Impact of Government Policy on the Growth of Small and Medium Enterprises in Nigeria

Abstract: This study examines the impact of government policy on the growth of small and medium enterprises in Nigeria from 1999 -2022 using Ordinary least Square (OLS) technique method. All data used were secondary data obtained from the statistical bulletin of Central Bank of Nigeria. In executing the study, the OLS technique was applied after determining stationarity of our variables using the ADF Statistic, as well as the cointegration of variables using the Johansen approach. It was discovered that the variables are stationary and have a long term relationship among the variables in the model. From the result of the OLS, it was observed that gross domestic product, government expenditure and commercial banks’ credit to SMEs have positive relationships with SMEs growth and development in Nigeria respectively. On the other hand, unemployment and interest rate have negative relationships with SMEs. Apart from government expenditure and unemployment rate which are not significant, Gross Domestic Product (GDP), Commercial Banks Credit to SMEs and Interest Rate have significant effect on small and medium industry output. Based on the above findings, the study recommends that the government should improve on the real GDP. This is important because it gives information about the size of the economy and how an economy is performing. The growth rate of real GDP is often used as an indicator of the general health of the economy which includes the SMEs industrial growth. The government should set up a supervised skill acquisition programme that will help improve SMEs growth and business development. The Central Bank of Nigeria should through the government-run development financing institutions provide adequate funding for SMEs in Nigeria. The government-run development financing institutions should ensure that SMEs borrow at cheap interest rates.
1. INTRODUCTION

It has been argued that one of the major ways of propelling economic growth and development in developing countries is through the encouragement of Small and Medium Scale Enterprises (SMEs) (Ameh, Alao & Amiya, 2020). Based on this, the Nigerian government has overtime launched economic reform schemes aimed at positioning Small and Medium Scale Enterprises to play major roles in the development of the national economy and boosting the nation’s Gross Domestic Product (GDP), thereby stimulating national development (Onyedikachi et al, 2022; Ekwochi et al, 2019). The initiative was borne out of government’s frustration that despite the abundant natural resources in the country, her developmental strides since independence had assumed a slow pace and was almost grinding to a halt. Basic infrastructure had collapsed while all sectors of the economy were plague by one challenge or the other; unemployment rate had skyrocketed and with increase in the poverty rate, many people resorted to owning their own businesses (Berisha & Pula, 2015).

With many hitherto big and profitable companies folding up, small businesses are fast springing up and entrepreneurship has become the toast of many unemployed graduate and non-graduates alike. Small and Medium Scale Enterprises (SMEs) have become means of generating employment, technological transfers, effective and efficient utilization of local raw materials and opening up of the economy thereby contributing to the economic growth and development of the nation. Undoubtedly, SMEs remain the catalyst for economic recovery and sustainability and this fact has led to its wide acceptance by governments in both developed and developing economies. It has become the focus of general interest and research with regards to how the sector can be better positioned to achieve its aim of contributing to nation building, especially in developing countries (Imeokparia & Ediagbonya, 2014; Folorunsho, Abodunde & Kareem, 2015).

Despite the benefits derivable from the emergence of SMEs, the full potential of their contribution to national growth can only be realized with the full support of the government. Consequently, successive government in Nigeria have since the 1980s been evolving policies and programmes aimed at consolidating the gains of the sector (Wasiu, 2019; Yahaya, Dutse & Bello, 2021). With the emergence of Micro finance bank in 2005 by virtue of the Central Bank of Nigeria microfinance provision which stipulated short-term financing to Medium, Small and Micro Enterprises (MSMEs), the needed boost in the country for the growth of the SMEs sub-sector was set in motion. However, even with the intervention of government, the full potentials of the sector is still yet to be achieved and so it requires the collaboration of all-government, the private sector and development partners for the sector to accomplish its goals (Anthony & Harry, 2015).). It is against this backdrop that this study examined the impact of government policy on the growth of Small and Medium Scale Enterprises in Nigeria.

Statement of the Problem

The inability of Small and Medium Enterprises (SMEs) in Nigeria to effectively and efficiently contribute to the nation’s economic growth and development may be responsible for government’s continuous intervention in the sector. Government’s budgetary allocations, fiscal incentives, grants including government support agencies have all been deliberate attempt to foster the growth of SMEs in the country (Obananya, 2022). Their rather poor performance despite government’s laudable policies for the sector has remained a source of concern to citizens and all operators in the Nigerian economy in the light of what other economies including developing countries have been able to achieve through the sector. These countries have been able to sustain development through a well-developed SMEs sub-sector that has seen to the reduction of hunger and poverty, unemployment and underemployment as well as improved the general well-being of the citizenry (Alabi et al, 2019)). Nigeria therefore needs to understand what these countries have done to make their SMEs vibrant and a major contributor to national growth. This will enable Nigeria to unlock the potentials inherent in the SME sub-sector to help
in lifting the citizens out of extreme poverty, hunger, poor standard of living, create employment and impact positively on national development.

The Nigerian economy has over the years been plague by policies which make no impact on national development owing to lack of the political will to effectively implement them. This has led to a plethora of challenges begging for government attention such as increased rates of unemployment, violent crimes, high mortality rate, banditry, cultism and terrorism (Oluwadare & Oni, 2016; Imoisi & Ephraim, 2015). Interest rates and inflation are high with low economic activities and a real sector that is almost comatose. Owing to these challenges, it may not be out of place if the government takes a critical look at the SMEs subsector with the aim of encouraging more of her citizens to go into entrepreneurial activities that will create productive businesses in order to stimulate the growth of the economy. Doing so will no doubt further open up the sector so that the nation can reap from its full potentials. Based on the above, this study therefore investigates the impact of government policy on the growth of Small and Medium Enterprises in Nigeria.

Objectives of the Study

The broad objective of the study is to examine impact of government policy on small and medium enterprises in Nigeria. Specifically, this study seeks to:

1. Ascertain the extent to which Gross Domestic Product have influenced small and medium industry output.
2. Determine the effect of government expenditure on small and medium industry output.
3. Examine the effect of Unemployment rate on small and medium industry output.
4. Determine the effect of commercial Banks Credit to SMEs on small and medium industry output.
5. Ascertain the effect of Interest rate on small and medium industry output.

Research Hypotheses

\( H_01: \) Ascertain the extent to which Gross Domestic Product have influenced small and medium industry output.

\( H_02: \) Determine the effect of government expenditure on small and medium industry output.

\( H_03: \) Examine the effect of Unemployment rate on small and medium industry output.

\( H_04: \) Determine the effect of commercial Banks Credit to SMEs on small and medium industry output.

\( H_05: \) Ascertain the effect of Interest rate on small and medium industry output.

2. METHODOLOGY

Model Specification

The model for this study will be based on the insight gained from Nwoga, (2007) and modifications made. This modification was the introduction of the government policy and unemployment in the model. Thus, government policy will be proxied by government expenditure while small scale enterprises will be proxied by small scale industrial output. In line with this, this study will adopt Nwoga, (2007) style of model. Thus, the model equation for this study is stated as follows:

\[
SME = f(GDP, GEXP, UMPL, CBC, INTR) \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (1)
\]

The mathematical form of the model is:
The econometric form of the model is:

\[ \text{SME} = \beta_0 + \beta_1 \text{GDP} + \beta_2 \text{GEXP} + \beta_3 \text{UMPL} + \beta_4 \text{CBC} + \beta_5 \text{INTR} + \mu_i \ldots \ldots (3) \]

Where; SME = Small and Medium enterprise captured by small and medium industry output

GDP = Gross Domestic Product

GEXP = Government policy proxied by government expenditure

UMPL = Unemployment rate

CBC = Commercial Banks Credit to SMEs subsector

INTR = Interest rate

\( \beta_0 = \) Intercept of the model

\( \beta_1 - \beta_5 = \) Parameters of the regression coefficients

\( \mu_i = \) Stochastic error term

**Method of Data Analysis**

The economic technique employed in the study is the ordinary least square (OLS). This is because the OLS computational procedure is fairly simple and it is the best linear estimator among all unbiased estimation. It is efficient and has shown to have the smallest minimum variance thus, it is the best linear unbiased estimator (BLUE) in the classical linear regression (CLR) model. Basic assumptions of the OLS are related to the forms of the relationship among the distribution of the random variance (\( \mu_i \)).

OLS is a very popular method and in fact, one of the most powerful methods of regression analysis. It is used exclusively to estimate the unknown parameters of a linear regression model. The Economic views (E-views) software will be adopted for regression analysis.

**Stationarity (unit root) test:** The importance of this test cannot be overemphasized since the data to be used in the estimation are time-series data. In order not to run a spurious regression, it is worthwhile to carry out a stationary test to make sure that all the variables are mean reverting that is, they have constant mean, constant variance and constant covariance. In other words, that they are stationary. The Augmented Dickey-Fuller (ADF) test would be used for this analysis since it adjusts for serial correlation.

**Decision rule:** If the ADF test statistic is greater than the MacKinnon critical value at 5% (all in absolute term), the variable is said to be stationary. Otherwise it is non stationary.

**Cointegration test:** Econometrically speaking, two variables will be cointegrated if they have a long-term, or equilibrium relationship between them. Cointegration can be thought of as a pre-test to avoid spurious regression situations. As recommended by Gujarati (2004), the ADF test statistic will be employed on the residual.

**EVALUATION OF PARAMETER ESTIMATES**

The estimates obtained from the model shall be evaluated using three (3) criteria. The three (3) criteria include:

1. The economic a priori criteria.
2. The statistical criteria: First Order Test
3. The econometric criteria: Second Order Test
Evaluation based on economic a priori criteria

This could be carried out to show whether each regressor in the model is comparable with the postulations of economic theory; i.e., if the sign and size of the parameters of the economic relationships follow with the expectation of the economic theory. The a priori expectations, in tandem with the manufacturing sector growth and its determinants are presented in Table 1 below, thus:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Regressand</th>
<th>Regressor</th>
<th>Expected Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>β₁</td>
<td>SME</td>
<td>GDP</td>
<td>+</td>
</tr>
<tr>
<td>β₂</td>
<td>SME</td>
<td>GEXP</td>
<td>+</td>
</tr>
<tr>
<td>β₃</td>
<td>SME</td>
<td>UMPL</td>
<td>-</td>
</tr>
<tr>
<td>β₄</td>
<td>SME</td>
<td>CBC</td>
<td>+</td>
</tr>
<tr>
<td>β₅</td>
<td>SME</td>
<td>INTR</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Researchers compilation

A positive '+' sign indicate that the relationship between the regressor and regressand is direct and move in the same direction i.e. increase or decrease together. On the other hand, a '-' shows that there is an indirect (inverse) relationship between the regressor and regressand i.e. they move in opposite or different direction.

Evaluation based on statistical criteria: First Order Test

This aims at the evaluation of the statistical reliability of the estimated parameters of the model. In this case, the F-statistic, standard error, t-statistic, Coefficient of determination (R²) and the Adjusted R² are used.

The Coefficient of Determination (R²)/Adjusted R²

The square of the coefficient of determination R² or the measure of goodness of fit is used to judge the explanatory power of the explanatory variables on the dependent variables. The R² denotes the percentage of variations in the dependent variable accounted for by the variations in the independent variables. Thus, the higher the R², the more the model is able to explain the changes in the dependent variable. Hence, the better the regression based on OLS technique, and this is why the R² is called the coefficient of determination as it shows the amount of variation in the dependent variable explained by explanatory variables.

However, if R² equals one, it implies that there is 100% explanation of the variation in the dependent variable by the independent variable and this indicates a perfect fit of regression line. While where R² equals zero. It indicates that the explanatory variables could not explain any of the changes in the dependent variable. Therefore, the higher and closer the R² is to 1, the better the model fits the data. Note, the above explanation goes for the adjusted R².

Standard Error test (S.E): The standard error test is used to test if the regression coefficients of the explanatory variables are statistically significant, individually (different from zero). The precision or reliability of estimates (i.e., the intercepts and scopes) would also be measured by the Standard Error.

The F-test: The F-statistics is used to test whether or not, there is a significant impact between the dependent and the independent variables. In the regression equation, if calculated F is greater than the table F table value, then there is a significant impact between the dependent and the independent variables in the regression equation. While if the calculated F is smaller or less than the table F, there is no significant impact between the dependent and the independent variable.
The *t*-statistic: This is used to determine the reliability/statistical significance of each variable coefficient. Here, the absolute *t*-value of each coefficient is compared with a tabular *t*-value and if greater than a tabular *t*-value, such variable possessing the coefficient is accepted as statistically significant and fit to be used for inferences and possibly for forecasting.

**Evaluation based on econometric criteria: Second Order Test**

This aims at investigating whether the assumption of the econometric method employed are satisfied or not. It determines the reliability of the statistical criteria and establishes whether the estimates have the desirable properties of unbiasedness and consistency. It also tests the validity of non-autocorrelation disturbances. In the model, Durbin-Watson (DW), unit root test, co-integration test are used to test for: autocorrelation, multicollinearity and heteroskedasticity.

**Decision Rule:** if the ADF test statistic is greater than the critical value at 5%, then the variables are cointegrated (values are checked in absolute term)

**Test for Autocorrelation:** The Durbin-Watson (DW) test is appropriate for the test of First-order autocorrelation and it has the following criteria.

1. If *d* is approximately equal to 2 (*d*=2), we accept that there is no autocorrelation in the function.
2. If *d*=0, there exist perfect positive auto-correlation. In this case, if 0<*d*< 2, that is, if *d* is less than two but greater than zero, it denotes that there is some degree of positive autocorrelation, which is stronger the closer *d* is to zero.
3. If *d* is equal to 4 (*d*=4), there exist a perfect negative autocorrelation, while if *d* is less than four but greater than two (*2<*d*< 4), it means that there exist some degree of negative autocorrelation, which is stronger the higher the value of *d*.

**Test for multicolinearity:** This means the existence of an exact linear relationship among the explanatory variable of a regression model. It is used to determine whether there is a correlation among variables.

**Decision Rule:** From the rule of Thumb, if correlation coefficient is greater than 0.8, we conclude that there is multicolinearity but if the coefficient is less than 0.8 there is no multicolinearity.

**Test for heteroscedasticity:** The essence of this test is to see whether the error variance of each observation is constant or not. Non-constant variance can cause the estimated model to yield a biased result. White’s General Heteroscedasticity test would be adopted for this purpose.

**Decision Rule:** We reject $H_0$ if $F_{\text{cal}} > F_{\text{tab}}$ at 5% critical value. Or alternatively, we reject $H_0$ if $n.R^2 > x^2_{\text{tab}}$ at 5% critical value.

3. **Empirical Results and Analyses**

Prior to the estimation of the regression, standard econometric tests were carried out in order to avoid the generation of spurious (i.e., non-meaningful) regression results.

**Stationary Unit Root Test**

The Augmented Dickey-Fuller (ADF) test for unit roots was conducted for all the time series employed for the study. The ADF results in Table 4.1 show that all the variables are non-stationary in levels, that is, $I(0)$. However, they are all stationary at their first differences, that is, they are $I(1)$. Since the ADF absolute value of each of these variables is greater than the 5% critical value, they are all stationary at their first differences. The result of the regression (stationary unit root test) is presented in table 2 below.
Table 2: Summary of ADF test

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF Statistics</th>
<th>Lagged difference</th>
<th>5% Critical Value</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>SME</td>
<td>-4.834036</td>
<td>1</td>
<td>-2.960411</td>
<td>Statistically stationary at $I(1)$</td>
</tr>
<tr>
<td>GDP</td>
<td>-5.489200</td>
<td>1</td>
<td>-2.960411</td>
<td>Statistically stationary at $I(1)$</td>
</tr>
<tr>
<td>GEXP</td>
<td>-5.396728</td>
<td>1</td>
<td>-2.960411</td>
<td>Statistically stationary at $I(1)$</td>
</tr>
<tr>
<td>UMPL</td>
<td>-6.404135</td>
<td>1</td>
<td>-2.960411</td>
<td>Statistically stationary at $I(1)$</td>
</tr>
<tr>
<td>CBC</td>
<td>-4.626230</td>
<td>1</td>
<td>-2.960411</td>
<td>Statistically stationary at $I(1)$</td>
</tr>
<tr>
<td>INTR</td>
<td>-9.992178</td>
<td>1</td>
<td>-2.960411</td>
<td>Statistically stationary at $I(1)$</td>
</tr>
</tbody>
</table>

Source: Researchers calculation

These results from table 2 show that at 5% critical value, small and medium enterprises development (SME), gross domestic product (GDP), government expenditure (GEXP), unemployment rate (UMPL), Commercial Banks credit (CBC) and interest rate (INTR) are not stationary at level form (i.e. they are not integrated at order zero; $I(0)$). The variables are only stationary at first difference. That is, they are integrated at order one; $I(1)$. This result is expected, since most macro-economic time-series data are known to exhibit non-stationary at level form.

Since our variables are non-stationary (i.e. at level form), we go further to carry out the cointegration test. The essence is to show that although all the variables are non-stationary, the variables have a long term relationship or equilibrium between them. That is, the variables are cointegrated and will not produce a spurious regression.

**Summary Johansen Cointegration Test**

Cointegration means that there is a correlation among the variables. Cointegration test is done on the residual of the model. Since the unit root test shows that all the variables are stationary at first difference $I(1)$, we therefore test for cointegration among these variables. The result is presented in tables 3 below for Trace and Maximum Eigenvalue cointegration rank test respectively.

Table 3: Summary of Johansen Co-integration Test

<table>
<thead>
<tr>
<th>Hypothesized</th>
<th>Unrestricted Cointegration Rank Test (Trace)</th>
<th>Unrestricted Cointegration Rank Test (Maximum Eigenvalue)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trace</td>
<td>0.05</td>
</tr>
<tr>
<td>No. of CE(s)</td>
<td>Eigenvalue</td>
<td>Statistic</td>
</tr>
<tr>
<td>None *</td>
<td>0.908385</td>
<td>163.0760</td>
</tr>
<tr>
<td>At most 1 *</td>
<td>0.676509</td>
<td>88.98110</td>
</tr>
<tr>
<td>At most 2 *</td>
<td>0.617768</td>
<td>53.99496</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.454930</td>
<td>24.18141</td>
</tr>
<tr>
<td>At most 4</td>
<td>0.143556</td>
<td>5.369352</td>
</tr>
<tr>
<td>At most 5</td>
<td>0.018073</td>
<td>0.565382</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Researchers computation
Table 3 indicates that trace have only 3 cointegrating variables in the model while Maximum Eigenvalue indicated only 3 cointegrating variables. Both the trace statistics and Eigen value statistics reveal that there is a long run relationship between the variables. That is, the linear combination of these variables cancels out the stochastic trend in the series. This will prevent the generation of spurious regression results. Hence, the implication of this result is a long run relationship between Small and Medium enterprise captured by small and medium industry output and other macroeconomic variables used in the model.

Presentation of result

The result of the regression test is presented in table 4below.

Table 4: Summary of regression results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>23.03838</td>
<td>0.623185</td>
<td>36.96876</td>
<td>0.0000</td>
</tr>
<tr>
<td>GDP</td>
<td>1.42E-05</td>
<td>2.16E-06</td>
<td>6.575930</td>
<td>0.0000</td>
</tr>
<tr>
<td>GEXP</td>
<td>2.81E-07</td>
<td>2.58E-07</td>
<td>1.090821</td>
<td>0.2850</td>
</tr>
<tr>
<td>UMPL</td>
<td>-1.701385</td>
<td>0.043563</td>
<td>-0.231782</td>
<td>0.9749</td>
</tr>
<tr>
<td>CBC</td>
<td>5.38E-07</td>
<td>2.30E-07</td>
<td>2.335443</td>
<td>0.0272</td>
</tr>
<tr>
<td>INTR</td>
<td>-3.096451</td>
<td>0.032486</td>
<td>-2.968984</td>
<td>0.0062</td>
</tr>
</tbody>
</table>

R-squared: 0.909937  F-statistic: 54.55809  Prob(F-statistic): 0.000000  S.E. of regression: 0.775086

Source: Researchers computation

Evaluation of the Estimated Model

To analyze the regression results as presented in table 4, we employ economic a priori criteria, statistical criteria and econometric criteria.

Evaluation based on economic a priori criteria

This subsection is concerned with evaluating the regression results based on a priori (i.e., theoretical) expectations. The sign and magnitude of each variable coefficient is evaluated against theoretical expectations.

From table 4, it is observed that the regression line have a positive intercept as presented by the constant (c) = 23.04. This means that if all the variables are held constant (zero), SME will be valued at 23.04. Thus, the a-priori expectation is that the intercept could be positive or negative, so it conforms to the theoretical expectation.

From table 4, it is observed that gross domestic product, government expenditure and commercial bank credits to small and medium enterprises have a positive relationship with small and medium enterprises development. This means that when gross domestic product, government expenditure and commercial bank credits to small and medium enterprises increases, there will be increase and improvement in small and medium enterprises development. On the other hand, unemployment and interest rate have a negative relationship with small and medium enterprises development.

From the regression analysis, it is observed that all the variables conform to the a priori expectation of the study. Thus, table 5 summarises the a priori test of this study.
Table 5: Summary of economic a priori test

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Variables</th>
<th>Expected Relationships</th>
<th>Observed Relationships</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regressand</td>
<td>Regressor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>β₀</td>
<td>SME</td>
<td>Intercept</td>
<td>+/-</td>
<td>+</td>
</tr>
<tr>
<td>β₁</td>
<td>SME</td>
<td>GDP</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>β₂</td>
<td>SME</td>
<td>GEXP</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>β₃</td>
<td>SME</td>
<td>UMPL</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>β₄</td>
<td>SME</td>
<td>CBC</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>β₅</td>
<td>SME</td>
<td>INTR</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Researchers compilation

**Evaluation based on statistical criteria**

This subsection applies the $R^2$, adjusted $R^2$, the S.E, the $t$-test and the $f$-test to determine the statistical reliability of the estimated parameters. These tests are performed as follows:

From our regression result, the coefficient of determination ($R^2$) is given as 0.909937, which shows that the explanatory power of the variables is very high and/or strong. This implies that 90.99% of the variations in the growth of the GDP, GEXP, UMPL, CBC and INTR are being accounted for or explained by the variations in SME. While other determinants of small and medium enterprises development as proxied by small and medium industry output not captured in the model explain just 9.01% of the variation in the growth of SME in Nigeria.

The adjusted $R^2$ supports the claim of the $R^2$ with a value of 0.893259 indicating that 89.33% of the total variation in the dependent variable (small and medium enterprise development as proxied by small and medium industry output) is explained by the independent variables (the regressors)). Thus, this supports the statement that the explanatory power of the variables is very high and strong.

The standard errors as presented in table 4.3 show that all the explanatory variables were all low. The low values of the standard errors in the result show that some level of confidence can be placed on the estimates.

The F-statistic: The F-test is applied to check the overall significance of the model. The F-statistic is instrumental in verifying the overall significance of an estimated model. The F-statistic of our estimated model is 54.55809 and the probability of the F-statistic is 0.0000. Since the probability of the F-statistic is less than 0.05, we conclude that the explanatory variables have significant impacts on small and medium enterprise development via small and medium industry output growth in Nigeria.

Alternatively, F-statistic can be calculated as:

$V_1 / V_2$ Degree of freedom (d.f)

$V_1 = n-k, V_2 = k-1:

Where; n (number of observation); k (number of parameters)

Where $k-1 = 6-1 = 5$

Thus, $df = 33-6 = 27$

Therefore, $F_{0.05(5,27)} = 2.21$ (From the F table) … F-table

F-statistic = 54.55809 (From regression result) … F-calculated
Since the F-calculated > F-table, we reject $H_0$ and accept $H_1$ that the model has goodness of fit and is statistically different from zero. In other words, there is significant impact between the dependent and independent variables in the model.

**T-statistic:** Here, we compare the estimated or calculated t-statistic with the tabulated t-statistic at $t_{a/2} = t_{0.05} = t_{0.025}$ (two-tailed test).

Degree of freedom (d.f) = $n-k = 33-6 = 27$

So, we have:

$t_{0.025}(27) = 2.052$  ... Tabulated t-statistic

Here, we are interested in determining the statistical reliability and significance of the individual parameters used in our model. We shall do this by comparing the absolute t-value of each coefficient with the critical t-value of 2.052 and if the absolute t-value is greater than 2.052, such variable possessing the coefficient is accepted as statistically significant and fit to be used for statistical inference and possibly for forecasting. This exercise is shown in the table below:

<table>
<thead>
<tr>
<th>Variable</th>
<th>$t_{tabulated} (t_{a/2})$</th>
<th>$t_{calculated} (t_{cal})$</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>$±2.052$</td>
<td>36.96876</td>
<td>Statistically Significant</td>
</tr>
<tr>
<td>GDP</td>
<td>$±2.052$</td>
<td>6.575930</td>
<td>Statistically Significant</td>
</tr>
<tr>
<td>GEXP</td>
<td>$±2.052$</td>
<td>1.090821</td>
<td>Statistically Significant</td>
</tr>
<tr>
<td>UMPL</td>
<td>$±2.052$</td>
<td>-0.231782</td>
<td>Statistically Significant</td>
</tr>
<tr>
<td>CBC</td>
<td>$±2.052$</td>
<td>2.335443</td>
<td>Statistically Significant</td>
</tr>
<tr>
<td>INTR</td>
<td>$±2.052$</td>
<td>-2.968984</td>
<td>Statistically Significant</td>
</tr>
</tbody>
</table>

Source: Researchers computation

From table 6, the t-test result is shown and the individual hypothesis consider below:

For GDP, $t_{a/2} < t_{cal}$, therefore we reject the null hypothesis and accept the alternative hypothesis. This means that GDP has a significant impact on SME.

For GEXP, $t_{a/2} > t_{cal}$, therefore we accept the null hypothesis and reject the alternative hypothesis. Thus, GEXP does not have significant impact on SME.

For UMPL, $t_{a/2} > t_{cal}$, therefore we accept the null hypothesis and reject the alternative hypothesis. Thus, UMPL does not have significant impact on SME.

For CBC, $t_{a/2} < t_{cal}$, therefore we reject the null hypothesis and accept the alternative hypothesis. This means that CBC has a significant effect on SME.

For INTR, $t_{a/2} < t_{cal}$, therefore we reject the null hypothesis and accept the alternative hypothesis. This means that INTR has a significant impact on SME.

**4. CONCLUSION AND RECOMMENDATIONS**

The study attempted to explain the impact and contributions of small and medium enterprises on economic growth and development in Nigeria from 1999 -2022 using Ordinary least Square (OLS) technique method. All data used are secondary data obtained from the Statistical Bulletin of Central Bank of Nigeria. In executing the study, the OLS techniques was applied after determining stationarity of our variables using the ADF Statistic, as well as the cointegration of variables using the Johansen approach and was discovered that the variables are stationary and have a long term relationship among the variables in the model.
From the result of the OLS, it is observed that gross domestic product, government expenditure and commercial banks credit to SMEs have a positive relationship with SMEs growth and development in Nigeria. On the other hand, unemployment and interest rate have a negative relationship with SMEs. This means that when SMEs is increasing, unemployment will be reducing. Finally, the study shows that there is a long run relationship exists among the variables. Both $R^2$ and adjusted $R^2$ show that the explanatory power of the variables is very high or strong. The standard errors show that all the explanatory variables were all low. The low values of the standard errors in the result show that some level of confidence can be placed on the estimates. Apart from government expenditure and Unemployment rate that are not significant, Gross Domestic Product, commercial Banks Credit to SMEs and Interest rate have significant effects on small and medium industry output.

Based on the above findings, the study recommends that the government should improve on the real GDP. This is important because it gives information about the size of the economy and how an economy is performing. The growth rate of real GDP is often used as an indicator of the general health of the economy which includes the SMEs industrial growth. The government should set up the supervised skill acquisition programme that will help improve SMEs growth and business development. The Central Bank of Nigeria should through the government-run development financing institutions provide adequate funding for SMEs in Nigeria. The government-run development financing institutions should ensure that SMEs borrow at cheap interest rates.

REFERENCES


