



Re-Engineering Nigeria Economy through Fourth Industrial Revolution: A Case of Agro-Allied Firms in Nigeria

Onyeizugbe Chinedu Uzochukwu^{1*}
Nnadi Tochukwu Alloysius²
Enaini Stella Olohi³

^{1,2}Unizik Business School, Nnamdi Azikiwe University, Nigeria.

³Email: edu_phd@yahoo.com

¹Department of Business Administration, Auchi Federal Polytechnic, Nigeria.

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Abstract

It is a known fact that all the efforts put in place over the years to industrialize the Nigerian economy have not yielded the desired result. Because industrial revolution does not wait for any country, Nigeria Nation is not well positioned for the fourth industrial revolution. It is in this view that the study adopted ex-post-facto research design to examine re-engineering Nigeria economy through fourth industrial revolution from 2009 – 2019. The multistage sampling technique was adopted to limit the scope of the study. Data collected were obtained from the secondary source and analyzed using the ordinary least-square (OLS) method. The findings revealed that social platforms for businesses have a positive and significant impact on the gross domestic product of the country. The study concluded that efforts should be made in changing existing system of operation and embracing social media platforms in order to achieve business technological advancement especially within the agro-allied sector which has potentials of increasing the nation's economy. This study recommended among others that the government of Nigeria should consider indebt change in their system of operation so as to encourage new media network building among various sectors in the country and ensure industrial revolution most especially in the agricultural sector.

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1. Introduction

Nigeria as a country is abundantly endowed with natural, physical and human resources. Like many other world war III countries, Nigeria adopted an eclectic collection of industrial development strategies over the years. These include; the substitution industrialization importation, export promotion, structural adjustment programmes, exchange rate adjustment and sometimes a combination of these industrial development pills in order to achieve industrial development.

Industrial revolutions that brought historical economic transformations over the centuries are described as disruptive. Resulting from huge technological developments in manufacturing which has influence across complementary industrial sectors such as agriculture, communication, trade and investment; these changes have impacted positively on the economies of nations and lives of their citizens. Some scholars have described these transformational re-engineering as revolutionary changes that made significant social, economic and political gains for some nations of the world. Notably, one could assert that the economic well-being of a country could be directly linked to her material resourcefulness and the level of industrialization, on the basis of which countries are classified into developed, developing and under developed, [Kayode and Kanu \(2016\)](#).

The social media is the latest advancement in agricultural marketing which includes; websites, pages, apps, blogs, groups and micro-blogs among others. Studies have shown that social media tools such as Facebook, Twitter, YouTube, LinkedIn, WhatsApp are becoming sophisticated ways of sharing information about agricultural produce and outreaching a wider range of the masses.

The use of social media in agricultural sector is increasing rapidly nowadays. Many service providers are giving better facilities to the farmers, [Bite and Anand \(2017\)](#). Researchers in Indian society; [Devesh and Mahesh \(2018\)](#) explained that information and communication technologies (ICT) are important factors towards promoting connectivity among the agricultural community. They posit that utilization of mobile technologies, availability of service networks, technological advancement of the sector in India would promote their agricultural produce and industrialize their economy.

The popularity of various social media platforms to a global audience especially in more advanced countries could be as a result of the increased reach of internet phones and number of platforms across the globe. Notably, these social media and sites have gained popularity not only because they connected people but a huge potential of communication was realized and started being infused in more professional communication. A major boost to social media use comes from increased mobile phone subscriptions. Unique mobile subscribers are 51 per cent of the global population, whereas, global mobile penetration is 97 per cent. Globally, active mobile social media accounts penetration is 23 per cent.

Nigeria and India has the highest share of web traffic through mobile in the world. Over 1.69 billion people across the globe are accessing social media via mobile where total number of active social media accounts are 2.08 billion, ([International Telecommunication Union \(ITU\), 2015; Kemp, 2015](#)). These enable agro-allied firms create a wide range of customer's data base and digital transactions which is easier, quicker, accessible and convenient for people.

[Imhonopi and Urim \(2010\)](#) assert that emerging markets such as Brazil, Russia, India, China and South Africa (BRICS) among other industrialised societies have shown that economic re-engineering is sine qua non for economic growth and for long-term poverty reduction and job creation depending on the pattern of industrialisation and transformation of a traditional and agrarian society to a modern and industrial society. Economic re-engineering is prominent to the stages of visible retransformation which characterizes economic development and growth.

According to [Kniivilä \(2007\)](#) industrial re-engineering is accountable for the economic growth of countries like China (Taiwan), the Republic of Korea (Korea) and Indonesia. Furthermore, with accelerated growth, the poverty rates have decreased in many of these countries. While some of these countries have managed to attain growth with equity, others inequality has increasingly remained higher. According to the [World Economic Forum \(LLC\) \(2019\)](#) the Fourth Industrial Revolution represents a significant change in the way people work, live their lives and communicate to each other. It fundamentally represents a new era in human development, enabled by extraordinary technology advances commensurate with those of the first, second and third industrial revolutions.

These advances are merging the physical, digital and biological worlds in ways that create both huge promise and potential peril. Hence this revolution forces us to have a deep rethink on how most firms create value, how countries develop and what it signifies to be human. Thus, the real platform is to look beyond technology, and find ways to give the greatest number of people the ability to positively impact their families, organisations and communities. [Lagos Chamber of Commerce and Industry \(2018\)](#) delineates that Nigeria would derive huge economic benefits by keenly introducing more sophisticated and outstanding technological outlets and platforms to their means of operations in the country.

Strategic re-engineering will provide a great opportunity to influence national discourse on the culture of enterprise in Nigeria in almost every perspective especially in technological advancement. Some of which could include how economic system ensures proper network building to facilitate better environment for business and how the economic structure could be geared towards service innovativeness.

Prior to now, the country was well-known for the exportation of agricultural products such as cocoa, groundnut and palm kernel oil among others. Recently, the rate of exportation of these produce has drastically decreased. Just recently, some of the local Nigerian companies have embraced exporting moringa seeds, groundnuts, sesame seeds, cashew nuts, among other produce.

Some other companies as Lantbruk Global Integrated Services Limited have created a legacy for other companies to embrace the Nigerian agricultural system, [Verter \(2016\)](#). Between 1980 and 2016 the production of agricultural produce significantly increased from more than 5million tones to 44million tones. The agricultural sector has hence remained the source of livelihood for most rural communities especially in developing countries like Nigeria.

That notwithstanding, in Nigeria, negligence of political willingness has deteriorated the full implementation of the country's industrial policies which could have re-engineered its fortunes. In some instances, it has led to poor implementation of these policies or led to lack of an integrated industrial policy framework for the country.

Notably, the level of industrialization in spite of all plans, efforts and programmes is still very low. The over dependence on industrial revolution especially among the manufacturing sector could lead to repetitive tasks, the migration of some employees for greener pastures, and automation of the system. This has made most factory staff tend to lose their individuality, feel alienated and have limited job satisfaction.

[Chete, Adeoti, Adeyinka, and Ogudele \(2015\)](#) point out that the re-engineering efforts made by Nigeria to promote industrial revolution in her National Development Plans witnessed over dependence on foreign

technological expertise, thereby leading to disregard of our locally endowed factors with associated difficulties. These setbacks necessitated the need for re-engineering Nigeria economic for forth industrial revolution.

The study specifically identifies the extent to which building businesses around platform (social media) contributes to GDP in Nigeria from 2009 – 2019.

1.1. Research Question

To what extent does building businesses around platform (social media) contributes to GDP in Nigeria from 2009-2019?

1.2. Hypothesis

H₁: There is a positive relationship that exists between building businesses around platform networking and GDP in Nigeria from 2009-2019.

2. Review of Related Literature

2.1. Conceptual Review

2.1.1. Re-Engineering

Reengineering is an approach employed to redesign business processes in order to take advantage of organizational strengths, called core competencies. Using this technique, an organization can align itself for the future and increase its market share and profitability, [Lowenthal \(2014\)](#).

Strategic methods that rationalize workflow involve reduction of physical distance between plant and suppliers, decentralization, reduced automation process, inducing technological approaches and management techniques, as well as controlling costs such as the cost of sales and delivery time. As such by identifying organizational strengths, weaknesses, opportunities and threats, a firm can boldly assume strategies aimed at redesigning or reengineering their operational processes and improve the firm's productivity.

In addition to focusing on existing processes, reengineering transforms processes and helps organizations maximize its core competencies to become more efficient. Some crucial elements in a reengineering process involves: (1) availing individuals guidelines for embracing appropriate actions; (2) making people understand that time is a limited resource; (3) changing people's way of life instead of the process; (4) implementing technology effectively, (5) providing superb service; (6) acknowledging the fact that reengineering process is huge and (7) approaching reengineering process as a lifetime venture, [Lowenthal \(2014\)](#).

Through the years, there have been many different notions about what reengineering is and how successful it has been as a process improvement approach. In the early 1990s, Michael Hammer and James Champy authored a best-selling book, *Reengineering the Corporation*, in which they promoted that sometimes radical redesign and reorganization of a process by wiping the slate clean was necessary to lower costs and increase quality of service.

[Carey \(2018\)](#) reveals that the idea behind reengineering is to make companies more flexible, responsive, efficient and effective for all stakeholders, including customers, employees and owners. In order for proper reengineering to work, an organization must be willing to make the following changes: Change from a management focus to a customer focus - the boss is not the boss, the customer is the boss. Empower workers that are involved in each process to have decision-making and ownership in the process; Change emphasis from managing activities to focusing on results; get away from "score keeping" and focus on leading and teaching so employees can measure their own results; Change company's orientation from a functional orientation to a process or cross-functional orientation.

This allows for an increase in organizational knowledge among its members and a greater degree of flexibility in accomplishing tasks; Move from serial operations to concurrent operations. In other words, multitask instead of just doing one thing at a time; get rid of overly complex and convoluted processes in favor of simple, streamlined processes and stop trying to build an empire and protect the status quo. Instead, invent new systems and processes that look towards the future.

2.1.2. Re-Engineering Nigeria Economy

Every country devises fundamental elements and strategies to successfully achieving its corporate and economic goals and objectives. They are the key mechanisms by which a country delivers value to its citizens. Regularly assessing economic trends and plans against other advanced ones keeps such country abreast, current and minimizes errors that might lead to economic deflation and disaster. Nigerian basic approach is always mean to be pragmatic – every process optimization project must have a metric driven objective, and every implementation must be measured against this objective. There is need for government political heads to often determine whether a re-engineering process is needed for improving its economy especially when trying to achieve industrial revolution.

[Akinsuyi \(2018\)](#) wrote that the prominent Nigerian Senator Bola Ahmed Adegunle Tinubu revealed that re-engineering Nigeria is strong foundation mattered in nation building. He opined that building such foundation requires perseverance, patience and commitment as it is often charged with difficulties for the people. Notably, the economic development and the progress of the youths are vital for the development of any

nation. Hence, there is urgent need to re-grow the economy, re-engineer it from bottom-up which is often unbearable for the ordinary masses. The interview explains that re-engineering the Nigeria economy would always be a difficult task but in order to advance and meet up to other advanced countries, such restructuring would be needed and would be a gradual process. Moghalu (2018) vividly gave an insight on the current Nigerian economic state as underdeveloped, marginalized and lame which need total nation building and re-engineering. He posits that the country would not totally embrace economic re-engineering due to the level of corruption and marginalization. Nigeria is currently anchored on injustice in many ways, and that arrangement may not last forever.

2.1.3. Fourth Industrial Revolution

There is need to recognise the measures of changes associated with forth industrial revolution. Obviously, these changes would reveal drifts in wealth flow, authority and power as well as innovativeness and knowledge. It is only by advancing one's knowledge concerning these changes and the speed at which its occurrence is taking place would one ensure the widespread of these technological advancement and its benefits for everyone. History recorded that the 1st industrial revolution commenced in 1760 with the invention of the steam engine. The steam engine permitted the alteration from agro-farming and feudal society to an advanced manufacturing process. This alteration called for the adoption of coal as one of the major sources of energy while the primary means of transportation were trains. Steel and textiles were the superior industries as regards their output value, strength of operation, terms of employment as well as invested capital. The 2nd industrial era began in 1990 with the invention of the internal combustion engine. This process ushers the period of rapid industrialization adopting the use of oil and electricity to ensure mass production. The 3rd industrial era which started in 1960 was associated with the implementation of electronics and information technology to automate production. The remote ways of manufacturing things include screwing or welding different parts together. The 4th industrial revolution posed as the emergency of technological advancement as it combines computer generated product design with a three dimensional (3D) printing, which could manufacture solids object by building up successive layers of materials.

There are similar traits between the 4th industrial revolutions and the five ages of civilization. This includes the agricultural age, hunter age, the information worker age and the emergence age of knowledge and wisdom. The opportunities presented in the 4th industrial revolution which covers the traits of the five ages of civilization as initiated by Steven Covey in his book "8th Habit" in 2011. These stages cover the productivity where by the productivity of each subsequent age goes up fifty times over the preceding age. Secondly, each subsequent age destroys many of the jobs of the preceding age.

Conclusively, the evolution of global industries within the fourth industrial revolution is both exciting and scary. Life will change with the 3D printing, the IoT, and the fusion of technologies. It is most likely that consumers would gain the most from the fourth industrial revolution. There are possibilities that the 4th industrial revolution could increase the income level of some industries by allowing business men to work and pilot their new innovative ideas. This would aim at enhancing the quality of life and the world in general. Jee (2017). Additionally, Schwab (2015) supports that the technological advancement under this revolution will support long-term gains in efficiency and productivity. The telecommunication and transportation costs associated with production would reduce, logistics and global supply chains will become more effective, the cost associated with trade will drastically reduce all of which would reassure open new markets and drive towards economic growth.

2.1.4. Ten Principles for Leading the Fourth Industrial Revolution

Norbert and Bob (2017) outlined these ten principles for leading the fourth Industrial revolution. They are:

- 1) Rethink your business model: The business world has become accustomed to disruption. Incumbents that cling to old business models lose ground to upstarts that introduce new products and services at much lower prices. The fourth industrial revolution according to Norbert and Bob (2017) will accelerate this sequence especially in manufacturing by reducing cost and improving efficiency at a broad scale. Industries that are too slow to change will lose to those that rethink their business models to take advantage of the new platforms and their new opportunities.
- 2) Building strategy around platforms: What the value chain was to the old industrial system, the platform is to the new. Platform creates a plug-and-play technological base on which a wide range of vendors and customers can interact seamlessly with the same collection of hardware, software services and one another. The most successful platforms match customers with vendors, maintain an appealing and effective customer experience, and collect data and rents from people who use the system. Examples of business that controls a popular platform are Microsoft with windows, Facebook with social media. Media and Goggle with its search engine. They can influence the direction of evolution for a business –to – consumer market.
- 3) Design for customers: Because the fourth industrial revolution is driven by large scale digital technology, it is easy to overlook the way it could affect human relationships. The new infrastructure is a web of connections among people. Producers and customers in particular are much more closely

connected than they used to be. Through smartphones and social media, consumers can connect directly to primary producers of the products and services they buy. Through sensors and data analytics, producers can be thoroughly attuned to the needs, habits, and long-term interests of the people who buy products and services. As a designer of the new platforms according to [Norbert and Bob \(2017\)](#) or a business leader participating in them, you have unprecedented opportunity to build a customer-centric enterprise, one that connects with what people genuinely want and need from your organization, thus generating commitment that will last a lifetime.

- 4) Raising the technology acumen: Because organizations operate a programmable world, software will be the key to competitiveness. Every industry needs to improve its technological acumen during the next few years. This is a matter not just of recruiting people with software expertise but of raising the skills of every one at the organization. They need not just the technical training to use digital tools, but insight into the patterns of technology for example, how to create an operations footprint that can take advantage of the industrial internet, how to accumulate the type of data that can foster machine learning.
- 5) Innovate rapidly and openly: Innovation and leadership go hand in hand in the fourth industrial revolution. Many companies will seek disruptive innovation, but a steady stream of increment innovations can be more profitable. Smaller innovation will be easier to generate and, more important easier to test in the market. With the tools of the industry internet according to [Norbert and Bob \(2017\)](#) you can prototype new products, manufacture them in small batches profitable, distribute them rapidly, and see how the customer responds before rolling them out worldwide. Incremental innovation can snowball into disruption. Rapid innovation is more effective when there is collaboration with those outside the company.
- 6) Learning more from the data: The exponential increase in real-time data- gathered from customers, equipment and work processes are giving companies new insights. It is critical to use the analytic results to recognize importantly patterns, and to gain insights that can help make the right choices and keep improving on the fly.
- 7) Adopt innovative financing model: New large-scale technologies inevitable put pressure on the old ways of raising money for them. Large industrial firms will similarly move from financing the ownership of factories and machinery to financing pay-as-you-go system. With smaller but more frequent rent charges for more flexible installations. There will be less interest in replacing old equipment and more interest in continuing to upgrade it using 3D printing and other forms of digital fabrication to manufacturer and customised new components. To continue the viability of industrial civilization, it will be necessary to replace or upgrade every aspect of the world's industrial infrastructure, with capabilities and systems that did not exist before. Financing all this will require as much expertise and creativity as the technological innovation. The technologist should understand this by establishing metrics for tracking short-and long-term returned, balancing immediate payback and long – range aspiration. They should embrace new mechanisms, such as block chain, to ensure that pricing; billing, transfer payments, and subsidies are reliable and free of undue influence ([Norbert & Bob, 2017](#)).
- 8) Focusing on purpose not products: A leader in the industrial internet will probably develop a wide range of products and services during any given fire-year period, potentially in several sectors. This platform can also be used to enable capabilities. This means looking closely at the reasons people come to the company, the outcomes they expect, and the ways the company can deliver. When it is clear about what the company is and why it sells what it sells, people will trust them to deliver what it promises. Customers recognise when a company fulfils its purpose. They are interested not in products or services, but in outcomes.
- 9) Being trustworthy with data: Shared data according to [Norbert and Bob \(2017\)](#) is the fuel of the fourth industrial revolution. The industries need not only to manage customer's behaviour, but to prevent outsiders from gaining access to critical information. Strong risk management, cyber security, and data integrity systems are essential in helping companies avoid breaches and better manage disruption to operations. The industries should keep up with leading edge approaches to protecting sensitive information from cyber –attack or theft.
- 10) Putting humanities before machines: As machines become increasingly interconnected, the quality of user experience will spread in viral fashion. If people are shut out-of jobs, creative opportunities, income and customers satisfaction-embracing technology will backfire ([Norbert & Bob, 2017](#)). Business in particular, will thrive in this new world only if its leaders understand the place of human values. Industries should be set up to foster better connections among people, to encourage human behaviour, and to build the requisite capabilities that overcome technological isolation. It needs people who can understand the technologies of the industrial infrastructure such as artificial intelligence and analytics, but who are also adept at working with an organization's culture.

2.1.5. Building Business around Social Platform (Network Building)

Building businesses around platform means the diverse mediums and outlets to which business transitional operations can be carried out. It also depicts the means and techniques business organizations design to reach their target market and public at large ([Interaction Institute for Social Change \(IISC\), 2018](#)).

Networking constitutes of an online service that has focused on building a community of users who share a common interest or activity ([Barnes, 2009](#)). Building business around platform involves using social network which include e-marketing, mobile marketing, mass customization and social marketing. E-Marketing utilizing the digital environment of the Internet has been a major focus for businesses during the past decade. Business platforms tools and techniques include; websites, online public relations, email, blogs, social networks, podcasts and wikis ([Dibb, Simkin, Pride, & Ferrell, 2012](#)).

Networking typically has brought mobile marketing using mobile devices such as smartphones and tablets can provide customers with time and location sensitive, personalized information that promote goods and services. Building business around platform is defined as any tool or service that uses the internet to facilitate personal conversations ([Hart, Ridley, Taher, Sas, & Dix, 2008](#)).

Business platform allows for the sharing of information and experiences with a large number of people. Marketers can utilize social media to listen and gain insight into what is being said about products and services. Businesses can further use social media networks to interact with potential and existing customers building closer relationships.

Social media and networks, part of the business platform environment have extremely changed the boundaries for marketers and consumers ([Dibb et al., 2012](#)). The use of Facebook, LinkedIn, Twitter, Digg, Myspace, Bebo, Flickr and YouTube allows marketers to reach target audiences effectively and engage them in commercial transactions. Social media are utilised to create low cost conversational communication strategies.

[McDaniel et al. \(2013\)](#) indicates that social media are meant to be a social experience and not a marketing experience. Social media utilises online technologies and methods through which people can share content, opinions and insights using text images, audio and video. Social media customers want to exchange information collaborate and communicate with other people. Social media have changed how conversations take place making human interaction global through the use of modern, mainly mobile technologies and electronic word-of-mouth (WOM) ([McDaniel et al., 2013](#)). Social media allows the user to be in control of message, the medium, the response or the combination of all three. Social marketing and techniques from commercial and e-marketing to encourage positive behavioural changes such as quitting smoking reducing the carbon footprint and to raise awareness of important issues, [Dibb et al. \(2012\)](#).

Social commerce is a subset of e-commerce that utilises the social interaction media and technologies to assist in the marketing of goods and services. Social commerce relies on user generated content including ratings, recommendations (for example Amazon) and comments ([McDaniel et al., 2013](#)). Social shopping tools such as Group on are one of the fastest growing social media tools currently, including the popular Group on mobile app. Social commerce sites are designed to assist customers to make more informed decisions on purchase and services, and the organization in return grow in profitability and proficiency.

Social media originated as a tool that most individuals use to communicate with people but was later incorporated by businesses that wish to utilize the business advantage of new media (new method of communication) to outreach large range of customers. The essence of social media in business cannot be overemphasized. It has the ability to connect and share information with anyone on Earth (or multitudes of people) as long as they also use social media.

Some of the social platforms available for businesses even in the agricultural sector include; Facebook, Twitter, Youtube, Amazon, Google+, Instagram, Pinterest, LinkedIn as well as personal websites among others. The Business Success Blog reveals that the social media has been distinguished as one of the best business tools for digital marketing. Ranging from all free accounts to paid advertising; the platform available in social media is one of the best ways for a firm to advance and increase their organizational visibility to gain wider customer base.

Generally, Farming can typically be isolating, but media communication within agriculture has never been more accessible at the tip of your fingers than now. With access to an internet connection, social media can be incorporated into agro-allied businesses to make communication process more efficient. [Ben \(2018\)](#) pinpointed that owing to the adverse changes in technologies, the method of production especially in the agricultural sector has developed extensively in recent times.

For most Americans it has been 3 or 4 generations since they have lived on farmland with the average age of the modern farmer being 58. In view of American's diverse population, it becomes essential that most agricultural inclined farmers explore other methods of communication to promote their produce as the traditional face-to-face dialogue method would not be efficient enough in conversing their message. If farmers miss out on using social media platforms, they would definitely miss the chance to educate, communicate and promote themselves to their audience. More farmers are however becoming computer literate and embracing new tech to establish a personal connection with customers. As such, social media is valuable in that it blurs the line between tech and social interaction, ([Ben, 2018](#)).

GDP from Agriculture in Nigeria decreased to 3597916.08 NGN million in the first quarter of 2019 from 4978775.48NGN million in the fourth quarter of 2018. GDP from Agriculture averaged 3832973.14 NGN million from 2010 until 2019, reaching on all time high of 5288339.21 NGN million in the third quarter of 2018 and a record low of 2594759.86 NGN million in the first quarter of 2010 (Nigeria Bureau of Statistics, 2019).

2.1.6. Online Customer Data Base

Customers are one of the most important assets of a company as such should be treated as “kings”. Every manufacturing or servicing company are constantly looking for new customers to sell their products or render their services to. As such, the way a firm manages customer’s information could be very vital. Online customer data base is the collection of customer’s information that is gathered from each person through the internet. The database could comprise of client’s contact information, address, full name, e-mail address, phone number and sometimes as much as bank details which are non-confidential. It may also include past purchases and future needs.

The management of these databases is very important. Some companies go as much as hire experts who maintain and monitor their online customer data base. As such customer data management (CDM) includes the various means in which firms keep track of their customer information and survey their customer base in order to obtain feedback. It includes a range of cloud or software computing applications designed to give firms quick and efficient access to customer data through the internet.

Online customer database benefits many companies in various ways. Most business might inquire from their customers’ ways they could provide better services to suit their demands. By collecting such data, it does not only enable the business store vital information about the customers but also enables the business to improve and enhance how they strategize in meeting customers’ demand. It also enables businesses keep close contact with their customers and passes information easily to them. This is possible as most people are technologically inclined.

It helps build loyalty and repeat business. Keeping and maintaining online customer database also provides access to contact information and allows appointment, bookings and orders to be confirmed. Customers could also be tracked or mailed for delivery if possible.

2.1.7. Digital Sales

Digital sales basically mean selling through digital media that is without seeing the customer directly. This type of transaction is possible through e-commerce sites (such as Amazon, eBay and others). Sometimes digital sales term is used to refer to selling space (in Web page, Google search and others) electronically. Digital sales and digital marketing are almost similar as both include online marketing efforts.

It is the marketing of products or services using digital technologies, mainly on the internet and being accessed using mobile phones, display advertising, and any other digital medium. Businesses leverage digital channels such as Google search, social media, email, and their websites to connect with their current and prospective customers. Generally, the idea of the most basic rule in digital sales is that communication and clarity are more important than a company’s view-able personality.

2.1.8. Gross Domestic Product (GDP) in Nigeria

Gross domestic product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period. As a broad measure of overall domestic production, it functions as a comprehensive scorecard of the country’s economic health. GDP as “an aggregate measure of production equal to the sum of the gross values added of all residents and institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs)”.

An International Money Fund publication states that GDP measures the monetary value of final goods and services that are bought by the final user; produced in a country in a given period of time (say a quarter or a year), Callen (2016).

Consequently, GDP can be divided into two parts. One part focuses on the contribution of each industry while the other focuses on the sector of the economy, Dawson (2006). Furthermore, the gross domestic product (GDP) could also be summed up on annual basis; it could be summed up on a quarterly. In the United States, for instance, government releases an annualized GDP estimate for each quarter and also for an entire year. Larger part of their individual data sets is presented in real terms. This means that their data is liable to adjustment in respect to price changes which is hence net of inflation.

The World Bank (2016) revealed that GDP could be ascertained via three basic dimensions which should at the long run yield same result. They include: the production (or output or value added) approach, the income approach, or the speculated expenditure approach. The production approach is the most vital and direct because it sums up the outputs of every dimension of enterprise and arrives at the total. In view of the expenditure approach, this works on the basis that all outputs must be purchased by an individual hence the total value of the product must be tantamount to the individual’s total expenditures in purchasing items.

Under the income approach, this operates on the fact that the income of the productive factors must be tantamount to the product's value hence determining the gross domestic product by ascertaining the sum of all producers' income.

Furthermore, [Kramer \(2019\)](#) posits that GDP is the most influential factor used to follow up a nation's economic standard and liveliness. This covers a large number of various elements which could include; investment and consumption rates. The GDP stands for the total dollar value of all goods and services manufactured within a specific or given period as such are referred to as the magnitude of the economy. Subsequently, GDP is often viewed and compared to the previous quarter or year.

Notably, both economic production and growth—which GDP represents—have a large impact on nearly everyone within that economy. A significant change in GDP; up or downwards often has a huge effect on the stock market. It is not difficult to understand why a bad economy usually means lower earnings for companies. This, in turn, translates into lower stock prices. Investors often pay attention to both positive and negative GDP growth when assessing an investment idea or devising with an investment strategy. One should remember that GDP is a measurement of the economy in the previous quarter or year which helps in explaining how it affects stocks and investments alike. It should not, therefore, be used as a means to predict how the market will move, [Kramer \(2019\)](#).

2.1.9. Industrial Revolution in other Countries

The industrialization of the Asia-pacific and several European countries as a direct consequence of the industrial revolution in Great Britain (1750–1850) after several centuries of individual learning and knowledge gathering as a result of involvement in experimentation or a particular trade in several parts of Europe, especially in Great Britain, leading to the invention of the steam engine and other labour saving machines Britain spontaneously experienced an Industrial Revolution. A study of Adam Smith's treatise on the wealth of nations helps one to note that the Industrial Revolution which occurred in Britain in the 18th and 19th century was a consequence of a gradual knowledge accumulation process over many centuries, ([Azeta, Okokpujie, Okokpujie, Osemwegie, & Chibuzor, 2016](#)).

However, other countries in the Asian continent were not privileged to pursue their industrialization at the same time as it was occurring in Europe and the USA. However, in 1854 a steamed U.S. Naval fleet came to establish trading and diplomatic relations with Japan. Britain, France and Prussia followed. This encounter with the Western powers greatly changed Japan within two decades through collective introduction of Western knowledge and machines ([Ucheda, 1995](#)). The course of economic transformation of Japan during the last decades of the 19th century was similar to those which occurred in France, Germany and the United States during the first half of the 19th century industrialization which happened through borrowing of technologies developed by the forerunner nation, Britain. Modern day shows Japan as one of the best countries specialized in technologies and industrial transformation.

Great China also underwent different stages of industrialization which represents the period after the establishment of the People's Republic of China. Under this era, great China underwent its most identifiable growths in industrialization. The economy of the Song dynasty was one of the most prosperous and advanced economies in the medieval world. Song Chinese invested their funds in joint stock companies and in multiple sailing vessels at a time when monetary gain was assured from the vigorous overseas trade and indigenous trade along the Grand Canal and Yangzi River, ([Ebrey, Anne, and James \(2006\)](#)). Prominent merchant families and private businesses were allowed to occupy industries that were not already government-operated monopolies. Overtime, China as a country has continued to increase their industrial strengths and values. It has emerged as one of the leading industrial power in the world as regards their annually outputs. As at 2016, China was producing \$4.566 trillion worth of industrial yields. This high rate of increase is enormously attributed to a number of factors. These factors include increasing available exportation opportunities; China's outsourcing strategy into the manufacturing sectors, the advent introduction of stock market in Shanghai, opening various parts of their industrial economy to privatization as well as foreign investment and the entrance of China into the World Trade Organization.

2.1.10. Repositioning Nigeria for the Fourth Industrial Revolution: Lessons to be learnt from South Korea

South Korea has a related case with Nigeria as it was poor economy with mainly subsistence agriculture and operating at very low income level and poor living standard. But the strategic and transformational leadership of the government led by Park Jung-hee on Industrialization and relevant policies transformed the economy to become among the world developed economies.

Some of the policies adopted by South Korea were employed in Nigeria but with different approaches regarding intensity and management. Like the import substitution industrial policy, export promotion strategy. Government of Nigeria needs to learn to focus and re-strategize when the need arises and have options of plans in case situation changes contrary to expectations ([Ogbonna & Uma, 2015](#)). The selfish intention, nepotism and parochial view of some resource managers prominent in Nigeria are highly avoided in South Korea. However, the major lessons available for Nigeria are:

- 1) Nigeria depends so much on foreign machines, man power and raw materials for industrialization while South Korea looked inwards and developed machines compatible with her resources, thereby minimizing various costs associated with production, foreign spare parts and expatriate.
- 2) South Korea established Industries on the basis of comparative advantages and interdependent industries so as to promote and encourage effective production and demand at all times. Steel industries put in place have remained great sources of uprising and progress of other industries but our leaders in Nigeria always consider politics first in establishing industries.
- 3) In South Korea, loans obtained for industrial and development intentions were strictly employed in productive and expansionary industries. Diversion of societal funds for personal use was discouraged but in Nigeria, our leaders treat public funds as personal funds.
- 4) South Korea adopted high level of infrastructural restructuring to ensure easy movement of resources at various nooks and crannies of the economy. This infrastructural restructuring lacks in Nigeria and no significant efforts have been made in this direction.
- 5) South Korea strengthened her exportable sectors, developed research and manpower training in line with needs through the establishment of special institutions aimed at quality and efficient manpower training but research in Nigeria is mainly academic and often regarded as useless by our political leaders.
- 6) The regular religious crisis, Niger Delta Militia, Boko Haram insurgency, kidnapping, robbery, armed banditry amongst other criminal activities prominent in Nigeria can be said to be unheard of in South Korea because the country encouraged the employment of various resources including all categories of labour which helped to minimize youth restiveness and social vices.

2.1.11. Fourth Industrial Revolution: Where is Nigeria?

With the principles of leading in the fourth Industrial revolution, reviewed above, Nigeria is going to see more technological changes in the years ahead. It may disrupt and change the business model of every industry. More jobs will be created and many will be host.

The industrial revolution simply describes an era marked by a technological revolution where new and rapidly advancing technologies merge with human, physical, mechanical and biological systems, leading to an extra ordinary transformation of the social, economic, and political status quo. Practically speaking, technology will invade, and disrupt all sectors of the economy, transform them, and then these technologies would then merge, connect most sectors together, and finally infuse them in an intimate level with humans. The practical manifestation of this is seen in artificial intelligence, robotics, and 3D printing autonomous vehicles, voice-activated virtual assistance, face ID recognition, 5G, internet of things (IoT), big data, cloud computing.; every Industry in Nigeria must leverage technology unless technology will leverage it. This ranges from food production, to retail, to banking, to health, to communication, transportation, education, genetics, politics and culture.

- But what are the issues for Nigeria? How well is the nation positioned for this future?
- Do we even know what is taking place?

If Nigerians do, what urgent steps is the government taking to put Nigeria on the global map of fourth industrial revolution (4IR), particularly in Africa?

- Is Nigeria government enacting laws for the future?
- Are they making policies for the future?
- Are they developing industries and business models for the future?
- Are they developing skills and building capacity for the future?

Many of our laws in Nigeria are already obsolete. For instance, if the country wants to adopt E - voting to an extent, the law that says that voters have to vote at a polling Station must be reviewed such one can vote from anywhere in the country. Nigeria does not have capacity to monitor how the telecommunication companies use the data of Nigerians. Our public policy may need to be formatted or streamlined to take into account, the transformative changes that will be upon us in a few years' time. For this to happen, public sector workers must be trained on 4IR thinking.

The Nigeria can leapfrog into development, depending on the foresight and vision of her leadership. This revolution is moving at jets speed, it is time for Nigerians to get to set and catch up and leverage technology before technology leverages Nigerians.

It is also pertinent to mention that for any economy to drive to maturity and industrial revolution, structural transformation must occur.

Structural transformation accompanies development, they are interrelated. Structural adjustment can be referred to as how an economy transits from agriculture to industry and from industry to service [Lipede \(2018\)](#). The initial stage of any economy is the agricultural phase, then gradually moves to industry and then to service. So it is impossible to transit to industry if the agricultural stage is not well managed. Any country that desires development must experience each phase duly before any transformation can be achieved.

In Nigeria, the agricultural sector has remained underdeveloped despite the numerous policies and programmes that have been enacted in the sector. Prior to the struggle the sector is experiencing. It had rich history and played a progressive role in the economy, playing a crucial role in the economic growth of the country. This success was achieved through investment in agriculture both at the federal and the regional level, various research institutes were established across the country. These research institutes include; Cocoa Research Institute of Nigeria (CRIN) Ibadan; National Institute for Horticulture Research and Training (NIHORT), Ibadan; Institute for Agricultural Research and Training (IAR&T), Moor Plantation Ibadan; National Institute for Oil Palm Research (NIFOR), Benin; Rubber Research Institute of Nigeria (RRIN), Benin National Cereal Research Institute (NCRI), Bajeji; Forestry Research Institute of Nigeria (FRIN) Ibadan; National Veterinary Research Institute (NRCI), Umudike; National Institute for Fisheries and Fresh Water Research, Kainji; National Institute for Oceanography and Marine Research, Lagos; National Institute for Animal Production, Zaria; International Institute for Tropical Agriculture (IITA) Ibadan; National Institute for Trypanosomiasis Research (NITR), Kaduna and Universities of Agriculture across the region. This was geared towards booming the agricultural productivity; however those are the past glory.

Agricultural sector servicing as raw materials accelerated the industrial revolution in Europe pioneered by the British Colony was a source of raw materials for Europe and it aided the industrial revolution experience in Britain especially. If the country indirectly fast-tracked the revolution experienced in Britain, what is happening now? Owing to the oil boom in the country, 1970s, agriculture experienced a decline. [Lipede \(2018\)](#) posits that according to statistics, the contribution of agriculture to GDP in 1960 was about 60%, however this decline between 1975 and 1979. This sharp decline should not have been a headache if the productivity level did not decline in the sector's share to the GDP.

According to economists, for any country to experience industrialization revolution, labour in the agricultural sector must be moved to the agricultural sector; however, the sector's productivity must not decline as a result of the labour migration. The productivity level of the agriculture can be maintained through technology, training of labour, investing in factors of production, investing in agriculture researches.

During the Industrial revolution in England, almost 75% of the population was dependent on agriculture in 1700. By the census in 1841, only 22% of the people worked in agriculture, there was a drastic decline for revolution to be a blast.

In 1830, citizens of United States working in the agriculture sector was roughly 90% but by 1870, the figure declined to 50% and by 2008, less than 2% are employed in agriculture. Also, in 1970 China has over 80% of the population working in the agriculture sector, however, 2015; it reduced to about 25%.

The matters arising in Nigeria's Industrial revolution are that the country has not explored its comparative advantage. Agricultural produces have to move beyond the raw and be more value added. To achieve industrial revolution, structural and institutional changes are needed without which new country shall see industrial revolution.

2.1.12. Overview of Industrial Policies in Nigeria

[Ogbonna and Uma \(2015\)](#) posit that various policies and programme have been formulated and implemented in Nigeria but the economy is yet to see the light of industrialization. Nigeria according to [Ogbonna and Uma \(2015\)](#) fails to look inwards so as to develop its own technology needed to industrialize the economy and as such relied solely on foreign inputs and technology that is at variance with Nigeria economy. Some of the policies/strategies employed by Nigeria to industrialize their economy are reviewed below:

- **Import Substitution Industrialization Strategy:** This was adopted by Nigeria after independence in 1960 to promote economic and industrial development. The purpose was to reduce excessive importation and promotion of home Industries. Protectionism was employed through Import restriction, import quota and exchange control to restrict the rate at which foreign goods flow into the local markets. The success of application of this strategy in other countries made Nigeria to replicate it in his own economy to reduce the quantum of imports end over dependence on foreign made goods. This strategy was targeted at developing confidence and reliance on domestically manufactured goods, increasing foreign reserve, promoting balance of trade (BOT), and increasing employment of resources, avoiding balance of payment (BOP) problem and at the same time accelerates technological advancement. This approach hoped to substitute imported foreign input with local ones other things being equal ([Busari, 2005](#); [Egwaikhide, 1997](#); [Ekpo, 2014](#); [Ndebbio, 1994](#)). Fiscal, monetary and infrastructural incentive such as tax holidays, income tax relief, and duty exemption on machinery, spare parts among others were provided for the prospective local investors and private investors engaged in import substitution strategy with view to reducing initial cost of take-off and encouraging domestic investment. The government constructed and let out industrial estates to industrialists at a subsidized rate with the motive of making industrial commencement and production easy. In order to provide financial facilities for industrialist, the federal government established the Nigeria Industrial Development Bank (NIDB) in partnership with International Financial Corporation to assist Nigerian industrialists engage in the Industrial sector and the provision of loans to support industrialists ([Ekpo, 2014](#)); ([Federal Government of Nigeria, 1970](#)).

Nigeria government gave more attention in the area of manufacturing investment. On this basis many Industries especially those usually engaged in importation of manufactured goods were encouraged to establish manufacturing factories which led to the emergence of industries such as textiles, tyres and tubes, building materials and cement among others. The federal government increased its Investment in public enterprise; specifically the following industries came on board: Kaduna and Warri refineries, Petrochemical Industries in Port-Harcourt, Pulp and Paper Mill in Calabar and Iwopin, Nkalagu and Calabar Cement Companies. Other heavy industries such as Ajaokuta Steel Company limited, Aladja, Jos, Kaduna and Oshogbo Steel Rolling Companies among others were also established. Some of these industries were abandoned and could not be fully constructed while others stopped operation due to lack of local experts capable of their maintenance, inadequate financing and inability to source for the required foreign raw materials (Ekpo, 2014); (FGN, 1970). It can be inferred that a good effort was made by the government to promote industrial sector through import substitution industrial strategy but the outcome was far below expectation due to incompleteness of activities and oil shock in 1980s, foreign exchange constraints and the ability of substitution local inputs for foreign ones. This was because foreign inputs could not easily be acquired by private investors in manufacturing industry due to lack of funds and high exchange rates (Ogbonna & Uma, 2015).

- **Export Promotion Strategy:** The problem of securing foreign exchange during the fall in oil price in international market forced Nigeria to promote generation of foreign income through non-oil exports. This was introduced to tackle essential financial needs like import bills, fiscal duties, and external debts amongst others. Consequently, Structural Adjustment Programme (SAP) was introduced in July 1986 during General Babaginda's administration. The SAP programme was introduced to focus on increasing exports of goods so as to increase the generation of foreign exchange needed for capital projects development and management of the economy. In this regard, domestic production for export was highly promoted and various export incentives were made available by the government (Ogbonna & Uma, 2015). Several industrial policies were pursued in SAP to fast-track industrialization such as New Export Promotion Decree of 1986, Interest Rate Deregulation Policy, Privatization and Commercialization Policy of 1988, the New Industrial Policy of Nigeria 1989 and Debt Conversions (Equity SWAP) policy (Ekpo, 2014), Ndebbio (1994). Consequently, export credit guarantee and insurance schemes come on board and actions intensified to be in operation and also created export free zones at different points in the country. The essence of deregulation of interest is to encourage foreign direct investment and motivate Nigerians to bring back into the country those funds taken to other economies of the world and encourage savings. Some monetary and fiscal incentives were made for instance; minimum lending rate was fixed at 14% and 100% retention of export earnings in foreign currency instead of 25% allowed by previous policy. In order to exchange private sector to drive the economy to growth and development privatization and commercialization of public enterprises were embarked upon through Technical Committee on Privatization and Commercialization (TCPC) which led to many public enterprises in Nigeria being acquired by private business men (Ekpo, 2014).
- **Small and Medium Industries Equity Investment Scheme:** The scheme was instituted in response to the Federal Government's concern and policy measures for promotion of SMEs as vehicles for rapid industrialization, sustainable economic growth and development, poverty alleviation and employment generation. This scheme was a voluntary initiative which requires all banks to set aside 10 percent of their after-tax profit for equity investment in SMEs in Nigeria, as part of their contribution towards stimulating economic growth economic growth, developing local technology and generating employment.

Other Objectives are:

- Enhancement of regional economic disperse.
- Moderating rural/urban migration.
- Easily adaptable to local technology.
- To develop and package viable Industries with Nigerian entrepreneurs.

Although, the scheme has recorded significant improvement in terms of sectorial and geographical distribution of investments, it has also been bedevilled with slow pace of aggregate investment. Other setbacks include high cost of pre-investment activities such as feasibility studies, assets valuation and others, which entrepreneurs feared might become wasted fund, if they are not considered, reluctance of banks to make a paradigm shift from short-term financing to long-term financing; continued poor state of physical infrastructures, among others.

- **National Economic Empowerment and Development Strategy (NEEDS):** To further consolidate the possible achievement by the preceding policy, the federal Government in 2004 launched an

entirely home-groomed package, Natural Economic Empowerment and Development Strategy (NEEDS).

Under this development policy, the private sector was identified as the engine of growth. The private sector is the executor, investor and manager of businesses. While the government is the facilitator and regulator, helping the private sector to grow, create jobs, and generate wealth.

The overriding objectives is contained in the NEEDS document are:

- i. To accelerate the pace of industrial development by increasing value added at every single stage of the value chain.
- ii. To encourage forward and backward linkages in a few inches.
- iii. To provide enabling environment for private sector leadership.
- iv. To promote the establishment of efficient SMEs sector to enhance sustainable economic development.
- v. To facilitate the development of an industrial sector that is internationally competitive.

The success and /or failure of NEEDS will to a very large extent depends on the success and/or failure of subsequent industrial policies that evolved thereafter, since NEEDS package is believed to be a mother package through which other Industrial policies within this period anchored their existence.

- **National Integrated Industrial Development (NIID):** The Federal Government of Nigeria in 2007 instituted another policy, the National Integrated Industrial Development (NIID) blueprint, as a service framework developed by the United Nations Industrial development Organization (UNIDO) in collaboration with the federal Ministry of Industry and other stakeholders. The framework, according to CBN (2007), compared four integrated programme, namely:
 - i. Industrial governance and public private sector partnership.
 - ii. Strengthening industry's institutional support base; a cluster development initiative to grow the small and medium enterprises using common facilities.
 - iii. Environmental and energy; addressing the challenges of low power generation and utilization through rural renewable energy.
 - iv. Rural private sector agro-industrial development.

Under this policy, the Lagos, Kano, Aba action plan was developed to address the efforts in address the problem of infrastructural decay and focus efforts in addressing the needs of these four industrial cities. The framework also made a provision of park in each of the six geopolitical zones of the country to boost the development of SMEs. The assessment of the policy showed that it has not achieved success. One of the failures is bureaucratic bottlenecks in terms of policy implementation.

Other problems are slow pace in the disbursement of loans meant for SMES by banks. The designated industrial parks lack operational facilities such as adequate power supply, lack of good transport network, inadequate water supply, lack of sewage system and others.

- **Industrial Park Development Strategy (IPDS):** In 2009, the Federal Government of Nigeria pursued Industrial Park Development Strategy (IPDS). This is a "Cluster Concept" strategy aimed at driving non-oil growth through the creation of industrial parks and special economic zones. As a medium – term strategy, industrial parks are designed in areas with basic infrastructural facilities needed for establishing an industry, thus making such areas more investment friendly. Where the park is near the sea port, it can be made an export processing zone, thus allowing tenants to bring in machinery and raw materials free of duty, provided a certain percentage of the output goes back into export. This policy also faced challenges of National Integrated Industrial Development (NIID).

2.2. Theoretical Framework

The study is anchored on Import Substitution Industrialization (ISI) theory which is associated with Dependency theory. This theory was proposed and theoretically organized by Raul, Hans, and Celso (1962). This theory explains the rise and fall of industrialization in Nigeria. The premise of ISI theory was that a country should attempt to reduce its foreign dependency through the local production of industrialized products. The theorists suggested state-induced industrialization through government intervention and spending. Although the concept of import substitution industrialization is a development theory but its political implementation is rooted in trade theory. Arguably, some or virtually all nations that have industrialized have followed import substitution industrialization. For instance, the Mercantilist economic theory of the 16th, 17th, and 18th century frequently advocated building up domestic manufacturing and import substitution.

Furthermore, the Korean economist Ha-Joon Chang asserts as regards their economic history that most developed countries which covers United Kingdom – used interventionist economic policies to promote industrialization and protected national companies until they had reached a level of development in which they were able to compete favorable in the global market.

This theory is relevant to this study as it focuses on the various factors responsible for the rise and fall of industrialization in Nigeria. This covers the concept of re-engineering the Nigeria economy. The above theory provides a framework that proffers a solution to bettering the economic state of country as it suggest that Nigeria should curtails its dependency on foreign bodies by encouraging production of local goods and

services and engineering domestic manufacturing build up and importation substitution. The initiation of technological under-buildings has aided an improved means of business/organizational operations in the country. Apparently, the concept of forth industrial revolution is denoted as an industrial shareholder responsibility as most organizations form the wheel for coordinating every stakeholder's gains and values as far as the management possess an administrative relationship to all stakeholders.

2.3. Empirical Review

Erol, Schumacher, and Sihm (2016) carried out a study on strategic guidance towards 4IR – a three stage process model found out that there are three stages to develop a company specific strategic roadmap towards 4IR. The co-innovation approach along with a systematic visualization of goals, strategies and concrete projects ensures a shared understanding of the 4IR, the impact on the company's structure and processes and the required activates to transform into a 4IR ready company.

Azeta et al. (2016) examined a study on a plan for igniting Nigeria's industrial revolution. The study presents a review of the industrialization of nations such as Japan, South Korea, Taiwan, Singapore and several other industrializing countries and the lessons learned revealed that the industrialization of these nations was based on initial imitative-reverse-engineering of products of forerunner nations which then leads to endogenous growth and the onset of innovation under certain constraints.

Enwere and Isik (2016) in a study titled impact of Industrialization on the economic growth of Nigeria (2000–2013) adopting method of ordinary least square found out that there is no positive relationship between industrialization and economic growth in Nigeria in the long-run.

Uma, Eboh, Obidike, and Ogwuru (2013) identified the role of industrial productivity in sustainable growth using the method of ordinary least square and tested for long-run relationship of variables. The study found absence of long run relationship between outputs of major industries variables with the dependent variable (real domestic product). The output of most industrial sectors did not impact significantly on the real gross domestic product.

Yongxin, Eduardo, Fernando, Guilherme, and Andre (2017) studied the impact of fourth industrial revolution as a cross-country/region comparison. The general objective of the study was to ascertain the most influential public policies and evaluate their differences. The study employed a primary source to elicit data through unstructured interviews. Data collected were analysed using the descriptive statistics. Findings showed that fourth industrial revolution comparison among each region provides a worldwide panorama of public policies durations as well as other areas of action prioritized towards advanced technologies. The study recommended that government should be keen to analyzing the position of country in tackling existing challenges imposed towards its own industrial infrastructure and also coordinate effectively its public policies.

Judit, Judit, Edina, Domician, and Jozsef (2018) studied the role and impact of industry 4.0 and the internet of things on the business strategy of the value chain; a case of Hungary. The main aim of the study was to ascertain how organizations operating within Hungary view industry 4.0 phenomenon, what internet of things (IoT) tools they use to support their processes and the possible challenges they encounter during adaptation. The study adopted a dual methodology and sent online questionnaire to manufacturing and logistics service companies concerning the research questions. The online response was 43 which were evaluated using inferential statistics. Findings showed that most firms have deeper insights concerning the application of IoT tools as well as encountered some basic challenges at the development phase. The study concludes and recommended that the spread of real-time data across companies given the availability of appropriate analytical tools and methods has a significant impact on the entire company.

From the empirical work reviewed related to re-engineering and restructuring of Nigerian economic to suit industrial revolution shows that most scholars focused more on sustainability and industrialization and all agreed it would only be strategic to restructure an economy in other to embrace industrialization. The study hence seeks other variables of re-engineering Nigeria economic for industrial revolution.

3. Methods

This study adopts an ex-post-facto research design which provides information regarding the causes of some events on the basis of which this study could be undertaken. The study adopted the multistage sampling technique which involves dividing the population into manageable groups. Under the first stage, the study selected Anambra state from the 36 states in Nigeria. The second stage allows the study to select 2 local governments from the 21 local governments that make up the state. They include; Awka south and Nnewi North. Six firms were randomly selected from 79 agro-allied firms in both local governments. These agro-allied firms are: Trinity Farms, Dan Agro Industries, Arroma Farms, Hatcher, Zion Integrated Agro Farm, Shalom Nnewi Farmers Multipurpose Co-operative Society and Green Vet Care Consult. Data collected were obtained from the Central Bank of Nigeria (CBN) Supervision Reports, Global statistics and Federal Ministry of Agriculture and Rural Development Annual Reports from 2009–2019. In order to estimate the relationship between building businesses around platform networking and GDP in Nigeria, this study employs the ordinary least-square (OLS) method which was used for the analysis.

3.1. Model Specification

The two variables would be building businesses around social media platform which would be represented with online customer base, online retail sales records, for the specific period of time in specific value. The gross domestic product (GDP) which includes labour and capital. This would measure the economic growth of the country. Other variables which are assumed to influence Nigerian economy are inclusive for the purpose of comparison. These include labor force and capital. This study adopted the Cobb - Douglas production function which is:

$$Y = AK^aL^b \tag{i}$$

In other to incorporate all related variables for this study, the model would be restructured thus:

$$Y = f(OC, OS, L, K) \tag{ii}$$

Above, Y stands for GDP , OC stands for *Online Customer Base*, OS is proxy for *Online Sales Transactions*, L represents *Labor Force* and K represents *Capital*. The above standard equations signify that all related variables contributes positively to the GDP of the country. The standard regression model can be transformed to:

$$GDP = \beta_0 + \beta_1 OC + \beta_2 OS + \beta_3 L + \beta_4 K + u_i \tag{iii}$$

$$\text{While } \beta_0 > \beta_1 > \beta_2 > \beta_3 > \beta_4 > 0$$

4. Data Analysis

4.1. Test of Hypothesis 1

H_0 : There is a positive relationship that exists between building businesses around platform networking and GDP in Nigeria 2009-2019.

Table-1. Summary of descriptive statistics presenting data collected on building businesses around platform networking and GDP in Nigeria from 2009-2019.

Descriptive statistics

	N	Range	Minimum	Maximum	Sum	Mean		Std. deviation
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. error	Statistic
Customer base	10	32.37	25.50	57.87	667.59	44.5060	2.73778	10.60339
Sales transacts	10	14.01	-9.28	4.73	25.88	1.7253	.85374	3.30652
Labor force	10	.98	9.50	10.48	152.30	10.1533	.12347	.47819
Capital	10	227.70	-64.72	162.98	349.48	23.2987	12.02279	46.56405

Source: Field survey, 2019.

4.2. Data Presentation

Table-2. The Anova table showing the degree of variance and relationship of data collected on building businesses around platform networking and GDP in Nigeria from 2009-2019.

Model	Sum of squares	df	Mean square	F	Sig.
Regression	32.693	1	32.693	3.531	.083 ^b
Residual	120.370	13	9.259		
Total	153.063	14			

Source: Computation using SPSS version-23.

Table-3. Correlation co-efficient table showing the degree of relationship that exists between building businesses around platform networking and Nigerian GDP.

	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	4.689	3.503		1.339	.604
OC, OS	.144	.077	.562	1.879	.483

Source: Computation using SPSS version-20.

Table 3 reveals that building business around social platform networking; if held constant, GDP would be 4.689. Hence, these social platforms for businesses have a positive and significant impact on the gross domestic product of the country. A unit increase in business social networking platforms to 1.44% increase in GDP. This is based on the networking platform coefficient of 1.44 & p-value (0.483).

Table-4. Model Summary of regulation analysis done on data collected from building businesses around platform networking and GDP in Nigeria from 2009-2019.

Model Summary^b

Model	R	R square	Adjusted R square	Std. error of the estimate	Durbin-Watson
1	.462 ^a	.214	.153	3.04290	2.917

Note: a. Predictors: (Constant), GDP.
b. Dependent Variable: OCOS.

Adjusted R-square is the coefficient which tells us the changes in the dependent variable attributed to the variation in the independent variable.

As shown in Table 4 the value of Adjusted R-square is 0.153. This implies that 15.3% change in labor force and capital was attributed to the variation in the customer base and online sales transactions within the period studied.

R is the correlation coefficient which shows the relationship between both variables. From the analysis, it was deduced that there is a positive and significant relationship that exists between building businesses around platform networking and GDP in Nigeria.

5. Conclusion

Nigeria has had its fair share of industrial plans, revolution and policies, and that the industrial sector contributes reasonably to national GDP is an indication that its evolutionary goals are achievable.

The study highlights the re-engineering of Nigerian economy through fourth industrial revolution as such concludes that initiating necessary restructuring, plans and systems especially initiating social media platforms for doing business (business networking) would advance the industrialization of the country especially in the agricultural sector.

Based on the finding, increased online customer bases and online transaction through social platforms for doing business in the agro sector has positively affected the GDP of the country. In a nutshell, one of the basic indications of the study is that re-engineering Nigeria economy would include more governmental restructuring and change in already existing system of operation in order to achieve technological advancement and network building especially within the agro-allied sector which has potentials of increasing the nation's economy.

It is also important to embrace industrial revolution policies from other countries that have succeeded as this will help to reposition industrial revolution in Nigeria. Findings also revealed that Nigeria policy makers are yet to fully embrace digitization of the continent and the transformation it would bring with it.

6. Recommendations

The following recommendations were made based on the findings of the study:

- i. The government of Nigeria should consider indebt change in their system of operation so as to encourage new media network building among various sectors in the country and ensure industrial revolution most especially in the agricultural sector.
- ii. For Nigeria to realize industrialization like other advanced countries, government should encourage firms to embrace digital marketing. The awareness and willingness to utilize and supplement social platform tools in agricultural related activities by various actors in the agricultural value chain can improve information sharing as well as utilisation across social media platforms.

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