

A Correlational and descriptive study on the economic effect of telecommunication industry in Nigeria

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Abstract: Given Nigeria's continued preference for telecommunications services and a rise in teledensity, the Nigerian economy remains plagued by low growth, high unemployment, and high business costs and it is against this context, that this study used a dynamic descriptive analysis with the help of the covariance correlation technique to examine the economic effect of telecommunication industry in Nigeria. Empirical investigations on the effect of telecommunication industries operations in Nigeria were conducted based on the concerns raised in the literature review. Results showed that the percentage contribution of telecommunication to GDP, teledensity, and the Consumer Price Index positively influence the Nigerian economy more than foreign direct investment, while manufacturing value added negatively influences the Nigerian economy. The study concluded that, in order to achieve high and sustainable growth, governments and telecommunication industry stakeholders should closely monitor the trend of telecommunication, teledensity, and economic growth in order to formulate and implement policies that will checkmate the downward trend that causes economic growth distortions, and that policy formulations in the midst of other internal and external macro-economic shocks.

Keywords: Telecommunication, Teledensity, Percentage Contribution of Telecommunication

I. BACKGROUND TO THE STUDY AND STATEMENT OF THE PROBLEM

Unlike in the past, governments now consider telecommunications networks to be so essential to national interests and economic development that they were placed directly under their control in most countries until recently, when deregulation and competition were introduced (Lee, 2003). Telecommunications has ushered in a new era in the communication industry. The internet, cell phones, and computers have ushered in a radical change in communication habits and human relationships. The communication revolution has resulted in incredible technological, economic, cultural, and psychological changes. It has turned the whole world into a village by compressing time and space (Keil & Johnson, 2005, Offurum, 2009). These recent advancements in telecommunications technology have been critical in allowing information exchange to mature as a valuable commodity for the country's transition to post-industrial and information-based economic development.

Modern telecommunications infrastructure development is needed not only for domestic economic growth, but also for participation in highly competitive global markets and the attraction of new investments in today's world. The Nigerian telecommunications market is the country's largest segment of the ICT industry. Nigeria has one of Africa's largest telecom markets. Nigeria's telecommunications industry has developed into an oligopolistic business system over time (a small number of firms have the majority of market share). There is a large global presence in this industry. MTN, a South African multinational corporation with a market share of 37.21%, Airtel (an Indian multinational telecommunication), Glo (a Nigerian multinational company), and 9mobile (formerly Etisalat) are the market leaders. Nigeria's telecommunications industry, which is controlled by the Nigerian Communications Commission (NCC), is one of the sectors that helped the country recover from recession in the fourth quarter of 2020, contributing 12.45 percent to GDP (GDP). Telecommunications & Information Services under Information and Communication grew by 17.64 percent in Q4 2020, up from 17.36 percent in Q3 2020 and 10.26 percent in Q4 2019, according to the latest data from the National Bureau of Statistics (NBS).

Agriculture, industries, and the services sector, which includes telecommunications, contributed 26.95 percent, 18.77 percent, and 54.28 percent, respectively, in the latest NBS survey. This indicates that the key drivers of Nigeria's exit from recession are telecommunications, trade, utilities, and crop production. The largest sub-sectors in Q4 2020, according to the NBS survey, are crop production at 3.68 percent, crude petroleum and natural gas at 8.2 percent, trade at 14.9%, telecommunications & information services at 12.45 percent, and real estate at 5.7 percent.

In the last five years, the telecommunications sector has been a major driver of the Federal Government's digital economy agenda, as it has continued to provide the required digital sinews that support the economy, particularly during the COVID-19 pandemic and its accompanying restriction period as Government agencies, companies, and individuals have relied heavily on telecoms services to carry out their daily operations and official routines since the outbreak of the pandemic. In response to the increased demand, the

Commission implemented a range of regulatory measures to ensure that Nigerians have seamless access to telecommunication services and to protect consumers' quality of service.

The telecoms sector's consistent growth over the years, as well as its widespread positive effect on all other sectors of the economy in terms of increased process automation and digital transformation in service delivery, has been remarkable. As the sector continues to energize significant economic activities in the services sector of the economy, the growth trend since 2015 has reawakened hope that the country's economic diversification dreams may finally become a reality. Under the leadership of the Commission's Executive Vice Chairman (EVC), Prof. Umar Garba Danbatta, telecoms investment increased from about \$38 billion in 2015 to over \$70 billion today. Also, broadband penetration increased from 6 per cent in 2015 to 45.02 per cent at December, 2020, indicating that 85.9 million Nigerians are now connected on 3G and 4G networks which provide enhanced high-speed Internet that has continued to boost efficiency and increase productivity across the economic spectrum.

Active voice subscriptions increased from 151 million to 204.6 million between 2015 and December 2020, with a teledensity of 107.18 percent, according to recent statistics. Basic active internet subscriptions rose from 90 million to 154.3 million during that period. Information technology, as well as the ability to connect and communicate, is essential to the functioning of our society. In today's digital ecosystem, telecommunication has become the foundation for businesses, governments, communities, and families to effectively connect and share information. Telecom advances have made things like surfing the internet, making phone calls, emailing, and sending text messages almost ubiquitous in our personal and professional lives. From a security standpoint, telecommunications is one of the most critical infrastructures to protect. Various organizations rely on telecom to provide protection, ranging from natural disaster relief to military requirements. Previously, communities in rural areas were unable to access essential services.

These locations can now procure goods and services through ships or aircraft, and systematize development initiatives, thanks to telecommunications. This level of accessibility enables our entire community to grow and develop.

According to Statista, the telecom industry accounts for \$520 billion in annual global spending. The United States, with one of the world's biggest telecom markets, is predictably the frontrunner. People now have access to learning opportunities outside of conventional schooling thanks to technological advancements. To perform a search, read a review, or watch a how-to video on virtually any subject, all you need is a computer, smartphone, and access to the internet. Telecommunications are also being used by several of the biggest organizations to provide long-distance or remote education. For students, this is highly cost-effective, as it

allows them to save money that would otherwise be spent on accommodation and transportation. Furthermore, online courses offer students the versatility and independence to balance their job and school obligations. For classmates and teachers to communicate and exchange knowledge, social media has become a powerful tool. The sector has grown dramatically as cell phone use has progressed from basic phone telephony to modern enhanced services and the implementation of new technology into various sectors of the country. Nigerians benefit from convenient banking services (bank mobile apps) and access to e-learning platforms thanks to the sector's rapid growth.

However, the Nigerian telecommunications sector experienced a halt in growth in the second half of 2016, resulting in network expansions and improvements being delayed or postponed, and this pattern continued into the second quarter of 2017. The telecommunications sector contracted by 1.92 percent in the second quarter of 2017, which can be attributed to problems such as low customer buying power, currency fluctuations, and the recent loss of foreign investors. Poor macroeconomic conditions resulted from the dollar's inaccessibility in the economy. Nigeria's poor macroeconomic conditions have resulted in sluggish labor market dynamics (high unemployment and underemployment), lower disposable income, and poor corporate results. Despite the fact that an increasing number of studies have attempted to recognize telecommunication as an important component of the economic infrastructure that fosters efficiency and economic development. Increased knowledge diffusion improves consumer quality and competitiveness, as well as the opportunity for technological catch-up, by lowering communication and transaction costs. Despite Nigeria's continued interest in telecommunications services and increased teledensity, the country's economy remains stagnant, with high unemployment and high business costs. The unemployment rate in Nigeria is high, at 23.1 percent in the third quarter of 2019, up from 18.1 percent a year earlier (National Bureau of statistics office, 2019). Furthermore, according to Akanbi, Adebayo, and Olomola (2015), the expansion of telecommunication services has had only a slight impact on employment and welfare, and thus economic development in Nigeria cannot be exclusively attributed to telecommunication and teledensity expansion. There are over 150 million active users, over 90 million internet connections, and a teledensity of over 100%, according to Osuagwu (2017). He claimed that \$80 billion had been invested in the business, with foreign direct investment accounting for more than 70% of the figure. Furthermore, the paper asserted that metropolitan areas house the vast majority of broadband network power. In the hinterlands, consumers have little or no access to goods and services. The United Kingdom, for example, provides mobile broadband speeds of up to 23.7 megabytes per second, while Nigeria averages 3 megabytes per second, compared to Egypt's 8 megabytes per second and South Africa's 5 megabytes per second. This slow pace is self-evidently going to discourage successful internet

exploration. This may explain why macroeconomic indicators such as the unemployment rate, inflation rate, exchange rate, and balance deficit payment have such a minor impact on economic growth. However, in order to determine the precise effect of telecommunication industries on Nigeria's economic growth, an empirical study was needed.

II. LITERATURE REVIEW

2.1 Conceptual Framework

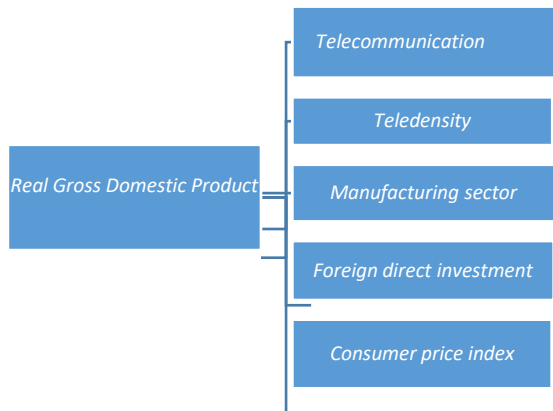


Fig 1: Conceptual Model for Telecommunication Industry in Nigeria

Source: Researcher's Compilation, 2021

2.1.1 Telecommunication

According to Raman (2015), telecommunication happens when two individuals share information. He continued, "Technology is used to transmit data through a physical medium, such as a signal cable or electromagnetic waves." According to Sajjad (2017), telecommunication is one of the most commonly used modes of global communication. He continued by stating that telecommunications has become a significant part of the global economy, increasing productivity and the rate of GDP or GDP per capita growth. According to Badran, the telecom industry is a network industry, and broadband (or high-speed internet connectivity) is a new technology that is widely used to access the internet worldwide (2012). Telecommunications devices are systems that enable the transmission of signals between two or more points or users, allowing them to communicate and exchange data (Wainaina, 2005). According to Magaji and Eke (2013), telecommunication is simply communication over a long distance using defined devices at a high rate. However, the study is interested in the percentage contribution of telecommunications to Nigeria's GDP. This is the percentage of overall real GDP that is allocated to telecommunications. It is important to keep in mind that telecommunications is a major driver of economic development in virtually every economy. As with roads and railways, telecommunications is a type of infrastructure. Similarly to how building a highway or railway in a particular area stimulates or boosts the economy, telecom has an impact on economic progress.

2.1.2 Teledensity

Teledensity, as described by the World Bank (2018), is the number of telephone connections per hundred people living in a region. Teledensity, as described by Mamoun and Talib (2017), is simply the number of telephone lines per 1,000 people. Teledensity, as described by Sulaiman (2013), is the rate of growth of mobile phone users. Teledensity (or penetration rate) was specified by Ani, Ugwunta, Eneje, and Okwo (2014) as the number of fixed-line and mobile phone subscribers per 100 persons.

According to Wainaina (2012), teledensity is known as an index of telephone lines, indicating a country's telephone availability expressed in terms of the number of main lines per 100 inhabitants. Additionally, density is a proxy for the degree of connectivity between network members. A fully connected network is one in which all members are connected to one another, and the network density is 1.0. (Wilde & Swatman, 1997).

2.1.3. Consumer Price Index

According to Osuagwu (2012), telecommunications and teledensity have a significant impact on the consumer price index, CPI, which measures the general price of goods and services. Additionally, he said that the advantages of embracing technology include the fact that it expands the market and democratizes access for consumers and producers alike. Osotimehin et al. (2010) added that since telecommunications and teledensity significantly increase efficiency and the growth rate of GDP or GDP per capita, their immediate effect on CPI is visible. According to Onakoya, Tella, and Osoba (2012), since technology facilitates knowledge exchange, storage, and retrieval among economic actors, industries, and sectors of the economy, an economy's CPI declines over time in comparison to the pre-adoption period.

2.1.4. Foreign Direct Investment in Information Communication Technology

Foreign direct investment (FDI) is a broad term that refers to an investment made by a corporation or individual in one country in the business interests, companies, or individuals of another country. Similarly, Eke et al. (2016) argued that foreign direct investment in telecommunications was a major contributor to Nigeria's rapid infrastructure development over the last two decades. Transnational corporations have been involved in almost every aspect of the telecommunications industry's implementation (TNCs).

2.1.5. Manufacturing Output

Nwakanma, Asiegbu, Eze, and Dibia (2014) specified manufacturing production as the sum of all factories in a country that manufacture goods. According to the National Bureau of Statistics (NBS), the manufacturing sector in Nigeria is dominated by the production of fruit, beverages, and tobacco, with sugar and bread products accounting for the

majority of output. Globalization, Haider et al. (2016) argue, drives manufacturing production. Similarly, David (2013) observed that telecommunications facilitate globalization, which eventually boosts manufacturing productivity and economic growth.

2.2 Theoretical Literature.

Theoretically, no single explanation can adequately describe the relationship between teledensity and economic development. Nevertheless, among the numerous theories on connectivity and telecommunication, this study is founded on both the Information theory proposed by Claude Shannon in 1948 and the Telecommunications Enhanced Community (TEC) theory proposed by Wilde and Swatman (1997), both of which seek to theorize the relationship between the need for telecommunications and the survival of societies.

2.2.1 The Information Theory

The quantification, storage and communication of information defines the information theory. In 1948, in a paper titled "A Mathematical Theory of Communication," Claude Shannon proposed data compression. This led to the discoveries such as compact disc, mobile phones, and the internet. Information theory in sum studies the transmission, processing, extraction, and utilization of information. This theory is well fitted to the activities of telecommunications network which could be described as a collection of transmitters, receivers, and communications channels that send messages to one another.

2.2.3 Telecommunications Enhanced Community Theory

Telecommunications Enhanced Community (TEC) theory by Wilde and Swatman (1997) attempts to combine many theories on communication theory, including Wellman's (1997) discussion of social interaction in a general computer network; Sproull and Faraj's (1997) discussion of computer-mediated social networks; and Romm and Clarke's (1995) theory of Virtual Communities and Society. According to the Telecommunications Enhanced Community (TEC) theory, a sufficient prerequisite for a community to remain self-sustaining is for its component parts to be funded by a critical mass of activity within the framework of telecommunications network activities. According to Wilde and Swatman (1997), the development and diversity of computer networks has been truly astounding since the mid-1970s. Since computing and communication technologies converged, business and social networking applications have grown at an exponential pace. The social computer network, which is constantly changing and expanding, has an effect on the entire community of human interaction. With a dwindling population and economic rationalism, a community's adoption of electronic networking is a necessary survival strategy. The aim of superimposing a network of electronic services on a traditional geographical group is to improve it. However, the configurations of these networks vary according to the computer network or virtual community. In general, adoption is effective when it not only maintains existing users but also

attracts new ones through the creation of an appealing lifestyle that combines physical and virtual services.

2.3 Empirical Literature

Numerous empirical studies conducted across the globe have provided conflicting results regarding the relationship between telecommunications, teledensity, and economic growth, with no agreement on the precise effect of telecommunications on the Nigerian economy.

Sajjad (2017), Adeola and Ekejiuba (2016), Haider and Sharif (2016), Sridhar and Sridhar (2014), and Wainaina (2012) all conclude that teledensity and telecommunications have a positive and important effect on economic growth. On the other hand, Atsu, Agyei, Darbi, and Adjei-Mensah, (2013); Mamoun and Talib, (2017); and Awoleye, Okogun, Ojuloje, Atoyebi, and Ojo, (2012) asserted that telecommunications revenue does not substantially contribute to economic growth; rather, it has a detrimental impact. Similarly, Haider and Sharif (2016); Sridhar and Sridhar (2014); Sulaiman (2013); and Wainaina (2012) conclude that increased teledensity benefits economic development. While Kuofie, Boateng, Yellen, and Garsombke (2011) hypothesized that the existence of the telecom industry generates numerous jobs, thereby lowering the unemployment rate and the GDP per capita,

Mohammed and Adeniji (2015) examined the relationship between telecommunication infrastructure and economic development using Nigeria as a case study. It analyzed quarterly time series data for thirteen years, from 2002 to 2014. They modeled a functional relationship between macroeconomic variables such as GDP growth rate, teledensity, the number of mobile telephone subscribers, the number of landline telephone subscribers, and the economy's degree of openness, gross domestic investment, and foreign direct investment, in their report. The thesis employed an autoregressive distributed lag model (ARDL) estimation technique to conduct a cointegration test, which included bound and stability tests. According to the findings, a long-term relationship exists between telecommunication infrastructure and economic development in Nigeria. As a result, it concluded that the country's gross domestic investment, foreign direct investment, and degree of openness have increased teledensity, the number of mobile telephone subscribers, and the number of landline subscribers, all of which boost economic activity and result in increased economic growth. However, due to the time lag, this study was unable to clarify the relationship between telecommunications and teledensity, as well as economic development.

Additionally, Ugwunta, Eneje, and Okwo (2014) used the ordinary least square (OLS) technique to investigate the impact of telecommunication development on economic growth in five leading ICT developed countries in the African region. The study subjected secondary data to a battery of tests, including stationarity and the Granger causality test; the

study's findings indicate that there is no causal association between mobile and fixed teledensity and economic development. However, the OLS test demonstrates unequivocally that Africa's telecommunications progress has a positive and important effect on economic growth. Nwakanma, Asiegbu, Eze, and Dibia (2014) use official (secondary) data to examine the effect of the telecommunications industry on economic growth in Nigeria over a 12-year sample span (2001-2012). SPSS was used to evaluate the data obtained, and a regression model was estimated. According to the findings of the assessments, government expenditure, the number of telecom subscribers, and private investment all have a major effect on Nigeria's economic development. This sizable impact was mostly due to the increase in the number of telecom subscribers. The report, however, did not take into account the effect of telecommunications' contribution to GDP on economic growth during the sample era.

III. METHODOLOGY.

3.1 Research Design

The paper employs the descriptive analysis techniques and covariance correlation analysis where the descriptive statistics will focus more on the significance of telecommunication effect in Nigeria while the correlation analysis will measure the relationship between telecommunication and economic growth in Nigeria.

3.2 Model Specification

The model specification of the study will be based on the determinants of telecommunication as discussed in under the conceptual framework.

$$RGDP = f(TEL_GDP, TELD, MNVAD, CPI, FDI)$$

$$RGDP = \alpha + \beta_1 TEL_GDP + \beta_2 TELD + \beta_3 MNVAD + \beta_4 CPIND + \beta_5 FDII + \epsilon_t$$

Where:

RGDP = Real Gross Domestic Product as proxy for Economic Growth

TEL_GDP = Telecommunication Contribution to GDP

TELD = Teledensity

MNVAD = Manufacturing Value Added

CPI = Consumer Price Index

FDII = Foreign Direct Investment Inflows

IV. RESULT

4.1 Descriptive Representations of the variables

4.1.1 Telecommunication Contribution to GDP

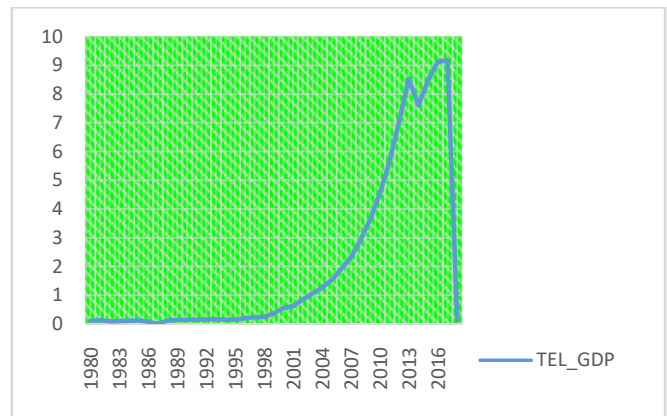


Fig 2: Trend Movement of Telecommunication contribution to GDP

Source: Researcher's Compilation from World Bank Development Indicators (WDI)

As shown in Figure 1, the contribution of telecommunications to Nigeria's gross domestic product has been extremely low over the years. For example, from 1980 to 1998, the contribution of telecommunications to GDP was extremely low, sustaining a flat trend movement. However, the percentage contribution of telecommunications increased to an all-time high in 2013 and 2017 before abruptly declining in 2018, 2019, and the infamous 2020 as a result of a sharp decline in the buying power of Nigerians, who are currently experiencing an extremely high inflation rate.

4.1.2 Teledensity

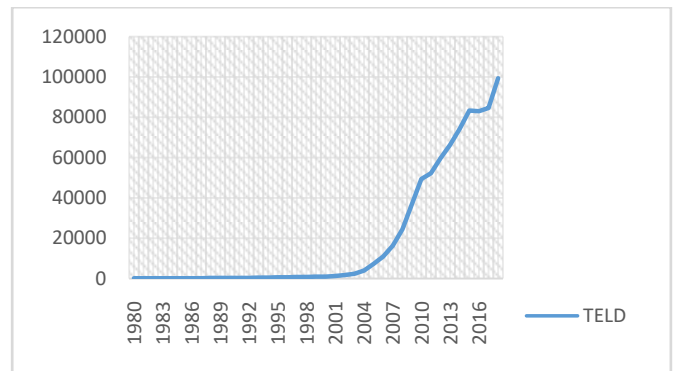


Fig 3: Trend Movement of Teledensity in Nigeria.

Source: Researcher's Compilation from WDI.

Telephone density or teledensity, which is the number of telephone connections per hundred people living in a city, has been increasing over the years, even though it was extremely low in the 1990's, from 1980 to 1998. Nigerians did not begin using cell phones until the introduction of the Global System for Mobile communication (GSM) in 2001. The rise in teledensity is a symbol of the sector's positive impact on the Nigerian economy, as every business source, church, and market now utilizes the services of mobile telecommunication networks, demonstrating the sector's positive impact on the Nigerian economy.

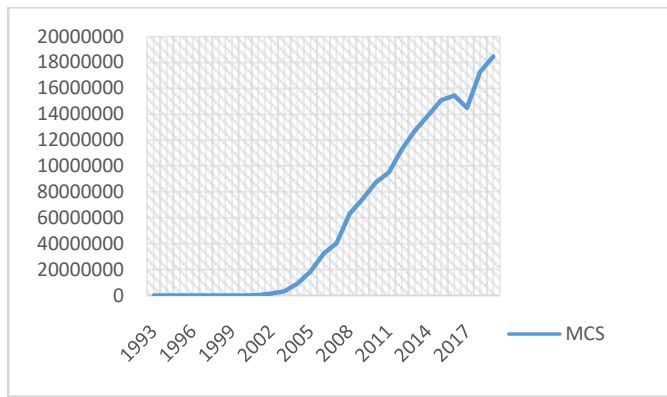


Fig 4: Trend Movement of Mobile Cellular Subscriptions

Source: Research Compilation from WDI.

Over the last decade, prepaid cellular telephone subscriptions (MCS), which are subscriptions to a public mobile telephone service that provide cellular technology-based access to the Public Switched Telephone Network (PSTN), have improved.

Mobile cellular subscriptions have increased dramatically over the years; for example, in 1993, the number of people with MCS was 9049; in 1994, it was 12800; in 1995, it was 13,000; in 2001, it was 266,461; all in thousands as a result of the launch of GSM; in 2016, it was 154.3 million; and in 2019, it was 184.5 million. This demonstrates the enormous effect of the telecommunications industry on the Nigerian economy.

4.1.4 Manufacturing Value Added

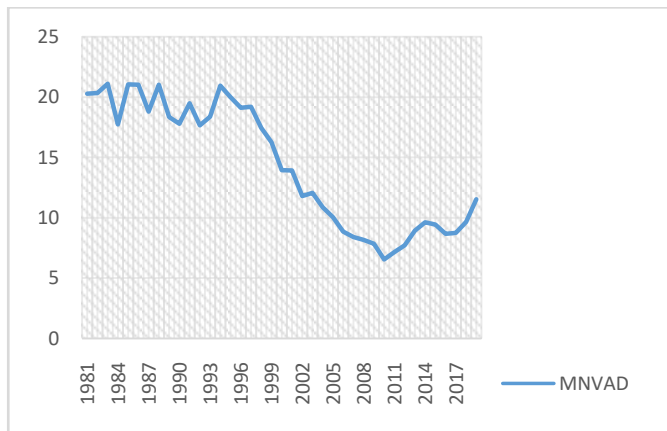


Fig 5: Trend Movement of Manufacturing Sector Contribution to GDP

Source: Researcher's Compilation from WDI

Manufacturing value added, which is a determinant of telecommunication, is the net output of a sector after adding all outputs and subtracting intermediate inputs, has been on a downward trend over the years, which can be due to the sector's neglect over the years. Unfortunately, the sector has underperformed expectations, resulting in a drop in industrial production and a contribution of less than 5% to the Gross Domestic Product (Udoh and Ogbuagu, 2012). Furthermore, weak financing, epileptic power supply, dilapidated and

outdated infrastructure, insufficient capital accumulation, high-interest rates, and persistent inflation, perpetual security challenges, smuggling, and massive importation of capital goods have all been major challenges that have slowed the sector's performance. David (2013) recognized the importance of the manufacturing sector to the telecommunications sector, stating that telecommunications improves globalization, which in turn boosts manufacturing production and economic growth.

4.1.5 Consumer Price Index

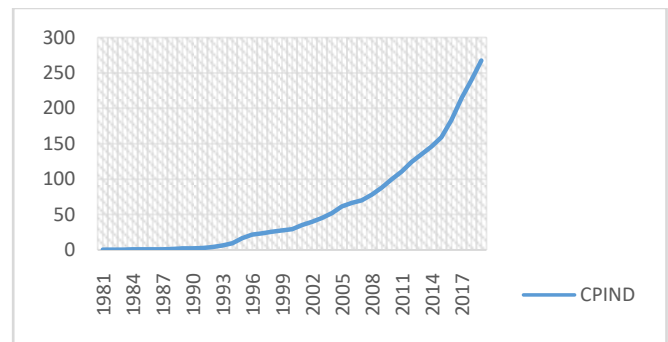


Fig 6. Trend Movement of Consumer Price Index

Source: Researcher's Compilation from WDI.

In Nigeria, the consumer price index has been on an upward trajectory for several years, reflecting improvements in the cost to the average consumer of purchasing a basket of products and services that may be set or adjusted at specified intervals. According to Onakoya et al. (2012), as technology improves network capabilities among economic actors, industries, and sectors, the ease of exchanging, storing, and retrieving an economy's CPI decreases over time when compared to the pre-adoption period. The importance of mitigating the effects of high inflation in an economy cannot be overstated, as high inflation costs more, factories produce less and may be forced to lay off staff, and public investments appear to lose value during periods of high inflation.

4.1.6 Foreign Direct Investment Inflows

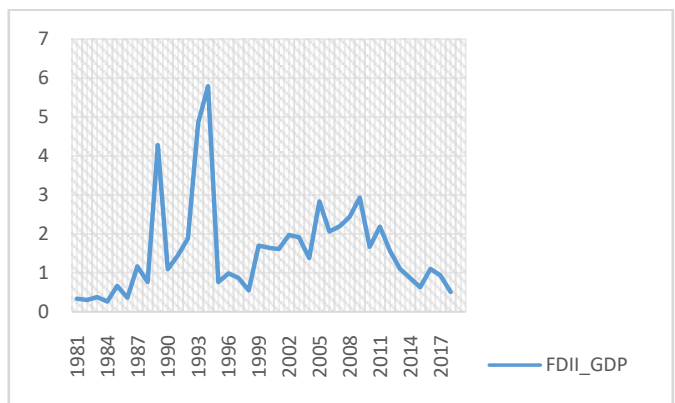


Fig 7: Trend Movement of Foreign Direct Investment Inflows

Source: Researcher's Compilation from WDI

Foreign direct investment occurs when an investor develops foreign business operations or acquires foreign business assets in a foreign company. It is described as an investment made by a firm or person in one country into business interests in another country. Foreign Direct Investment Net Inflows in Nigeria have fluctuated over time, as seen in Fig 6 above, despite the fact that Nigeria was ranked 131st worldwide for ease of doing business in the World Bank's 2020 edition of the Doing Business Report, up from 146th in the 2019 edition. Many subcategories of the rankings have improved, such as starting a company, dealing with construction permits,

having electricity, registering land, trading across borders, and enforcing contracts, but Nigeria continues to struggle as a country seeking to achieve economic prosperity in all of its strategic sectors due to economic instability. According to Eke et al. (2016), foreign direct investment in telecommunications has played a significant role in the massive infrastructure build-out that has taken place in Nigeria, including giants like Uber and Facebook, as well as Emergent Payments and Meltwater Group.

4.2 Correlation analysis

Table: 1. Correlation on effect of telecommunication industry in Nigeria.

	LNRGDP	TEL_GDP	TELD	MNVAD_GDP	CPIND
LNRGDP	1	0.832141779060	0.8784136126799	-0.93237934802	0.927363041737
TEL_GDP	0.832141779060	1	0.8470996227500	-0.72238795652	0.79851471807
TELD	0.878413612679	0.8470996227500	1	-0.70936117526	0.96495515232
MNVAD_GDP	-0.93237934852	-0.722387956527	-0.709361175263	1	-0.7920803152
CPIND	0.9273630417	0.798514718072	0.9649551523245	-0.79208031523	1
FDII_GDP	0.031763940585675	-0.092473123312	-0.168493567388	-0.0865839797160	-0.1321691993188

Source: Researcher's Extract from Eviews 11 package 2021

4.2.1 Lnr GDP And Tel_Gdp:

In Nigeria, there is a clear positive correlation between real gross domestic product and telecommunication, meaning that a 1 unit increase in telecommunication would increase RDGP by 0.832141779060 units on average. This result is not shocking, given that it is a well-known fact that the lives and standard of living of Nigerians have greatly improved since the advent of telecommunication networks. Telecommunication has become the backbone for enterprises, governments, societies, and families to easily communicate and exchange knowledge in today's digital ecosystem. Stuff like browsing the internet, making phone calls, emailing, and text messages have become nearly commonplace in our personal and professional lives thanks to telecom advances.

4.2.2 Lnr GDP And Teld:

In Nigeria, real gross domestic product has a clear positive relationship with Teledensity, meaning that a one-unit increase in Teledensity would increase RDGP by 0.878413612679 units on average. Increased teledensity, combined with a variety of services provided by telecommunications companies, contributes to economic growth by creating jobs and lowering both implied and explicit costs associated with the production of goods and services, especially costs associated with postage, logistics, transportation, and distribution.

4.2.3 Lnr GDP And Mnvad_Gdp:

The manufacturing sector in Nigeria has a clear negative association with real gross domestic product, meaning that a 1 unit shift in MNVAD reduces RDGP by 0.93237934852 units on average. This is not surprising given the sector's long-term

neglect, which has been exacerbated by weak funding, epileptic power supply, dilapidated and outdated infrastructure, insufficient capital accumulation, high-interest rates, and persistent inflation, as well as chronic security problems, smuggling, and massive importation of capital goods.

4.2.4 Lnr GDP And Cpind:

In Nigeria, real gross domestic product has a clear positive correlation with the Consumer Price Index, meaning that a one-unit shift in the CPIND increases RDGP by 0.9273630417 units on average. This finding demonstrates how the telecommunications emergency in Nigeria has impacted Nigerians' cost of living because knowledge and communication facilitates the exchange of goods and services between buyers and sellers.

4.2.5 Lnr GDP And Fdii:

In Nigeria, real gross domestic product has a poor positive association with Foreign Direct Investment Net Inflows, meaning that a one-unit rise in FDI would only increase RDGP by 0.031763940585675 units on average. The lack of a connection between FDI and Nigerian economic growth is unsurprising given the country's constant economic instability, in which adequate infrastructures that aid foreign firms in investing in the country are not properly controlled and maintained, posing a barrier to their level of involvement in doing business in Nigeria.

V. CONCLUSION AND RECOMMENDATION

For the period under consideration, this study used a dynamic descriptive analysis with the aid of the covariance correlation

technique to investigate the effect of telecommunication in Nigeria. In the midst of other internal and external macroeconomic shocks, the study reveals that telecommunications percentage contribution to GDP, teledensity, and the Consumer Price Index contribute more positively to the Nigerian economy than foreign direct investment, while manufacturing value added has a negative impact on the Nigerian economy. Nonetheless, in order to achieve high and sustainable development, policymakers and telecommunication industry stakeholders should closely track the telecommunications, teledensity, and economic growth trends in order to develop and enforce policies that will counteract the downward trend that causes economic growth distortions. Furthermore, given the strong correlation between telecommunications, consumer price index, economic growth, and teledensity, policy formulation that encourages teledensity expansion, economic growth, foreign direct investment inflow, and price stability is strongly recommended, while doing everything possible to encourage the manufacturing sector through such policies which includes accessibility, availability of mobile telephone and network facilities, a low tariff on a voice call and data use and discounts on imports telecommunication forms of equipment as well as tax holiday for the companies.

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