEL Code: C22, D24, J21, L81

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1.0 Introduction

Full employment is one of the primary macroeconomic goals of every government. However, many countries, especially developing countries, find it difficult to achieve full employment which could be attributed to either the trade-off between achieving full employment and other macroeconomic goals or the structural failure of the economy's system or external vicissitude (Raifu, 2019). Consequently, it becomes an uphill task for many countries to provide decent jobs to their teeming labour force despite recording remarkable economic growth (Rad, 2011). More so, growth theories have shown that labour force growth has a positive impact on aggregate output and have implications for unemployment.

Unemployment is a growing epidemic in Nigeria especially, among the youths. This is because the white-collar jobs are fast eroding as the financial institutions and manufacturing companies, which used to be the juicy sectors people sought after, are folding up or merging as a result of the bank consolidation crisis as well as the intermittent power supply, insecurity, inconsistency in government policies, poor or dilapidated infrastructures and high interest rate, among others. These increase the costs of production, raise the price of products, undermine the profit-making potential of firms and result in layoff of workers, thereby increasing unemployment (Ogunjimi and Amune, 2019).

The high crime rate, terrorism, pipeline vandalism, hooliganism, drug and human trafficking and prostitution, among other social ills, can be attributed to the high rate of unemployment in the country. Realising the dangers high unemployment rate pose to the economy, the government established institutions and agencies such as Small and Medium Industry Equity Investment Scheme (SMEIS), Small and Medium Scale Enterprises Development Agency (SMEDAN), National Directorate of Employment (NDE), National Economic Reconstruction Fund (NERFUND), and microfinance banks, among others. Also, several programmes and policies have been formulated overtime to ensure that employment is generated. Such policies and programmes include Youth Empowerment Scheme (YES) aimed at empowering youths socially and economically; National Poverty Alleviation Programme (NAPEP) aimed at cushioning the effect of severe economic situation on the unemployed; and N-Power as a panacea to graduate unemployment. More so, the government recognised the important role of the SMEs subsector in reducing unemployment such that in the recently launched Economic Recovery and Growth Plan (ERGP) of the federal government, one of the five goals of the development plan is to drive industrialization through investment in SMEs. Nonetheless, these government's efforts have not achieved obvious success as unemployment still remains a bane of the economy.

However, the reasons for the high rate of unemployment despite the government's frantic efforts at combating this malady are not far-fetched. First, the Nigerian economy is a mono-economy which totally rely on the production and export of crude oil, a sector which is capital intensive. Second, the services

sector which is fast gaining relevance in the economy through its increasing contribution to total national output is also capital-intensive (Ogunjimi, 2020). Third, the high population growth rate resulting in a teeming labour force puts increasing pressure on the few available resources in the country including employment opportunities. Fourth, the real sectors of the economy are neglected and industrialization, which could have absorbed a high amount of labour, is at a low ebb (Ogunjimi, 2019).

At the moment, it is apparent that there is an excess supply of labour to the Nigerian labour market and the short-term feasible panacea for youth unemployment is the promotion of small and medium scale enterprises. SMEs has been identified as a sub-sector that can help reduce unemployment to the barest minimum and create jobs for the ever-increasing labour force. Peterise (2003) stated that over 60 per cent of Nigeria's working population are employed in both formal and informal SMEs sub-sector. Further, Gbam (2017) averred that about 80 per cent of the daily necessities are elementary materials requiring little or no automation to produce, most of which comes from SMEs.

The Nigerian tertiary institutions churn out hundreds of thousand graduate per annum while the labour market does not have the capacity to absorb them. As a result, the National University Commission (NUC) incorporated entrepreneurship, where students are equipped with skills required to make them be their own bosses and an employer of labour, into the curriculum of tertiary institutions in a bid to make graduate self-employed and self-reliant. This stemmed from the belief that a self-employed person will create job and be an employer of labour rather than jostle for the limited available job opportunities in the country. As a result, many unemployed people have ventured into small scale businesses including livestock farming, fisheries, shoe production, laundry and dry-cleaning services, car-wash, soap-making, carpentry, tailoring, and barbering, among others. Accordingly, these small businesses are spread across different geographical areas of the country. The apparent reason for the preponderance of these SMEs is the continued efforts of government at all level and microfinance institutions to provide capital to SMEs owners (Gbam, 2017). It is against this background that this study aims to examine the SMEs-unemployment nexus in Nigeria with a view to proffering lasting solution to the unemployment conundrum in Nigeria.

This paper comprises five sections. Following this first section, the second section reviews relevant literature on the nexus between SMEs and unemployment. Section three presents the methodology and materials of this study. Section four presents the empirical findings, and the last section concludes and provides policy recommendations.

2.0 Literature Review

2.1 Theoretical Literature

Typical economic models and production functions show that the output level is proportional to the amount of input employed in the production process given the variety of returns to scale. Increasing returns to scale (IRS) occurs when the level of output increases by a greater proportion the level of input factors; decreasing returns to scale occurs when the firm experiences decreasing output level when input factors increases; and constant returns to scale is a situation when the level of output and input increase/decrease at the same rate during the production process. The employment of more input factors (such as labour) in the production process leads to a reduction in the unemployment rate. However, given that the natural rate of unemployment is believed to be positive, there will certainly be some level of unemployment in the country. Therefore, Arthur Okun unveiled the theoretical link between productivity growth and unemployment by explaining the differences between potential and actual level of output as well as the disparity between unemployment and its natural rate. He alluded, in the popular Okun's Law, that there is an inverse relationship between unemployment and real GNP growth (productivity growth) such that an increase in GNP growth by one percent will plummet unemployment rate by 0.3 percent (Okun, 1962). Several studies have been carried out to test the validity of the Okun's Law and variations were found in the responsiveness of unemployment to changes in productivity (Knotek, 2007; Ball, Jalles and Loungani, 2014). The disparity in the degree of responsiveness has been attributed to the frequency of data used and business cycles.

2.2 Empirical Literature

There are several studies in the literature that examine the performance of small and medium scale enterprises (SMEs) both in developing and developed countries. While some studies focused on the impact of SMEs on economic growth, some concentrated on evaluating the impact of SMEs on poverty reduction and others examined how they help reduce unemployment. The results vary and are mixed due to the structure and nature of the country or region under review as well as the estimation techniques adopted and other methodological issues. For instance, Benis (2014) used the augmented solo growth model to examine the nexus between SMEs and economic growth in Iran provinces and found than SMEs have a significant positive impact of the growth of the Iranian economy. More so, Chughtai (2014) found that SMEs have a strong correlation with output growth in the Pakistani economy. For the Albanian economy, Grisejda and Krisdela (2016) also found that SMEs drives economic growth. Similarly, Obi (2015), Bello, Jibir and Ahmed (2018) and Obi, Ibidunni, Tolulope, Olokundun, Amaihian, Borishade and Fred (2018) showed that small-scale enterprise is a veritable tool for stimulating economic growth in Nigeria. However, Eze and Okpala (2015) found that SMEs output has no significant effect on economic growth in Nigeria.

On the other hand, Afolabi (2013) evaluated how SMEs financing affects economic growth in Nigeria between 1980 and 2010 using the Ordinary Least

Square (OLS) method and he found SMEs output and commercial banks' credit to SMEs to be important drivers of economic growth in Nigeria. Similarly, Ilegbinosa and Jumbo (2015) who employed the ordinary least square, co-integration and error correction model technique found similar results showing that the financial capital available to SMEs stimulates the growth of the Nigerian economy. Moreover, Osemene, Salman and Kolawole (2017) evaluated how SMEs reduce poverty incidence in Kwara State by sampling 100 SMEs within the state. A probit regression model was employed and the results showed that the revenue of SMEs owners helps to reduce poverty incidence in Kwara state. Also, John-Akamelu and Muogbo (2018) assessed the role SMEs play in eradicating poverty in Nigeria. The 150 sampled respondents tested the hypotheses using chi-square and found that SMEs fosters employment creation and harness local resources utilization. More so, Oba and Onuoha (2013) made use of annual time series data from 2001 to 2011 and employed the ordinary least square method to examine the role SMEs play in reducing poverty in Nigeria between 2001 and 2011 by focusing on the employment channel through which SMEs lessen poverty. The results showed that SMEs' income is a driver of employment as well as a veritable tool for reducing poverty in Nigeria.

Oduntan (2014) opined that SMEs provides a platform for capacity building; capable of generating employment; promote economic growth; serve as facilitators of industrial dispersion and rural development; facilitate backward and forward linkages; aid technological/industrial development; and eradicate poverty. However, Wang (2016) argued using the World Bank Enterprise Survey covering data from 119 developing countries found that the key inhibitors of SMEs include: lack of access to finance, high tax rate, stiff competition, "poor or inadequate electricity supply and political instability. In addition, the study of Muritala, Awolaja and Bako (2012) in five selected local government areas in Ogun state, Nigeria, showed that the major hindrances to SMEs growth in Nigeria are: lack of or inadequate finance, corruption, poor infrastructure, lack of training and experience, low demand for goods and services and poor management.

On the nexus between SMEs output and employment, Gbam (2017) carried out a study on one hundred and thirty-three SMEs in Plateau State, Nigeria, using the chi-square technique. The results showed that SMEs is a vital tool for employment generation in the state. On the other hand, Otugo, Edoko and Ezeanolue (2018) assessed the impact of SMEs on economic growth in Nigeria using the ordinary least square method and found that SMEs have a positive impact on employment generation as well as economic growth in Nigeria. Similarly, Fiseha and Oyelana (2015) evaluated the role of SMEs play in fostering growth in developing countries. They found that SMEs play a crucial role in income generation, wealth creation, employment generation and poverty alleviation in South Africa. More so, in their study on the impact of entrepreneurship development on unemployment reduction in Anambra state, Asogwa and Dim (2014) sampled 150 youths and found that entrepreneurship training, traits and empowerment attenuates unemployment

rate. However, Opafunso and Adepoju (2014) sampled 150 SMEs owners in Ekiti state to know the effect SMEs have on the economic growth of the state. They employed a multistage sampling method and found that poverty nosedived, employment was generated, and the standard of living was improved with an increase in the output of SMEs in the state.

Employing the multiple regression model to estimate the effects of SMEs on employment creation in Nigeria, Edoko, Agbasi and Ezeanolue (2018) found SMEs to be a significant driver of income per capita and employment generation in Nigeria but also found that foreign aids, commercial bank credits to SMEs, human capital development and infrastructure do not generate employment in Nigeria. On the other hand, Okolie, Anidiobu and Ugwuanyi (2018) used annual time series data from 2001-2017 to examine how entrepreneurship financing affects unemployment rate in Nigeria employing the Vector autoregressive (VAR) estimation technique. The results showed that bank credit to SMEs, inflation rate and bank lending rate exert no significant influence on employment generation in Nigeria. They argued that the funds available to these SMEs are inadequate to improve the performance of the sub-sector let alone reduce the unemployment rate.

Using simple percentages and chi-square to estimates the responses of 120 SMEs owners on how SMEs have created jobs in Lagos state, Safiriyu and Njogo (2012) found a significant positive relationship between SMEs and job creation. More so, Ndiaye, Razak, Nagayev and Ng (2018) applied the General-to-Specific modelling on World Bank Enterprise Survey data for 266 economies to model five performance indicators based on 80 potential factors derived from firm characteristics, regulation taxes, technology, innovation, informality, finance, workforce, informality, infrastructure, and trade concerning micro, small and medium enterprises (MSMEs). The result showed that technology and innovation increase employment in medium enterprises, but not in small enterprises.

Summarily, it is apparent that the literature on the nexus between SMEs and employment in Nigeria is inconclusive as the results are mixed. In addition, most of the studies examining this nexus are done at the micro-level while studies on the overall economy are rare. More so, most of the studies employed the ordinary least square estimation technique without carrying out pre-estimation and post-estimation tests in order to ascertain the appropriateness of the model. Hence, this study will fill these gaps in the SMEs-employment nexus literature by examining the dynamic impact of SMEs on employment generation in Nigeria and how sustainable the employment generated through SMEs is especially in providing a lasting solution to the unemployment problems in Nigeria. This will be done by sourcing annual time-series data from World Development Indicators (WDI) and estimating the specified model using the Dynamic Ordinary Least Square (DOLS), Fully-Modified Ordinary Least Square (FMOLS) and Canonical Cointegrating Regression estimation techniques. The estimation techniques are employed since the objective of

this study is to examine the long-run effect of the employment generated by SMEs on unemployment rate in Nigeria.

3.0 Materials and Methods

3.1 Materials: Data Description and Sources

This study sourced for annual time-series data covering the period between 1991 and 2018 from World Development Indicators (2019). The choice of this small sample size is as a result of paucity of data for the key variables. This study comprises one dependent variable (unemployment rate) and five independent variables (self-employment, inflation rate, credits to private sector, real GDP per capita and supply of labour). Whereas unemployment rate (% of total labour force) is used to measure unemployment rate, self-employment (% of total employment) is used to proxy employment generated by SMEs, inflation (annual %) is used to measure inflation, GDP per capita is used as a proxy for economic growth, and domestic credits to private sector by financial institutions (% of GDP) is used as a proxy for credits to private sector.

3.2 Method of Analysis

This study employs the Dynamic Ordinary Least Square (DOLS), Fully-Modified Ordinary Least Square (FMOLS) and the Canonical Cointegrating Regression (CCR) estimation methods to evaluate the sustainability of the employment generated by SMEs in Nigeria. These methods are preferred because they help to achieve the main focus of this study which is to check the sustainability (long-run impact) of the employment generated by SMEs in Nigeria. These methods can be invoked only when the existence of a long-run relationship among the variables has been confirmed. Whereas the DOLS method was developed by Stock and Watson (1993), the FMOLS was developed by Phillips and Hansen (1990) and the CCR was developed by Park (1992). These estimation methods have areas of strength in relation to other estimators.

The DOLS method helps to construct asymptotically efficient estimators that excludes the cointegrating system feedback. It corrects for both small sample and simultaneity biases as well as solves the endogeneity problem by incorporating lags, leads and contemporaneous values into the estimation process. It also accounts for autocorrelation and residual non-normality as well as accommodates variables that are integrated of varying orders. On the other hand, the FMOLS utilizes semi-parametric correction to eliminate the problems of heteroscedasticity, autocorrelation, omitted variable bias and endogeneity (Phillips and Hansen, 1990). It generates consistent parameters even in small sample sizes and is suitable when the variables are stationary at first difference and cointegrated. Similarly, the CCR is an efficient single equation regression which can be used to test cointegrating vectors in a model where the variables are stationary at first difference. It is based on transforming variables in the cointegrating regression and eliminates the second-order bias of the OLS estimator. The difference between CCR and

FMOLS is that whereas CCR focuses on only data transformation, FMOLS concentrates on the transformation of both data and parameters (Park, 1992). These three estimation methods (DOLS, FMOLS and CCR) are adopted simultaneously in this study to facilitate robustness checks and ensure that the results are consistent irrespective of the method of analysis employed so as to provide evidence-based policy recommendations.

Following the specification of Okolie, Anidiobu and Ugwuanyi (2018) and incorporating other important variables in the model, the general equation depicting the relationship between the variables of interest in this study can be specified as:

$$UNEM = \lambda_1 + \lambda_2 SFEM_t + \lambda_3 INF_t + \lambda_4 CPS_t + \lambda_5 GDPPC_t + \lambda_6 LABF_t + \mu_t \quad (1)$$

Equation (1) shows that unemployment (UNEM) is a function of self-employment (SFEM), inflation rate (INF), credits to private sector (CPS), gross domestic product per capita (GDPPC) and labour force (LABF). To ease interpretation of the empirical results, all the variables are expressed in natural logarithm by including "L" before the variables (GDP per capita and supply of labour) except those already in percentage. Hence, equation (1) can be rewritten as:

$$UNEM = \lambda_1 + \lambda_2 SFEM_t + \lambda_3 INF_t + \lambda_4 CPS_t + \lambda_5 LGDPPC_t + \lambda_6 LLABF_t + \mu_t \quad (2)$$

A priori Expectation: $\lambda_1, \lambda_2, \lambda_3, \lambda_4, \lambda_5 < 0; \lambda_6 > 0$

Expectedly, the coefficient of self-employment, a proxy for the employment generated by SMEs which is the main variable of this study, should be negative indicating an inverse relationship with between self-employment and unemployment. Incorporating inflation rate into the model is predicated on the Phillips Curve which postulates an inverse relationship between unemployment and inflation hence, the expected sign for the parameter of inflation is negative. Further, the inclusion of credits to private sector in the equation is because financial capital is a major prerequisite to starting a business including SMEs; a negative relationship is expected to exist between unemployment and credits to private sector. More so, the supply of labour is an important determinant of unemployment rate hence, its inclusion in the model. In fact, excess supply of labour causes unemployment thus, it is expected that the coefficient of supply of labour (labour force) has a positive sign. Finally, Okun's law posits that economic growth and unemployment are inversely related hence, it is expected that the coefficient of GDP per capita will be negative.

4.0 Empirical Analysis

4.1 Preliminary Analysis

4.1.1 Descriptive Statistics

The synopsis of the descriptive statistics of the variables of this study is presented in Table 1. The Table depicts that the average share of self-employment in total employment is approximately 83 percent and its standard deviation is quite

low (1.45 percent). Unemployment rate ranges between 3.4 percent and 6.2 percent with a mean and standard deviation of 4.1 percent and 0.77 respectively. This suggests that unemployment rate is still single-digit in Nigeria. On the other hand, inflation fluctuated significantly during the period under review as evidenced by its minimum and maximum value of 5.4 percent and 72.8 percent respectively. The mean values of labour force, GDP per capita and the share of credit to private sector in total GDP stand at about 43 million people, $1873.57 and 15.8 percent respectively. More so, all the variables except share of credits to private sector in total GDP are positively skewed. Also, only unemployment rate and inflation rate are leptokurtic while the others are platykurtic. Similarly, as regards normality, the Jarque-Bera probability values show that only unemployment rate and inflation rate are not normally distributed.

Table 1: Descriptive Statistics of Variables

	UNEM	SFEM	INF	CPS	GDPPC	LABF
Mean	4.14	83.05	18.86	15.80	1873.57	43416376
Median	3.95	82.63	12.55	15.85	1824.59	42275761
Maximum	6.24	85.07	72.84	26.56	2563.90	60698492
Minimum	3.42	81.15	5.38	3.02	1348.68	30040723
Std. Dev.	0.77	1.45	17.33	6.69	454.93	9177805
Skewness	1.83	0.15	1.97	-0.18	0.21	0.29
Kurtosis	5.06	1.30	5.69	1.76	1.43	1.93
Jarque-Bera	20.53	3.47	26.59	1.93	3.10	1.73
Probability	0.0000	0.1766	0.0000	0.3804	0.2128	0.4206
Observations	28	28	28	28	28	28

Where UNEM = unemployment rate (%), SFEM = Self-Employment (% of total employment) INF = Inflation rate (%); CPS = Domestic credits provided by financial institutions (% of GDP); GDPPC = GDP per capita; and LABF = Labour Force (Supply of Labour).

Source: Authors' Computation from Eviews9

4.1.2 Unit Root Test

Unit root tests are conducted to ascertain the time-series properties of the variables so as to prevent spurious regression. The Augmented Dickey Fuller (ADF) and Phillip Perron (PP) unit root test approaches are employed in this study and the results are presented in Table 2. These methods test the null hypothesis of "The variable has a unit root" which is rejected when the probability value is less than 10 percent and accepted when it is more than 10 percent. Consequently, the results accept the null hypotheses only at first difference signifying that all the variables have a unit root and are not stationary until after the first difference. This satisfies the condition for adopting the Johansen cointegration test approach.

Table 2: Unit Root Test Results

	Augmented Dickey Fuller (ADF)			Phillip Perron (PP)		
Variables	**Level**					
	Constant	**Constant and Trend**	**None**	**Constant**	**Constant and Trend**	**None**
UNEM	-1.30	-1.76	0.67	-0.19	-0.73	1.18
SFEM	-0.96	-1.58	-1.73	-0.85	-1.22	-1.58
INF	-1.92	-2.64	-1.27	-2.08	-2.94	-1.27
CPS	-1.60	-1.82	-0.22	-1.78	-1.99	-0.30
LGDPPC	-0.67	-2.98	0.92	-0.34	-2.04	1.66
LLABF	2.18	0.75	3.18	1.55	0.11	60.06
First Difference						
	Constant	**Constant and Trend**	**None**	**Constant**	**Constant and Trend**	**None**
UNEM	-2.88***	-3.55***	-2.76*	-2.88***	-3.05	-2.76*
SFEM	-3.14**	-3.13	-2.53**	-3.15**	-3.14	-2.51**
INF	-5.03*	-4.93*	-5.11*	-5.21*	-5.45*	-5.19*
CPS	-4.35*	-4.33**	-4.46*	-4.35*	-4.32**	-4.46*
LGDPPC	-2.39	-2.34	-2.21**	-2.47	-2.43	-2.25**
LLABF	-2.87***	-3.30***	0.34	-2.75***	-3.22	0.70

Summary of Unit Root Test Results

	Augmented Dickey Fuller (ADF)			Phillip Perron (PP)		
	Level	**First Difference**	**I(d)**	**Level**	**First Difference**	**I(d)**
UNEM	-1.76b	-3.55***b	I(1)	-0.73b	-2.67*c	I(1)
SFEM	-1.73c	-3.14**a	I(1)	-1.58c	-3.15**a	I(1)
INF	-2.64b	-5.11*c	I(1)	-2.94b	-5.45*b	I(1)
CPS	-1.82b	-4.46*c	I(1)	-1.99b	-4.46*c	I(1)
LGDPPC	-2.98	-2.21**c	I(1)	-2.04b	-2.25*c	I(1)
LLABF	3.18c	-3.30***b	I(1)	60.06c	-2.75***a	I(1)

Note: 'a' denotes model with constant, 'b' is for model with constant and trend and 'c' is the model without constant and trend. I(0) and I(1) denote stationarity at level and first difference respectively.

Source: Author's Computation using Eviews9

4.1.3 Cointegration Test

Consequent upon the unit root test result which shows that all the variables are integrated at order one [I(1)], the Johansen cointegration test is the most appropriate cointegration test approach to determine the existence of a long-run relationship among the variables. This approach tests the null hypothesis, "There is no cointegration" which should be rejected when the critical value exceeds the trace statistic or when the probability value is greater than 10 percent but should be accepted if otherwise. The Johansen cointegration test result is presented in Table 3 and it shows that there are six cointegration equations in the trace cointegration rank test and three cointegrating equations in the maximum eigenvalue cointegration rank test. This suggests that the variables are cointegrated that is, there is a long-run relationship between employment generated by SMEs and unemployment rate, among

other variables in the model. Both employment generated by SMEs and unemployment rate converge in the long-run indicating that they have a long-run relationship whose direction and magnitude will be revealed by the estimation results. Given this result, the next line of action is to estimate the specified model using the DOLS, FMOLS and CCR approaches.

Table 3: Johansen Cointegration Test Result

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**5% Critical Value**	**Prob.**
None *	0.84	140.02	95.75	0.0000
At most 1 *	0.79	93.17	69.82	0.0002
At most 2 *	0.56	52.63	47.86	0.0166
At most 3 *	0.43	31.46	29.80	0.0319
At most 4 *	0.33	16.88	15.49	0.0308
At most 5 *	0.22	6.59	3.84	0.0102
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**5% Critical Value**	**Prob.**
None *	0.84	46.85	40.08	0.0075
At most 1 *	0.79	40.53	33.88	0.0070
At most 2	0.56	21.17	27.58	0.2659
At most 3	0.43	14.58	21.13	0.3193
At most 4	0.33	10.29	14.26	0.1938
At most 5 *	0.22	6.59	3.84	0.0102

* denotes rejection of the hypothesis at the 0.05 level

Source: Author's Computation from Eviews9

4.2 Discussion of Findings

Sequel to the Johansen cointegration test result which shows that the variables are cointegrated, the conditions for estimating equations using DOLS, FMOLS and CCR methods are satisfied. The estimation results are presented in Table 4. Of utmost importance is the self-employment variable used to proxy the employment generated by SMEs in Nigeria. Interestingly, all the estimation methods show that employment generated by SMEs is positively related to unemployment in Nigeria indicating that an increase in employment through the SMEs sub-sector increases unemployment in Nigeria. Specifically, unemployment will increase by less than one percent, on the average, if the employment in the SMEs subsector increases by one percent. This result is against a priori expectation and the findings of Opafunso and Adepoju (2014), Fiseha and Oyelana (2015), Otugo, Edoko and Ezeanolue (2018) and Edoko, Agbasi and Ezeanolue (2018).

Nevertheless, this result suggests two possibilities: the population growth rate and supply of labour outweigh the available employment opportunities in the country and/or the contribution of the SMEs subsector to total employment is negligible, the former being the most likely as evidenced by the direct relationship between supply of labour (labour force) and unemployment rate in Nigeria. The result shows that an increase in the supply of labour by one percent leads, on the average, to between 9.6 percent to 13.3 percent increase in unemployment rate which suggests that unemployment rate is highly responsive to a change in supply of labour in the country. In sum, this result shows that the employment generated in the SMEs subsector is not sustainable nor is it a panacea to combating the unemployment problems in Nigeria in the long-run. Intuitively, the preponderance of SMEs in the economy is not sufficient to permanently solve the unemployment problem in Nigeria. Hence, it is needful that, while the campaign for self-employment continues, the economy be diversified to ensure that employment is generated from other sectors of the economy especially sectors that are labour-intensive. Succinctly, the effort to attenuate unemployment through SMEs is not enough and the government needs to be proactive by making efforts towards reducing the excess supply of labour.

Against the conjecture of the Phillips Curve, the coefficient of inflation has a positive sign indicating that unemployment rate increases as inflation rates rises. Specifically, the DOLS model shows that unemployment rate would be aggravated by approximately 0.03 percent when inflation rises by one percent while the FMOLS and CCR show that unemployment worsens by about 0.1 percent when inflation rate increases by one percent. However, only the DOLS and FMOLS models show that inflation rate is a significant driver of unemployment rate in Nigeria. This result implies that there are costs attached to high inflation, one of which is an increase in unemployment rate thus, the Nigerian economy should be ready to accept an increase in unemployment rate when the CBN fails in her responsibility of price stability. This result holds true from Nigeria because an increase in inflation rate reduces the purchasing power and cost of production of firms which is a disincentive for investors that leads to laying-off of workers thereby increasing the rate of unemployment in the country. This finding negates that of Rafiu (2019) who argued that there is a trade-off between inflation and unemployment in Nigeria such that Nigeria must accept a considerable unemployment level to achieve some level of price stability.

In line with the postulation of the Okun's law, the coefficient of GDP per capita has the right sign indicating an inverse relationship between unemployment rate and GDP growth in Nigeria. However, only the DOLS and FMOLS models show that GDP per capita, a proxy for economic growth, is significant in influencing unemployment rate in Nigeria while the CCR model shows the converse. It is noteworthy that even though the signs of the coefficients of GDP per capita in each model are the same, their magnitudes differ. For instance, DOLS model shows that an increase in GDP per capita by one percent will attenuate unemployment by approximately 4.8 percent while the FMOLS and

CCR models show that unemployment will fall by about 0.9 percent and 0.6 percent respectively if GDP per capita should increase by one percent. This suggests that increasing aggregate output (GDP) especially in labour-intensive will generate more employment hence, it is needful to diversify the Nigerian economy so as to increase employment generation in all the sectors of the economy.

Further, the FMOLS and CCR models show that credit to the private sector (CPS) has a positive impact on unemployment such that an increase in CPS by one percent will, on the average, worsens unemployment by 0.01 percent while the DOLS model shows that CPS is inversely related to unemployment such that an increase in CPS by one percent assuages unemployment by 0.01 percent in Nigeria. However, the results show that credits to private sector does not have a significant impact on attenuating unemployment in Nigeria. This result corroborates the findings of Okolie, Anidiobu and Ugwuanyi (2018) who argued that the funds available to these SMEs are inadequate to improve their performance let alone reduce unemployment rate.

In addition, the result also shows that the DOLS has the highest goodness of fit as revealed by its Adjusted R-Squared which shows that the self-employment, inflation rate, credits to private sector, labour force, and GDP per capita explain about 81 percent of the variation in unemployment rate in Nigeria whereas the FMOLS and CCR methods have an Adjusted R-Squared value of approximately 70 percent and 68 percent respectively. Further, the S.E. of regression and sum squared residuals are considerably low thus, certifying that the findings are of this study are valid for policy recommendation.

Table 4: Results of the Dynamic OLS Estimation

	Estimation Techniques		
	DOLS	**FMOLS**	**CCR**
Dependent Variable: UNEM			
SFEM	0.545*** (2.07)	0.872* (4.40)	0.918* (4.74)
INF	0.026** (2.80)	0.011*** (1.75)	0.01 (1.41)
CPS	-0.013(-0.53)	0.008 (0.51)	0.007 (0.33)
LLABF	13.284* (7.92)	9.598* (8.68)	9.624* (7.65)
LGDPPC	-4.807** (-2.47)	-0.870* (-0.66)	-0.602 (-0.51)
C	-236.19* (5.88)	-230.65* (-7.30)	-236.90* (-6.65)
Adj. R2	0.8133	0.6978	0.6849
S.E.	0.3013	0.4278	0.4369
S.S.R.	0.9077	3.8434	4.0077
Leads	1		
Lags	0		

Notes: *, ** and *** denote 1%, 5% and 10% significance level respectively; and t-statistics are in parentheses.

Source: Author's Computation from Eviews9

4.3 Post-Estimation Test

The DOLS, FMOLS and CCR estimation methods produce efficient and consistent parameters which makes the result plausible for policy prescription, and as well circumvent the problems of serial correlation, residual non-normality, heteroscedasticity, small sample bias as well as endogeneity bias. However, it is needful to check for the unit root properties of the residuals of each of the estimated model so as to certify that the model is fit for policy recommendation. The ADF and PP unit roots test approaches are employed again, and the results are presented in Table 5. The results of both approaches show that the residuals of each of the models are stationary at level indicating that the findings of this study are fit for policy recommendation.

Table 5: Unit Root Tests on Residuals of DOLS, FMOLS and CCR

	ADF (Level)	ADF (First Difference)	Order of Integration	Phillip Perron (Level)	Phillip Perron (First Difference)	Order of Integration
DOLS Residuals	-6.25c*	-	I(0)	-10.01b*	-	I(0)
FMOLS Residuals	-3.83c*	-	I(0)	-2.58c*	-	I(0)
CCR Residuals	-3.83b**	-	I(0)	-2.50c**	-	I(0)

Notes: b and c denote model with constant and trend and a model without constant and trend respectively; and *, ** and *** denote 1% and 5% significance level respectively.
Source: Author's Computation from Eviews9

5.0 Conclusion and Policy Implications

Every government aims to achieve full employment. Nevertheless, this has remained an uphill task for many developing countries including Nigeria as the rate of unemployment soars at an alarming rate. Consequently, campaigns for self-employment through setting up of small and medium scale enterprises (SMEs) are common place and as such there is a great preponderance of SMEs in every nook and cranny of the country. Despite this evolving phenomenon, unemployment continues to rise as a result of excess supply of labour resulting from the high population growth rate of Nigeria. Hence, this study sought to evaluate the SMEs-unemployment nexus as well as examine the sustainability of the employment generated by the SMEs sub-sector and to check if it is a long-run phenomenon. To achieve the objective of this study, annual time-series data on key variables were sourced from World Development Indicators (2019) for the period between 1991 and 2018 and the DOLS, FMOLS and CCR estimation methods were employed to investigate the sustainability of the employment generated by SMEs as a panacea to the unemployment problems in Nigeria.

Primarily, this study found that employment generated by SMEs is a long-run phenomenon but it is not sufficient to completely solve unemployment problems in Nigeria. This results from the direct relationship between

unemployment and labour supply as well as the excess labour supply as a result of high population growth rate in the country. Hence, the employment generated in the SMEs subsector is not sustainable nor is it a panacea to combating the unemployment problems in Nigeria in the long-run. However, it is important to note that it is not the employment generated by SMEs that causes unemployment, but that labour supply outweighs the contributions of SMEs to fighting unemployment in Nigeria. Further, the result shows that the proposition of Phillips curve does not hold in Nigeria whereas the Okun's law holds in Nigeria. In addition, the result shows that credits to private sector is not a significant determinant of unemployment rates as Okolie, Anidiobu and Ugwuanyi (2018) argued that the funds available to these SMEs are inadequate to improve their performance let alone reduce unemployment rate. Given the foregoing, this study concludes that the preponderance of SMEs is not enough to reduce unemployment in the long-run in Nigeria and that while it is necessary condition for employment generation, it is not a sufficient condition.

These results have policy implications. First, the less-than-one-percent but positive coefficients of SMEs employment and the positive but large coefficients of labour supply suggest that Nigeria should not be carried away by the preponderance of SMEs in every nooks and cranny of the country as the high rate of labour supply, resulting from high population growth, frustrates the efforts of this subsector in effectively combating unemployment. Hence, it is imperative to take cues from China in a bid to effectively engage the excess supply in the Nigerian labour. Further, while the campaign for self-employment continues, efforts should be made to diversify the Nigerian economy so as to generate more employment. More so, the Nigerian government should formulate and implement policies geared towards providing a conducive business environment where SMEs can thrive and also provide adequate infrastructure to ensure an increase in the ease of doing business index in Nigeria. The government needs to exponentially increase the ease of doing business and access to finance by these SMEs, so they can also exponentially increase jobs created.

Second, the non-significance of the credits to private sector coefficients shows that CPS does not exert a significant influence on unemployment in Nigeria. This is because the volume of credits to the private sector are still at a low ebb and the lending rate is high. Hence, the monetary authorities should give special directives to financial institutions to prioritize the SMEs subsector. This would encourage SMEs owners and further improve their performance thereby creating more employment in the country. Besides, policies geared towards financial inclusion should be implemented to ensure that all and sundry, especially intending SMEs owners, have access to credits facilities.

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