Impact of Small and Medium Scale Enterprises on Economic Growth: Evidence from Nigeria

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Abstract:

Small and medium scale enterprises play an important role in terms of growth and development of an economy. This is due to the fact that creation, sustenance, and growth of SMEs is believed to be the key ingredient for development of the industrial sector of an underdeveloped economy. The study examines the impact of small and medium scale enterprises on economic growth of Nigeria using time series data spanning between 1986 and 2016. The data is obtained from the statistical bulletin published yearly by the Central Bank of Nigeria (CBN). Regression analysis is employed for interpretation and analysis of the data collected for the study. The finding of the study reveals a positive and significant relationship between small and medium scale enterprises and output growth indicating that small and medium scale enterprises in Nigeria make positive contribution towards the development of Nigerian economy. The study recommends that government should formulate new economic policy to restrict massive importation of foreign goods especially those goods that the SMEs can produce locally in order to protect the local producers against competition with foreign firms. Efforts should also be made to ensure that adequate infrastructural facilities are in place for proper operation of SMEs in the country.

Keywords: Economic Growth, Industrial Sector, SMEs

JEL Classification: L26, L32, O10, O40

Introduction:

In recent time, interest in the linkages between Small and Medium Scale Enterprise (SMEs) and economic performance of countries has attracted the attention of researchers and policy makers and spawned volume of studies on this research area (see Kadiri, 2012; Taiwo, Ayodeji & Yusuf, 2012; Thurik & Wennekers, 2004; Vijayakumar, 2011). This is not surprising considering the role of SMEs in promoting economic growth and development through various channels including job creation, income redistribution, poverty reduction and maintaining a healthy economy (Beck, Demirguc-kunt & Levine, 2005).

The small and medium scale enterprises sub sector of the economy holds the key to the nation’s quest for economic growth and development. Today, regardless of the level of growth and development the world over, countries continue to embark on viable policies and programs that would create and pave way for the sustainable development of their economies through SMEs development. Numerous studies have shown that small and medium scale enterprises act as a

In recent decades, Nigeria has made it one of the nation’s prime objectives to expand its industrial base through creation, sustenance and growth of small and medium scale enterprises for attainment of economic growth. This has remained the focus of various administrations in Nigeria particularly during the present democratic dispensation.

Moreover, a major obstacle limiting the development of SMEs in Nigeria is the death of infrastructural facilities and financial sources for the sub sector. In most cases, the operators often find financing options particularly banks inaccessible. This phenomenon has pushed many operators to explore other alternative funding sources with high interest rate and other implications. In response to that, government came with various financial windows for the SMEs through the Central Bank of Nigeria. This include Micro, Small and Medium Scale Development Fund (MSMSDF), microfinance banks, direct loans from state governments among many other financial windows. Over a short period, it has yielded significant improvement in their activities (Jibir, 2015).

On the other hand, the decay of infrastructural facilities especially power has negatively affected the performance, growth and development of SMEs in Nigeria over the years. However, there are efforts by both states and central government to provide a supporting power supply for industrial development. This development in SMEs activities has spawned volume of empirical studies trying to ascertain the nexus between their activities and general performance of the economy. Studies such as Aremu and Adeyemi (2011); Cravo, Gourly and Becker (2009); Kaigama, Talib, and Ashari (2016); Nagaya (2017) and Taiwo, Ayode and Yusuf (2012) among many others have looked into the relationship between SMEs and economic growth and came up with different and conflicting results which call for further investigation. Besides that, it is observed that majority of the studies applied primary data in the case of Nigeria. There are very few studies that used time series data. Thus, the present study plans to undertake the anatomy of the relationship between SMEs activities and economic growth using dataset for Nigeria. The study goes beyond the existing studies in two ways: firstly, it has applied more recent time series data and secondly, it considers wide specification and robust econometric techniques. On the basis of that, it provides fresh insight to the existing literature on the relationship between SMEs and economic growth.

The remainder of the paper is organized in six sections as follows: following the introduction (section 1), Section 2 deals with empirical literature. Respectively, methodology, results and discussions are treated in sections 3 and 4 followed by conclusion in the last section.

Literature Review:

Given the significance of SMEs in economic growth and development, numerous studies have assessed the role of SMEs sector in light of various activities stimulating growth and development. For instance, Nagaya (2017) examines the impact of SMEs on economic growth using dataset for India and found that SMEs activities are growth enhancing through various channels like employment and poverty reduction. Correspondingly, Aremu and Adeyemi (2011) finds similar evidence that SMEs are vital agent in creating job opportunities and reducing poverty.

In another study for a sample of 45 countries conducted by Beck, Dunt and Levine (2005) show that there is a strong positive correlation between SMEs activities and output growth. This implies that SMEs are vital instrument for promoting growth and development. However, no link is found between SMEs, poverty and inequality. Taiwo, Ayodeji and Yusuf (2012) in their study of the role of SMEs in promoting economic growth in Nigeria have revealed that there is strong nexus between SMEs activities and economic performance in Nigeria. Moreover, the study found that SMEs in Nigeria are faced with several challenges including financial constraints, high level of corruption and lack of training and capacity building which have hindered their smooth activities.

Additionally, Chinweuba and Sunday (2015) investigate the relationship between SMEs and economic growth of Nigeria. Their findings reveal that SMEs activities are growth enhancing through expansion in output and other various means of survival. In the same vein, Motilewa, Ogbari
and Aka (2015) established that SMEs are found to be engine of growth in Nigeria. They also state that such enterprises operate with multiple challenges including financial and managerial constraints. In another study for the economy of Pakistan by Nalini, Alamelu, Amudha and Motha (2016), they note that SMEs are making significant role in promoting job opportunities and commodities for export.

Availability of finance has been widely viewed as a problem to growth and development of SMEs particularly in developing countries. For instance, Bekele and Zekele (2008) and Jibir (2015) have examine the role of finance in the development of SMEs and found that smooth financing has a strong link with the running and growth of SMEs and can boost their performance. Furthermore, there are some studies that found no significant impact of SMEs on economic growth. For example, Cravo, Gourly and Becker (2009) find that SMEs activities is negatively correlated with the level of growth and development. They further assert that human capital embodied in SMEs may be more significant for promoting economic growth than the SMEs activities.

Using time series data for Sri Lanka, Vijayakumar (2013) find an insignificant nexus between SMEs and growth and development of Sri Lankan economy. Also, Olukayode and Somoye (2013) investigate the impact of finance on entrepreneurship growth in Nigeria using endogenous growth framework, the results show that the finance, interest rate, real gross domestic product, unemployment and industrial productivity are significant to entrepreneurship in Nigeria.

Afolabi (2013) evaluates the effect of SMEs financing on economic growth in Nigeria between 1980 and 2010. The study employed ordinary least square (OLS) method to estimate multiple regression models. The study reveals that SMEs output proxy by wholesale and retail trade output as a component of gross domestic product and commercial banks’ credit to SMEs exert positive and significant impact on the economic development. Furthermore, Onakoya, Fasanya and Abdurrahman (2013) examine the impact of financing small scale enterprises on economic growth using quarterly time series data from 1992 to 2009 using OLS. The result shows that loan to small scale entrepreneurs have a positive impact on the economic performance.

Also, the role of SMEs in employment generation has also been acknowledged in the literature. Anthony and Arthur (2008) investigates the role of micro, small, and medium enterprises in the growth of per capita income in the United States, using database for firms in the formal manufacturing sector with fewer than 10, 20, 100, or 250 employees. Employing regression model, the result of the study shows a positive relationship between economic growth and the prevalence of firms of medium size or smaller (250 employees or less). However, they find only limited connection between growth and the prevalence of small or micro firms with fewer than 10, 20, or 100 employees.

Kadiri (2012) examines the contributions of small and medium scale enterprises (SMEs) to employment generation in Nigeria. The binomial logistic regression analysis was employed as tools for statistical analysis. The results show that SMEs has not impacted positively on economic growth partly due to poor financing and commitment from the government. Iyigun and Owen (1998) show a negative relationship between the level of economic development and the level of self-employment in the labour force. Carree, Van Stel, Thurik and Wennekers (2002) find a non-linear relationship between economic development and entrepreneurship activities.

Also, Beck, Demirguc-Kunt, and Maksimovic (2005) estimate the standard growth regression including the relative size of the SMEs sector in terms of employment and find a positive but not robust impact on economic growth for a cross-section of countries. Using similar approach, Audretsch and Keilbach (2004) and Mueller (2007) obtain a positive impact of measures of entrepreneurship on economic growth in the context of developed countries.

In addition, there are some panel studies that investigate the role of SMEs in promoting growth and development. In this regard, Andre, Carree and Thurik (2004) investigate the contribution of total entrepreneurial activity in GDP growth for a sample of 36 countries and test whether this contribution depends on the level of economic development measured as GDP per capita. The result shows that entrepreneurial activity by nascent entrepreneurs and owner/managers of young businesses affects economic growth, but the effect depends upon the level of per capita income.
In another cross country study, Ming-Wen (2010), uses a dataset covering thirty-seven countries including developed and developing countries to examine the contribution to economic growth from the SMEs sector spanning between 1960 and 1990. The findings reveal that small scale businesses contribute positively towards economic prosperity of a country. Also, it is observed from the study that, in pursuance of economic growth, SMEs in the high-income economies generally help in the promotion of entrepreneurship activities, whilst in the less-developed economies they contribute in terms of job creation to the people.

Thus, it can be observed that studies on the impact of SMEs on economic growth still remain inconclusive. There are mixed findings on the subject matter. In the case of Nigeria, besides inconclusiveness of the results, most of the studies used descriptive statistics (see Taiwo, Ayodeji and Yusuf, 2012; Motilewa, 2015). Very few studies have applied econometric techniques and they have not properly check the time series properties of the data. Again, it is noted that they used small sample size which affected the reliability of their findings. Therefore, this study plans to improve on the weaknesses identified in the literature by extending the study period and using robust econometric techniques.

Materials and Methods:

• Type and sources of data
  The data used in this study were all collected from secondary sources including annual time series data for Nigeria on real gross domestic product which was taken as proxy for economic growth, SMEs output and commercial banks credits to SMEs collected for the period spanning between 1986 and 2016. The data were obtained from the statistical bulletin of the Central Bank of Nigeria (CBN), 2017.

• The Model
  Over the years, economic growth models developed by Barro (1990); Mankiw, Romer and Weil (1992) have been used by many researchers provide a theoretical framework for the analysis of the factors promoting economic growth. This development in the growth literature has brought a break-through where many other variables are now considered into the growth framework in addition to the traditional factors like capital, labour and technology. This has brought extension in the growth model to include other variables like SMEs in the analysis of economic growth. In this vein, this study follows Cravo, Gourlay and Becker (2010) approach to specifically analyse the impact of SMEs on economic growth of Nigeria.
  The model for this study is specified in equation 1 as follows:
  \[ RGDP_t = f(SMEO_t, BCSME_t + \mu_t) \]

Where RGDP represents real gross domestic product, which is taken as proxy for economic growth while SMEO and BCSME represent total output of SMEs and bank credit to SMEs respectively. Bank credit to SMEs is taken as proxy for the input of the enterprises.
  Equation 1 can also be estimated in econometric form as:
  \[ RGDP_t = \alpha_0 + \alpha_1SMEO_t + \alpha_2BCSME_t + \mu_t \]

Where:
  \( \alpha_0 \) denote the constant term, and \( \alpha_1 \) and \( \alpha_2 \) are slope of coefficients representing parameters to be estimated and \( \mu_t \) is the stochastic error term which represents all other variables that are not captured in the model.
  All the coefficients are expected to be positive. We can equally expressed it in econometric form as \( \alpha_0, \alpha_1, \alpha_2 > 0 \).

• Tools of analysis
  The study employed regression technique to model the relationship between SMEs activities in Nigeria and the performance of its economy. In view of the fact that this study used time series data and inherently it might exhibit some strong trends, the non-random
disposition of the series might undermine the use of some of econometrics tests such as F and t-tests. This is because they can cause rejection of a hypothesis which would have otherwise not been rejected. This study conducted stationary test using ADF test to mitigate such situations. After that, a fully modified simple ordinary least square is applied with a view to find the nexus between the dependent variable and independent variables used in the model.

- **Unit root tests**
  
  As explained earlier, testing for unit root of the variables is necessary in order to rule out the possibility of non-stationery of the data. Therefore, testing for unit root test will be done using Augmented Dickey Fuller (ADF) test unit root test. The test is based on an estimate of the following regression:

\[
\Delta y_t = \alpha_0 + \alpha_1 y_{t-1} + \sum_{i=1}^{n} \alpha_i \Delta y_{t-i} + \mu_t \quad - - - - - - - - - (3)
\]

\[
\Delta y_t = \alpha_0 + \alpha_1 y_{t-1} + \sum_{i=1}^{n} \alpha_i \Delta y_{t-i} + \delta_t + \mu_t \quad - - - - - - - - - (4)
\]

Where:

- \( Y \) is a time series,
- \( t \) is a linear time trend,
- \( \Delta \) is the first difference operator,
- \( \alpha_0 \) is a constant,
- \( n \) is the optimum number of lags on the dependent variable and
- \( \mu \) is the stochastic error term.

The difference between equation (3) and (4) is that, the first equation includes just drift. Moreover, the second equation includes both drift and linear time trend.

**Results and Discussions:**

This section presents and discusses the result of Augmented Dickey Fuller (ADF) and Philips unit root tests of individual series, followed by modified ordinary least square (OLS) regression technique. Table 1 depicts the result of the ADF unit root test. It can be seen that all the variables (real gross domestic product (RGDP), small and medium scale enterprise output (SMEO) and bank credit to small and medium scale enterprises (BCSME) are not stationery at levels but they become stationery after differentiating once at 5 percent level of significance.

**Table 1: ADF Unit Root Test**

<table>
<thead>
<tr>
<th>Variable</th>
<th>At Level</th>
<th>At First Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constant and no trend</td>
<td>Constant and Trend</td>
</tr>
<tr>
<td>RGDP</td>
<td>-2.5901</td>
<td>-2.8600</td>
</tr>
<tr>
<td>SMEO</td>
<td>-1.3209</td>
<td>-2.4321</td>
</tr>
<tr>
<td>BCSME</td>
<td>-1.7902</td>
<td>2.4560</td>
</tr>
</tbody>
</table>

Source: Computed by authors using E-views 9.0.

Note that, ** denotes rejection of null hypothesis at 5 percent significant level.

Perron (1989) opines that in the presence of structural changes and breaks, the power of ADF unit root tests to reject the unit root hypothesis decreases. This can affect the reliability and robustness of the result. In this case, the application of ADF statistics may be misleading, for several time series data used in the study have been subjected to structural changes over the study period (see Fambon, 2013). In this regard, the study applied PP unit root test and the result is presented in table 2.
Table 2: PP Unit Root Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>At Level</th>
<th>At First Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constant and no trend</td>
<td>Constant and trend</td>
</tr>
<tr>
<td>RGDP</td>
<td>-1.4310</td>
<td>-2.0123</td>
</tr>
<tr>
<td>SMEO</td>
<td>-2.0119</td>
<td>-2.1345</td>
</tr>
<tr>
<td>BCSME</td>
<td>-1.0981</td>
<td>-2.3110</td>
</tr>
</tbody>
</table>

Source: Computed by authors using E-views 9.0.
Note that, ** denotes rejection of null hypothesis at 5 percent significant level.

Interestingly, as obtained in the ADF test, all the variables (real gross domestic product (RGDP), small and medium scale enterprise output (SMEO) and bank credit to small and medium scale enterprises (BCSME) are not stationery at level but they become stationery after differentiating once at 5 percent level of significance.

Table 3: Modified OLS regression result, real GDP as the dependent variable

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T-Statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>124.4370</td>
<td>141.0983</td>
<td>2.00579</td>
<td>0.0010</td>
</tr>
<tr>
<td>SMEO</td>
<td>12.6734</td>
<td>2.0694</td>
<td>3.2754</td>
<td>0.0001</td>
</tr>
<tr>
<td>BCSME</td>
<td>3.6793</td>
<td>1.7923</td>
<td>0.0261</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.88348</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adj R-square</td>
<td>0.87612</td>
<td>MeanDepVar</td>
<td>295077.4</td>
<td></td>
</tr>
<tr>
<td>S.E of REG</td>
<td>42.44567</td>
<td>S.D DepVar</td>
<td>242544.1</td>
<td></td>
</tr>
<tr>
<td>Sum squared</td>
<td>253.16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-96.54335</td>
<td>F-stat</td>
<td>42.7649</td>
<td></td>
</tr>
<tr>
<td>Durbin Watson T-test</td>
<td>1.44567</td>
<td>Prob (F-stat)</td>
<td>0.49000</td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by authors using E-view 9.0.

The results of the estimated regression equation indicate that the dependant variable (RGDP) and independent variables (SMEO and BCSME) are in line with our apriori expectation. All the coefficients are positive and significant at 5 percent level of significance. A unit increase in SMEO increases the RGDP by 12.6734 and a unit increase in BCSME increases RGDP by 3.6793. Therefore, it is very clear that changes in the dependant variable depend on changes in the explanatory variables used in the study. This shows that the explanatory variables used in the model have significant influence (positively) on economic growth in Nigeria. The findings of this study is in line with previous studies like Nalini, Alamelu, Amudha and Motha (2016); Anthony and Arthur (2008) and Onakoya, Fasanya and Abdurrahman (2013) and in contrast with studies conducted by Cravo, Gourly and Becker (2009); Vijayakumar (2013) and Kadiri (2012).

The result indicates that the explanatory variables included in the model explain about 88 percent variation in the explained variable. Within the context of the model, the independent variables explain about 88 percent variability in economic growth during the study period while the remaining 12 percent is controlled by the stochastic error term.

Further Diagnostic test

The reliability of the OLS regression result depends on the ability of the model to pass all the necessary diagnostic tests and meet the OLS assumptions. On the basis of that, Breusch-Godfrey Serial Correlation LM test, Ramsey RESSET test, JarqueBera normality test and Heteroscedasticity test are conducted and the results are presented in table 4.

Table 4: Diagnostics Results

<table>
<thead>
<tr>
<th>Test</th>
<th>Test Statistic</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X^2_{Breusch-Godfrey LM test}$</td>
<td>5.4356</td>
<td>0.1926</td>
</tr>
<tr>
<td>$X^2_{Ramsey RESSET test}$</td>
<td>0.6651</td>
<td>0.9911</td>
</tr>
<tr>
<td>$X^2_{JarqueBera normality test}$</td>
<td>2.4577</td>
<td>0.0055**</td>
</tr>
<tr>
<td>$X^2_{Heteroscedasticity test}$</td>
<td>1.3666</td>
<td>0.6999</td>
</tr>
</tbody>
</table>

Source: Computed by authors using E-view 9.0.
The results from table 4 depicts that the regression model passes all the diagnostic tests against serial correlation, functional form misspecification and non-normal errors.

**Conclusion and Policy Recommendations:**

Contribution of small and medium scale enterprises towards economic growth of a country cannot be over emphasized. Many industrial countries of today have used such enterprises in one way or the other to expand the industrial base of their economies for attainment of economic growth.

The study is conducted to examine the impact of small and medium scale enterprises on economic growth in Nigeria. The study is carried out using secondary data. Regression analysis is employed to analyse and interpret the data collected for the study. It is found from the study that small and medium scale enterprises contribute positively towards economic growth in Nigeria. Stimulation for exploration of local resources and creation of employment opportunities for the citizens of the country signify their contribution to the economy of Nigeria. It is known to everyone that small and medium scale enterprises predominate the industrial base of the Nigerian economy. This highlights that the country’s industrial sector highly depends on the activities of small and medium scale enterprises. On the basis of the findings of the study, the following recommendations are proposed for policy action in the country:

1. Effort should be made to ensure that adequate infrastructural facilities are in place for proper operations of small and medium scale enterprises in the Nigerian economy. Availability of adequate electricity and efficient transport system is very essential for survival, growth and development in any given economy.
2. New economic policy should be introduced in the country to prevent massive importation of foreign goods particularly those that our local industries can produce domestically in order to protect the local producers against stiff competition with foreign firms.
3. Financial institutions especially banks should be encouraged to increase their loans and advances to SMEs in the country to address the financial challenges confronting the operations and survival of many enterprises in the country.
4. Seminar, Workshop and training should be organised from time to time for managers and operators of SMEs in the country in order to improve their technical and managerial skills for better performance from such enterprises.

**References:**

تأثير المؤسسات الصغيرة والمتوسطة على النمو الاقتصادي: دليل من نيجيريا

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الكلمات المفتاحية: النمو الاقتصادي، القطاع الصناعي، الشركات الصغيرة والمتوسطة