

# **HARNESSING ECONOMIC AND POPULATION GROWTH IN NIGERIA USING INFORMATION AND COMMUNICATION TECHNOLOGY**

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## **ABSTRACT**

Telecommunications and information services, which is a subfield of Information and Communication Technology (ICT) serves as a source of revenue and means of economic diversification for some of the most populous nation in the world. The contribution of Telecommunications and information services to Gross Domestic Product of these populous nations for example China, USA, India, Indonesia has expanded these countries' sources of national income, thus creating jobs, enhancing Human Capital Development, enhancing digitisation of such economies, the sustenance of these economies and providing room for diversification of the economy. The paper reviews relevant literatures on population growth and economic growth, the role of ICT in harnessing economic growth amid population growth. More so, a time series analysis is carried out to forecast a twelve-year GDP on Telecommunications and information services to Gross Domestic Product at current basic prices for Nigeria. The forecasting predicted a continuous increase in GDP, thus increased source of national revenue, the possibility of diversifying the Nigerian Economy via the Telecommunications and information services sector.

Key words: Population, economy, Information and Communication Technology (ICT), forecasting, Gross domestic Product.

## **1.0 INTRODUCTION**

Nigeria is the most populous black nation in the African continent and the seventh most populous nation in the world, blessed with natural and human resources [16]. Nigeria's population is estimated to be 200 million

and yet to translate its population strength into a developed and potent economy as is obtained by other populous nations like India, Indonesia, China and the United States of America, India, Indonesia, China and the United States of America have been able to turn their population into wealth for their nation by ensuring that their population serve as a source of cheap labour and technological innovations for developed and developing nations. These nations have adopted various ICT techniques towards economic sustenance, stability and growth, one of such technique is the digitisation of their economies [12]. It is no longer news that China, India, United States and other populous nations have adopted Information and Communication Technology (ICT) as a means of promoting economic growth, thus driving sustainable development. The government of China and the India were able to integrate Science Technology and Innovation (STI) driven through ICT into the country's national development plans, which in turn created jobs, enhanced human capital development, increased productivity and contributed immensely to the GDP of the country.

The [22], describes STI as the key indicator and driver for economic, sustainable and social development and could be achieved by enacting policies towards achieving and sustaining STI for developing countries. [23], describes ICT as Information Technology (IT), that lays emphasis on the function of the role of unified communications and the harmonization of telecommunications, which include computers, telephone lines and wireless signals, as well as necessary applications software, storage, and audio-visual systems, which enable users to process information, while Science is referred to as an organised creativity, which constructs and organizes knowledge in the method that it can be testable with justifications and likelihood about the earth [15] and can be also described as an aggregation of skills and knowledge intended for nature, learning and understanding. Technology on the other hand can be described as a pool of understanding of science, which is

applied for exploration to environmental resources through instrumentation, manipulation and production [7]. Additionally, innovation is referred to as a novel idea, imaginative thoughts in the form of device or method and could be perceived as enhanced solutions that meet new challenges, tacit needs or existing human needs [8]. With the above definitions and descriptions, it is expected that ICTs will direct economic development with sustainable tendencies and innovations, which most times are driven by ICT, and has proven to be a major indicator for enhanced growth and economic stability.

The economic gaps between developed nations and developing nations can be attributed to gaps between Information and Communication Technology (ICT) and other factors that exist between such nations [10]. For a nation to attain digital inclusion, ICT should contribute to economic development and sustenance with adequate ICT infrastructure. Some of these populous nations have planned and envisaged ICT driven economies. These plans come with huge investments on the backbone, which includes the infrastructures of ICT as well as training and retaining of experts who handle these ICTs.

According to [13], by the year 2025, the economy of Indonesia is estimated to generate USD 150 billion to the Gross Domestic Product (GDP), which will be achieved through infrastructure development, the provision of internet of things (IoT) and 4G services to every city via a series of digital transformations with the sole aim to drive small and medium enterprises. All these will be achieved through policies that drive national and sustainable development. The Government of Indonesia, has recognized the aim of ICT in economic development and growth, thus spurred all means of ICT infrastructure for growth in the nearest future. In the same vein, China's population which is a strength to the nation can be attributed to industrialization, mechanization and the use ICT to drive most if not all of her processes and in addition policies that drives ICT and innovation.

Nigeria as a developing nation is yet to attain economic stability and can adopt ICT as means of income, economic stability and growth. In 2018, the Minister of Science and Technology, Ogbonnaya Onu posited that the Nigerian government will adopt the transformation model of China for Nigeria, thus investing in technologies to enhance national development and interestingly the telecommunications industry of Nigeria contributes over N6trillion quarterly to Nigeria's Gross Domestic Product [6], yet the contribution of the sector to GDP is still struggling. China been the most populous nation in the world has invested heavily on ICT infrastructures to drive virtually all sectors of its economy, which has provided jobs for the population and also created an enabling environment for entrepreneurs to thrive, thus making China a global village and easily accessible to the rest of the world. Nigeria is yet to allocate substantial allocation of its annual budget to the development of the backbone of ICT, which currently reflects on its poor investment in ICT infrastructure and the current rating by ICT Development Index of 143<sup>rd</sup> in the world.

The teeming Nigerian population is faced with unemployment, insurgencies, banditry, kidnapping, and separatist agitations. ICT, if harnessed properly and invested on could assist in managing these challenges effectively and most especially providing jobs and enhancing Human Capital Development (HCD).

The paper reviews Information and Communication Technology (ICT) in various countries with a view to ascertain how it has contributed to sustainable nation building in these countries and proposes how Nigeria could benefit from ICT. The paper further forecasts Telecommunications and information services to Gross Domestic Product at Current Basic Prices (₦ Billion) from 2019 to 2030.

This paper is divided into various sections, section one presents a brief background of population growth, ICT and economic growth; section two presents a review of relevant literatures by scholars on the relationship

between ICT, economic growth and population growth. Section three presents a ten-year forecast of Telecommunications and information services to Gross Domestic Product at Current Basic Prices, section four presents result and discussion, five presents conclusion while section six presents recommendations.

## **2.0 REVIEW OF RELATED LITERATURE**

The literature review presents the examination of scholars' discussion on three major areas of this paper; Information and Communication Technology, Nigeria's evolving population, ICTs adoption in the most populous nations in the world and the correlation between population and economic development.

[5] investigated if ICT had attributed to Gross Domestic Product Growth and tried to establish if there was no relationship between the two elements. Using the Eurostat data and applying partial least squares, they studied European Union nations from 2014 to 2017, to identify if Information and Communication Technology contributes to sustainable economic development (measured in Gross Domestic Product per capita). Their study revealed that ICT recorded the most variance in GDP per capita and they proposed that the investment in the deployment of Information and Communications Technology supports sustainable economic development of EU nations.

[14] assessed the population dynamics in Kenya and evaluated the variation in the population and its impact on Kenya's economic growth. They adopted three theories to analyse population as a stimulant for economic growth, population as a repellent for economic growth and population as a neutral factor in economic growth. Upon using Vector Auto Regression estimation technique, their study revealed that there is a positive relationship between population growth and economic growth, which implies that an increase in population will automatically result to an economic growth in Kenya.

[2] tried to establish a relationship between population growth and economic growth, unfortunately, their study could not establish a relationship. An annual time series data covering a period of 1970 to 2013 was subjected to the Granger Causality test, the results showed that population growth did not initiate economic growth and vice-versa. This now raises the question, if population growth is a strength or weakness since it does foster economic growth. Although, countries like India and China with a very large population have proven that a large population is a strength, which is reflected on the economy of both nations while Israel with a very small population of about 8.7 million has also proven that a small population is a strength, which is also reflected on the economy of Israel.

[1] interrogated the nexus between demographic variation and economic growth in Nigeria. Positing that there was a negative effect of population on economic growth and on the contrary, population may not be crucial to emerging economies like Nigeria. They conducted their analysis using time series data and fully modified ordinary least square estimation technique and postulated that to ensure sustainable long run growth the economic productive, capacity must be expanded and enabling macroeconomic stability should be ensured and maintained consistently overtime.

[18], opined that economic drivers of developed and third world countries are alleged to be pinned on such country's population growth, such drivers include but not limited to GDP per capita, inflation rate and most importantly ICT. He researched on the drivers of the economy of Nigeria using secondary data gotten from the World Bank and subjected the data to Regression. Data sourced ranged from 2008 to 2018 and Statistical Package for Social Sciences used for analysis using Regression as the test tool. It was revealed that an increase in inflation, population and GDP per capita have gross negative effects on the number of Internet Users. He proffered that the Federal Government of Nigeria should improve funding for the ICT sector of the country

and the development of an ICT masterplan for the Nigerian State.

[9], researched on the nexus between investment in Information and Telecommunication Technology (ICT) and Human Capital Development on economic transformation in Economic Communities of West African States (ECOWAS) and also examined the how ICT and human capital development can reposition the economies of ECOWAS countries. Their research, revealed that investment in Information and communication technology doesn't have a statistically significant relationship with human development. Their study further revealed that factors responsible for the non-significance include, low investment in ICT and the exorbitant cost of the acquisition of technology by ECOWAS member states accompanied with a harsh policy environment. They proffered the enforcement of strong institutions and the stabilization of political and economic variables as a means to achieving enhanced ICT adoption and improved human capital development. While some literatures support that there is no relationship exists between population and economic growth, some other literatures clearly depicts that population has co-relation with economic development. Although there exist other factors which need to be considered for this effect. One of such factors is Information and Communication Technology, which has added grossly to the Gross Domestic product of Nigeria. This paper also tries to establish the role of ICTs in economic development for developing and developed countries.

According to [24], China with a staggering population of 1.435 billion has been able to use ICTs to digitize her economy and this move has attracted benefits to the country such as the remarkable growth in e-commerce, as the country accounts for 40 percent of the world's (global) transaction and 32 percent of global ICT goods export. This feat was achieved by governments continual investment in ICT infrastructure, which is facilitated in the boom in the ICT industry with minimal

regulation during the early stages of development. The growth of ICT in China was expedited by her population which currently has 700 million internet users willing to adopt digital services and new technologies for their social and economic benefits. A series of populated nations was subjected to trend analysis [3], on the population growth determinants in developing countries; Nigeria, Ethiopia, Bangladesh, Indonesia and Mexico and developed countries: United States of America and Germany, revealed that the life expectancy, birth rate, death rate fertility and mortality rate, are determinants of rapid population growth rate and youth dependency ratio (youth less than 15years) attributed to growth threat in developing countries. The study revealed that Gross National Income per capita of the United States of America and Germany with huge population had real economic wellbeing when juxtaposed with other developing nations.

ICTs has boosted productivity in China with improved efficiency for example the Chinese now perform financial transactions within splits of seconds at very minimal costs. The enabling and stable environment provided by the government of China has also helped SMEs thrive such as the Alibaba and the Didi taxi platforms that has created over 30 million jobs and 13 million drivers respectively. More so, ICT has created a market structure for the Chinese people and the world at large linking supply and demand directly through ICT driven platforms reducing oligopoly to a great extent. The growth of ICT in China can be attributed to governments' willingness for her continual provision of ICT infrastructures with regulation and in turn has resulted in innovations nationally and international, which has enhanced the social and economic well-being of her citizens.

The table below depicts the population of countries with the most population in world, the economies of some these countries have being observed to be experiencing growth and ICT is adding to the GDP of these countries immensely.



**Table 1:** Ten Most Populous Countries in the World

s/n	Country	Population
1.	China	1,389,618,778
2.	India	1,311,559,204
3.	United States	331,883,986
4.	Indonesia	264,935,824
5.	Pakistan	210,797,836
6.	Brazil	210,301,591
7.	Nigeria	208,679,114
8.	Bangladesh	161,062,905
9.	Russia	141,944,641
10.	Mexico	127,318,112

**Source:** [19]

Russia another populous nation also has ICT thriving with government willingness to develop the sector. The [17], estimates Russia population to about 144.5 million, with an Information Technology market worth \$22.6 billion as of 2018, the sector provided jobs for over 1.2 million people in 2017. The Russian Government to a large extent has been able to regulate the activities in the sector for enhanced quality of service and protection of people's data in the industry. Russian government policies have encouraged the digitalisation of the economy and growth in the IT sector, although the United States of America is a major supplier of technologies and IT products to the IT sector of the Russia economy. The IT sector though industrious is faced with challenges, which include; difficult political conditions and sanctions by the US in the finance, energy and defence sectors. Earnings to national coffers from the ICT sector of the Russian economy has added to the country's GDP and also provided jobs for the population thereby enhancing economic growth. In addition, Wesley, 2017 opined that there exists a contentious relationship between population growth and economic

growth. The author established a link between population growth, growth in per capita output, and overall economic growth over the past 200 years. Low population growth in high-income countries is likely to create socioeconomic problems, while high population growth in low-income countries it may slow their development. International migration could help to adjust these imbalances but is opposed by many. Drawing on economic analyses of inequality, it appears that lower population growth and limited migration may contribute to increased national and global economic inequality.

Information and communications technologies (ICTs) are changing nations and driving the growth of the world economy, though these gains are yet to spread to most nations especially developing nations. However, developed and populous nations like USA and Russia have being able to adopt ICTs as a means to drive their economy thus creating jobs, sustaining the economy, providing alternative means of national income, promoting social inclusion and economic growth. These developed nations digitize their economy in order to predict and expand its economy in the global space. A digital economy can be referred to as a series of economic activities, which includes the use of digitized information and knowledge as a major indicator of production (Zhang and Cheng, 2019). Nigeria is yet to fully digitise her economy with a varying population and a census that was last conducted in 2006, planning becomes difficult as most estimates by governments are made on population projections making it most difficult to direct resources both financially and otherwise accordingly.

According to the UN (2018), ICTs has the tendencies to reach and expand effectiveness of social development for countries and yield benefits in sectors such as education, healthcare, job creation and assist in the preservation of the environment. These tendencies are not planned for sufficiently and adequately in Nigeria; thus, the Nigerian government has failed to plan

for her teaming population, which has greatly slowed down economic, social and national development, very little has been invested in the areas of ICT, which is supported by science, technology and innovation. More so, very little has been allocated for research and development, which has placed Nigeria in a very difficult position as against her population. For a developing country, the adoption and use of ICTs is not sufficient to promote economic growth but factors such as the regulatory environment and requisite skills for the use of these ICTs are germane to drive economic development [20]. Thus, the provision of these ICTs is not sufficient to drive economic growth, as requisite skills and training is needed to sustain and use these ICTs. The Nigerian population which has been steadily increasing has mostly depended on crude oil, below is table showing a 10-year period showing Nigeria's population.

**Table 2:** History of Nigeria population

<b>Year</b>	<b>Population</b>	<b>Population Growth Rate</b>
2008	149,134,093	2.68 %
2009	153,161,414	2.70 %
2010	157,315,944	2.71 %
2011	161,597,706	2.72 %
2012	166,005,536	2.73 %
2013	170,528,460	2.72 %
2014	175,146,252	2.71 %
2015	179,838,974	2.68 %
2016	184,635,279	2.67 %
2017	189,559,502	2.67 %
2018	194,615,054	2.67 %

**Source:** [20]

The table above depicts Nigeria's ever-increasing population with crude oil as its major source of revenue. The country currently faces high unemployment rate and

increasing crime rate. This clearly suggests that its increasing population does not have sufficient innovations driven by science and technology to sustain her growing population and economy at large. The Federal Government of Nigeria has failed to produce an enabling environment to encourage foreign investors and small and medium industries to thrive, thus creating a lacuna in the survivability of the industries and hence their operations. Since these industries find it difficult to survive, they would also find it extremely difficult to import knowledge and technology to drive its survival and production, thus affecting the productivity of the country at large.

Nigeria with her increasing population is yet to fully adopt and utilise ICTs that can spur change in the present ICT knowledge-based global economy. Between 2001 and 2019, the giant telecommunications companies (MTN and GLO) were able to adopt technologies and technology driven services that have driven other sectors of the economy such as the banking sector and education sector. The banking sector were able to fully automate its banking service such as banking transactions (locally and internationally) through the services provided by these telecommunication companies. More so, tertiary institutions as a way to curb corruption through the adoption of these ICTs, introduced electronic payments for most of their transactions. This in turn provided enhanced quality of service and provided jobs for the unemployed, for the large number of persons who enrolled in tertiary institutions had one form of electronic transaction or the other. Within the aforementioned period, ICTs brought about economic growth and an enhanced wellbeing of Nigerians, assessed based on social and human development. The government was able to adopt, regulate and integrate into some of the world's ICT best practices such as in the finance sector where almost all services are driven by ICT [11]. Interestingly, if Nigeria adopts ICT as a driver for economic growth and stability for national development, then there is urgent need for massive investment in

various sectors of the economy to achieve economic growth and stability (Ukwuoma, 2019).

In Brazil, André Müller Borges, the secretary to the Telecommunication secretary posited that ICT infrastructure was the foundation for a digital economy with investments generating avenues for economic, digital inclusion and social welfare. In furtherance, stating that the innovation and use of ICT has enhanced empowerment and economic growth, spurring new opportunities all over the world hence fuelling astounding productivity and economic growth with a transformation in the way people work, learn, and socialize.

### **3.0 METHODOLOGY**

The paper adopts Statistical package for Social Sciences (SPSS) for data analysis of the secondary data gathered. Secondary data was sourced from the Central Bank of Nigeria and the World bank. Data source was subjected to forecasting in order to make predictions and draw conclusions on the predicted data. A quantitative method of data analysis was used for analysing the data.

### **4.0 RESULTS AND DISCUSSIONS**

Time series forecasting is adopted to predict future monetary values of Telecommunications and information services to Gross Domestic Product GDP (2019-2030) based on observed values obtained from the Central bank of Nigeria (1981-2018).

The role of Information and Communication Technology (ICT) in populous countries like China, United States cannot be over emphasised with visible economic and national development in the above stated countries, thus providing jobs for the populace and sustaining economic development. In a bid to ascertain if ICT can provide jobs and services that can assist the teeming Nigeria's population; a time series test is

performed using the forecasting tool in SPSS. The below table show forecasts from 2019 to 2030.

**Table 3: Forecasting of Telecommunications and information services to Gross Domestic Product (2019-2030)**

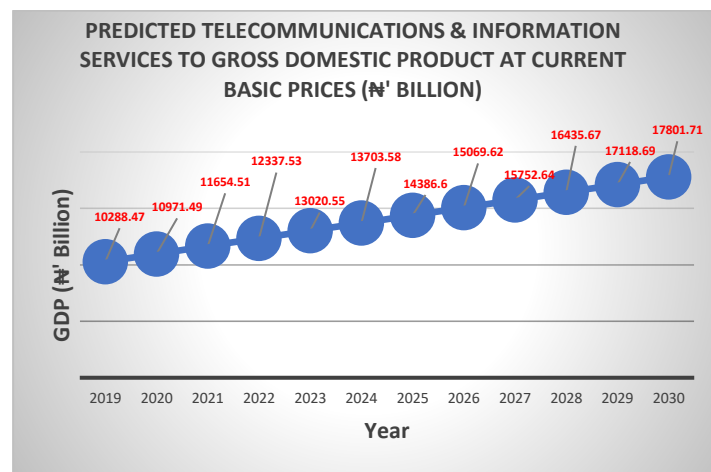
Year	Telecommunications and information services to Gross Domestic Product at Current Basic Prices - Annual (₹' Billion)***	Predicted Telecommunications and information services to Gross Domestic Product at Current Basic Prices - Annual (₹' Billion)	Year	Telecommunications and information services to Gross Domestic Product at Current Basic Prices - Annual (₹' Billion)***	Predicted Telecommunications and information services to Gross Domestic Product at Current Basic Prices - Annual (₹' Billion)
1981	1.24	1.26	2006	1083.81	936.72
1982	1.44	1.23	2007	1625.72	1381.29
1983	0.83	1.52	2008	2438.58	2043.24
1984	1.18	0.62	2009	3657.87	3050.76
1985	1.66	1.17	2010	4931.99	4570.52
1986	1.73	1.91	2011	5212.69	6052.19
1987	1.89	1.94	2012	5960.9	5987.41
1988	2.06	2.06	2013	6621.73	6659.12
1989	2.1	2.23	2014	7424.58	7301.28
1990	2.6	2.21	2015	8147.61	8156.08
1991	2.65	2.87	2016	8529.39	8884.85
1992	3.29	2.85	2017	8558.12	9107.89
1993	4.09	3.67	2018	9667.31	8864.73
1994	4.13	4.69	2019		10288.47
1995	5.2	4.51	2020		10971.49
1996	6.28	5.85	2021		11654.51
1997	7.32	7.17	2022		12337.53
1998	7.92	8.31	2023		13020.55
1999	8.54	8.75	2024		13703.58
2000	9.33	9.25	2025		14386.6
2001	118.65	10.06	2026		15069.62
2002	165.27	167.68	2027		15752.64
2003	230.7	221.6	2028		16435.67
2004	386.94	290.89	2029		17118.69
2005	722.54	490.55	2030		17801.71

\*\*\* Source: [4]

The table above show values of the contribution of Telecommunications and information services to

Gross Domestic Product between 1981 and 2018 extracted from the Central bank of Nigeria Statistical Bulletin. These values were subjected to time series analysis using the forecasting tool of SPSS. The column in red depicts values of GDP forecasted from 1981 to 2030. Interestingly, the values predicted between 2019 and 2030 tend to increase gradually, which implies that there will be increased contribution of the sector to the GDP of Nigeria.

Kindly note that Nominal GDP was used for this prediction



**Figure 1:** Predicted telecommunications and information services to gross domestic product (₦ billion)

The GDP telecommunications and information services from 2019 to 2030 was subjected to a time series analysis to identify the trend of how telecommunications and information services has contributed to Nigeria's National GDP and how the sectors' contribution changes over time. The figure above shows a 12-year prediction of steady rise of GDP in telecommunications and information services from 2019 to 2030 in Nigeria.

It is expected that all things been constant the sector is considered to contribute the forecasted values in billions to national GDP within the aforementioned

period. These increase of GDP in the stipulated years shows the potency of the sector to drive economic development thus creating jobs and services that can drive the teeming Nigerian population. This is in turn creates more jobs for the teeming population, drives other sectors of the economy and diversifying the Nigerian economy and creating an alternate means of income for the nation.

Additionally, the figure supports the finding of [5] who suggested that any adjustment in ICT contributes to increase in GDP per capita, thus, the figure above shows a perpetual increase in billions as revenue for Nigeria, if the Nigerian government is able to build strong institutions and also invest in the ICT of Nigeria, there will be a marginal change in GDP per capita and also increased revenue for the Nigerian State.

However, the paper identifies with the findings of [14] who opines that the variation in population impacts on Kenya's economic growth. Between 2008 and 2019, the Nigerian Population was observed to have increased yearly between 2.67 percent and 2.73 percent. Also, the Predicted Telecommunications and information services to Gross Domestic Product at Current Basic Prices were also observed and predicted to increase significantly, implying that Nigeria's increasing population has resulted in the increase in the observed/ Predicted Telecommunications and information services to Gross Domestic Product. Although with adequate policies and funding of the ICT sector, it is expected that Predicted Telecommunications and information services to Gross Domestic Product will definitely increase hence improving and impacting on the Nigerian economy.

More so, the study concurs with the findings of [9], who postulated that investment in Information and communication technology doesn't have a statistically significant relationship with human development. It can be deduced from the above figure that a noticeable contribution to GDP per capital was observed from 2006 when it was realized that Telecommunications and information services to Gross Domestic Product



accounted for N1,083.81 billion and is confirmed to increase to present, but ironically, Nigeria's Human Development index(HDI) for 2018 stands at 0.534 which presents the country in the low development group; positioned at 158 out of 189 countries of the world. This shows that even with the increased contribution of Telecommunications and information services to Gross Domestic Product between 2006 and 2018, Nigeria still struggles with human development.

Finally, the paper also concurs with the revelation of Adenola and Saibu (2017). The table three and figure one above shows that with the increasing population of Nigeria, the Telecommunications and information services to Gross Domestic Product has being increasing too. Although, it was not established if a decreasing Nigeria population affects economic growth positively or negatively. But one fact was established, with little investment in the ICT sector of Nigeria, the ICT sector has being growing hence the need for Nigerian Government to expand the capacity and improve enabling macroeconomic stability overtime.

## **5.0 CONCLUSION**

This study concludes by positing that most empirical studies suggest that there is correlation between population and economic development. Studies also revealed that Nigeria is among the 10 most population nations in the world, although yet to fully adopt ICTs that will turn the economy into the most vibrant economy of the populous black nation in the world. The study also revealed that Nigeria is yet to fully digitise her economy, which is obtainable in other most populous nations in the world, as this has attributed to the ease of doing business in such countries thus attracting foreign direct investment. The Nigerian state has the population, which implies they have the market, thus for the FG can generate funds from the telecommunications and information services sector, which in turn means increased GDP from the sector.

This paper concurs that the telecommunications and information services, which is under the ICT sector can serve as an avenue for alternative means of income for the Nigerian government creating an avenue for diversification of the Nigerian economy as data sourced from Central Bank of Nigeria reveals that the increasing contribution of the telecommunications and information services to the GDP is quite encouraging and steadily increasing. The times series data sourced from the Central Bank of Nigeria that was used for forecasting predicts that in the next 12 years, Nigeria will continue to experience a rise in the revenue of the telecommunications and information services to gross domestic product. The paper reviewed Information and Communication Technology(ICT) in various countries and forecasts Telecommunications and information services to Gross Domestic Product at Current Basic Prices from 2019 to 2030 and proffered ways in which the Nigerian State can improve on the existing status.

## **6.0 RECOMMENDATION**

Based on the literature reviewed, findings and discussion above, the following recommendations are proffered;

- i. The Federal government of Nigeria to allocate more of its national budget to ICT sector.
- ii. The Federal Government of Nigeria to provide backbone to drive the telecommunications and information services.
- iii. The Federal Government of Nigeria to immediately fully digitize her economy in order to encourage innovation, and enhance job opportunities and hence economic growth.
- iv. The current forecast enables the Nigerian government to plan for the present structure and future restructuring of the sector.

- v. The Federal Government of Nigeria to improve funding of the telecommunications and information services subsector which will yield more funds for the Federal Government, thus serving as a means of diversifying the Nigerian Economy hence creating room for ICT export to other countries towards achieving global competitiveness.

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