

# Gsm Usage and Economic Growth of Nigeria

Ojukwu, Henry Sonna<sup>1</sup>, Nsofor, Ijeamaka Charity<sup>2</sup> and Moedu, Vitalis Okwudili<sup>2</sup>

Department of Business Administration<sup>1&2</sup> and Department of Accountancy<sup>2</sup>  
Nnamdi Azikiwe University, Awka.

**Abstract:** *this paper empirically observed the impact of GSM usage on the economic growth of Nigeria from year 2000 to 2016, which is a period of 17 years. The study uncovered the global history of Gsm and how telecommunication services kick start its operations in Nigeria. Among other things, the authors reviewed the concept of Gsm usage in Nigeria and how it has impacted the growth of the economy empirically. Models were specified to guide this study. Data analyses were done using regression with the aid of E-View statistical software. Conclusions were made in line with the study findings.*

## I. Introduction

The introduction of telecommunication was a result of genuine novel invention that literally moved the whole globe from a point of ignorance characterized with stress to a location of efficiency by making the world a global village such that communication barriers were completely eliminated. The need for the world to go global and mobile in regard to communication as against the fixed analogue form of communication that existed prior to this pressing need led to the formation of a group called Group Special Mobile (GSM) in the 1980s. In 1989, the work achieved by this group was moved to the European Telecommunication Standards Institute where the acronym of Group Special Mobile was replaced with Global System for Mobile Communications (Randall & Michael, 2001).

Telecommunications infrastructure took off in Nigeria when a cable connection was established between Lagos and London by the colonial administration in 1886 (Adegboyega, 2008). Originally, the creation of that infrastructure was not intended towards the growth of the economy, but was used a tool for colonial subjugation (Mazango, 1998). By January 1985, the erstwhile (P&T) Post and Telecommunications divisions merged with NET to give birth to Nigeria Telecommunication Limited (NITEL) that was owned by the government with the primary objective of harmonizing the planning and coordination of the internal and external communication services, rationalizing investments in telecoms development and providing accessible, efficient and affordable services (Bakare & Lola, 2011).

The Nigeria telecommunication sector was grossly underdeveloped before the sector was deregulated under the military regime of General Ibrahim Babangida in 1992 with the establishment of a regulatory body, where the Nigerian communication commission (NCC) was mandated to issued licenses to private telecommunication operators (Bakare, Ekanem & Allen, 2017). The return of democracy in 1999 brought a full deregulated telecommunications sector by auctioning 3 GSM licenses in January 2001 for 285 million each and further reserved a license for NTEL (Bakare, Ekanem & Allen, 2017). Ever since the introduction of GSM in Nigeria, its usage has risen to figures exceeding 50 million which even till now is directly contributing to Nigeria's National income as consumption increases.

Before the advent of mobile telecommunication (GSM), Nigeria was ranked among the lowest users of telephone lines in world. However, with the introduction of GSM, the total number of lines increased from 866,782 in 1999, to over 60 million lines in year 2008 out of which GSM operators accounted for 57, 622, 901 lines, fixed line operators accounted for 2,537,504 code division multiple access, CDMA, operators connected 780,938 lines (Ndukwe, 2008).

The importance of GSM on the growth of Nigeria's economy cannot be overemphasized as it has led to the creation of employment and efficiency in the ease of doing business in the country. It is against this background that this study intends to empirically ascertain the effect of GSM usage on Nigeria's economic growth.

## II. Literature Review

### GSM Usage

The impact of GSM in Nigeria cannot be overemphasized as it has touched lives directly and indirectly, increased communication and still positively impacting on businesses and personal lives of Nigerians (Bakare, Ekanem & Allen, 2017). The revolution of information and communication technology (ICT) has brought assurance to many people especially low income earners that they can feed themselves and families, as well as provide shelter for themselves and have a secured future (Ndukwe, 2008). The Global Service for Mobile communication (GSM) serves as a tool for economic, political and social interactions among people of all profession, classes and status by helping bridge the communication gap between urban and rural dwellers through its usage (Bakare, Ekanem & Allen, 2017), as the official statistics shows that Nigeria has a telephone subscriber base of about 70million (NCC, 2010),

of which about 62million are GSM subscribers. Prior to this period, access to telephone was exclusively reserved for the rich and privileged (Bakare, Ekanem & Allen, 2017).

According to Nokia (2011), the benefit of GSM include livelihood Sustainability, job creation and employment, cheaper call rate, mobile banking, reduced risk and cost of travel, cheap intercontinental call/roaming, internet services, mobile/social media, and internet banking with ease. As explained by Balogun (2000), the emergence of GSM facilitates has impacted positively on Nigeria's economic growth such that it provides an easy and effective communication means needed to stimulate and promote trade between Nigeria and its foreign partners in the globe. Also, its emergence has a significant positive effect on the investment level within Nigeria (Tella, 2007).

As regard employment creation, Manuaka (2008) and Okereocha (2008) revealed that more than 1,000,000 Nigerians have been directly and indirectly employed by the operators. Although currently in 2021 the numbers of those directly employed by telecom operators have dropped given the increased level of hardship within the country. However, these operators are indirectly creating opportunities at micro level even where and when the government has failed. While on the other hand, supportive service organizations like financial, haulage, consultancies, and insurance have themselves blossomed (Bakare & Lola, 2011). Mobile phone has greatly changed the fortune of the poor by providing them with series of opportunity to better their standard of living (Soyinka, 2008). In regards to the benefit to businesses, the introduction of mobile telecoms has drastically reduced the cost of doing business and consequently increased output (Adebayo, 2008).

### **Economic Growth**

Nigeria's economic growth has been an issue of much debate as its growth rate has been consistently going towards an economic depression. There seems to be no practicable plan as to how this ailing economy will be vitalized to full production capacity. One would actually wonder if the problem rests on those charged with the responsibility of piloting the affair of this country or on continued interference from government that is the "presidency" that made these appointments. Indeed this country is in a serious quagmire struggling to see the light of each new day.

Nigeria, oftentimes regarded as the most populous black nation has been stagnant even before the official declaration that the economy is in recession from the second quarter of 2016, has had many things that has gone wrong with the economy (Edet & Samuel, 2018). Structurally, the Nigerian economy is primary product oriented, highly import dependent, consumption driven and undiversified where Agriculture accounts for 40% of GDP and employs about 70% of labour force, crude oil accounts for more than 90% of exports and foreign exchange earner, while manufacturing accounts for less than 1% of total exports (Edet & Samuel, 2018). Nigeria is a sorry situation in that being a country with so much potential and an abundance of natural resources at its disposal, many of its citizens can barely afford a balanced meal for either themselves or their dependents. Also, majority of the populace are under the burden of inequality and unemployment (African Development Bank, 2014; Ministry of Budget and National Planning, 2017; The World Bank, 2010). The economic recovery and growth plan of 2017-2020 document highlights that general economic performance of the country is seriously undermined by deplorable infrastructure, corruption, insecurity and poor governance or generally, poor and ineffective institutions infrastructures (Ministry of Budget and National Planning, 2017).

### **Empirical Studies**

Bakare & Lola (2011) investigated the impact of Global System for Mobile Telecommunication (GSM) in providing employment opportunities, income of the masses, and transaction cost of various economic activities of the masses. The study made use of a structured questionnaire administered to 1,000 respondents' from 20 selected communities in Ilorin metropolis in Kwara State, Nigeria. The purposive sampling method was also employed in the study with a sample unit. Linear regression analytical techniques were used for data analysis. The outcome of the empirical investigations shows that Global System for Mobile Communication has contributed positively to the economic situations of Nigeria and has served as source of income and employment to many Nigerian youths. It was revealed that GSM business had reduced the cost of doing business in terms of traveling and transaction cost. The researchers suggested that there is need for the Federal Government of Nigeria through Nigerian Communication Commission (NCC) to provide the necessary economic infrastructure (particularly power supply) to the GSM operators in order for them to deliver efficient services and to be able to reduce their charges.

Ibilola (2005) examined the use of global system for mobile communications (GSM) at the University of Ibadan, Nigeria by emphasizing on the nature and characteristics of the activities for which it is used. The study adopted a descriptive survey design. A two-stage stratified sampling technique was adopted for selecting a sample of 456 staff and students of the University of Ibadan that form the target population. The questionnaire was the main data collection instrument while frequency and percentage distributions were the analytical tools adopted. Findings show a significant use of the GSM for social activities (getting in touch with friends and relations) while its use in research and academic activities were less significant. Also a number of inhibitors of effective GSM use in the University of Ibadan such as limited network coverage, unstable network and difficulty in making calls, etc. were identified. The study recommended that the government need to promote a competitive mobile phone market for more players to come into the sector and an upgrade in the communication standard for better GSM services in Nigeria.

Bakare, Elkanem & Allen (2017) conducted a study on the appraisal of the Global System for mobile communication (GSM) in Nigeria. They rendered an overview of the history and the trend of GSM in Nigeria, the effect so far, the areas of reconsideration and future expectations as compared to developed countries. According to the authors, the introduction of GSM in Nigeria has made way to a variety of different services that were never possible with Government Owned Telecommunication Company (NITEL), such as mobile banking. They explained that as more phones and accessories are being sold, it has helped to stimulate the Nigerian economy. They concluded that the deregulation of the Nigerian telecommunication sector and the introduction of GSM technology have made very significant positive impact on the economic situation of Nigeria.

### III. Methodology

Data for this study was sourced from the Central Bank of Nigeria Statistical Bulletin and World Development Indicator. The study covers a period of 17 years which is from 2000 to 2016. In terms of data analyses, the regression analysis was utilized with the aid of E-View statistical package.

#### Model Specification

As it pertains to this research, a model showing the functional relationship between the independent and dependent variable is established. Real Gross Domestic was used as a measure for Economic Growth while Exchange rate, inflation rate, mobile cellular subscription, and interest rate served as measures for GSM usage. The relationships among the variables can be represented as;

$$RGDP_i = \alpha_0 + \alpha_1 EXCHR_i + \alpha_2 INFLR_i + \alpha_3 MCS_i + \alpha_4 INTRR_i + \epsilon_i$$

Where;

RGDP = Real Gross Domestic Product

EXCHR = Exchange Rate

INFLR = Inflation Rate

MCS = Mobile Cellular Subscription

INTRR = Interest Rate.

#### Presentation and Analysis

Dependent Variable: RGDP

Method: Least Squares

Sample: 2000 2016

Included observations: 17

RGDP=C(1)+C(2)\*EXCHR+C(3)\*INFR+C(4)\*MCS+C(5)\*INTR

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	24035523	6412138.	3.748441	0.0028
C(2)	32390.97	30039.84	1.078267	<b>0.3021</b>
C(3)	-141765.6	186848.8	-0.758718	<b>0.4627</b>
C(4)	454758.7	39489.75	11.51587	0.0000
C(5)	121940.7	337611.7	0.361186	<b>0.7242</b>
R-squared	0.983787	Mean dependent var		47075581
Adjusted R-squared	0.978382	S.D. dependent var		15435313
S.E. of regression	2269443.	Akaike info criterion		32.34790
Sum squared resid	6.18E+13	Schwarz criterion		32.59296
Log likelihood	-269.9571	Hannan-Quinn criter.		32.37226
F-statistic	182.0344	Durbin-Watson stat		0.710932
Prob(F-statistic)	0.000000			

#### Interpretation

The P-value of the model is <0.05. This implies the model is significant at 5%. There is enough evidence to conclude that the model can be used for decision making. T-test shows significance of the parameters in the model. Among the parameters, C2 and C3 are insignificant but other variables are significant. The independent variables except INFR have positive effect on RGDP. This is an indication that increase in the variables will lead to growth in the RGDP. For an improvement in RGDP, the INFR must be controlled since it has negative effect on RGDP.

Model presentation

$$RGDP = 24035 + 32390.97EXCHR - 141765.6INFR + 454758.7*MCS + 121940.7*INTR$$

Among the variables with positive effect, MCS has highest effect with the value of 454758.7unit. Based on the T-test for parameters, the negative effect of INFR is not significant which implies the contribution of INFR in the model is negligible. Since MCS and EXCHR are highly correlated, to prevent multi-co linearity, it is better to use one of the two variables (MCS and EXCHR).

Dependent Variable: RGDP

Method: Least Squares

Sample: 2000 2016

Included observations: 17

RGDP= C(1)+ C(2)\*MCS

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	28250057	851950.9	33.15925	0.0000
C(2)	481569.8	17117.58	28.13305	0.0000
R-squared	0.981400	Mean dependent var		47075581
Adjusted R-squared	0.980160	S.D. dependent var		15435313
S.E. of regression	2174111.	Akaike info criterion		32.13227
Sum squared resid	7.09E+13	Schwarz criterion		32.23029
Log likelihood	-271.1243	Hannan-Quinn criter.		32.14201
F-statistic	791.4685	Durbin-Watson stat		0.701736
Prob(F-statistic)	0.000000			

Despite the removal of insignificant parameters, the coefficient of determination of the model is 98.1%. This implies the contribution of other variables in the model is negligible.

#### IV. Conclusion

The focus of this study has been to ascertain the effect of GSM usage on Nigeria's Economic growth. From the analysis conducted in the study, it was revealed that among the various variable used to measure GSM usage, it was Mobile Cellular Subscription that has the most significant impact of Nigeria's Real Gross Domestic Product. The implication of this is that if the number of those that subscribe to mobile data increases, there is every likely-hood that Nigeria's RGDP will increase simultaneously. In order to encourage this, the FGN ought to reduce the tax rate of telecommunications are demanded to pay which will encourage mobile phone users to subscribe more data and review several contents on the internet and social media.

#### References

- Adebayo F (2008). Seven Years of Telecoms Revolution – The Fun and the Fury Tell Magazine of Nigeria.
- Adegboyegba OA (2008). Seven Years of Telecoms Revolution – Hello! This is how it all began. Tell Magazine of Nigeria.
- Bakare, B., Ekanem, A., & Allen, I .(2017). Appraisal of Global System for Mobile Communication (GSM) In Nigeria. *American Journal of Engineering Research (AJER)* e-ISSN: 2320-0847 p-ISSN: 2320-0936 Volume-6, Issue-6, pp-97-102
- Bakare A. & Lola, G. (2011). Estimating the impacts of global system for mobile telecommunication (gsm) on income, employment and transaction cost in Nigeria. *Journal of Economics and International Finance Vol. 3(1), pp. 37-45, January 2011*
- Balogun J (2000). Impact of GSM on Culture and Technical interchange between East and West Gwagwalada, Abuja.
- Edet, O, & Samuel , A. (2018). Economic Growth and Development in Nigeria: Which Institutions Infrastructure Matter. *Journal of Business and Economic Policy. 5(1).*

Ibilola, O. (2005). GSM usage at the University of Ibadan. [www.emeraldinsight.com/0264-0473.htm](http://www.emeraldinsight.com/0264-0473.htm)

Manuaka T. (2008). Seven Years of Telecoms Revolution: The Prime Investors' Destination. Tell Magazine of Nigeria.

Ndukwe E. (2008). Seven Years of Telecoms Revolution Tell Magazine of Nigeria.

Nokia .(2011). "Wikipedia", Retrieved from: [https://en.wikipedia.org/wiki/Nokia\\_1011](https://en.wikipedia.org/wiki/Nokia_1011)

Okereocha C (2008). Seven Years of Telecoms Revolution – One Revolution, a Thousand Gains. Tell Magazine of Nigeria.

Randall, A., & Michael, D. (2001). *Wireless Mobile Networking with ANSI-41*, McGraw – Hill Book, Second Edition.

Soyinka A (2008). Seven Years of Telecoms Revolution – Breeding Jobs for the Masses. Tell Magazine of Nigeria.

Tella., S. (2007). Telecommunications Infrastructure and Economic Growth Evidence from Nigeria, Being a Paper Submitted for the Un- Idep and Afea Joint Conference on Sector-Led Growth in Africa and Implications for Development Dakar, Senegal, pp. 8-11.