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Assessment of Nigeria's Economic Sectors Through the Input-Output Model

Dariyem, Naandi Kruslat, Salifu Achile Momoh and Isah Muhammed Ozi

Research Directorate, National Institute for Policy and Strategic Studies (NIPSS), Kuru

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ABSTRACT: *This study established the contribution effect of the input-output model in studying the interconnectedness of industries in Nigeria's economy, with the aim of channelling resources and policy framework to building industries with strong backward and forward linkages that can spur and stimulate industrial growth. The data was sourced from the NBS database of production statistics, labour statistics, and foreign trade statistics, as well as administrative, enterprise, and household surveys. The entire productive sector was aggregated into thirteen sectors with similar features and according to international industrial standard classification. The table constructed shows that the coefficient values have changed over the years since the last review. There are indications of slight positive changes in innovation, technology, and business activities that have sprouted up over the years. Furthermore, there were no negative values in the entire production matrix. The results of the impact analysis show that electricity and water have a strong production linkage and their positive impacts cut across income, value-added, and with a relatively lower impact on job creation from direct, indirect, and induced effects. It is undeniably one of the economy's major driving sectors, while agriculture, lodging and food service, transportation and storage, professional, arts, administrative, and public sectors (labour-intensive sectors) are at the forefront of employment and income generation. The manufacturing industry contributes less to per capita income and employment. This is a signal that the nation is still lacking behind in terms of industrial development, which is the key or bedrock of development and employment generation in developed nations of the world.*

KEYWORDS: input-output model, coefficients, forward linkages, backward linkages, input-output (IO) table

INTRODUCTION

The importance of studying the interdependency and inter-sectoral connectedness of industries within an economy cannot be overemphasized (Ayantoyinbo and Ekundayo, 2015). The Leontief input-output (IO) model is the widely accepted and accurate measure of such transactions (Effiong, Okoye, and Itam, 2019). The input-output model is by nature one of the most suitable instruments or models for estimating interdependency between sectors and the impact of each sector on the national and global economy (Wu et al., 2014; Xing, 2017). The IO table is a symmetric table that

shows the flow of income between consumers and producers. It also presents the distribution of the output of every sector across all other sectors in the economy and the sector itself, as well as across economic actors (government, households, investors, and the rest of the world). The majority of the contemporary economy's sectors are significantly interrelated. Individual industries use labour and capital, as well as resources and inputs from other industries and from other countries. They sell their output (products) to other producers and to final consumers, both domestically and internationally. These macroeconomic flows are recorded in IO tables, typically according to detailed product and industry classifications (Gretton, 2013).

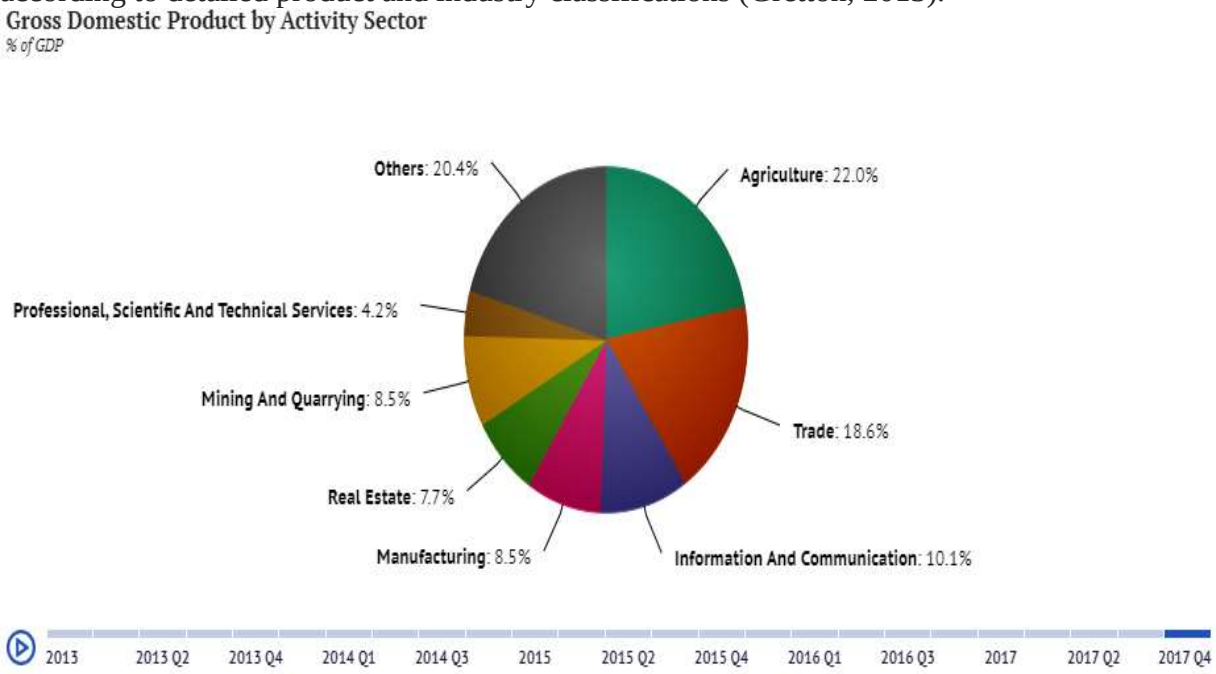

Figure 1: Nigeria Gross domestic Product by Activity Sectors

Source: NBS 2022(https://nigeria.opendataforafrica.org/)

Analysing the different contributions of various sectors of the domestic economy helps formulate appropriate macroeconomic and industrial policies to effectively stimulate sectors of the economy. According to Lapeyre (2010), an effective strategy for stimulating economic growth, reducing poverty, and creating jobs should target sectors within the national economy that generate the most value-added, spur the revival of other sectors, generate employment in the face of rising unemployment challenges, and have a large multiplier effect and linkage to the domestic economy. The total significance of sectors in the economy and determining the key generating sectors within the economy can be targeted by examining the inter-industry impacts. Epstein et al., (2009) express a similar opinion when they posit that the input-output framework allows measuring domestic transaction linkages (forward or backward linkages). However, linkages could also evaluate the importance of international trade in the production process.

Proper economic impact evaluation could facilitate greater value-added in all operational sectors of the economy. If done well, this could have positive effects in terms of stimulating economic development; promoting the development of local industries; creating economic linkages; building local capacity, capabilities, and technologies; developing skills within the workforce; boosting employment; and minimizing capital flight (Mcculloch et al., 2017). Studies have revealed that U.S. IO data is updated each year and provides information on 71 industry categories (Lawson et al., 2002). This IO data equally provides governments, businesses, and private organisations with data to examine the role of information technology in structural change, productivity, and the strength of economic growth. South Africa's Bureau of Statistics produces and updates IO statistics at intervals of one year. As is the standard practice in most countries, the IO table is compiled or updated every year. "The IOTs should be compiled annually and, if possible, on a quarterly basis," (United Nation, 2018, p. 86).

The National System of Accounts sets the standard for the compilation of economic activities based on the principles of accounting procedures (*System of National Accounts*, 2008). Since the publication that contains a set of IO tables for 1985, 1987, and 1990, published by the then Federal Office of Statistics (FOS), A preliminary IO table based on a preliminary supply and use table was compiled by NBS in 2010. The table was short of a complete IO table (Paper, 2015). Since then, an updated or fresh version has not been published by the National Bureau of Statistics (NBS) via the Statistics Act 2007 for the purpose of analysing the various sectors of the Nigerian economy. The most recent available Nigerian IO table was the symmetric for 2015, which was obtained from the Eurostat database. (Effiong, Okoye, and Itam, 2019). The published IO's were intended to provide the public with comprehensive statistical data on the interrelationship of the various sectors of the economy and the purpose for which it will be useful for economic planners, academicians, etc. They were undertaken as part of a program aimed at the improvement and updating of the system of national accounts estimates for the periods (NBS, 2022).

The primary focus is to use the updated table of input-output (IOT) analysis to derive the input coefficients, production inducement coefficients, backward and forward linkage effects, and multiplier impacts of inter-sector relationships within the Nigerian economy**.** The framework of the IO table constructed by Olayide et al. (1981) makes it relatively easy to recompile and update. Updating this particular IO rather than constructing a fresh one is preferred because it was originally designed to allow for future updating, and it relies more on secondary data sources rather than surveys, which are time-consuming and expensive. The IO model has been recognised as a useful approach to analyse and predict the overall economic impact (Jeong et al., 2021). This economic analysis has hardly been explored, especially in the Nigerian context (Effiong, Okoye, and Nweze, 2019). The research seeks to explore the potential sectoral multiplicative impacts that one sector is able to disperse or to concentrate due to its input-output interdependencies with the other sectors of the economy.

Statement of Problem

The obvious lack of an up-to-date IO table for Nigeria has continued to pose a serious challenge to international and local users of the data. There is a growing demand for Nigerian IO tables that are both current and representative of the structure of the economy. The impact of the global economic crisis of 2007–2008, the recession of 2016, and the global COVID-19 pandemic of 2020 have raised questions among policymakers concerning measures required to stimulate and revive the nation's economic misfortune. The Nigerian industrial sector is not having the expected impact it should in promoting economic growth. Its contribution to the national GDP is below one-quarter (Chimezie, 2016; Newman et al., 2016; Angahar and Kida, 2020). The manufacturing sector has not been the major driver of the Nigerian economy and employment generation. Government policies to stimulate the economy through large-scale investment in various sectors require a careful evaluation of the economic structure and its likely effects. Governments with a given target of spending may well view job creation as an important factor in determining which stimulus package to favour and which industry to target for more investment in the economy. Ideal policy options must be directed to explore sectors with sustainable potential. The key inputs needed for economic analysis, including economic impact assessments, are primarily provided by the IO analysis table. The tables help to understand the structure and connections within the economy better. Unfortunately, for nearly three decades, no operational IO tables have existed in Nigeria, either as planning tools for policymaking or for economic researchers to conduct econometric modelling and analysis for the country. Nigeria, like other emerging economies, needs to understand the structure and operation of her economy in order to have a solid developmental plan for the nation and to ensure economic activities are attended to.

Conceptual Clarification

Input-output analysis is the vast collection of data describing economic activities. It is the economic analytical tool for explaining the prediction and behaviour of macroeconomic activities (Christ, 1955). It extensively describes the economic structure and relationships among macroeconomic variables, which include data on supply and demand among industries (Xing, 2017). Not only that, but it keeps track of industrial relationships and measures external shocks and policy interventions (Cerina et al., 2015). The input-output analysis provides answers to a variety of questions about the contributions of macroeconomic variables (Raa, 2006). The input-output model is commonly used to examine the effects of changes in external components on an economy. (e.g household consumption, decision makers' spending, gross fixed capital formation, exports) to the economy. The technique for assessing the effect was first introduced by Wassily Leontief and later developed into many branches (Miller and Blair, 2009). According to Steenge (1990), The relevance of input-output analysis stems largely from the fact that it can easily estimate the output multipliers of combined direct and indirect effects of a change in final demand. When maximal total impacts are the sole purpose of policymakers' expenditure, it is rational to invest resources in the sector with the highest output. (Bekhet, 2011).

The multipliers that predict how external changes would affect the outputs of various economic sectors are the most widely used ones. income that each sector's households will receive as a result

of the new outputs. The employment (or, jobs in physical terms), which is anticipated to be generated in each sector as a result of the new outputs and change in sales, is a good indicator of the value added that each sector in the economy is producing as a result of the new outputs. The concept of multipliers is based on the difference between an exogenous change's initial and cumulative impacts (Miller and Blair, 2009). Based on Richard F. Kahn's prior research, John Maynard Keynes developed the multipliers approach, which addressed broad data aggregates.

Input-output multipliers are built using a complete collection of sector or industry accounts that measure the commodities generated by each industry as well as their consumption by other industries and end users. By integrating information on inter-industry linkages, input-output multipliers can highlight the impact of demand changes on certain industry sectors within a region. Input-output models, according to Bess and Ambargis (2015), do not take into consideration potential price changes brought on by increased competition for limited resources. The ratios of total to partial changes in economic activity are represented by multipliers, such as the ratio of a total change in output to a preliminary change in final demand.

The multipliers are derived using the technical coefficient (A) and Leontief inverse $(I\ A)^{-1}$ from the input-output tables. Because technological development is slow in most industries, it is possible to acquire reasonable findings for the most recent year even if the most recent input-output figures are a few years old. In general, the various multipliers remain pretty consistent throughout time. The demand-side input output model, which is driven by demand for its outputs, is the conventional input-output model used to calculate multipliers. The model implies that a set amount of a given input is required to create a certain output in any given year.

Production Linkages: The literature review's output multiplier is the same as the backward linkages. When one industry increases its output, the demand for the industries that generate intermediate inputs rises. Backward linkage models are models that measure impacts based on this type of relationship. This refers to the extent to which a sector or industry is dependent on the outputs of other domestic sectors for its production. Forward linkage can alternatively be thought of as an input multiplier. When one industry boosts its output, there is a greater supply of output for other sectors to utilise in their production. Forward-linkage models are those that measure impacts based on this type of relationship. This refers to the extent to which other sectors within the domestic economy depend on a sector for their intermediate input. In other words, the dependency of other sectors of the economy on a particular sector for the supply of input for their production process. Information on Backward and forward linkages among the sectors of an economy provides a better understanding of the economy's sectors and dynamics, which are important in formulating policy in the economy. A production model or linkage analysis can measure the effect an industry's production has on other industries in the economy. The analysis of input-output multipliers generates four forms of final-demand multipliers and two types of direct-effect multipliers. All of these multipliers estimate the total impact across all industries, however the total obtained using Type I multipliers differs from the total generated using Type II multipliers. This is due to the fact that Type I multipliers determine the cumulative effects of direct

and indirect rounds of industry spending, whereas Type II multipliers measure the cumulative effects of direct, indirect, and household (induced) spending. In general, assuming that the overall industrial mean of the backward linkage effect is one, an industry is considered to have an impact if its mean is greater than one and a low impact if its mean is less than one (Mandras and Salotti 2020; Miernyk 2020).

Empirical Studies

There is a wealth of literature on how different industries are interconnected. In order to give our investigation a theoretical framework, some of the most significant studies are discussed below. Olayide et al. (1981) established a methodology for the compilation and standard updating of the table for the Nigerian economy within a regular interval. They believed that the table could be constructed for any other year for which the real sector data is available and on a regular basis. ONS (Office for National Statistics), 2010. The main focus is on product-by-product tables. Some users may wish to use industry-based analyses instead of the product-based analyses shown here. The manual therefore concludes this publication with a description of an alternative way of performing industrial analyses based on the product-by-product tables. These tables form an essential tool for economic modelling**.** Ayantoyinbo and Ekundayo (2015) examined the role of the transport system in economic growth and development in Nigeria. Specifically, the study considered the extent of backward and forward integration of transportation sectors in Nigeria using input-output analysis. The result revealed that the transport sectors have strong backward and forward linkages. United Nations and others (2018), the objective of this handbook is to provide a step-by-step guide for the compilation of Supply and Use Tables (SUT) and Input-Output Tables (IOTs) and an overview of the possible extensions of SUTs and IOTs which increase their analytical significance. Tables; and provide practical compilation recommendations for countries with advanced, less advanced, or developing statistical systems. Jeong et al., (2021) used input-output modeling to investigate the industrial linkage impacts of the logistics service business. The findings revealed the logistics service industry's extensive industrial linkage effects, suggesting that many logistics sectors (transportation, storage, and handling) are not only interdependent, but also create a service ecosystem.

While there are numerous existing studies using IOA to evaluate various macroeconomic activities, there has been limited research on specific economic activities and the impact of industries using the input-output model in Nigeria. This study fills this gap in the literature by conducting research on the overall production structure of the Nigerian economy. To this end, this study analyses the economic ripple effects of the overall industry, which encompasses various economic activities such as agriculture, mining, electricity, manufacturing, construction, trade, accommodation, information and communication, professional services, finance, real estate, and human capital development, and suggests implications for improving industrial interdependency competitiveness.

RESEARCH METHODOLOGY

This study computes and analyses the interindustry flow matrix for 2018. The analysis follows the Leontief model derived from the table to be able to analyse the structure and the procedures for developing multiplier effects. The construction of the table originally made provision for future updating and the use of secondary data rather than relying solely on survey data, which is very expensive and time-consuming. The data was sourced from the NBS database on production statistics, labour statistics, and foreign trade statistics, as well as administrative, enterprise, and household surveys. The entire productive sector was aggregated into thirteen sectors with similar features according to the international industrial standard classification (ISIC).

For the purpose of this research, these sectors were aggregated into 13 real sectors. In order to estimate the multiplier effects of an increase in the final demand, various components of the GDP were allocated among the following thirteen productive economic activities, and the multiplier model was built for this project; the sectors considered are the result of current study on their relative contribution to the economy's value added.

Data source and industry classification based on the International Standard Industrial Classification. The classifications are: Agriculture (Ag), Mining and Quarrying (Mn), Manufacturing (MF), Electricity, Gas Combined with Water Supply (EL), Construction (Co), Trade (TR), Accommodation and Food Services (HT), Transportation and Storage (TS), Information and Communication (IF), Finance (FN), Real Estate (Est), and the table below displays the results of the multiplier data analysis.

RESULTS AND DISCUSSION

Multiplier Analysis

The Leontief matrix can be computed using the technical coefficients table. The Leontief matrix is a square matrix (the number of rows and columns equals the number of domestic industries in this study, which is 13). The production inducement coefficient can be used in two ways to determine the degree of industrial interconnectivity. The first is to look into the industries that use intermediate goods, while the second is to look into the industries that supply intermediate goods. The former investigates the backward linkage effect, while the latter investigates the forward linkage impact. The input coefficient is the parameter used to determine the size of the production inducement coefficient. When the number of industrial segments is enormous, it becomes difficult to employ input coefficients to calculate the infinite number of direct and indirect production ripple effects created by a single unit of output. Using an inverse matrix, the production inducement coefficient is calculated. The production inducement coefficient is expressed by $(I-A)^{-1}$, which is also called the Leontief inverse (Jeong et al., 2021).

Explain this The Leontief Inverse is the matrix $(I-A)^{-1}$. It depicts the links between final demand and output. This set of relationships is precisely what is required to depict the economic impacts of an event occurring outside of a given economy. Means the whole requirement of each industry's output in terms of direct and indirect products and services required to generate one unit of the specified industry's output (Mandras and Salotti 2020).

Table 1: Type I Multiplier Analysis (In Millions of Naira)

	Output	%	Input	%	Income	%	Value Add	%	Employment	%
Ag	**1.2927**	**5.9**	**1.4654**	**6.7**	**0.1391**	**2.8**	**0.1486**	**6.1**	**2.8118**	**13.9**
Mn	**1.4311**	**6.5**	**1.2110**	**5.5**	**0.0330**	**0.7**	**0.1779**	**7.3**	**0.0308**	**0.2**
MF.	**2.1487**	**9.8**	**2.0000**	**9.1**	**0.3028**	**6.1**	**0.1668**	**6.9**	**1.8487**	**9.1**
EL	**3.3999**	**15.6**	**1.1720**	**5.4**	**1.3045**	**26.4**	**0.9399**	**38.6**	**0.9121**	**4.5**
CO	**1.3230**	**6.1**	**1.1062**	**5.1**	**0.1299**	**2.6**	**0.1413**	**5.8**	**0.9070**	**4.5**
TR	**1.6576**	**7.6**	**1.5884**	**7.3**	**0.2496**	**5.1**	**0.2489**	**10.2**	**1.5555**	**7.7**
HT	**1.8044**	**8.3**	**1.0145**	**4.6**	**0.1203**	**2.4**	**0.2278**	**9.4**	**3.1148**	**15.4**
TS	**2.1630**	**9.9**	**1.3196**	**6.0**	**0.3845**	**7.8**	**0.0741**	**3.0**	**3.4643**	**17.1**
IF	**1.1206**	**5.1**	**3.6333**	**16.6**	**0.0070**	**0.1**	**0.0956**	**3.9**	**0.0611**	**0.3**
FN	**2.2883**	**10.5**	**1.2511**	**5.7**	**0.4266**	**8.6**	**0.0350**	**1.4**	**1.1276**	**5.6**
Est	**1.1033**	**5.0**	**3.8718**	**17.7**	**0.0069**	**0.1**	**0.0803**	**3.3**	**0.0163**	**0.1**
PF.	**1.1075**	**5.1**	**1.0430**	**4.8**	**0.9502**	**19.2**	**0.0801**	**3.3**	**2.4485**	**12.1**
Oth	**1.0239**	**4.7**	**1.1874**	**5.4**	**0.8847**	**17.9**	**0.0186**	**0.8**	**1.9145**	**9.5**

The type I output multiplier for a particular sector or industry is the total of all output from each domestic industry required in order to produce one additional unit of output. Figure 1 quantifies the cumulative effects of the direct and indirect rounds of industry contributions. Electricity (15.6%), finance (10.5%), transportation (9.9%), and manufacturing (9.8%) all have a significant direct and indirect impact on intermediate inputs. The gross value added is a more reliable measure of the economic impact. It can be seen that the electricity and water supply sectors add 0.9399, trade 0.2489, and public services 0.2278 value to production from direct and indirect effects. In the same way, induced impact added 2.4218 value to electricity and water supply. The results from the table revealed the multiplier impact on employment, where agriculture, transportation, agriculture, Hotelling, professional services, and manufacturing contributed to employment generation from the supply function. An overview of the output multiplier computed shows that the key sectors in the economy are electricity and water supply, finance, manufacturing, and transportation. The electricity and water sectors are highly integrated with the rest of the economic activities, having 3.3999 direct and indirect effects. This, however, indicated the dominant role it

plays in the production process. Transportation and storage are two of the sectors that have a strong backward linkage in the economy and are contributing positively to production in the country.

Table 2: Type II Multiplier Analysis

	OUTPUT	%	INCOME	%	VALUE ADD	%	EMPLOYMENT	%
Ag	**1.4672**	**5.5**	**0.1579**	**2.2**	**1.1950**	**8.5**	**3.1915**	**11.9**
Mn	**1.5039**	**5.7**	**0.0347**	**0.5**	**0.9077**	**6.4**	**0.0324**	**0.1**
MF.	**2.4645**	**9.3**	**0.3473**	**4.7**	**0.5843**	**4.1**	**2.1203**	**7.9**
EL	**4.0944**	**15.4**	**1.5710**	**21.4**	**2.4218**	**17.1**	**1.0983**	**4.1**
CO	**1.4719**	**5.5**	**0.1445**	**2.0**	**0.8957**	**6.3**	**1.0090**	**3.8**
TR	**1.9715**	**7.4**	**0.2969**	**4.0**	**1.0516**	**7.4**	**1.8499**	**6.9**
HT	**1.9439**	**7.3**	**0.1296**	**1.8**	**0.6824**	**4.8**	**3.3558**	**12.5**
TS	**2.4588**	**9.3**	**0.4371**	**6.0**	**0.2043**	**1.4**	**3.9381**	**14.7**
IF	**1.1306**	**4.3**	**0.0071**	**0.1**	**1.0096**	**7.1**	**0.0616**	**0.2**
FN	**2.6224**	**9.9**	**0.4889**	**6.7**	**0.0889**	**0.6**	**1.2923**	**4.8**
Est	**1.1153**	**4.2**	**0.0069**	**0.1**	**1.0174**	**7.2**	**0.0163**	**0.1**
PF.	**2.1992**	**8.3**	**1.8868**	**25.7**	**2.0063**	**14.2**	**4.8625**	**18.2**
Oth	**2.1115**	**8.0**	**1.8245**	**24.9**	**2.0712**	**14.7**	**3.9484**	**14.7**

The Type II multiplier is computed by dividing the sum of each row in the production inducement coefficient matrix $(I–A)^{-1}$ by the overall industry average. According to Table 2, electricity has a 4.0944 induced effect, accounting for 15% of output, 21.40% of income generation, 17.1% of value added, and 4.1% of employment. Followed by the financial sector's 2.6224 output, 6.71% income, and very high contribution to employment; manufacturing; 9.3 % output, 4.7 % income, 4.1 % value added; and 7.9 % employment. However, as shown in Table 2, transportation has a greater induced impact on employment induced by final demand generation in the country than manufacturing (14.7% to 7.9%), professional sector industries (8.3%), and other sectors.

DISCUSSION

The study of the impact of backward and forward linkages or multipliers is well known and is mainly used for the identification of major industries or sectors in the economy. According to Hirschman (1958), the unbalanced development of major final demand sectors will cause the entire economy to suffer from efficient growth, similar to that of a competitive economy. These key sectors could lead to successful development strategies and they are identified to be electricity and water supply, transportation, and finance with backward linkages. Manufacturing, real estate, and communication show strong forward linkages. According to literature, these sectors with strong

backward linkages constitute key sectors in the Nigerian economy. An overview of the output multiplier computed shows that the key sectors in the economy are electricity and water supply, finance, manufacturing, and transportation. The electricity and water sectors are highly integrated with the rest of the economic activities, having 3.3999 from direct and indirect effects and 4.0944 from induced effects or impact. This, however, indicated the dominant role it plays in the production process. Transportation and storage are two of the sectors that have a strong backward linkage in the economy and are contributing positively to production in the country. Transportation is an essential part of human activity and, in many ways, forms the basis of all socio-economic interactions. It is evident that a good transport system will spur economic growth and development as well as employment generation by road, rail, air and maritime services. In research conducted by Ayantoyinbo and Ekundayo (2015), it was opined that transportation influences economic activities and has a strong backward linkage. Financial institutions are also a prominent key industry in the Nigerian economy, having 2.6224 from direct, indirect, and induced effects. The manufacturing sector is not left behind, having 2.4645 from direct, indirect, and induced effects. The gross value added is a more reliable measure of the economic impact. It can be seen that the electricity and water supply sectors add 0.9399, trade 0.2489, and public services 0.2278 value to production from direct and indirect effects. In the same way, induced impact added 2.4218 value to electricity and water supply.

As we have previously computed from the income column for both type I and II multiplier tables, we can summarize that 1.3045 more of income is induced by working on producing a 1:00 output of electricity and water than other sectors. Therefore, we concluded that the sector has high potential in terms of direct and indirect income generation. While the type II multiplier of 2.4218 includes household spending

In a publication released by the National Bureau of Statistics on the Nigerian Gross Domestic Product Report Q1 2022, it stated that information and communication (Telecommunication); trade; financial and insurance (Financial Institutions); agriculture (crop production); and manufacturing (food, beverage, and tobacco) all contributed to positive GDP growth in the first quarter of 2022 (National Bureau of Statistics, Q1 2022). The agricultural sector has the potential to generate employment with 13.9 percent from the type I analysis and a capacity of 13.3 percent from the type II multiplier. Both create 2.8 and 3.4 million jobs in the economy from a change in their demand. The Employment by Sector Report clearly showed that agriculture produces 48.19 percent of the total labour force employed. Another sector is the professional, scientific, and technical sector, which in this research work is combined with art, entertainment, and recreation and has the capacity to generate about 2.45 and 4.84 million jobs in the economy as a result of # 1.1 million jobs in the economy. The public sector, education, and health sectors have a high percentage of employment in both direct and indirect and induced analysis. From the table, it generates 3.95 million jobs from induced activities in the economy.

However, accommodation also plays a key role in terms of employment generation. According to the jobs created, it contributed about 27.9 % of the jobs created in the economy from direct,

indirect, and induced activities. The National Bureau estimated about 1.30 %, indicating that these activities were more labour-intensive than other sectors. This result from employment analysis confirmed the National Bureau of Statistics publication on the state of the sectors in job creation in the economy for the first quarter of 2021.

CONCLUSION

This study sought to establish the contribution effect of the input-output model in studying the interconnectedness of industries in the Nigerian economy with the intention of channelling scarce resources with a policy framework to building industries with strong backward and forward linkages in order to spur and stimulate industrial growth. The data came from the NBS database of production statistics, labour statistics, and foreign trade statistics, as well as administrative, enterprise, and household surveys. The entire productive sector was aggregated into thirteen sectors with similar features and according to international industrial standard classification. The table constructed shows that the coefficient values have changed over the years since the last review. There are indications of slight positive changes in innovation, technology, and business activities that have sprouted up over the years. The results of the impact analysis show that electricity sectors have strong production linkages and their positive impact cuts across income, value-added, and job creation with relatively lower impact from direct, indirect, and induced effects. It is without a doubt one of the major driving sectors in the economy, with agriculture, lodging and food service, transportation and storage, professional, arts, administrative, and public sectors (labour-intensive sectors) leading in employment and income generation. Information and communication, hotelling, and estate development were also promising Nigerian industries. With appropriate policy intervention, these sectors have a high potential for spreading growth impulses throughout the economy (Temursho 2016). The manufacturing industry contributes less to per capita income and employment. This is a signal that the nation is still far behind in terms of industrial development, which is the bedrock of development and employment generation in developed nations of the world. This means appropriate policy and intervention should be made in this sector because industrialization is the pathway for developing and reviving the economy.

Policy Recommendations

i. The compilation of the Input-Output table is rigorous and cost-effective. It requires surveys of diverse economic activities across the county. The National Bureau of Statistics can collaborate with the Central Bank of Nigeria, CEAR, United Nations Statistics Division (UN World Data Forum Secretariat), Ministry of Finance and National Planning, Eurostat, World Bank, relevant research instituted internally and internationally to build a robust system of national accounting for the Nigerian economy on a quarterly or yearly basis.
ii. The National Bureau of Statistics should develop IO databases for policy intervention and research purposes, and that could also be extended to multi-regional studies at the global level.
iii. The power sector is, invariably, one of the strongest sectors that the federal government should focus attention on to revive. It has the potential to sustain industrial development in the country, as it depends heavily on power supply. The Federal Government through the Ministry of Power,

together with the electricity regulation commission, transmission company, and electricity distribution company, should ensure transparency in the execution of power projects and the sector should be properly funded to address the issues of epileptic power supply, especially to industrial layout.

iv. There should be a national policy that will address the need to establish a stronger industrial base in Nigeria. The Federal government should enact laws that will encourage and protect the growth of both small and medium-sized businesses, which will translate into industrial outlets. The FGN should prioritise the revival of the Ajaokuta steel company and textile industries in Nigeria. These industries have the potential to generate a wide range of socioeconomic benefits while also increasing the nation's productive capacity due to their interconnections with other industries. It would provide resources for infrastructure development, technology acquisition, human capacity development, income distribution, regional development, and job creation.

v. Agriculture and other service sectors are also key drivers of the economy. The Ministry of Agriculture, in collaboration with the CBN and private partners, should provide a framework that will lead to the revolution of the agricultural sector through modern and mechanised farming practices. Farmers should be provided with the necessary support and trade protection in order to increase productivity in order to meet industrial needs.

vi. To revitalize the manufacturing sector, the government should focus scarce resources on viable investment and how to collaborate with private institutions. The National Assembly and relevant policy bodies should pay attention to macroeconomic variables that are key to development. Policymakers should pay special attention to sectors in the country that have strong multiplier effects.

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