



Entrepreneurship and Economic Development in Nigeria

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Abstract

The study explores the relationship between entrepreneurship and economic development in Nigeria, with a particular focus on the impact of micro, small, and medium enterprises (MSMEs) on unemployment and per capita GDP. Using annual time series data from 1981 to 2022, the analysis was conducted employing the Autoregressive Distributed Lag (ARDL) technique. The results indicated that government loans to MSMEs and real per capita GDP significantly and negatively affected the unemployment rate in both the long and short term. Conversely, the government's external debt was found to have a positive and significant effect on the unemployment rate over the same periods. Additionally, the working-age population had a positive but insignificant impact on the unemployment rate in the long run, while in the short run, this impact was negative and insignificant. Further findings revealed that government loans to MSMEs and the working-age population positively and significantly influenced real per capita GDP in both the long and short run. On the other hand, the government's external debt and the inflation rate had a negative and insignificant effect on real per capita GDP in both the long and short term. The study suggests that policymakers should prioritize enhancing labor market efficiency by promoting skills development, improving access to education and training, and fostering entrepreneurship, particularly among the working-age population.

Keywords: *Economic Development, Entrepreneurship, MSMEs, GDP, Unemployment*

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Background to the Study

Entrepreneurship, defined as the initiation of business or entrepreneurial activities, serves as a crucial mechanism for enhancing the quality of life for individuals, families, and communities, particularly in developing nations. Various stakeholders, including government agencies, development organizations, farmers, and the unemployed, perceive entrepreneurship differently. Government agencies regard entrepreneurship as a key strategy to prevent social unrest, while development agencies recognize its significant potential for job creation. For farmers, entrepreneurship enables commercial farming with increased earnings, and for the unemployed, it offers a nearby employment opportunity that fosters autonomy and self-reliance, reducing the need for social support (Adisa et al., 2023; Nwokoye et al., 2020). At national, household, and individual levels, entrepreneurship is essential for economic sustenance and is pivotal for economic growth and development.

Economic development refers to qualitative and quantitative improvements in economic and social conditions. It fosters entrepreneurial spirit and promotes economic activities that generate employment. Economic development is often linked to the availability of more goods and services and higher economic welfare, typically measured by an increase in the standard of living (Panth, 2020; Ivic, 2015). Ahmed and Nwankwo (2013) specifically highlight employment generation and enhanced economic welfare (measured as increased per capita GDP) as the primary benefits of entrepreneurship growth and development, especially in developing countries.

Employment involves engagement in paid work, whether as an employee or through self-employment. It provides income and boosts self-worth and confidence by improving individuals' social and economic status, particularly among the youth (United Nations Development Programme – UNDP, 2013). Economic welfare, on the other hand, signifies positive changes in the living conditions of a country's population (Adekunle et al., 2013). An improved standard of living and increased comfort is among the benefits associated with enhanced economic welfare (Rasmidatta, 2011). Over the years, Micro, Small, and Medium Enterprises (MSMEs) have gained prominence in developing countries and within the entrepreneurship literature.

MSMEs, as described by Oloketuyi (2012), hold a relatively small market share and are labor-intensive. Compared to large firms, MSMEs are more flexible and can quickly adapt to market and environmental challenges. While MSMEs are not subsets of large enterprises, they are vital for endogenous entrepreneurship growth and development. They promote indigenous technological knowledge, utilize local resources with minimal foreign exchange requirements, and adapt easily to customer needs. MSMEs significantly contribute to the national economy through the production of goods and services (Matenda & Sibanda, 2023). They employ a large number of people per unit of capital compared to large enterprises. According to a PwC (2017) survey report, MSMEs contribute approximately 48 percent to Nigeria's GDP and provide employment for about 70 percent of the Nigerian population. Dominating the Nigerian economy, MSMEs account for about 96 percent of businesses, particularly in agriculture, manufacturing, commerce, and services sectors (Eniola, 2014).

Despite the widespread recognition of the benefits of entrepreneurship and MSMEs development globally, not all countries equally reap these benefits. The level of benefits derived from MSMEs depends on the extent of their development, which is often hindered by various challenges. Countries, therefore, create policies and programs to harness the power of MSMEs to generate employment, foster intensive growth, and boost per capita income. In Nigeria, successive governments have supported MSMEs development through policies, financial interventions, and technical assistance. Obaji and Olugu (2014) categorize government efforts into Entrepreneurship Development Programmes/Institutions (EDP) and Finance/Micro-credit Programmes and institutions (MPI). Despite these efforts, MSMEs development has not achieved the desired success, facing challenges like high investment costs, unfavorable economic policies, and corruption. Financial constraints, inadequate technical and conceptual abilities, and inefficient human capital further hinder entrepreneurship development. These issues limit MSMEs' role in addressing high unemployment, slow growth, and low per capita income.

Nigeria faces a high unemployment rate, with the government being the primary employer in most states. For example, the unemployment rate increased by 1.7 percent in 2016, reached 17.46 percent at the end of 2017, and further rose to 22.562 percent in 2018. The average unemployment rate between 2017 and 2018 was 29.21 percent (IMF World Economic Outlook Database, 2019). By the second quarter of 2020, the unemployment rate was estimated at 27 percent, increasing to 28 percent in the third quarter and 30 percent in the fourth quarter of 2020 (PwC, 2021). The persistent double-digit unemployment rate, coupled with the inability of the government and large private enterprises to absorb the growing number of job seekers, highlights the need to leverage MSMEs' employment-generating potential. However, despite numerous promotional measures by the government and NGOs, there has been no significant reduction in unemployment rates. MSMEs' benefits, especially in job creation, are not fully realized, partly due to high job destruction rates, with only 50 percent of new MSMEs surviving until the fifth year.

Frequent recessions further indicate inefficiencies in Nigeria's economic system, making it difficult for MSMEs to thrive. The relationship between MSMEs and economic development and welfare needs to be reassessed, given the poor economic performance despite increased support for MSMEs. This necessitates empirical investigation into the role of MSMEs in stimulating economic development, promoting economic welfare, and reducing unemployment. While there have been some studies on the effect of MSMEs on economic growth in Nigeria (e.g., Hudson, Andrew & Ibrahim, 2014; Abiodun, 2014; Katua, 2014; and Kadiri, 2012), the questions remain: What is the effect of micro, small, and medium enterprises on the unemployment rate in Nigeria? What impact do micro, small, and medium enterprises have on per capita GDP in Nigeria?

The main objective of this study is to examine the relationship between entrepreneurship and economic development in Nigeria. The specific objectives are: (i) to determine the effect of micro, small, and medium enterprises on unemployment in Nigeria, and (ii) to examine the effect of micro, small, and medium enterprises on per capita GDP in Nigeria.

Literature Review

Theoretical Literature

Schumpeter's Theory of Entrepreneurship

Joseph Schumpeter, an Austrian economist, introduced a theory in 1949 that is often referred to as the theory of innovation and entrepreneurship. Schumpeter's theory portrays entrepreneurs as catalysts of economic change, facilitating economic growth and development through their activities. According to this theory, entrepreneurship is the fundamental function of entrepreneurs, whether performed by an individual or an organization. Schumpeter makes a clear distinction between innovation and invention, emphasizing that entrepreneurship involves creating innovations, and true entrepreneurial status is achieved through such innovations.

Schumpeter incorporated the concept of innovation as a crucial aspect of entrepreneurship, alongside risk-taking and organizing production factors. He viewed entrepreneurship as a creative activity, with entrepreneurs acting as innovators who introduce new products and services into the economy. Innovation, according to Schumpeter, is the primary tool of entrepreneurs and serves as the driving force of economic growth. In 1949, Schumpeter identified five types of entrepreneurial behaviors and three main motivations for entrepreneurs. Dorin and Alexandru (2014) categorized these entrepreneurial behaviors as follows:

1. Introducing a new product that is unfamiliar to consumers or offering a new quality of an existing product.
2. Implementing a new production technique that has not yet been tested by experience.
3. Creating new markets.
4. Seeking new sources of raw materials.
5. Establishing and executing a new organization within any industry.

The primary motivations driving entrepreneurship are:

1. The desire for economic power and independence.
2. The aspiration to succeed.
3. The joy of creation.

Joseph Schumpeter views the entrepreneur as a key driver in the development of an economy through their role in innovation and creating new combinations. He distinguishes between innovators and inventors, stating that inventors discover new methods and materials, while innovators, or entrepreneurs, apply these inventions and discoveries to form new combinations and drive economic performance. Inventors focus on creating new ideas, whereas innovators go a step further by commercially exploiting these inventions.

Schumpeter's 1949 theory of innovation entrepreneurship has significantly influenced the evolution of modern capitalism. Entrepreneurs are indeed seen as central to the economic development process. This theory holds particular relevance for developing countries where innovation is crucial for economic growth and progress. For a society to transition to a developed status, significant initiatives and changes from small, medium, and large

entrepreneurs are necessary. However, this theory has been criticized for placing too much emphasis on the role of innovation, almost to the exclusion of other critical aspects such as risk-taking and resource organization in entrepreneurship. While innovation is a vital function of entrepreneurs, they also play crucial roles in taking risks and efficiently assembling and utilizing resources.

Economic Theory of Entrepreneurship

Many economists agree that entrepreneurship and economic growth are likely to occur when economic conditions are favorable for the business environment. Notable proponents of the economic theory of entrepreneurship, as noted by Dorin and Alexandru (2014), include Papanek and Harris. Various economic factors can influence entrepreneurship, including:

1. Availability of bank credit
2. Capital formation along with savings and investment flows
3. Supply of loanable funds combined with low or moderate interest rates
4. High demand for goods and services
5. Access to productive resources
6. Effective monetary and fiscal policies
7. Adequate communication and transportation infrastructure

Additionally, some researchers have connected the growth of entrepreneurship to regional economic factors, such as industrial support in the local environment. The industrial climate can play a significant role in determining the performance and sustainability of entrepreneurs.

New Growth Theory

The emergence of the new growth or endogenous growth theory can be traced back to the 1990s. Prominent figures in this field, according to Dang and Pheng (2015), include Romer (1986), Lucas (1988), and Aghion & Howitt (1992). This theory addresses why many underdeveloped countries continue to struggle despite implementing policies recommended by neoclassical theories. The new growth theory posits that technological change has not been evenly distributed or exogenously transmitted in some developing nations.

The central idea of the new growth theories is that economic growth results from increasing returns to the use of knowledge rather than labor and capital. The theory argues that the high rate of returns anticipated in Solow's theory is significantly diminished by reduced levels of complementary investments in human capital (such as education), infrastructure, or research and development (R&D). Dang and Pheng (2015) highlight that knowledge or innovation is distinct from other economic goods because it can grow without bounds, can be reused at no additional cost, and can provide spillover benefits to other firms once they acquire it. Therefore, investment in knowledge is seen as a catalyst for sustained growth. However, market failures impede the production of sufficient knowledge because individuals cannot capture all the benefits that arise from their investments in creating new knowledge. Thus, government policy intervention is deemed necessary to influence growth, particularly in the long run. This theory advocates for government involvement in modern investment in human

capital formation and the encouragement of foreign private investments in knowledge-intensive industries, such as computer software and telecommunications (Meier, 2000).

Critics of the new growth theory argue that it overlooks the role of social and institutional structures. Its applicability is limited due to its assumptions. For instance, the theory treats the economy as if it were a single firm, which does not account for the primary growth-creating reallocation of labor and capital within the economy during structural changes. Additionally, other factors that can stimulate economic growth, which many developing countries lack, include poor infrastructure, inadequate institutional structures, and imperfect capital and goods markets (Cornwall & Cornwall 1994).

The Marginal Productivity Theory of Employment Generation

The marginal productivity theory of employment generation posits that rational employers or entrepreneurs will maximize profits by employing labor units that can be utilized profitably given the available capital. Essentially, an entrepreneur will continue hiring additional labor as long as the increase in total product from an additional unit of labor exceeds the wage rate paid. This process continues until the wage rate equals the marginal product of labor, at which point the employer will be content with the level of employment. However, the marginal productivity of a factor tends to decline when it is combined with other fixed factors. According to Umobon & Ekong (2015), this theory focuses on the key demand-related factors that drive the growth or decline of employment in an economy.

The marginal productivity theory suggests that economic activities generating employment can be categorized into basic (export-oriented) and non-basic (local) activities. Basic activities involve firms and individual operations whose outputs are intended for export, thereby bringing foreign income into the domestic economy. These activities include farming and manufacturing, where outputs are sold in foreign markets, as well as domestic services like tourism that attract international visitors. This theory underpins the rationale for industrial recruitment, the development of small and medium enterprises (SMEs), tourism expansion, and the growth of the domestic service sector (Umobon & Ekong, 2015).

Empirical Literature

Maaitah (2023) investigated the influence of government support for entrepreneurship on economic development and job creation in Jordan, utilizing a sample of 377 respondents. The data was analyzed through descriptive techniques, including mean and simple percentages. The study concluded that transforming new ideas into products or services via entrepreneurship led to reduced unemployment, increased productivity capacity, enhanced experience, and improved living standards.

Matenda and Sibanda (2023) employed a fixed effects model to examine the impact of entrepreneurial attitudes and behaviors, along with entrepreneurial framework conditions (EFCs), on economic growth in BRICS economies from 2001 to 2021. They discovered statistically significant negative correlations between GDP per capita and factors such as 'entrepreneurial intentions rate', 'perceived capabilities rate', 'perceived opportunities rate',

and 'governmental support and policies'. However, entrepreneurial attitudes and behaviors were found to positively influence GDP per capita.

Ofori-Sasu, Dzisi, and Abor (2022) analyzed the joint effect of entrepreneurship and FDI inflows on economic wealth in Africa from 2006 to 2020, using a dynamic system Generalized Method of Moments (GMM) approach. The study revealed that while entrepreneurship reduced economic wealth in the short term, it had a positive effect in the long term. Neuman (2021) conducted a systematic review over the past 25 years to assess the impact of entrepreneurship on economic, social, and environmental welfare. Reviewing 102 publications, the study found that entrepreneurship contributes to macroeconomic development, although the relationship between entrepreneurship and welfare is complex. Gherghina, Botezatu, Hosszu, and Simionescu (2020) examined the impact of investments and innovation by SMEs on territorial economic growth in Romania from 2009 to 2017. Using regression techniques, the study found that investments and innovation by SMEs positively impacted turnover.

Nursini (2020) investigated the role of SMEs in poverty reduction in Indonesia from 1997 to 2018, employing the Headcount Index (P0), Poverty Gap Index (P1), and Poverty Severity Index (P2) as proxies for poverty. The study used the ordinary least square regression technique and found that SMEs significantly affected poverty reduction both directly and indirectly. Roopchund (2020) explored the relationship between economic growth, employment, and entrepreneurial culture in Mauritius using primary data and descriptive statistics. The study found no statistically significant effect of SME revenue on real GDP growth, and an increase in SMEs was associated with increased unemployment, suggesting that SMEs did not reduce unemployment.

Khan (2020) examined the impact of microfinance banks on SME development in Nigeria, focusing on microfinance banks in Damaturu, the capital of Yobe State. Using a questionnaire and analyzing the data with the Chi-square technique, the study found that strict borrowing conditions hindered entrepreneurs from borrowing from microfinance banks, thus affecting their growth and development.

Rotar, Pamić, and Bojnec (2019) assessed the contributions of SMEs to employment in EU countries from 2005 to 2016 using panel fixed effect and random effect approaches. The study found that employment in the SME service sector had a positive effect on total employment and that GDP per capita positively affected total employment. Dogan, Qamarul Islam, and Yazici (2017) focused on the role of SME age and size in determining employment. The study found that the size and age of SMEs significantly influenced employment, with small enterprises being the main source of employment and the age of enterprises driving this result.

Akanbi, Akin, and Sodiq (2016) analyzed the financing options available to SMEs in Nigeria and their contribution to economic growth from 1981 to 2012 using the ordinary least square technique. They found that SME financing had a positive but insignificant effect on economic

growth. Oyeniran, David, and Ajayi (2015) employed an autoregressive distributed lag approach to examine the contribution of SMEs to Nigeria's economic growth from 1981 to 2013. The study found that SMEs had a significant and positive impact on economic growth. Anigbogu, Onwuteaka, Edoko, and Okoli (2014) explored the role of SMEs in community development in Anambra South Senatorial Zone. Based on a sample of 55, the study found that SMEs generated employment, provided services, improved living standards, and alleviated poverty.

Etuk, Etuk, and Baghebo (2014) examined the relationship between SMEs and Nigeria's economic development using primary data. The findings showed that SMEs played a beneficial role in alleviating poverty through wealth and job creation. Opafunso and Omoseni (2014) assessed the impact of SMEs on economic development in Ekiti State. Using a sample of 150 respondents from various sectors, the study found a positive and significant relationship between SMEs and poverty reduction, employment generation, and improved living standards.

Haltiwanger, Jarmin, and Miranda (2013) analyzed the relationship between young SMEs and economic growth in the US using longitudinal data. Controlling for enterprise age, they found that young SMEs significantly contributed to employment, with enterprise age playing a critical role in employment generation. Mabe, Mabe, and Codjoe (2013) investigated the constraints facing new and existing SMEs in the Greater Accra Region of Ghana. Analyzing data from 30 new and 40 existing SMEs with descriptive statistics, the study identified high rent costs and low income as major constraints.

Mawoli, Sarkin-Daji, and Wushishi (2013) examined the challenges impeding MSMEs from contributing to Nigeria's economic growth and development. The study highlighted issues such as inadequate electricity and water supply, poor road networks, outdated railway systems, and undeveloped inland waterways as significant obstacles. Bowale and Akinlo (2012) investigated the socio-economic factors influencing the capacity of SMEs to alleviate poverty in southwestern Nigeria using primary data. They found that business registration, size, nature, and sources of capital were key determinants of SMEs' income and employment generation potential.

Herman (2012) studied the effect of SMEs on employment in Romania from 2000 to 2010, comparing SMEs with large enterprises using descriptive statistics. The study found that while SMEs positively affected employment and income, their labor productivity was lower compared to large enterprises.

Uzoma (2012) examined the impact of SMEs on Nigeria's economy from 1986 to 2010 using the Ordinary Least Square (OLS) technique. The study found that SMEs significantly contributed to Nigeria's economic growth.

Methodology

Research Design

The study employs a time series research design, which involves the collection, analysis, and interpretation of time-series data. In this design, the researcher measures the same variable(s)

over a period that spans the duration of the study. Data is collected throughout this period, and the findings are derived from the analysis of this collected data.

Source of Data

The annual time series data for the variables in this study was obtained from various editions of the Statistical Bulletin published by the Central Bank of Nigeria (CBN) and the World Development Indicators of the World Bank. Specifically, data on the working population was sourced from the World Development Indicators, while data for the other variables were sourced from the various issues of the CBN bulletin. The dataset covered the period from 1981 to 2022.

Model Specification

The first objective of this study is to determine the impact of entrepreneurship on unemployment. The functional form of the model for this objective is specified as follows:

$$UNEMP = LOANSME, EXTD, WPOP, PGDP \quad (1)$$

Where:

UNEMP = unemployment rate

LOANSME = government loan to MSMEs, a measure for entrepreneurship growth

EXTD = government external debt

WPOP = working age population

PGDP = real per capita GDP

Equation (1) is re-specified in autoregressive distributed lag (ARDL) form as follows:

$$UNEMP = \alpha_0 + \alpha_1 UNEMP_{t-1} + \alpha_2 LOANSME + \alpha_3 EXTD + \alpha_4 WPOP + \alpha_5 PGDP + \sum_{j=1}^p \phi_j UNEMP_{t-j} + \sum_{s=0}^q \rho_s LOANSME_{t-s} + \sum_{m=0}^q \delta_m EXTD_{t-m} + \sum_{z=0}^q \psi_z WPOP_{t-z} + \sum_{z=0}^q \vartheta_z PGDP_{t-z} + \mu_{1t} \quad (2)$$

In equation (2), the various terms represent the short-run variables, while the lag terms denote the long-run processes. The term μ_{1t} is the error term, and α_i (where $i=1,2,3,\dots,5$) along with $\phi, \rho, \delta, \psi, \vartheta$ are the long-run and short-run parameters of the respective variables. The optimal lag length will be determined using the Akaike Information Criterion (AIC) for lag length selection.

A notable advantage of this model is its applicability even with a small sample size. It can be used when the regressors are stationary at $I(0)I(0)I(0)$ or $I(1)I(1)I(1)$, or a combination of both orders. If cointegration is detected among the variables, it indicates that the variables adjust to equilibrium, which can be captured by an error correction model, specified as follows:

$$\Delta UNEMP = \alpha_0 + \sum_{j=1}^p \phi_j UNEMP_{t-j} + \sum_{s=0}^q \rho_s LOANSME_{t-s} + \sum_{m=0}^q \delta_m EXTD_{t-m} + \sum_{z=0}^q \psi_z WPOP_{t-z} + \sum_{z=0}^q \vartheta_z PGDP_{t-z} + \gamma ECM1_{t-1} + \mu_{12t} \quad (3)$$

Where $ECM1_{t-1}$ is the error correction term?

To capture objective two, the following functional form is specified:

$$PGDP = LOANSME, EXT D, WPOP, INF \quad (4)$$

Where:

PGDP = per capita GDP

LOANSME = government loan to MSMEs, a measure of entrepreneurship

EXTD = government debt

WPOP = labour force

INF = inflation rate

After taking the log of the variables, equation (4) is re-specified in autoregressive distributed lag (ARDL) form as follows:

$$PGDP = \beta_0 + \beta_1 PGDP_{t-1} + \beta_2 LOANSME + \beta_3 EXT D + \beta_4 WPOP + \beta_5 INF + \sum_{j=1}^p \vartheta_1 PGDP_{t-j} + \sum_{s=0}^q \vartheta_2 LOANSME_{t-s} + \sum_{m=0}^q \vartheta_3 EXT D_{t-m} + \sum_{z=0}^q \vartheta_4 WPOP_{t-z} + \sum_{z=0}^q \vartheta_5 INF_{t-z} + \mu_{2t} \quad (5)$$

In equation (5), the various terms represent the short-run variables, while the lag terms denote the long-run processes. μ_{2t} is the error term, and β_i (where $i=1,2,3,\dots,5$) and ϑ_i (where $i=1,2,3,\dots,5$) are the long-run and short-run parameters of the respective variables. The optimal lag length will be determined using the Akaike Information Criterion (AIC) for lag length selection.

If cointegration is detected among the variables, it indicates that the variables adjust to equilibrium, which can be captured by an error correction model, specified as:

$$\Delta PGDP = a_0 + \sum_{j=1}^p \vartheta_1 PGDP_{t-j} + \sum_{s=0}^q \vartheta_2 LOANSME_{t-s} + \sum_{m=0}^q \vartheta_3 EXT D_{t-m} + \sum_{z=0}^q \vartheta_4 WPOP_{t-z} + \sum_{z=0}^q \vartheta_5 INF_{t-z} + aECM_{t-1} + \mu_{2t} \quad (6)$$

Where ECM_{t-1} is the error correction term?

Definition of the Variables in the Model

The variables in the models are defined as follows:

Unemployment Rate (UNEMP): This represents the percentage of the labor force that is unemployed.

Per Capita GDP (PGDP): This indicator measures the output per capita, serving as a gauge of economic welfare. It has been utilized by previous researchers, such as Edeme (2018), who explored the linkages between economic growth and welfare in Nigeria.

External Debt (EXTD): This variable signifies the total debt of a country sourced from foreign entities, including foreign corporations, governments, or financial institutions. It reflects the amount of a country's debt owed to creditors outside its borders.

Inflation Rate (INF): The inflation rate denotes the average rate of price increases across the entire spectrum of goods and services produced within an economy.

Government Loan to SMEs (LOANSME): This refers to loans provided by the government to support the growth and development of Small and Medium Enterprises (SMEs).

Working Population (WPOP): This represents the population of individuals who are engaged in employment or actively working within the economy.

Estimation Procedure

Prior to estimation, the lag order of ARDL models is determined using the Akaike Information Criterion (AIC) lag length selection method. Subsequently, Ordinary Least Squares (OLS) technique is employed for model estimation. OLS is widely regarded as the Best Linear Unbiased Estimator (BLUE). Linearity in this context refers to the regression model being a linear function of random variables, such as the dependent variables like unemployment rate and per capita GDP. Unbiasedness implies that the average or expected value of the estimator is equal to the true parameter value, while efficiency indicates that the estimator has minimal variance.

The majority of macroeconomic time series exhibit trends and are therefore often non-stationary. Hence, an Augmented Dickey-Fuller (ADF) unit root test is conducted to assess the stationarity of the variables. Following this, a test for the existence of a long-run relationship among the variables is performed. If the calculated F-statistic surpasses the upper bound of the critical band, the null hypothesis of no long-run relationship is rejected, suggesting cointegration. Conversely, if the F-statistic falls below the lower bound, the null hypothesis is retained, indicating no cointegration. When the F-statistic falls within the critical band, the result is inconclusive, and the presence or absence of cointegration cannot be determined definitively.

Results and Discussion

Descriptive Statistics of the Variables

Table 1 shows the results of estimating the descriptive statistics for the variables used for the study. This is to have an idea about the data set.

Table 1: Descriptive Statistics

Variables	Obs	Mean	Standard Deviation	Minimum value	Maximum value	P-value (Skewness)	P-value (Kurtosis)
LOANSME	42	41093.83	24511.54	10747.89	95644.16	0.0832	0.7399
UNEMP	42	3.6663	0.9171	1.9000	5.633	0.5099	0.9914
EXTD	42	2611.688	3963.326	2.3312	15855.23	0.0000	0.0016
WPOP	42	71400000	23200000	39500000	118000000	0.2591	0.0389
PGDP	42	1908.921	463.5383	1408.209	2679.554	0.2637	0.0000
INF	42	18.7859	16.4888	5.3880	72.8355	0.0000	0.0098

Source: Estimated by the authors

The mean values of the unemployment rate, working-age population, and inflation rate are close to their respective standard deviation values, indicating that these variables have data points that are clustered around their mean values. In contrast, government loans to MSMEs, government external debt, and real per capita GDP have mean values significantly larger than their standard deviation values, suggesting that these variables exhibit greater variability, with data points spread far from the mean.

All minimum values are less than the maximum values, demonstrating that some data points exceed the mean while others are below it, which also indicates an absence of outliers in the dataset. Regarding skewness, the probability values for government external debt and the inflation rate are significant at the 5% level. This significance leads to the rejection of the null hypothesis of normal distribution, implying that these variables are not normally distributed and are skewed either to the right or left, indicating asymmetry. Conversely, the skewness probability values for government loans to MSMEs, the unemployment rate, working-age population, and real per capita GDP are not significant. Therefore, the null hypothesis of normal distribution is accepted at the 5% level for these variables, indicating that they are normally distributed.

For kurtosis, except for the unemployment rate and government external debt, all variables are significant at the 5% level. This significance implies the rejection of the null hypothesis of normal distribution kurtosis, indicating that these variables have tails different from those of a normal distribution. The unemployment rate and government external debt, however, are not significant at the 5% level, suggesting that their distribution tails are similar to those of a normal distribution.

Unit Root Test

The Augmented Dickey-Fuller and the Phillips-Perron tests are used in testing the stationarity of the time series variables used for this study. The test results are shown in Table 2.

Table 2: Augmented Dickey-Fuller and Philips–Perron Unit root test Results

Variable	Augmented Dickey-Fuller Result		Philips–Perron Result		Lag order	Order of Integration
	Level	1 st Difference	Level	1 st Difference		
LOANSME	-1.547	-3.835	-2.045	-7.700	2	I(1)
UNEMP	-2.175	-4.260	-2.014	-4.244	2	I(1)
EXTD	-1.053	-3.677	-1.097	-3.715	2	I(1)
WPOP	-3.656	-	-3.841	-	2	I(1)
INF	-2.671	-4.517	-3.285	-5.841	2	I(1)
PGDP	-1.491	-3.943	-2.869	-3.699	2	I(1)

Where * denotes significance at 5% and the rejection of the null hypothesis of the presence of unit root. The optimal lag length of 2 was chosen using Akaike's Final Prediction Error (FPE), and Akaike's information criteria. The ADF 5% critical value at levels is -3.544, while at 1st difference is -3.548. The Philips–Perron critical value at levels and 1st difference is -3.536 and -3.540. A trend was included in both the Augmented Dickey–Fuller and Philips–Perron unit root test models estimated.

Source: Estimated by the authors

The Augmented Dickey-Fuller (ADF) test indicates that, except for the working-age population, the 5 percent critical value is greater than the test statistics for all variables at their levels. This suggests that the working-age population is significant at the 5 percent level, while the other variables are not. Consequently, the null hypothesis of the presence of a unit root is rejected for the working-age population, indicating it is stationary, while it is accepted for the other variables, indicating they are non-stationary.

To address this, the non-stationary variables (government loans to MSMEs, unemployment rate, government external debt, inflation rate, and real per capita GDP) were differenced once, and the ADF test was reapplied at the first difference. At this stage, the test statistics for these variables exceeded the 5 percent critical value, leading to the rejection of the null hypothesis of a unit root, thus indicating stationarity at the first difference. The Phillips-Perron test results align with the ADF test outcomes, showing that at the level, only the working-age population is stationary, while the other variables are non-stationary. However, after differencing, these previously non-stationary variables become stationary at the 5 percent level.

Effect of Micro, Small and Medium Enterprises on Unemployment

This section presents and discusses the results for objective one. The Bounds test results for assessing the existence of a level form relationship (cointegration) among the variables in the model for objective one is detailed in Table 3.

Table 3: Bounds test result for level cointegration of the variables in the model for objective one

	10%		5%		1%		p-value	
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
F	2.592	3.966	3.167	4.744	4.562	6.616	0.000	0.000
t	-2.473	-3.589	-	-4.024	-	-4.912	0.000	0.000
			2.844		3.603			
F = 11.579								
t = -13.807								

Source: Authors' Computation

The F-value of 7.512 is compared with the 5 percent critical values, revealing that it exceeds both the lower and upper bound critical values of 3.167 and 4.744. Since the F-value is greater than the upper bound, we reject the null hypothesis of no level relationship, indicating that the variables are cointegrated. Additionally, the t-value of -8.220, in absolute terms, is higher than the 5 percent lower and upper bound critical values of -2.844 and -4.024, respectively. This confirms the presence of cointegration among the variables. Furthermore, the p-values for the variables at both order 0 and order 1 are significant, supporting the rejection of the null hypothesis of no level relationship. The results of the error correction model are presented in Table 4.

Table 4: Error correction estimates of the effect of micro, small and medium enterprises on unemployment

The dependent variable is the unemployment rate				
UNEMP	coefficients	Standard Errors	t-Statistics	P-value
Adjustment	-0.4062	0.1066	-3.81	0.000
Long-Run				
LOANSME	-0.1201	0.0567	-2.12	0.044
EXTD	0.0511	0.0207	2.47	0.019
WPOP	0.0245	0.1362	0.18	0.859
PGDP	-0.0416	0.0114	-3.65	0.000
Short-Run				
UNEMP	0.3391	0.2294	1.48	0.152
LOANSME	-0.0641	0.0186	-3.45	0.000
EXTD	0.0702	0.0265	2.65	0.014
WPOP	-0.0821	0.1303	-0.63	0.533
PGDP	-0.0619	0.0268	-2.31	0.029
Constant	2.1257	1.1892	1.79	0.086
R2		0.7410		
Adjusted R-Squared		0.5960		
F-statistics		5.11 (0.0002)		
Durbin-Watson d-statistic (15, 40)		1.8427		
Breusch-Godfrey LM test		0.013 (p = 0.9080)		

Source: Authors' computation

The analysis revealed an error correction adjustment coefficient of -0.4062 with a t-value of -3.81. This significant negative value suggests that any short-term discrepancies in the variables for objective one is corrected back to equilibrium in the long term at an annual adjustment speed of 40.62 percent. The long-term coefficient for government loans to MSMEs is -0.1201 with a t-value of -2.12. Given the statistical significance of the t-value (greater than 2), the null hypothesis that government loans to MSMEs have no significant effect on the unemployment rate is rejected at the 5 percent level. Specifically, an increase in government loans to MSMEs leads to a 0.12 percent significant reduction in the unemployment rate. Similarly, in the short run, an increase in government loans to MSMEs results in a 0.06 percent significant decrease in the unemployment rate. Therefore, government loans to MSMEs have a negative and significant impact on the unemployment rate in both the long term and short term.

The coefficient for the government's external debt is positive and significant. Due to its significance, the null hypothesis that government external debt has no significant effect on the unemployment rate is rejected at the 5 percent level. An increase in the government's external debt leads to a 0.05 percent significant increase in the unemployment rate in the long term. In the short term, an increase in the government's external debt results in a 0.07 percent significant increase in the unemployment rate. Therefore, the government's external debt has a positive and significant effect on the unemployment rate in both the long term and short term.

The impact of the working-age population on the unemployment rate is positive but insignificant in the long term, with a coefficient of 0.0245 and a t-value of 0.18, indicating a 0.02 percent insignificant increase in the unemployment rate. In the short term, the effect is negative and insignificant, with a coefficient of -0.0821 and a t-value of -0.63, indicating a 0.08 percent insignificant decrease in the unemployment rate. Thus, the working-age population has an insignificant positive effect on the unemployment rate in the long term and an insignificant negative effect in the short term. The effect of real per capita GDP on the unemployment rate is negative and significant in the long term. Given its significance, the null hypothesis that real per capita GDP has no significant effect on the unemployment rate is rejected in the long term. Consequently, a percentage increase in real per capita GDP results in a significant decrease in the unemployment rate. This outcome is consistent in the short term, where real per capita GDP also has a negative and significant impact on the unemployment rate. Thus, an increase in real per capita GDP leads to a significant decrease in the unemployment rate in both the long term and short term.

Effect of Micro, Small and Medium Enterprises on Per Capita GDP

This section presents and discusses the results for the second objective. The Bounds test outcomes, which determine the existence of a long-term relationship (cointegration) among the variables in the model for this objective, are outlined and analyzed. These results are detailed in Table 5.

Table 5: Bounds Test result for Cointegration of the Variables in the Model for Objective two

	10%		5%		1%		p-value	
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
F	2.592	3.966	3.167	4.744	4.562	6.616	0.000	0.000
t	-2.473	-3.589	-2.844	-4.024	-3.603	-4.912	0.000	0.000
F = 12.785								
t = -12.846								

Source: Authors' computation

The F-value of 12.785 is compared to the 5 percent critical values, revealing that it exceeds both the lower and upper bounds critical values of 3.167 and 4.744, respectively. Since the F-value surpasses the upper bound, we reject the null hypothesis of no long-term relationship, indicating that the variables are cointegrated. Additionally, the t-value of -12.846 is greater than the 5 percent lower and upper bounds critical values of -2.844 and -4.024 in absolute terms. Because the t-value exceeds both bounds, it confirms that the variables are cointegrated. Moreover, the p-values for the variables at both order 0 and order 1 are significant, further supporting the rejection of the null hypothesis of no long-term relationship for both orders. The error correction results are presented in Table 6.

Table 6: Error Correction Estimates of the effect of micro, small and medium enterprises on real per capita GDP

The dependent variable is real per capita GDP				
PGDP	coefficients	Standard Errors	t-Statistics	P-value
Adjustment	-0.1990	0.0699	-2.85	0.009
Long-Run				
LOANSME	0.0574	0.0186	3.09	0.000
EXTD	-0.1139	0.0610	-1.87	0.074
WPOP	0.0231	0.0097	2.37	0.026
INF	-0.1752	6.4149	-0.03	0.978
Short-Run				
PGDP	0.2297	0.1724	1.33	0.195
LOANSME	0.0607	0.0205	2.96	0.004
EXTD	-0.0246	0.0142	-1.74	0.095
WPOP	0.1022	0.0322	3.17	0.000
INF	-0.7206	0.9351	-0.77	0.448
Constant	-125.873	152.6486	-0.82	0.417
R2		0.6240		
Adjusted R-Squared		0.4134		
F-statistics		2.96 (p = 0.0087)		
Durbin-Watson d-statistic (14, 25)		2.2251		
Breusch-Godfrey LM test		2.476 (p = 0.1156)		

Source: Authors' Computation

The results indicated an error correction adjustment coefficient of -0.1990 with a t-value of -2.85. The significant negative value of -0.4062 suggests that when there are short-run discrepancies, the variables in the model for the second objective adjust back to equilibrium in the long run at an adjustment speed of 19.90 percent annually. The long-run coefficient for government loans to MSMEs is 0.0574, with a t-value of 3.09. Given that the t-value exceeds 2, it is statistically significant, leading to the rejection of the null hypothesis that government loans to MSMEs have no significant effect on real per capita GDP at the 5 percent level. Specifically, an increase in government loans to MSMEs results in a 0.06 percent significant increase in real per capita GDP. The short-run results also indicate a positive and significant effect, with a similar increase of 0.06 percent. Thus, government loans to MSMEs positively and significantly impact real per capita GDP in both the long run and short run.

The coefficient for government external debt is negative and insignificant. Since it is not significant, the null hypothesis that government external debt has no significant effect on real per capita GDP is accepted at the 5 percent level. Specifically, an increase in government external debt results in an insignificant decrease of -0.11 percent in real per capita GDP in the long run. In the short run, the effect remains insignificant at the 5 percent level, with an insignificant decrease of -0.02 percent. This indicates that government external debt has a negative and insignificant impact on real per capita GDP in both the long run and short run.

The working-age population positively and significantly affects real per capita GDP, with a long-run coefficient of 0.0231 and a t-value of 2.37. This means that an increase in the working-age population leads to a 0.02 percent significant increase in real per capita GDP in

the long run. In the short run, the effect is also positive and significant, with a coefficient of 0.1022 and a t-value of 3.17, resulting in a 0.10 percent significant increase in real per capita GDP. Thus, the working-age population has a positive and significant impact on real per capita GDP in both the long run and short run. The inflation rate's effect on real per capita GDP is negative and insignificant in the long run. As it is not significant, the null hypothesis that the inflation rate has no significant effect on real per capita GDP is accepted in the long run. Therefore, an increase in the inflation rate has a negative and insignificant effect on real per capita GDP. This finding is consistent in the short run, with the inflation rate also having a negative and insignificant effect. Hence, the inflation rate's impact on real per capita GDP is negative and insignificant in both the long run and short run.

The R² coefficient is 0.6240, indicating that the independent variables explain about 62.40 percent of the changes in real per capita GDP in Nigeria. The remaining percentage is due to other variables not included in this study. The F-value is 2.96, with a p-value of 0.0087, which is significant since it is less than 0.05. Consequently, the null hypothesis that the independent variables have no joint significant effect on real per capita GDP is rejected, confirming that the independent variables collectively have a significant impact on real per capita GDP. The Durbin-Watson d-statistic is approximately 2, suggesting no autocorrelation. Additionally, the insignificant Breusch-Godfrey LM Chi-square statistic of 2.476 ($p = 0.1156$) indicates that the independent variables are not serially correlated.

Summary of Findings

The key findings of this study are summarized as follows:

- i. For objective one, the study revealed that government loans to MSMEs and real per capita GDP have a negative and significant impact on the unemployment rate in both the long run and short run. Additionally, it was found that government external debt exerts a positive and significant influence on the unemployment rate over both time horizons. The findings also indicated that the working-age population has a positive yet insignificant effect on the unemployment rate in the long run and a negative but insignificant effect in the short run.
- ii. For objective two, the study found that government loans to MSMEs and the working-age population have a positive and significant impact on real per capita GDP in both the long run and short run. Conversely, it was observed that government external debt and the inflation rate have a negative and insignificant effect on real per capita GDP over both periods.

Implications of the Findings

The findings related to objective one reveal that government loans to MSMEs and real per capita GDP have a significant and negative impact on the unemployment rate both in the long and short term. This indicates that these factors are crucial in reducing unemployment. The results suggest that targeted measures, such as providing subsidized loans to MSMEs and implementing policies that promote economic growth and job creation, are effective. Additionally, the analysis shows that the government's external debt has a positive and significant impact on the unemployment rate. This highlights the necessity to manage debt

levels carefully, prioritize investments that create jobs, enhance productivity, and implement sound fiscal policies to address the relationship between government debt and unemployment. Furthermore, the working-age population was found to have a positive but insignificant effect on the unemployment rate in the long run and a negative but insignificant effect in the short run, suggesting that without proper management, an increasing working-age population could worsen unemployment over time.

Regarding objective two, the analysis indicates that government loans to MSMEs and the working-age population positively and significantly affect real per capita GDP in both the long and short term. This underscores the importance of providing financial support to MSMEs and implementing policies to support workforce development for sustained economic growth. In contrast, the study found that the government's external debt and the inflation rate have a negative and insignificant impact on real per capita GDP in both the long and short term, implying that their influence on economic performance is relatively minor compared to other factors.

Conclusion

This study investigates the relationship between entrepreneurship and economic development in Nigeria, utilizing the Autoregressive Distributed Lag (ARDL) technique. The analysis yields several key findings. It is concluded that enhancing government loans to Micro, Small, and Medium Enterprises (MSMEs), coupled with an increase in real per capita GDP, contributes to a reduction in unemployment rates in Nigeria. Providing subsidized loans to MSMEs and fostering economic growth can generate employment opportunities and decrease the unemployment rate. Furthermore, financial support for MSMEs and investment in workforce development are crucial for advancing economic development. Although government external debt and inflation rate may affect economic development to some extent, their long-term impact appears to be relatively minor.

Recommendations for Policy

The following suggestions are offered:

- i. Policymakers should prioritize initiatives that increase labor market efficiency, such as promoting skills development, enhancing access to education and training, and encouraging entrepreneurship, particularly among those of working age.
- ii. Additionally, policymakers should aim to create a favorable environment for entrepreneurship, investment, and job creation.
- iii. Policymakers should also concentrate on addressing the key factors that drive economic growth and stability, ensuring sustainable development and improved living standards for the populace.

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