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MODELING THE IMPACTS OF MSMES' CONTRIBUTIONS TO GDP AND THEIR CONSTRAINTS ON UNEMPLOYMENT: THE CASE OF AFRICAN'S MOST POPULOUS COUNTRY

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Abstract:

The activities of micro small and medium-sized enterprises (MSMEs) are crucial to combating the menace of unemployment towards the actualization of the Sustainable Development Goals (SDGs) in African. However, financial constraints and infrastructural deficits are conspicuous issues among the numerous challenges confronting MSMEs' activities in many developing nations. Hence, this study explores the challenges and the impacts of MSMEs' contributions to GDP on the unemployment level in Nigeria as Africa's most populous country. The empirical results from the study using annual time series data (1985-2018) reveal that a rise in MSMEs' activities vis-à-vis their contributions to GDP in 5 major economic sectors (agriculture, trade, accommodation, manufacturing, and other services) alongside the financial support given to them, have significant impacts on stemming the level of unemployment in the Nigerian economy. Contrastively, the cost of accessing credit by MSMEs significantly exasperates unemployment while the impacts of the level of infrastructural investments by the government were found to be insignificant in reducing unemployment in the country over the reviewed period. In practical terms, the findings suggest that while ensuring adequate provision of financial support to MSMEs, cogent efforts should be concurrently geared toward the implementation of sufficient budgetary allocations for investment in critical infrastructures like electricity, transport, and ICT facilities to boost MSMEs' activities to proactively address the unemployment menace in Nigeria.

Key words: MSMEs, Financial Constraints, Unemployment, Infrastructures, Nigeria & Africa

1. Introduction

Unemployment is perhaps one of the greatest challenges facing Nigeria as a nation in current times. Nigeria is African's most populous nation with an estimated population of about 191 million people (WDI, 2018). The country has passed through

various monumental changes ranging from political reforms that have led the country through various regimes to include both military and civilian rules since her independence from Britain in 1960, to various degrees of socio-economic reforms which are often targeted at addressing macroeconomic variables like unemployment and inflation among others (Adebaniwi and Obadare, 2010; Kifordu, 2011). However, it is still very clear that the nation has a long way to go as far as employment generation is concerned since most attempts at stemming the trend of unemployment in the country have yielded insufficient desired results over the years going by the current situation especially with regards to the level of youth unemployment vis-à-vis the entire population size, labor force, and the population growth rate (Folawewo and Adeboje, 2017; Akanle and Omotayo, 2019). The situation has led to some degrees of setbacks on the actualization of the Sustainable Development Goals (SDGs) on basic components like wealth creation, zero hunger, and poverty eradication among other issues.

The labor force statistics of Nigeria have turned out to be highly worrisome in the past couple of years as both unemployment and under-employment figures have continued to rise thus arousing public concerns in all quarters. As of the third quarter of 2018, the unemployment rate in the country was estimated to be about 23.1% with another 20.21% of the labor force being under-employed (NBS, 2018). Unemployment among youths within the population is even of a greater concern as the estimated rate of both unemployment and under-employment among this group was put at 55.4% within the same period (NBS, 2018). Ironically, Nigeria has a large proportion of youths compared to aged people in her demographic distribution and it has also been listed among one of the nine major countries from which over half of the estimated rise in the world's population will come from by the year 2050 according to the United Nations World Population Prospect (WPP, 2019).

It is highly disturbing to have hundreds of thousands of young people entering the labor market every year with very little or no prospect of getting any gainful employment due to the overwhelming challenges in the labor market (Dabalén et al., 2001). In times like this, every plausible strategy to combat the unemployment crisis should be explored. As such, micro small and medium-sized enterprises (MSMEs) ought to be part of the main segments that should be attracting the attention of policymakers partly because they constitute a significant proportion of the private sector that can accommodate a sizable amount of the youths that are currently trapped in the unemployment menace. Secondly, considering the size of the government vis-à-vis the unemployment level and given the demographic distribution that is largely skewed towards the youths, it is obvious that the public sector alone cannot accommodate such a vast army of the jobless youths in the population. Thus, the private sector should be the central point of focus in addressing the unemployment crisis and as such, decisively tackling the various challenges of MSMEs as a critical component of the private sector would be a step in the right direction. A survey by the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) with the joint effort of the National Bureau of Statistics (NBS) in 2017 reveals the undeniable importance of micro, small and medium enterprises (MSMEs) as it employs about 76.5% of the total national workforce thus contributing about 49.78% of the nation's total Gross Domestic Product (GDP) as at the last quarter of 2017 (SMEDAN, 2017).

As important as the role played by SMEs could be in any given society, lack of access to finance and other basic amenities appear to be the notable common challenges out of other numerous issues that MSMEs are confronted with across the globe and most especially in developing countries of which Nigeria is not an exception (Beck and Demirguc-Kunt, 2006; Tambunan, 2008; Paul et al., 2017). Have there been sufficient financial and institutional supports to boost MSMEs' activities and what are the impacts of these supports on the level of unemployment in Nigeria? Thus, this study explores the connection between MSMEs' activities and their financial constraints in addition to some other critical factors that affect their performances while focusing on the impacts of such interplay on unemployment level in the wake of a renewed surge in the rate of joblessness which is currently a major macroeconomic challenge in Africa's most populous country and largest economy.

The novelty of this study lies firstly in its relevance towards addressing the current surge in unemployment crisis in Nigeria through the analysis and important policy recommendations, and secondly, in the uniqueness of the approach that was adopted for the empirical analysis which has not been applied in previous studies on the subject matter to the best of the authors' knowledge. It is also worthy to note that the majority of the existing studies are mainly based on qualitative analysis of the impacts of MSMEs on the nation's economic growth in terms of the GDP size. The study has been organized into six sections beginning with an introduction in Section 1. Section 2 provides a sketchy summary of the constraints of MSMEs in doing business in Nigeria among other African countries. Section 3 contains the review of some related past studies while the details of research methodology and data were given in Section 4. The results and interpretations of the empirical estimates were summarized in Section 5, and Section 6 contains the conclusions and various recommendations with respect to the findings.

2. Constraints of MSMEs in doing business: the case of Nigeria among other African countries

MSMEs enterprises in Nigeria are categorized into 3 major groups based on their employment capacity and total assets which exclude lands and buildings. These groups are Micro Enterprises (MEs), Small Enterprises (SEs), and Medium Enterprises (MEs). Micro Enterprises are those enterprises with total employment capacity ranging between 1 to 9 employees, and a sum of assets whose values do not exceed 10 Million Naira (approximately, \$32,626.50). On the other hand, Small Enterprises are those whose employment capacity is between 10 to 49 employees with total assets ranging from above 10 Million Naira to a maximum of 100 Million Naira (approximately, \$326,265.00), while Medium Enterprises are those that have the capacity to employ between 50 to 199 workers with total asset value that is above 50 Million Naira (approximately, \$163,132.50) but not more than 1 Billion Naira (approximately, \$3,262,650.00).

Many factors have been identified to be militating against the general performances of MSMEs in Nigeria over the years and out of those numerous challenges, lack of access to finance among other factors has remained a central issue that has been repeatedly identified as a major cog in the wheel of both the performances and continuity

of MSMEs operations in the Nigerian economy (Okpara, 2011; Igwe et al., 2018). Furthermore, the subject matter has become more complicated in recent times owing to the additional challenges of adapting to global competitiveness. Lal (2007a) and Lal (2007b) have identified infrastructural inadequacies as part of the major setback for many MSMEs in Africa at large, citing issues like poor access to communication facilities and uninterrupted electricity power supply as major bane on SMEs among other issues.

Ihwa (2009) also examined the various constraints to the success of MSMEs using the case study of MSMEs in Nigeria in contrast to their counterparts in the United Kingdom (UK). The result revealed a dichotomy between what is obtainable in the UK and Nigeria. In the case of the UK, poor management was a major key to the poor performances of MSMEs, while the level of economic hardship and deficits in infrastructure were the primary causes of business failure in Nigeria. This is due to the peculiarity of the challenges of doing business in the Nigerian business environments.

Table 1: Ease of Doing Business in Selected African Countries

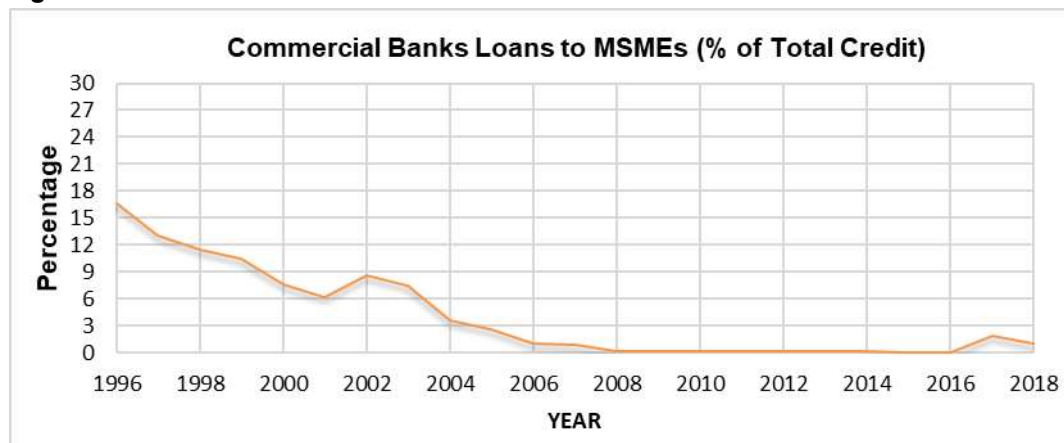
Rank		Economy	EODB Score	Rank		Economy	EODB Score
World	Africa			World	Africa		
61	1	Kenya	70.31	137	16	Togo	55.20
80	2	Tunisia	66.11	141	17	Senegal	54.15
82	3	South Africa	66.03	143	18	Niger	53.72
86	4	Botswana	65.40	144	19	Tanzania	53.63
87	5	Zambia	65.08	145	20	Mali	53.50
96	6	Seychelles	62.41	146	21	Nigeria	52.89
99	7	Djibouti	62.02	148	22	Mauritania	51.99
106	8	Lesotho	60.60	149	23	Gambia, The	51.72
107	9	Namibia	60.53	151	24	Burkina Faso	51.57
111	10	Malawi	59.59	152	25	Guinea	51.51
114	11	Ghana	59.22	153	26	Benin	51.42
120	12	Egypt, Arab Rep.	58.56	155	27	Zimbabwe	50.44
122	13	Côte d'Ivoire	58.00	157	28	Algeria	49.65
127	14	Uganda	57.06	159	29	Ethiopia	49.06
135	15	Mozambique	55.53	161	30	Madagascar	48.89

Source: Doing Business database (World Bank, 2019).

As shown on Table 1, despite some levels of improvements in the performance of Nigeria in the ranking of nations based on Ease of Doing Business between (EODB) 2016 and 2018, the overall performance of the nation in contrast to the rest of Africa and the world at large still appears to be relatively low as the country ranked 146th among 190 countries (World Bank, 2019).

The ease of doing business ranking is carried out based on a set of indicators that generally cover the procedures of starting a business, access to credit and source of electricity, and other forms of legal regulations that guide the establishment and operations of businesses. Despite all the challenges, MSMEs in Nigeria have continued to serve as a vital force to the enhancement of economic growth and development.

Figure 1



Source: Author's computation using data from CBN Statistical Bulletin (2018)

As reflected in Figure 1, the share of commercial bank loans to MSMEs has continued to decline over the years. Cant and Obamuyi (2009) noted that most MSMEs are forced to seek an alternative source of finance, especially from the informal financial institutions due to strenuous and unfavorable terms and conditions for accessing credits from major financial institutions in the country such as the deposit money banks. Having acknowledged financial constraints as a challenge to MSMEs in Nigeria, Eniola and Entebang (2017) further identified the low rate of financial literacy among many Nigerian entrepreneurs as another factor that often reduces the level of productivity, efficiency, and continuity of many MSMEs in Nigeria. In addition, Quartey et al. (2017) have also examined the major reasons for financial constraints on MSMEs among the Economic Community of West African States (ECOWAS) which includes Nigeria and other member countries. They discovered that the size of a firm, penetration of information about credit availability, and experiences of entrepreneurs among other issues are the key common factors fueling financial constraints among MSMEs in the ECOWAS states.

Abereijo and Fayomi (2005) noted that although there is a serious need to boost the growth of MSMEs in Nigeria, however, financial constraint is the main challenge militating against meeting this need. The importance of MSMEs cannot be overemphasized in any nation and Nigeria is not an exception. Thus, Considering the recent developments in the Nigerian economy with regards to rising challenges of unemployment in the labor market, this study explores the economic contributions of MSMEs' activities vis-à-vis their challenges, and the impacts of such interactions in addressing the unemployment situation in the country.

3. Literature review

The performances of MSMEs are vital to both economic growth and development of any nation and this has often been substantiated by empirical evidence from various studies in the past. Thurik and Wennekers (2004) acknowledged that

MSMEs encourage job creation and they also stimulate economic growth through their inherent competitiveness.

Audretsch et al. (2006) observed that although MSMEs have various degrees of limitations in contrast to big businesses such as the provision of less remuneration to employees and challenges of efficiency due to factors like insufficient funding for research and development (R&D) among other issues, however, they are very important as they encourage needed competition that often stimulate required growth in an entrepreneurial economy. Carree and Thurik (2008) examined the effects of the number of entrepreneurs on some macroeconomic indicators to include GDP growth and employment growth among 21 Organization for Economic Co-operation and Development (OECD) member countries. Their findings reveal that numbers of business owners have positive impacts on these two variables, although no effects were observed with respect to the impacts of the number of business owners on the productivity of labor based on individual country-level analysis. Moreira (2016) noted that better access to credit facilities for MSMEs could significantly stimulate growth and employment in Europe having investigated the connections between the availability of finance and growth of MSMEs using the case of some small businesses that operate in the internet and high-tech industry in Europe.

Although the positive impacts of MSMEs could be widely visible in the economic activities of many nations especially when considering the number of people MSMEs provide means of livelihood to, however, there are empirical studies that have provided evidence that does not necessarily follow the general a priori expectation that substantiates MSMEs' positive impacts on economic growth. Beck et al. (2005) explored the connection between small and medium scale business and economic growth while focusing on how such interplay affects poverty alleviation among a group of 45 countries. They found out that although a positive relationship exists between economic growth and importance of MSMEs however, their results show that there was no causality to back up the positive relationship that was observed such that MSMEs cannot be said to have been instrumental in reducing poverty among the nation that they considered. Cravo et al. (2012) noted that the human capital component of MSMEs may be of more relevance to growth rather than the ordinary size of MSMEs following the results of their empirical study which supports a negative relationship between the relative importance of MSMEs and economic growth in some Brazilian states.

On the Nigerian scene, Dibia and Okonkwo (2000) emphasized the important role played by small scale businesses in the economic growth of Nigeria while tracing the history of entrepreneurship in the country to the pre-colonial era as far back as in the 10th century. Furthermore, Eniola and Entebang (2015) noted that MSMEs play a significant role in driving and supporting growth in the Nigerian economy and that they also help in providing remedies for unemployment challenges in the country.

The study of Adegboye and Iweriebor (2018) have shown that the level of accessibility to bank credit is a major factor that influences the extent to which MSMEs are innovative as far as Nigeria is concerned. Owing to the regular occurrence of financial constraints and infrastructural deficits as important aspects of the challenges

of MSMEs activities as noted by Harrison and Baldock (2015) and Wang (2016), this study explores the connections between MSMEs contributions to GDP amidst their financial and infrastructural challenges while focusing on the impacts of this nexus on the rising level of unemployment that has been viewed as a huge potential threat to the stability of Nigeria as Africa's largest economy and most populous country (Onifade et al., 2019).

4. Data and methodology

Annual time series data between 1985 and 2018 were utilized for the empirical analysis in this study. The data were sourced from the World Development Indicators (WDI, 2018), the Nigerian Central Bank (CBN, 2018), and the National Bureau of Statistics (NBS, 2018). Equation (1) is a simple model for the depiction of the relationship among our variable of interest.

$$UNEMPL = \gamma_0 + \gamma_1 LSME + \gamma_2 RINR + \gamma_3 CAPGDP + \gamma_4 SMEGDP + \mu \quad (1)$$

From Equation (1), UNEMPL denotes national unemployment rates while LSME represents commercial bank's supports to MSMEs in form of loans. RINR stands for the lending interest rate (in %) which has been adjusted for inflation, and CAPGDP represents the capital expenditures of the government measured as a % of the GDP over the period. Both the LSME and RINR variables in Equation 1 are crucial to the issue of availability of financial support to MSMEs. The variable LSME captures the amount given solely to MSMEs as loans by commercial banks as an influential source of capital, while the RINR does not only affect the MSMEs alone but also relates to the availability of financial support for the entire private sectors. We added the variable CAPGDP which represents the government's capital expenditure to control for the level of investment in infrastructures and basic social amenities like roads, electricity and ICT infrastructure among others, which have been argued to be very crucial to both the operation and profitability of MSMEs (Singh and Belwal, 2008; Akpan et al., 2013). Lastly, the variable SMEGDP was used to capture the amount of contribution by MSMEs to the nation's economic growth, and it was proxied by the Real Gross Domestic Product data at 2010 constant basic prices for 5 major economic sectors including trade (wholesale & retail), agriculture, accommodation & food services, manufacturing, and other services. According to SMEDAN (2017) activities in these five major economic sectors accounted for approximately 91% of the MSMEs in Nigeria. All the variables are given in natural log forms with the exception of the real interest rate.

4.1 Unit root test

We applied the Augmented Dicky-Fuller Generalized Least Squares (ADF-GLS) by Elliott et al. (1992) as a modified form of the traditional ADF unit root test, after which we also applied the Phillips-Perron (PP, 1988) test to take advantage of its desirable non-parametric qualities. In both cases, the null hypothesis that variables

have unit root is to be tested against the alternative of an absence of unit root and the outputs of the test are provided in Table 2.

Table 2: Traditional Unit root test Results Test at Levels

Variables	ADF-GLS		PP		Decision
	Model with Intercept	Model with Trend & Intercept	Model with Intercept	Model with Trend & Intercept	
<i>UNEMPL</i>	0.1772	-3.3937*	0.4552	-2.8514	
<i>LSME</i>	-1.5543	-2.0604	-2.1248	-2.2634	
<i>RINR</i>	-3.5371***	-4.0470***	-3.4968**	-3.7604**	I (0)
<i>CAPGDP</i>	-0.9267	-1.6812	-1.1069	-2.6011	
<i>SMEGDP</i>	-0.6150	-1.8168	0.2274	-1.7235	
Test at First Difference					
Δ (<i>UNEMPL</i>)	-5.9866***	-6.2520***	-10.5214**	-13.9307***	I (1)
Δ (<i>LSME</i>)	-2.1353**	-2.4719**	-5.3072***	-5.0876***	I (1)
Δ (<i>RINR</i>)	-7.2676***	-7.2941***	-16.638***	-16.827***	I (1)
Δ (<i>CAPGDP</i>)	-2.8167***	-3.7296 ***	-7.4249***	-7.2985***	I (1)
Δ (<i>SMEGDP</i>)	-2.2382**	-2.2596	-4.3353***	-4.3368***	I (1)

UNEMPL represents the national unemployment rate while LSME denotes the commercial bank loans to SMEs. SMEGDP represents the contribution of SMEs to the economy through their activities in 5 major sectors of the economy. CAPGDP denotes the capital expenditures of the government while RINR denotes the real interest rates. All variables are in natural log form except the real interest rate. The subscript ***, **, and * represent the significance level of the reported t-statistics and adjusted t-statistics for the PP and ADF-GLS tests at 1%, 5%, and 10% level of significance respectively.

From the two traditional unit root tests results on Table 2, the PP test outputs complement those of the ADF-GLS test and they reveal that our variables are integrated of order one [I(1) variables] except in the case of the real interest rate which was confirmed to be stationary by the two tests at least at the conventional significance level of 5%. Hansen (2001) noted that there is a need to take structural breaks into cognizance following the strong submissions of Perron (1989) that in time series analysis, major economic occurrences that create alterations in the directions and properties of time series data ought to be accounted for to avoid any bias conclusions from the traditional unit root test.

Having taken a look at the visual form of our data, while there appears to be an upward trend in the unemployment rates over the years, there was a change in the trend of the proportion of loan given to MSMEs over the period following the change in the policy of 20% mandatory credit ratio for MSMEs by commercial banks as major financial institutions. Thus, in addition to the traditional unit root test, a breakpoint unit root test was conducted to double-check on the initial results to avoid any misleading conclusions with regards to the unit root test on each variable to cater for any trend and innovational changes. Thus, following Vogelsang and Perron (1998), the unrestricted

Dickey-Fuller equation for trending data which allows for both trend and intercept break within the framework of an Innovational Outlier (IO) model was used as seen in equation 2.

$$X_t = \pi + \alpha t + \phi DU_t(T_b) + \rho DT_t(T_b) + \delta D_t(T_b) + \gamma X_{t-1} + \sum_{i=1}^k c_i \Delta X_{t-i} + \mu_t \quad (2)$$

From equation 2, the time series variable X follows a trend process t where α, ϕ, ρ and δ are the trend and break parameters such that T_b represents the break time given that $1 < T_b < T$. Also, DU_t is equal to 1 when t is greater than T_b and zero if otherwise. Furthermore, DT_t equals to T_t when t is greater than T_b and equals to zero if otherwise. The random walk with drift will be tested in line with a trend stationary process for both intercept and trend breaks. The results of the breakpoint unit root test are provided in Table 3.

Table 3: Breakpoint Unit Root Test

Variable	Test at Level		Test at First Difference	
	T-statistic	Break Date	T-statistic	Break Date
UNEMPL	-3.2891	1993	-5.3721***	1993
LSME	-2.2625	2002	-5.0137**	1996
SMEGDP	0.0154	2008	-5.3807***	2008
CAPGDP	-3.9442	1998	-7.2836***	1992
RINR	-3.9839*	2015	-7.1172***	1998

The subscript ***, ** and * represent the significance level of the reported t-statistics for the rejection of the null hypothesis of the presence of unit root for the breakpoint unit root tests under 1%, 5%, and 10% significance levels respectively. The results from the breakpoint unit root test corroborated the findings from the traditional unit root tests. The test suggests that there is unit-root in all the variables at their level point excluding the real interest rate slightly above the conventional significance level of 5%. The results further show that we can reject the null hypothesis of a unit root in all the variables at least at individual first difference level even after breakpoints have been taken into considerations.

The Central Bank of Nigeria (CBN, 2018) noted that there was an abolishment of the compulsory banks' credit allocations of 20% of their total credit to MSMEs that are fully owned by Nigerian following the Structural Adjustment Program (SAP) of the 1980s and that the abolition took effect from 1996. Incidentally, the selected break date according to the test coincided with this period, and as such; the real spillover effects of the policy change might have also spread through the succeeding years. Thus, we try to factor in the effects of this development in subsequent stages of analysis by also creating a dummy variable (DUMSME) as a fixed regressor with a value equal to 1 in periods when this important policy change is in place while other periods take the value of 0.

4.2 ARDL Cointegration

Evidence from the unit root test juxtapose the decision to adopt the bounds test technique to cointegration under the framework of an ARDL modeling of Pesaran et al. (2001). Although there is a mix order of integration among our variables, however the practicality of the ARDL approach is not restricted in this regard; on the contrary, it has been argued to be very relevant and useful in such situation (Li and Lin, 2015; Nwaka and Onifade, 2015; Taiwo et al., 2020). Thus, the conventional ARDL representation for the bound testing based on the unrestricted error correction model is represented in equation (3).

$$\begin{aligned} \Delta UNEMPL_t = & \delta_0 + \delta_1 t + \delta_2 DUMSME_t + \gamma_1 UNEMPL_{t-1} + \gamma_2 LSME_{t-1} + \gamma_3 RINR_{t-1} \\ & + \gamma_4 CAPGDP_{t-1} + \gamma_5 SMEGDP_{t-1} + \sum_{i=1}^p \beta_1 \Delta UNEMPL_{t-i} \\ & + \sum_{i=1}^p \beta_2 \Delta LSME_{t-i} + \sum_{i=1}^p \beta_3 \Delta RINR_{t-i} + \sum_{i=0}^p \beta_4 \Delta CAPGDP_{t-i} \\ & + \sum_{i=0}^p \beta_5 \Delta SMEGDP_{t-i} + \varepsilon_t \end{aligned} \quad (3)$$

From equation (3), the null hypothesis that there is no cointegration relationship among the long-run variables will be tested against the alternative hypothesis that supports the existence of a level relationship among the variables based on the joint significance of the γ parameters for the corresponding long-run variables regarding the critical values for the bounds test (Pesaran et al., 2001). The parameters δ_0 represents the constant while δ_1 and δ_2 represent the parameters for the deterministic trend and the dummy variable respectively. The deterministic trend (t) is not restricted in the model and the ε_t represents the error term which is expected to be serially uncorrelated from the estimation. Pesaran et al. (2001) also noted that the inclusion of dummy variable does not invalidate the critical values of the bound test. Lastly, an error correction model (ECM) is provided in equation (4) to obtain the short-run dynamics and the periods of adjustment to equilibrium.

$$\begin{aligned} \Delta UNEMPL_t = & \beta_0 + \sum_{i=1}^p \beta_1 \Delta UNEMPL_{t-i} + \sum_{i=1}^p \beta_2 \Delta LSME_{t-i} + \sum_{i=1}^p \beta_3 \Delta RINR_{t-i} \\ & + \sum_{i=0}^p \beta_4 \Delta CAPGDP_{t-i} + \sum_{i=0}^p \beta_5 \Delta SMEGDP_{t-i} + \varphi ECM_{t-1} \\ & + \omega_t \end{aligned} \quad (4)$$

In equation (4), the error correction variable is represented by ECM and its coefficient (φ) is the adjustment term of the model. The results of the bound test and the long-run estimates from selected ARDL (1,1,1,0,0) based on AIC are detailed in Table 4.

4.3 Results

Table 4: Bound Test Results and Long-run Estimates

Equations	Selected Lag Length (AIC)	F-Statistics	
(3)	(1)	9.16	
Critical Values (F-Statistics)	Lower bound values at 5% = 3.47 Lower bound values at 1% = 4.40	Upper bound at 5% = 4.57 Upper bound at 1% = 5.72	
Estimated Long-run Coefficients			
Variables	Coefficients	t-statistics	P-Values
C	4.8114***	3.4823	0.0020
TREND	0.0458***	4.7506	0.0001
DUMSME	0.0723	1.5200	0.1421
LSME	-0.3838***	-3.8512	0.0008
RINR	0.0031*	1.8062	0.0840
CAPGDP	-0.0831	-0.8160	0.4228
SMEGDP	-0.9600**	-2.7062	0.0126

All variables are as previously defined. DUMSME denotes the dummy variable for the abolition of mandatory bank' credit to MSMEs. The subscript ***, **, and * represent the significance level of the estimated coefficients at 1%, 5%, and 10% level of significance respectively.

The estimated F-statistic for the bound test is 9.16 and this exceeds the values for the bound test at a 5% level of significance thus making us reject the null hypothesis and as such, there is evidence of long-run relationship among the variables. From the long-run coefficient estimates, all variables followed the expected signs based on a priori expectations concerning how variations in each of the regressors are likely to impact the level of unemployment in the country. Furthermore, all the variables are statistically significant except for the capital expenditure of the government.

The long-run estimates reveal that a 1% rise in the level of financial support offered to MSMEs in form of loans and credit facilities is expected to result in a long-run decrease in the level of unemployment by about 0.38% and this relationship is found to be highly statistically significant. By a way of addition, a 1% rise in the activities of MSMEs in the economy as captured by the variable SMEGDP is also expected to help in significantly reducing the worrisome level of unemployment by about 0.96%. Recall that the variable SMEGDP captures some essential contributions of MSMEs to the GDP with respect to the share of 5 major sectors in which the activities of MSMEs are directly pronounced vis-à-vis trade, including wholesale & retail trade, agriculture, accommodation & food services, manufacturing, and other services. Thus, these findings have provided a piece of empirical evidence in corroboration of the incontrovertible roles of MSMEs in the Nigerian economy especially as far as issues bordering on employment generation are concerned; coupled with other challenges of how to stimulate the general level of production and consumption.

On the other side of the analysis, there is an indication that a rising real interest rate might have exasperating effects on the level of unemployment as the coefficient

estimate suggests that a 1% increase in the real interest rate is expected to worsen the unemployment level by about 0.31%. Ironically, the lending interest rate has remained at above 15% on the average over the last one decade and incurring huge liability in the form of financial support as loans from various financial institutions at a high-interest rate is a huge huddle which most MSMEs cannot cross especially when considering their conventional small size and other circumstances that surround their setup including their day to day operations and general continuity. The bottom line is that many promising MSMEs might have been forced out of operation in the face of financial challenges, thus, worsening the unemployment crisis in the country. Even if some MSMEs are successful in improvising to sustain business continuity, they are likely to be performing below their full capacity. For instance, the level of productivity of MSMEs in sectors like agriculture and manufacturing could be hugely circumscribed by inadequate financial supports for basic inputs such as farm implements and other basic manufacturing equipment. Lastly, a 1% rise in the capital expenditures of the government is also expected to help in reducing the unemployment level by about 0.08%. However, the latter relationship is found to be insignificant even when the estimated coefficient followed the expected sign. The reason for this can be attributable to gross insufficiency in budgetary allocations for capital expenditures which have left the country in a state of infrastructural deficits that have besieged the nation for donkey's years.

Onifade et al. (2020) noted that recurrent expenditures have been accounting for the lion share of the Nigerian government annual budget at an average of about 70% over the years. Thus, it will be difficult for such fiscal expenditure arrangements to provide the expected level of infrastructures that can facilitate the desired level of significant impacts on combating the challenges of unemployment through the establishment, smooth operations, and continuity of MSMEs. The error correction model and its estimated coefficients including the coefficient for the correction speed are provided in Table 5.

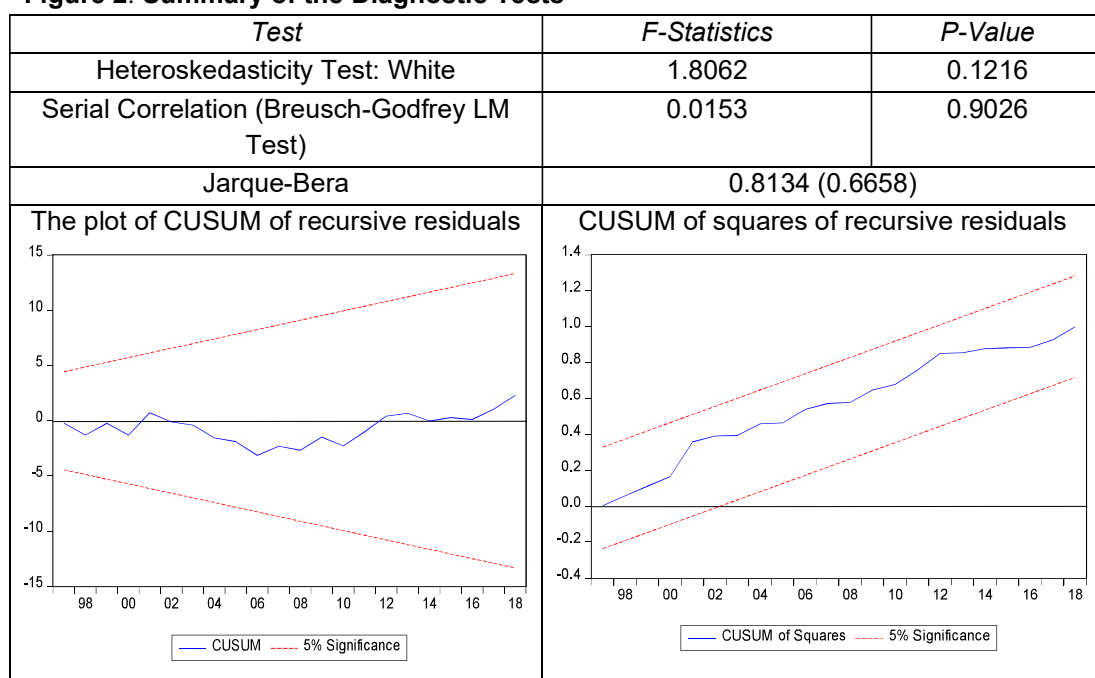
Table 5: Short-run Coefficient Estimates and the Error Correction Term

Variables	Coefficients	t-statistics	P-Values
<i>C</i>	4.4200	7.3678	0.0000
<i>TREND</i>	0.0420	7.2777	0.0000
<i>D(LSME)</i>	-0.0970	-1.8398	0.0787
<i>D(RINR)</i>	-0.0021	-2.4675	0.0215
<i>D(CAPGDP)</i>	-0.0763	-0.7682	0.4502
<i>D(SMEGDP)</i>	-0.8819	-2.3629	0.0270
<i>DUMSME</i>	0.0664	3.4547	0.0022
<i>ECM (-1)</i>	-0.9186***	-7.3355	0.0000
<i>R-squared</i>	0.6899		
<i>Adjusted R-squared</i>	0.6325		
<i>F-statistic</i>	12.015		
<i>Prob(F-statistic)</i>	0.0000		
<i>Durbin-Watson stat</i>	1.9325		

The ECM represents the error correction term. The subscript ***, **, and * represent the significance level of the estimated coefficients at 1%, 5%, and 10% level of significance respectively.

The coefficient estimate for the ECM variable from the error correction model is negatively signed and its interpretation is valid as the co-efficient is also significant. The co-efficient showed that approximately 91.8% of the disequilibrium between the level of unemployment in the economy and the identified explanatory variables will be corrected per annum. In general, about 69% of the variation in the level of unemployment was explained by the model and the estimates are quite robust as the model has passed crucial diagnostic tests. Summary of the diagnostic tests for the unrestricted ECM model is in Figure 2.

Figure 2: Summary of the Diagnostic Tests



The model is structurally stable and also suitable for policy direction as the residuals from the estimates have been found to follow the expected distribution pattern and they are serially uncorrelated.

5. Conclusion and policy directions

This study explores the challenges and the impacts of MSMEs' contributions to GDP on the unemployment level in Nigeria as Africa's most populous country. Considering the current level of unemployment in Nigeria vis-à-vis the size of the population and labor force, the findings from the study suggest that there is an urgent need to address the socioeconomic threats posed by the rising level of unemployment in the economy through the instrumentality of MSMEs' activities. Addressing the unemployment menace is not only

crucial to getting the teeming youth gainfully employed, but it is equally paramount to achieving the sustainable development goals (SGDs) as far as Nigeria is concerned.

We strongly recommend that financial constraints on MSMEs' activities should be addressed by widening the sources of finance to the MSMEs through the provision of viable alternative sources of finance. We recommend the creation of special investment funds through carefully designed initiatives programs for boosting MSMEs' activities. Such programs should cut across all tiers of government as an intervention scheme for entrepreneurial development and such fund should be made accessible to promising MSMEs in all sectors of the economy without outrageous conditionalities and unbearable cost of borrowing. For instance, the recent framework of the Anchor Borrowers Program of the CBN that was targeted at the agricultural sector could be replicated for other major sectors where MSMEs activities are predominant including trade, services, and manufacturing sectors. Thus, the challenges of being unable to purchase basic inputs and light equipment can be overcome by young people who are already engaged and those aspiring to go into MSMEs in these sectors. Precise actions can also be taken to encourage private equity financing as an alternative source of finance for MSMEs. Also, the government and concerned private sector players are not just to provide more credit facilities but they should take the issues bordering on information dissemination about the availability of credit facilities as equally important.

The government has to play an important role in providing a conducive business environment to promote MSMEs' financing among various financial institutions across the country so that MSMEs are not neglected in their lending schemes. Accessing credits is often very difficult for small businesses considering the rate of business failure among many MSMEs given the level of infrastructural deficit and other factors that they have to struggle with. Hence, the government should stimulate investment confidence in financial institutions to incorporating more MSMEs in their lending schemes by providing adequate amenities that can facilitate successful operation of MSMEs in both rural and urban centers to reduce the aspects of business failures that are instigated by infrastructural challenges. To achieve this, cogent efforts should be made to ensure that sufficient budgetary allocations are provided and implemented to stimulate critical investment in basic infrastructures like electricity, roads, and ICT infrastructures to promote MSMEs' operations. Addressing infrastructural decay as a matter of urgency will serve as a two-edged sword. Firstly, by helping to increase MSMEs' efficiency, and secondly, by helping to reduce wastages in outputs from MSMEs especially for those in the manufacturing and agricultural sectors due to lack of critical infrastructures for storage, preservations, and value-chain improvements. Hence, addressing infrastructural decay will not just help in boosting employment generation through the growth of MSMEs' activities, but it will also help in boosting wealth creation among the growing population and ultimately enhance economic self-reliance in terms of food security.

Finally, the government should strive more on all frontiers to ensure that the overall ease of doing business is improved upon. For instance, easing the strenuous and bureaucratic procedures of MSMEs registrations should be given adequate priority. Although the federal government has much role to play considering the share of the entire revenue that accrues to it base on the nation's present revenue allocation formula,

however, the duty of stimulating entrepreneurship development should not be left solely in the responsibility of the central government. Governments at all tiers should collaborate in encouraging MSMEs' operations to decisively stem the current upsurge in the level of unemployment, especially among the teeming youth population.

6. References

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