


## Article

# Conditions Driving Youth Employment in Key Sectors of the Nigerian Economy

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**Abstract:** The rising incidence of youth unemployment, especially in emerging economies, calls for prompt attention of development experts and policy makers given its effect on sustainable growth. This challenge has worsened in recent times in Nigeria, hence, making it crucial to understand the factors driving youth employment. We analyzed the differential impact of sectoral growth on youth employment across rural and urban areas through a gender lens and identified the specific conditions needed for investment in sectors with potentials for job creation in the Nigerian economy. Data were analyzed using descriptive statistics, revealed comparative advantage (RCA), employment elasticity, and Logit regression model. It was observed that Nigeria has demonstrated a comparative advantage in the export of 17 products. Our findings also revealed that all the economic sectors in Nigeria have potential for creating employment at different levels with financial services contributing the highest (0.734) and manufacturing the lowest (0.056). The increase in education influenced employment and a higher likelihood of male youths' employment in the services, construction, and industry sectors as compared to more female youths in the trade sector. Some common conditions that could aid firms' production scale-up and increase job creation across all sectors include: increased access to finance, improved infrastructure (road, water, air, power, and rail), and favorable interest rates and exchange rates. We recommend that concerted effort be targeted at mainstreaming gender in all sectoral policies and key sectors be strengthened through targeted welfare reforms aimed at enhancing the capacities of the youths for sectoral relevance.



**Citation:** Edewor, S.E.; Kollie, G.B.; Olaoye, I.J. Conditions Driving Youth Employment in Key Sectors of the Nigerian Economy. *Sustainability* **2023**, *15*, 6096. <https://doi.org/10.3390/su15076096>

Academic Editor: Luigi Aldieri

Received: 4 February 2023

Revised: 2 March 2023

Accepted: 3 March 2023

Published: 31 March 2023



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**Keywords:** employment; youth; economic sectors; unemployment; potential

## 1. Introduction

Unemployment remains a key macroeconomic indicator that is determined by economic growth [1–3]. It is one of the principal problems threatening sustainable economic growth in many emerging economies, especially in sub-Saharan Africa countries [4]. Unemployment occurs when individuals within the 15–64 age bracket who are actively seeking and available for work are unable to find work [5]. In recent times, there has been more emphasis on “youth” [6] and unemployment, especially in Nigeria where youth unemployment is on the increase. According to the United Nations in 2020, the Nigerian population was estimated at 200 million people with a higher proportion of this population comprised of youths between the ages of 15–34 years. Ref. [7] refers to youth unemployment as a condition where full employment is not guaranteed for people between ages 19 and 35.

The labor market in Nigeria is complex with high instances of underemployment and unemployment. The understanding of what drives youth engagement and participation in key sectors of the Nigerian economy is very crucial in addressing the unemployment problem that constrained the nation economy [8–10]. The effect of unemployment, which is a critical problem facing Nigerian youth, includes dejection, dependency on family members and friends in some cases, as well as frustration [11]. In the same vein, it is a major contributor to social vices such as rising militancy, kidnapping, poverty, political

thuggery, armed robbery, prostitution, restlessness, and political instability, as it is noted to have a significant negative impact on social, economic, and political developments in Nigeria [11–13]. In Nigeria, the informal sector employs 68% of the labor force and generates 41% of the country's GDP, according to the report by PWC. Furthermore, the United Nations; Bandura and Hammond [10,14], reported that the informal sector in Nigeria accounts for the majority of job growth and employs a higher proportion of young people than the formal sector.

According to several studies [15–19], the Nigerian economy is in a unique situation where increasing rates of economic growth do not necessarily translate to decreasing unemployment rates. This suggests that Nigeria is characterized by high unemployment levels and economic growth. According to data from the National Bureau of Statistics, Nigeria's unemployment rate increased from 23.1% in Q3 2018 to 27.1% in the second quarter of 2020, totaling approximately 21.7 million unemployed people; 13.9 million of them are young Nigerians [20]. Despite the annual improvement in growth rate reported, the Nigerian economy is still mainly underdeveloped due to the country's high unemployment rate. This is true despite the country's tremendous natural and human resource wealth [3]. Several things could lead to this predicament. It is possible that a significant portion of the nation's resources are used for unproductive purposes. It is also possible that the Nigerian economy's expansion is primarily due to oil commerce, which is dependent on the oil sector and has a limited capacity to create jobs [21].

Nigeria's employment issue has resulted in underemployment, particularly in the informal sector, which created 54% of the jobs in 2013, compared to 37% in the private formal sector and 9% in the public sector [22]. In most cases, those who are employed informally work for themselves, their families, or in close proximity to their houses. Sometimes, they are engaged in many jobs while making less money than necessary to break free from the poverty cycle [22,23]. Therefore, the identification of the promising economic sectors in Nigeria with great potential for employment creation for young people is crucial for addressing these issues, as well as the political and economic obstacles that these sectors face. For instance, the United Nations; Adesugba and Mavrotas; Ekeruche et al. [10,15,24] noted that the number of jobs being created is below the number of young people entering the job market, and it is important to prioritize highly productive sectors in Nigeria to achieve sustained growth and reduce youth unemployment. Thus, the study hypothesized that economic growth and youth employment in Nigeria are endogenous functions of how the country harnessed the potential of key sectors of the economy and identified gender, entrepreneurship, and education as crucial factors that drive youth employment in Nigeria. They further identified that increasing investment in infrastructure, technology, and human capital, as well as providing incentives for businesses, can help to expand and hire more people.

Additionally, to address these issues, it is crucial to pinpoint the Nigerian economic sectors with the highest potential for creating jobs for young people, as well as the political and economic obstacles that stand in their way, as well as the circumstances that will encourage investment in these sectors. Based on this backdrop, the study specifically identified the promising economic sectors in Nigeria with high potentials for creating youth employment (informal and formal), and evaluated the conditions in terms of policies, infrastructure, and institutions that needs to be in place to encourage investment in these sectors. However, considering the importance attributed to economic growth and youth employment generally by economists, this study is underpinned on the theory of the endogenous growth model with the understanding that economic growth in the long run is largely dependent on factors within the individual countries [25,26]. Over the years, policymakers and labor economists have been concerned with entrepreneurship skill development and how to match individual skills and qualification with the appropriate job, given the importance to "improve labour market efficiency" [23]. This can help to ensure that the right individuals are being recruited for the right jobs, thus, improving the efficiency of the labor market.

Etim and Daramola [27], through a systematic review with a Boolean string search protocol, found that income inequality, limited technology adoption, extreme tax burdens, poor infrastructural support, GDP per capita, administrative challenges from the government, absence of social protection survival tendencies, and poor control of corruption are key drivers of employment in South Africa and Nigeria. In the same vein, Kluve et al. [28] emphasized that skills training and entrepreneurship programs are crucial to youth employment in developing countries. Geza et al. [29], also noted that youths are still constrained by factors surrounding the up and down stream of the labor market due to the lack of inclusivity in policy design and execution, which limit youth participation in agriculture and rural development enterprises even though emphasis is primarily focused on entrepreneurship. Assfaw and Ayele [30] mentioned that there is a form of both labor movement to the more productive manufacturing and services sectors and productivity growth through the commercialization and creation of agribusinesses. They recognized that even though there is an increasing number of agribusinesses that are likely to create more jobs, youth challenges such as skill gaps, low wages, and inflexible land title and transfer processes remain key constraints to youth employment. Considering the drivers of youth employment, Ribault [31] reported that the challenge of youth unemployment in Japan is explained by their social factor constructed rather than by the assumed change in the work environment, as wage, family dependency mechanisms, and access to education, among other socioeconomic factors, predicts the probability of a youth being employed. In the same vein, Haouas et al. [32] observed that workers with higher education suffer from unemployment for all ages in Tunisia in the long run as the economy cannot produce a sufficient number of jobs for more educated workers despite increased years of schooling. This, therefore, weakens the job market, which is largely felt by the youth. Additionally, Adeniran et al. [33], using secondary data, found that age category, gender, location of residence, education, and sector of employment are significant factors driving employment in Ghana as women experience a higher degree of being employed than men, with a higher level of education having a negative effect on individual employment status as youths with tertiary-level education have the same likelihood as a middle-aged adult with no formal education.

Consequently, education remain the foundation of the skills supply system as it provides the knowledge and understanding that are needed to develop critical thinking skills while preparing individuals to apply their skills in the workplace. Additionally, the rising trends of remote work, e-commerce, digitization, and automation (information technology and communications) in the work environment are also crucial to youth employment as young people will need to adapt to this change even in the nearest future [34–37]. Therefore, these are important for youths to ensure that they stay competitive in the labor market. Nonetheless, unemployment, poor levels of education, and institutional frameworks were linked to national insecurity in Nigeria [38]. Given that Nigeria is ranked 143rd globally in the overall Legatum Prosperity Index and 142nd in the education comparative position in 2021 with an adult literacy rate of approximately 78%, it is, therefore, imperative to understand how this relates to youth employment in the country. Although considerable empirical evidence exists in the literature on the drivers of youth employment, to the best of our knowledge, limited information exists on the conditions driving youth employment in economic sectors in the Nigerian context. Thus, we provide answer to the broad research question of: the conditions driving youth employment in key sectors of the Nigerian economy by relying mainly on secondary data and different descriptive and econometrics models. Section 2 contains the details of our research materials and methods while we present the results and discussion in Section 3. Finally, Section 4 contains the conclusion and recommendation of the study.

## 2. Materials and Methods

The study focused solely on the Nigerian context. The study made use of both secondary and primary data. Data on youth employment, underemployment, and un-

employment rates in Nigeria for 2010–2018 were obtained from the National Bureau of Statistics. Data on youth employment by sector were extracted from the 2018/2019 Living Standards Measurement Study-Integrated Surveys on Agriculture—LSMS-ISA (General Household Survey—GHS) data. Data on number of persons engaged (thousands) and gross value added at current basic prices (millions, local currency) by economic activities (See Appendix A for definition) were extracted from the Groningen Growth and Development Centre’s (GGDC) Economic Transformation Database. Furthermore, data on trade indices—revealed comparative advantage (RCA), diversification index, and concentration index were extracted from United Nations conference on Trade and Development (UNCTAD) and the World Bank World Integrated Trade System (WITS). Additionally, data on business environment constraint and productive capacity were obtained from the 2014 World Bank Enterprise Survey data and UNCTAD. Based on findings from the employment elasticities, the primary data were obtained through key informant interviews (KII) between October to December, 2021 from 10 stakeholders (2 from the agriculture sector, 1 from the financial service sector, 1 from the construction sector, 2 from the education sector, 2 from the telecommunications sector, 1 from the bioeconomy sector, and 1 from the health sector), comprised of heads of departments and supervisors identified within key sectors with potential for job generation in Nigeria. This was done so as to validate the secondary findings on constraints and conditions required by these sectors to stimulate employment.

### 2.1. Estimating Model/Model Specification

Descriptive statistics, trend analysis, and inferential statistics were used to analyze the data. The youth employment trend was analyzed using trend analysis. In identifying the economic sectors with employment creation potentials, we utilized different methods while following some of the approaches used by [39]. We made use of both trade and non-trade measures. We used political and eco-geological characteristic attributes to identify the commodities (products) and sectors in which potential existed for economic growth and commensurate employment potential due to the huge deposit of materials or available infrastructure. Trade indices were used to identify Nigerian export products, their intensities, and untapped potentials. Statistically, the point employment elasticity was used to determine the key economic sectors with potential for generating employment.

#### 2.1.1. Revealed Comparative Advantage Index (Balassa Index)

A country has revealed comparative advantage (RCA) in any given product when the ratio of the product’s export to the total exports of all products is greater than the same ratio for the world [40,41].

That is:

$$RCA_{Ai} = \frac{\frac{X_{Aj}}{\sum_{j \in P} X_{Aj}}}{\frac{X_{wj}}{\sum_{j \in P} X_{wj}}} \geq 1 \quad (1)$$

where  $P$  refers to a set of all products (with  $I \in P$ ),  $X_{Aj}$  is country  $A$ ’s exports of product  $i$ ,  $X_{wj}$  is the world’s exports of product  $i$ ,  $\sum_{j \in P} X_{Aj}$  is country  $A$ ’s total exports (of all products  $j$  in  $P$ ), and  $\sum_{j \in P} X_{wj}$  is the world’s total exports (of all products  $j$  in  $P$ ).

A country with  $RCA > 1$  for a product is a competitive producer and exporter of the product compared to another country producing and exporting the same product. Intensification in the production and export of any product with  $RCA > 1$  will require added labor to catch up with demand, and this will eventually reduce unemployment.

For a country with factor endowment to be competitive in the world market, Porter (1990b) suggested that four determinants could be identified that shape national competitiveness. These attributes include the factor conditions, the demand conditions, the related and supporting industries, and the firm strategy, structure, and rivalry. In [42], factor conditions refer to the position of a country’s factors of production in any sector while the demand conditions focus on the home country’s market demand for a sector/industry’s product or service. The third components “Related and supporting industries” focus on the

existence or lack of national internationally competitive supply or related industries. Firm strategy, structure, and rivalry refers to the conditions governing the creation, organization and management of the companies in a country coupled with the degree of their domestic rivalry. A critical assessment of these factors will determine the performance of a country's goods and services.

### 2.1.2. Employment Elasticities

Employment elasticities measure employment's responsiveness to growth in a given sector. They are used in tracking the potential of a sector to create and forecast future growth in employment. The point elasticity method shows the relationship between GDP and employment through a double-log linear equation. It is specified as:

$$\ln L = \beta_0 + \beta_1 \ln Y \quad (2)$$

where  $L$  denotes employment,  $Y$  measures GDP for the economy, and  $\beta_1$  is the employment elasticity. According to [43], it measures the percentage change in the employed when GDP changes infinitesimally.

### 2.1.3. Logistic Regression Model

The effect of sectoral growth on youth employment by gender was determined using the Logit Regression. It is a dichotomous dependent variable for an employed female or male youth ("15–29" according to the Nigerian youth categorization and "15–35" according to the African Union—AU charter youth categorization). It is assigned a value of "1 for an employed male" or "0 for an employed female". The likelihood of being an employed young male is dependent on a given set of variables denoted as  $x$  such that:

$$\text{Prob}(Y = 1) = \frac{e^{\beta'x}}{1 + e^{\beta'x}} = \Lambda(\beta x) \quad (3)$$

$$\sum \left( \frac{y}{x} \right) = 0 [1 - F(\beta x)] + 1 [F(\beta x)] = F(\beta x) \quad (4)$$

$$Z_i = \ln \left( \frac{P_i}{1 - P_i} \right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots + \beta_n X_n + \varepsilon_i \quad (5)$$

where  $Z_i$  refers to the log odds of being an employed male or female youth,  $\beta$ s are coefficients for the independent variables  $X$ s,  $\alpha$  is the constant, while  $\varepsilon_i$  is an error term. The independent variables are, age (years), remittances (Yes = 1, No = 0); educational level (years); economic activity/occupation\_Agriculture; economic activity/occupation\_Industry; economic activity/occupation\_Construction; economic activity/occupation\_Trade; economic activity/occupation\_Services; location (rural = 1, 0 = urban); geopolitical zone\_North East; geopolitical zone\_North West; geopolitical zone\_North Central; geopolitical zone\_South-South; geopolitical zone\_South West; and geopolitical zone\_South East.

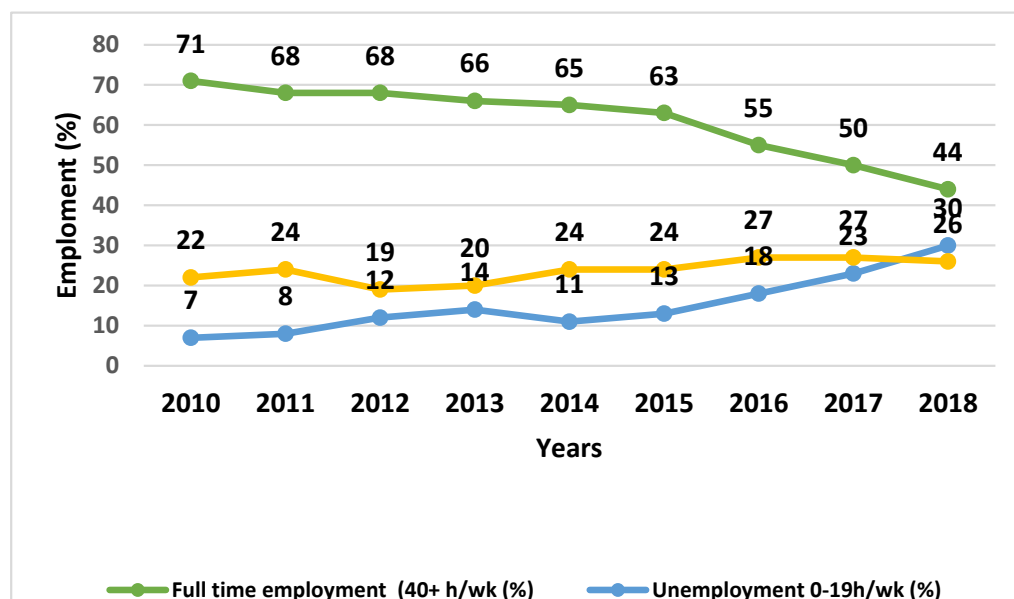
## 3. Results and Discussions

### 3.1. Trend of Youth Unemployment in Nigeria

In Nigeria, a third of the economically active population is comprised of youths [14]. The youth are believed to be an important asset for innovation and creativity in any society; however, this peculiarity could be lost if the capabilities of the youths are not well harnessed [44]. Figure 1 presents the trend in youth employment, underemployment, and unemployment in Nigeria for the period 2010–2018. The result has shown that full time employment for youth aged 15–34 years has been on the decline since 2010 with a decline from 50% in 2017 to 44% in 2018, and unemployment rate has been on a steady increase from 23% in 2017 to 30% in 2018. Even with a high level of underemployment rate right from 2010, as compared to unemployment in the same year, it is obvious that many youths were employed, although underemployed. This is due to their willingness to be



engaged in different types of employment in any sector that may be beneath their skills and educational qualifications to avoid unemployment.

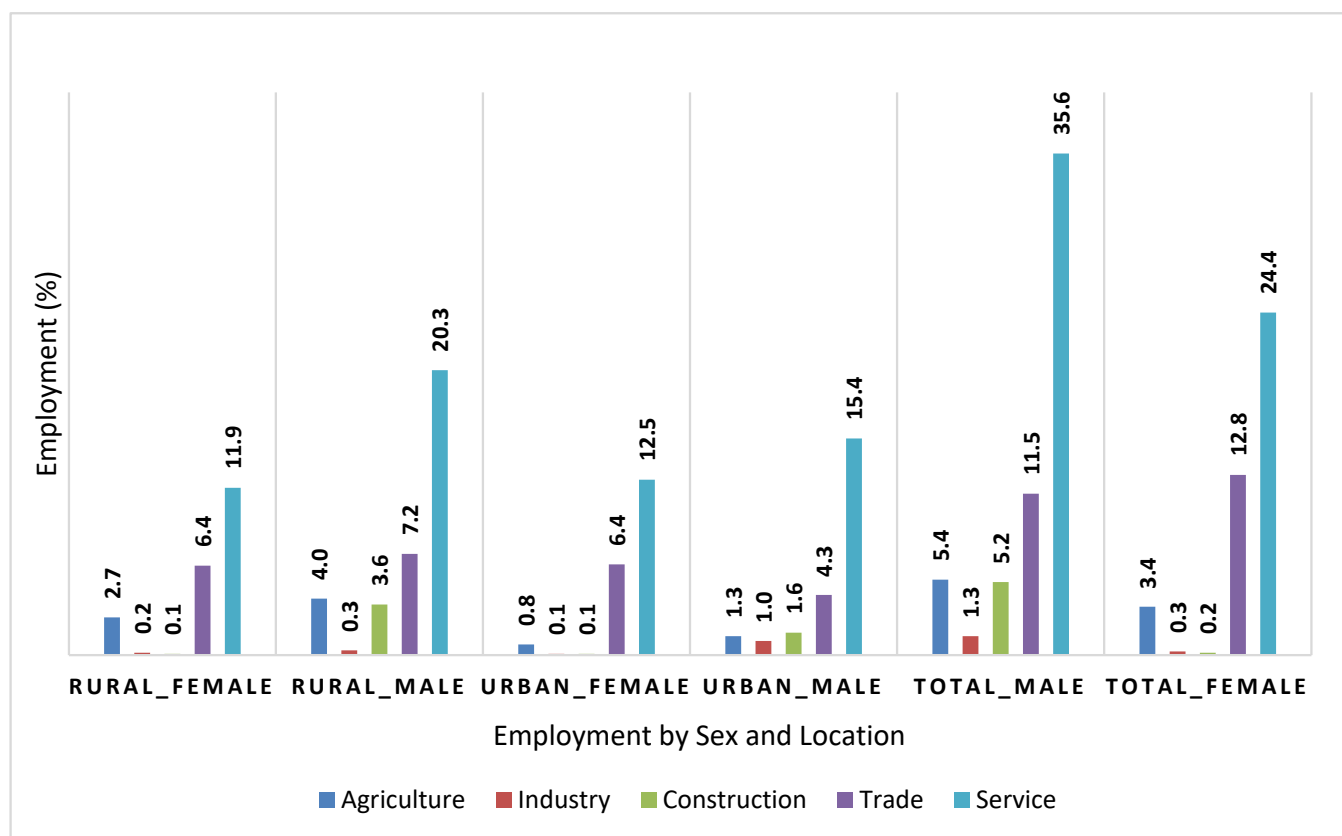


**Figure 1.** Trend in youth (15–34 years old) employment, underemployment and unemployment rates in Nigeria, 2010–2018. Source: Computed from [45].

Nigerian youth employment distribution by economic sectors is presented in Figure 2. The result has shown that the services sector, which comprises information, communication, and technology (ICT), entertainment, financial, trade, and public service, amongst others, is the highest employer of youths both in the rural and urban areas. Over the years, the ICT sub-sector has contributed to youth employment creation by offering youth empowerment opportunities [46] and income generation especially in ICT based businesses (GSM recharge card printing, mobile phones and accessories vendors, cybercafés, cable and satellite TV installations, mobile phone services and repairs, computer training, service and repair centers, internet service providers, etc.) that require very little funds to start up [47].

The second highest youth labor employer was the trade sector. This sector requires minimal experience in most cases to participate. This is in line with [48] that the share of youth in the formal sector is lower than in the formal sector with higher employment in the non-agricultural informal sector such as services and trade.

The agricultural sector embodied huge potentials for employment with growing commitment from the Nigerian Government and development partners for engaging youths in agribusiness [49]. This is reflected in the various programs implemented within the agricultural sector geared towards youth engagement. These programs include: Fadama Graduated Unemployed Youths and Women Support (FGUYS) program; Youth in Commercial Agriculture Development Program (YCAD); Livelihood Improvement Family Enterprise (LIFE) program; Youth Employment in Agriculture Program (YEAP); and Youth Initiatives for Sustainable Agriculture (YISA) program [50]. The decline in youth employment in the agriculture sector may be attributed to their search for employment in other sectors with jobs with higher pay and lesser stress [51,52]. Furthermore, this shift may be due to the inability of youths to access land, basically due to stringent land tenure security and titling [53]. Interestingly, there was low incidence of female youth employment in the construction and industrial sector. This may be attributable to the fact that these sectors require a high level of expertise and, in most cases, physical strength, especially for unskilled labor.



**Figure 2.** Youth employment distribution by economic sectors in Nigeria, 2018–2019. Source: Authors' computation from [54].

### 3.2. Economic Sectors with Job Creation Potential for Youths in Nigeria

To identify the economic sectors in Nigeria with high potential for job creation, this study relied on the use of both trade related indicators and employment elasticities and drew inferences based on government policies, Nigeria's geopolitical area comparative advantage and enterprise analysis.

Table 1 presents the contribution of the 12 economic sectors to employment and GDP. Our findings have shown that agriculture contributed 46.4% and 21.4% to total employment and GDP in 2018. The least contributor to employment was the real estate sector with just 0.1% (69,791.90 employed persons). Interestingly, the mining sector's contribution to GDP was quite high, with it contributing 10.7% to total GDP. Other sectors that were high contributors to employment included trade services, manufacturing, business services (information and communication; administrative and support service activities, professional, scientific, and technical activities), government services (public administration and defense; education; human health and social work activities, compulsory social security), and other services (arts, entertainment and recreation; other service activities; activities of households as employers; undifferentiated goods- and services-producing activities of households for own use; activities of extraterritorial organizations and bodies). These sectors also contributed higher shares to total GDP in Nigeria, with trade services, business services, mining, manufacturing, government services, and construction contributing 18.1%, 14.0%, 10.7%, 9.8%, 5.1%, and 4.7%, respectively.

**Table 1.** Sectoral contribution to employment and gross domestic product in Nigeria.

Year	Employment by Sector (No)	Share of Employment (%)	Gross Domestic Product 2018 (N)	Share of GDP (%)
Agriculture	33,110,198.98	46.45	27,371,295.76	21.42
Mining	116,586.58	0.16	13,674,382.25	10.70
Manufacturing	5,083,657.69	7.13	12,455,527.91	9.75
Utilities	94,607.70	0.13	1,083,076.50	0.85
Construction	1,647,188.02	2.31	6,031,060.77	4.72
Trade services	11,392,293.16	15.98	23,062,810.53	18.05
Transport services	2,501,720.93	3.51	2,328,367.79	1.82
Business services	5,444,268.71	7.64	17,869,956.56	13.99
Financial services	915,974.21	1.29	3,996,755.06	3.13
Real estate	69,791.90	0.10	8,632,817.11	6.76
Government services	4,632,626.33	6.50	6,482,313.23	5.07
Other services	6,267,405.88	8.79	4,774,182.12	3.74
Total	71,276,320.07		127,762,545.59	

Source: Authors' computation from Economic Transformation database, [55].

### 3.2.1. Existing Government Policies Analysis, Enterprise Analysis, and Geopolitical Area Comparative Advantage

#### Agro-Ecological Zones Potentials Analysis

Across the agro-ecological zones (AEZs) and geopolitical zones (GEZ) in Nigeria, several areas (clusters) have been identified over the years as areas with high production intensities for several crops and livestock. It is perceived that the intensification and commercialization of these commodities will further lead to employment generation, especially for the youths. In the agriculture sector in Nigeria, despite the high dependence on imports, evidence has shown that the country has the potential to be self-sufficient and be a net exporter of several products. Based on the GEZ, in the Southeast, there is huge potential for cashew, cassava, fish, oil palm, and rice; in the South-South: banana, fish, plantain, rice, and oil palm; North Central: cassava, cashew, yam, and rice production; Southwest: bush mango, cassava, cocoa, and poultry production; Northwest: onions, rice, sorghum, wheat, and watermelon production; and in the Northeast: Yam and wheat production.

Across the country, several crop clusters with functional infrastructure exist that will aid production and processing, such as the Kadawa Tomato Cluster, Kano; Gassol Rice Cluster, Taraba; Badeggi Rice Cluster, Niger; Omor Rice Cluster, Anambra and Kebbi Rice Cluster; Makurdi Citrus Cluster, Benue; Agadu-Alape Cassava Cluster, Kogi; Ketu-Ereyun Corridor Aquaculture; Oban Pineapple Cluster, Cross River, Abuja Crop Processing Cluster, FCT, and Osogbo Poultry and Feed Cluster [39,56]. With the existence of these products and trade clusters, employment in food processing is expected to grow in future [57]. The existence of this infrastructure will make the agriculture sector more attractive, especially for youths who tend to avoid agriculture or agriculturally related courses because they perceive that farming is unantiquated and unprofitable [58].

In the industry and construction sectors, high deposits of solid minerals exist across various parts of the country. For instance, the existence of limestone is beneficial to the cement industry, thus, cement companies establish themselves within such locations. Both the construction and industry sectors have potential for job creation because of urbanization and the real estate boom in Nigeria. Other resources currently identified by [39,59–61] include the computer village in Otigba, Lagos; Tin in Jos, an auto and industrial spare parts fabricator in Nnewi; Coal in Enugu, and the leather tannery in Kano, amongst others. The Nigerian Industrial Revolution Plan (NIRP) was developed to promote the industrial sector as a key employment and income generator through the identification of priority sectors capable of promoting competitiveness.



In the trade sector, be it retail or wholesale, employment could either be skilled or unskilled. It is sometimes the first choice for the unemployed as it requires little or no skill with the exception of specialized trade.

Some of the international known retail clusters driving employment identified by [56] include: Dawanau Grains Retail Cluster, Kano; Kurmi Artefacts Retail Cluster, Kano state; Potiskum Livestock Retail Cluster, Yobe; Alaba Retail Cluster, Lagos; Osoba Adire/Kampala International Market Retail Cluster, Ogun, and Ariaria Leather Products Cluster, Abia. Ref. [62] identified the Yabacon Valley (ICT), Nnewi (automobile), Otigba (technology), Kano (leather), and various trade zones through policy mandates. Proper harnessing of these clusters' potentials will help in price control, thus, making it attractive for investors.

The service sector can potentially employ many people due to its countless sub-sectors, of which some require minimal skill. Sub-sectors such as finance, ICT, health, entertainment, and education continue to contribute greatly to the sectors. From Figure 2, it accounts for the employment of a higher proportion of youths, and harnessing its untapped potentials in the entertainment and tourism industries will promote employment generation, especially amongst the youths.

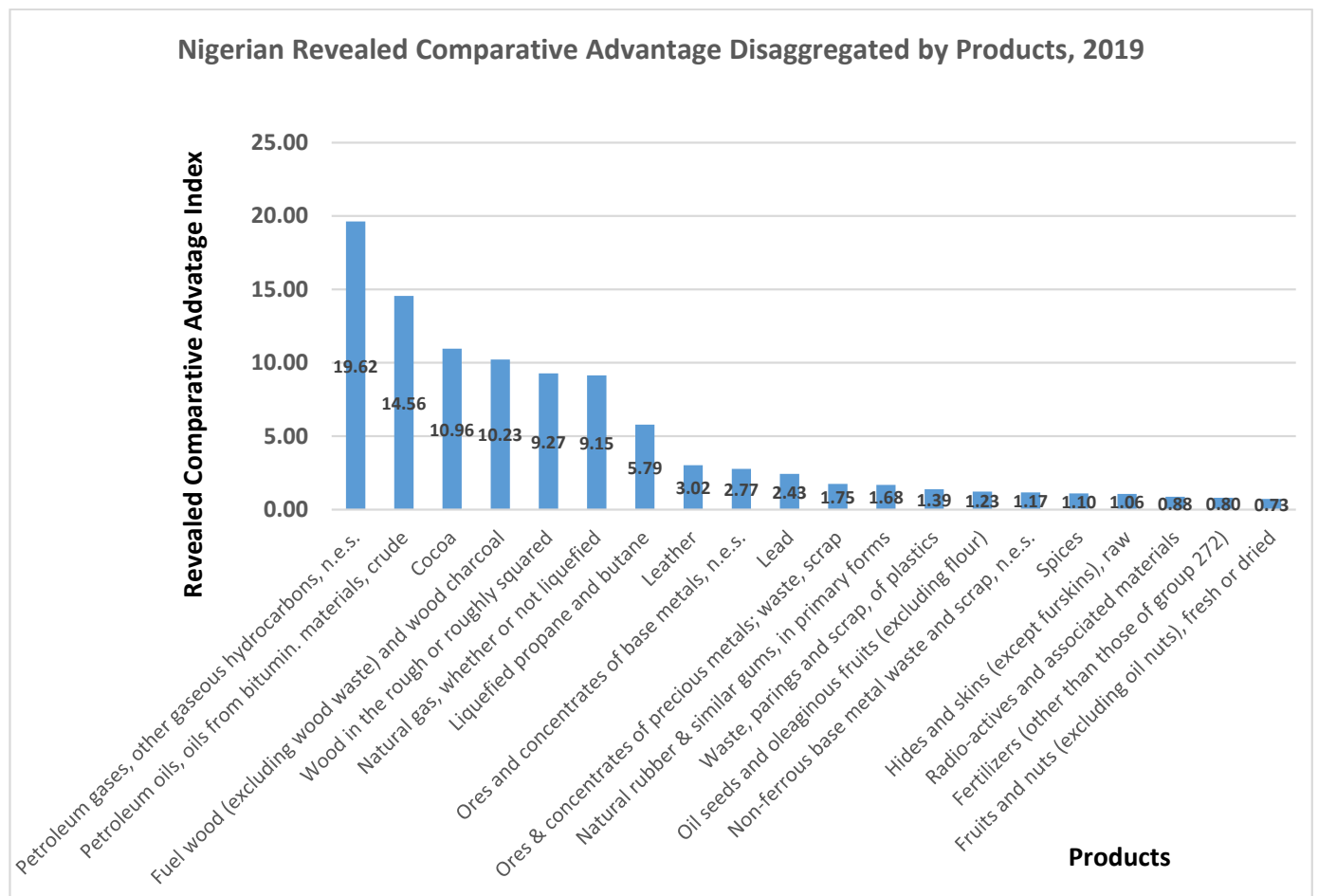
### 3.2.2. Trade Related Indices Economic Sectors with Job Creation Potential in Nigeria Revealed Comparative Advantage, Diversification, and Concentration Indices

Figure 3 presents Nigeria's revealed comparative advantage (RCA) for the top 20 exports in 2019. Although the country depends largely on petroleum, our findings show that RCA are in non-oil products (cocoa, oil seed, fuel wood, spices, fruits and nuts, ores, natural rubber, lead, amongst others, and manufactured goods such as different types of leather. As a result, when these products are properly harnessed and further processed before exporting, they can contribute to massive youth employment. Nigeria will be more competitive with a shift from primary products exports to value added exports.

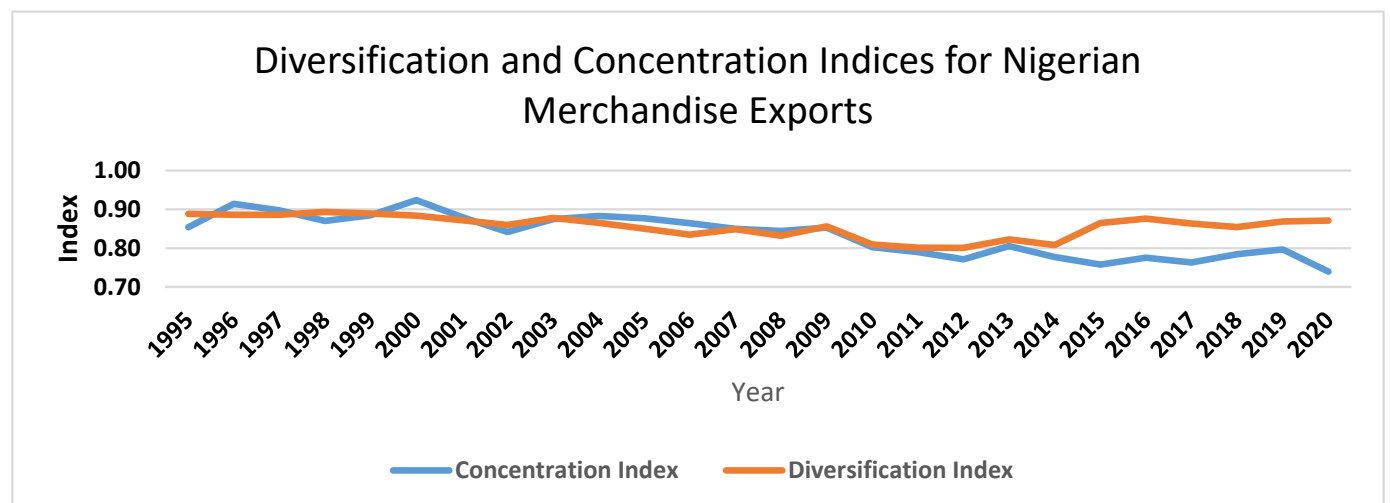
The diversification and concentration indices for Nigerian merchandise exports are presented in Figure 4. Although Nigeria has diversified, the value added in exports comes from mineral products. It is interesting to note that the rate of diversification is interwoven with that of the concentration of its products. From Figure 3, the diversification and product concentration rates lie between 0.7 to less than 1, thereby implying that the country's products are not diversified but concentrated on one main product, which is petroleum and its products. This is reiterated by [63] that natural resource endowment (especially oil resources) may affect countries negatively in terms of complexity. Even though over 200 products were exported in 2020, the main product(s) still comprised oil and gas Figure 4 [40].

Petroleum products have a concentration index of 0.76, thereby implying that almost all the exports from Nigeria are comprised of petroleum products. Nigeria has RCA in 17 products out of the 205 export products from Nigeria (Figure 5).

Figure 6 shows the export potential map for Nigeria's diversified products. This map presents practical information on export opportunities for over 4000 products. The focus of such a map is to help countries identify areas of untapped export potential and opportunities for export diversification. According to the International Trade Centre, Nigeria's total untapped export potential is estimated at \$2.2 bn.



**Figure 3.** Nigerian Revealed Comparative Advantage Disaggregated by Products, 2019. Source: Authors' Computation from [40].



**Figure 4.** Diversification and Concentration Indices for Nigerian Merchandise Exports. Source: Author's Computation from [64].

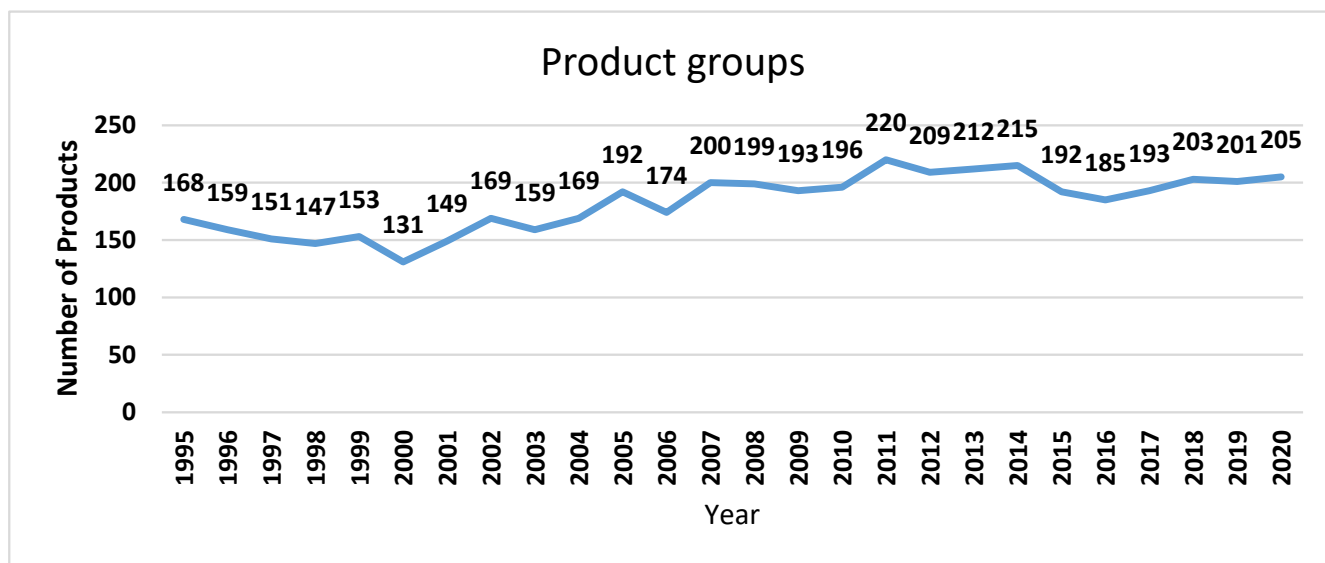


Figure 5. Number of Traded Products in Nigeria, 1995–2020. Source: Author’s Computation from [63].

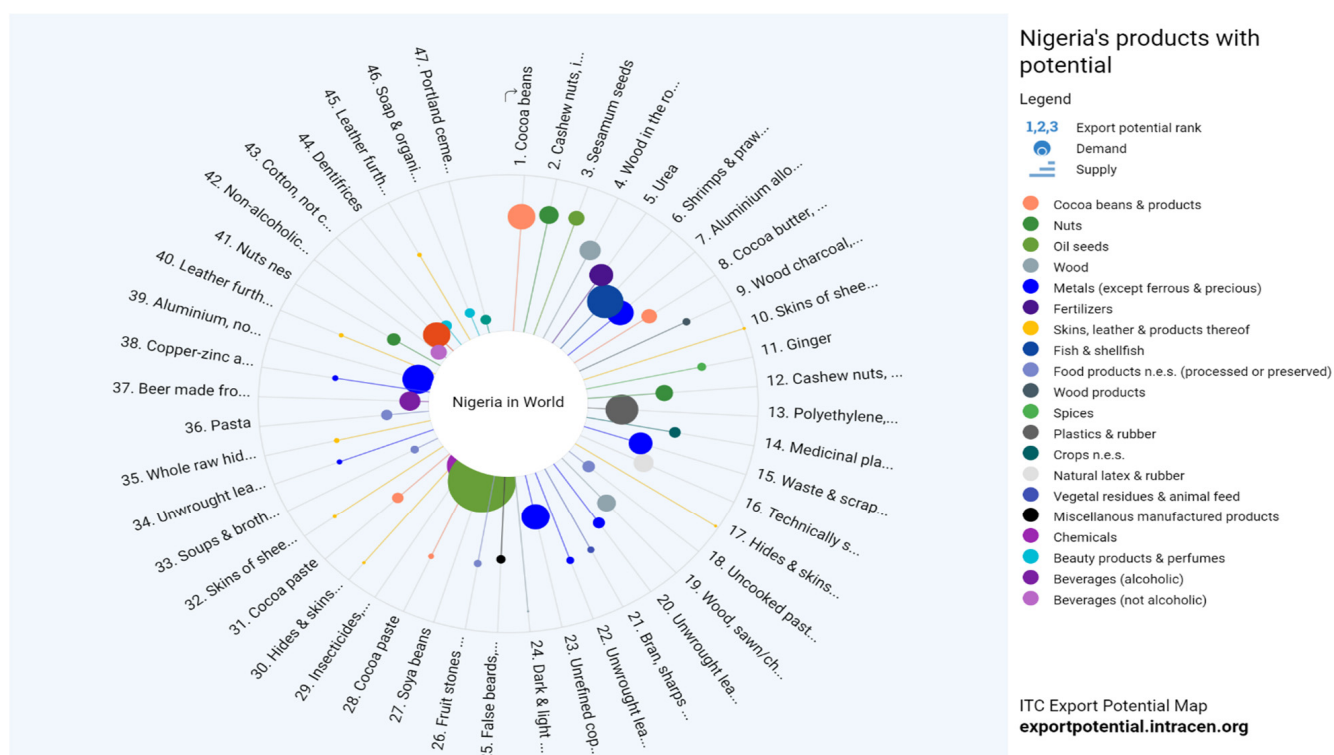


Figure 6. Export Potential Map for Nigeria’s Diversification Products. Source: [65].

Cocoa beans, sesame seeds, and cashew nuts in shells were identified as Nigerian products with the highest export potentials. Tapping these products potentials will immensely contribute to youth employment, especially when their production and processing are intensified. This validates the result of [66] where oil palm, meat and poultry, and cocoa were identified as sectors with high job potential.

### 3.2.3. Employment Elasticity

Data from the GGDC Economic Transformation Database were used to determine the economic sectors with high potential for youth employment creation. Although the scope of the analysis covers the entire employed population, our claims are based on the assumption

that employed youths are part of this population. The point elasticity is presented in Table 2. The economic sectors elasticities for the period (1991–2018) were all positive, with the financial services having the highest elasticities. This corroborates the findings of [67] with the service sector having a positive elasticity. From our findings, a percent growth change in the financial service sector would increase employment by 0.73-point percent. This is followed by the transport sector with a 0.60-point percent increase in employment.

**Table 2.** OLS Estimates for Point Employment Elasticities.

Economic Sectors	Elasticity	Standard Error
Agriculture	0.080	0.002
Mining	0.057	0.007
Manufacturing	0.056	0.047
Utilities	0.176	0.018
Construction	0.364	0.021
Trade services	0.252	0.023
Transport services	0.602	0.047
Business services	0.452	0.021
Financial services	0.734	0.052
Real estate	0.359	0.018
Government services	0.327	0.029
Other services	0.332	0.013
Total	0.155	0.011

Source: Authors' computation from Economic Transformation Database, [55].

The mining and manufacturing sectors had the lowest employment elasticities. Typically, as compared to other sectors, employers are fewer in number, well trained with more men than women. An elasticity under 0.2 implies that unemployment is rising with a likelihood of slow growth in the labor force [68]. This low elasticity was also evident in the agriculture sector (0.080-point percent). This may be attributable to data unavailability when capturing the informal sectors. Furthermore, there is a high shift in the labor force out of agriculture due to the slow farm productivity growth rate [69]. Many youths prefer to seek employment in off-farm activities as they perceive that there is not much incentive in the agricultural sector. Despite their low contribution to employment, these sectors contributed greatly to GDP. All the service sectors: trade, business services, government services, and other related services are high contributors to employment.

### 3.3. Differential Impact of Sectoral Growth on Youth Employment across Rural and Urban Areas

The Logistic regression model was used to analyze the effect of sectoral growth on youth employment by gender and location using the 2018/2019 LSMS-ISA data. The result is presented in Table 3 for two regressions where the first is based on the African Union (AU) Youth Charter Categorization (AUYCC) of youths (18–35 years), upon which our study is based, and the Nigerian Youth Categorization—NYC (15–29) under the 2019–2023 new National Youth Policy [66]. For both regressions, the dependent variable was dichotomous (with a value of 1 for an employed male youth; and 0 for an unemployed female youth. Based on the AUYCC, 11 variables significantly affected youth employment by sex in Nigeria.

The regression results reveal that age did not significantly affect youth employment based on both the AUYCC and NYC, although it was positive. Though not significant, it corroborates the findings of [14], which reported that as youths age, there is a higher likelihood of securing employment compared to their younger counterparts. A probable reason for this could be attributed to the belief that age goes with experience. As such, employers would likely hire youths who they perceive to be matured.

Remittance negatively influenced youth employment. An increase in inward remittance by one naira reduced the likelihood of youth employment by 21.4 percent and 12.4 percent from the NYC and AUYCC, respectively. This result is not surprising as the

literature has identified inward remittance as a disincentive to work. In some cases, young people with wealthy relatives abroad who send them money regularly may likely feel reluctant to search for and secure jobs.

**Table 3.** Logit Regression Model on the Differential Impact of Growth on Employment.

	Nigerian Youth Categorization (15–29 Years)			AU Charter Youth Categorization (15–35 Years)		
	Coeff	Z Value	Marg. Effect	Coeff	Z Value	Marg. Effect
Age	0.013 (0.023)	0.58	0.030 (0.005)	0.009 (0.011)	0.87	0.002 (0.003)
Remittance	−0.891 *** (0.222)	−4.01	−0.214 (0.053)	−0.520 *** (0.148)	−3.51	−0.124 (0.035)
Education (years)	−0.011 (0.020)	−0.54	−0.003 (0.005)	0.030 ** (0.013)	2.27	0.007 (0.003)
Occupa_Agric	0.031 (0.342)	0.09	0.008 (0.082)	0.049 (0.230)	0.21	0.012 (0.055)
Occupa_Industry	2.852 *** (1.083)	2.63	0.685 (0.259)	1.849 *** (0.653)	2.83	0.441 (0.155)
Occupa_Constru	3.881 *** (1.035)	3.75	0.931 (0.241)	3.576 *** (0.729)	4.90	0.852 (0.169)
Occupa_Trade	−0.403 * (0.218)	−1.85	−0.097 (0.052)	−0.362 ** (0.150)	−2.41	−0.086 (0.036)
Occupa_Service	0.364 ** (0.175)	2.08	0.087 (0.042)	0.218 * (0.124)	1.76	0.052 (0.029)
Location	0.130 (0.178)	0.73	0.031 (0.043)	0.255 * (0.129)	1.97	0.061 (0.031)
Southwest	−0.603 ** (0.283)	2.13	0.145 (0.068)	0.612 *** (0.203)	3.01	0.146 (0.048)
South-South	−1.694 *** (0.330)	5.14	0.407 (0.079)	1.772 *** (0.234)	7.58	0.422 (0.055)
Northeast	1.561 *** (0.300)	5.22	0.375 (0.071)	1.485 *** (0.214)	6.93	0.354 (0.051)
Northwest	0.453 (0.275)	1.59	0.109 (0.068)	0.438 ** (0.199)	2.20	0.104 (0.047)
Northeast	0.477 * (0.263)	1.82	0.114 (0.063)	0.291 *** (0.194)	1.51	0.069 (0.046)
Constant	−0.817 ** (0.591)	−1.38		−1.121 *** (0.387)	−2.90	

*p*-values are in parenthesis. \*, \*\*, \*\*\* represent 10 percent, 5 percent, and 1 percent significance level respectively. Source: Author's Computation from the 2018/2019 LSMS-ISA—GHS data [54].

Educational status significantly influenced the employment of young men and women. Under the AUYCC model, education was significant and positive, with the implication that the more educated a male youth is, the higher the likelihood of being employed. This is in line with previous studies, as it is a well-established fact that higher education leads to improved job security and income. However, this result was contrary under the NYC model because of the negative and non-significant relationship between male employment and education. The result implies that the more educated a female youth is, the higher her likelihood of being employed. This is similar to the findings of [33].

With respect to occupation, male youths have a higher likelihood of securing jobs in the construction, industrial, and service sectors than female youths. The likelihood of becoming employed in the industrial sector by male youths increased by 68.5 percent

and 44.1 percent under the NYC and AUYCC model, respectively. Similarly, the chances of a young man becoming employed in the construction sector increased by 93.1 and 85.2 percent respectively. A similar result was evident in the service sector with lower magnitude compared to the other sectors.

On the contrary, employment in the trade sector was negative and significant, thereby implying that there was a higher likelihood for more female youths to be employed in this sector with a magnitude of 9.7 and 8.66 percent under the AUYCC and NYC models, respectively. This result may be suggestive of the fact that certain sectors are more male dominated, with their female counterpart highly concentrated in the informal sector [14]. In the same vein, under the AUYCC model, more male youths are likely to be employed in the rural areas compared to the urban centers. This may be a result of the employment of male youths in the informal sector.

Geographically, Nigeria is divided into six geopolitical zones, namely: North West, North Central, North East, South West, South East and South-South. The result from the AUYCC model has shown that male youths from the South-South, South East, North west, and North east regions were most likely to secure employment compared to their female counterparts from those same regions.

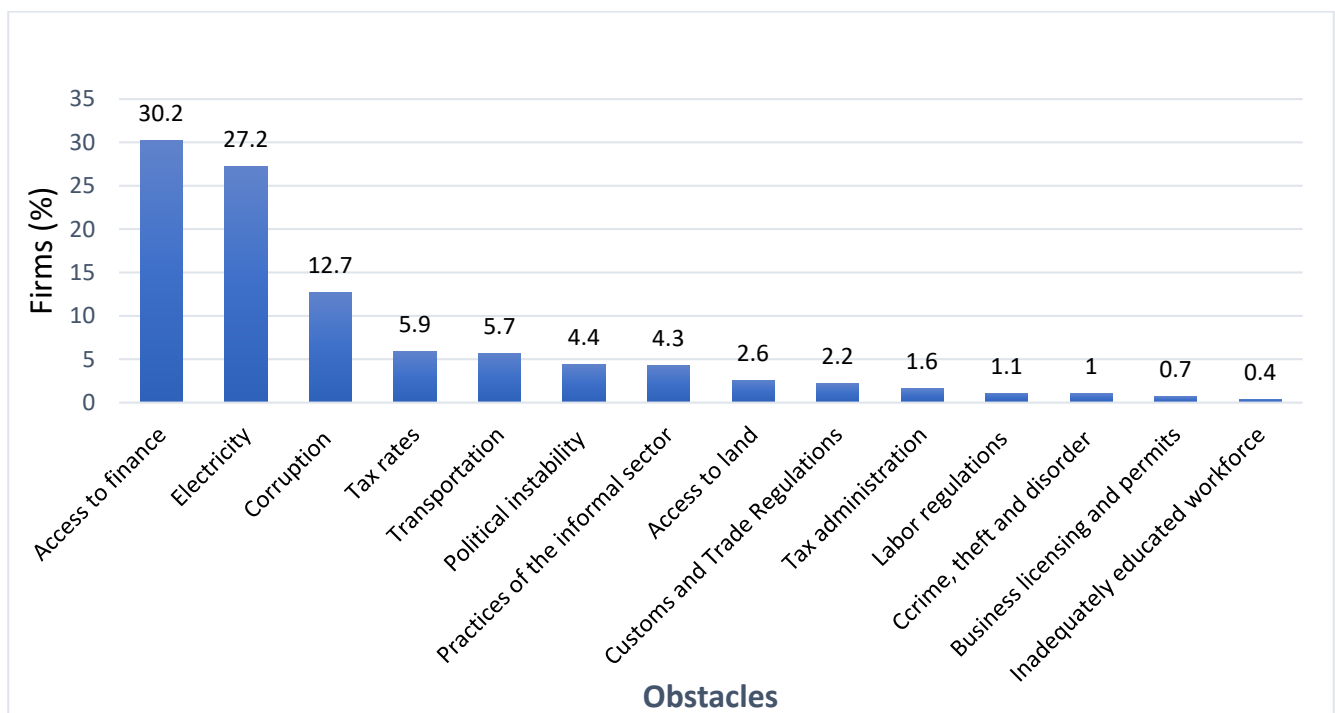
### *3.4. Economic and Political Constraints to Developing Key Sectors Relevant for Youth Employment*

Data from the 2014 Enterprise Survey, validated by primary data obtained through key informant interviews, were used to identify the economic and political obstacles/constraints to developing the key economic sectors relevant for youth employment in Nigeria. The economic sectors in Nigeria are often faced with challenges that inhibit their abilities to create jobs for the ever-teeming youths despite their huge potentials for growth. Figure 7 presents the challenges to the business environment in Nigeria. The finding from this survey is in concert with that from the KII. From Figure 5, most firms reported that access to finance (30.2%) was a major obstacle to their business, followed by electricity access (27.2%) and corruption (12.7%). Inadequate access to finance impedes a firms' ability to scale up production or enjoy economies of scale. A firm's competitiveness is enhanced with access to basic infrastructure such as water and electricity, thus, making the business conducive for growth and development. Access to infrastructure increases a firm's efficiency, while lack of access reduces their productivity because of higher production cost. The findings from the various sectors have shown that all sectors are faced with constraints such as inadequate access to finance, poor infrastructure, high taxes, corruption, political instability, and inadequately skilled personnel, amongst others.

Corruption is a critical problem that is deeply rooted into society. A report from the United Nations Office on Drugs and Crimes—UNODC [70] revealed that 32.3% of Nigerian citizens reported being asked to bribe or having paid bribes with just a single contact with a public official. This is bad for the business environment as it increases the running cost associated with any business. Other constraints identified by diverse firms include increased tax rate, high cost of transportation for moving raw materials and finished products, political instability, and access to land, amongst others. To further validate the findings from the 2014 Enterprise Survey, we have identified key political and economic constraints using key informant interviews (KII) where our stakeholders were selected based on our findings on identified sectors with high employment creation potentials.

In the agriculture sector, findings from the KII have shown that inadequate access to finance, skills mismatch, lack of entrepreneurship and life skills education, policy inconsistency and discontinuity, and lack of stability and continuity in programs by succeeding governments are some economic and political constraints to developing the agriculture sector. This is similar to the findings of [71], where they identified some challenges to aquaculture and fish farming in Nigeria, including inadequate infrastructure, high input prices, land acquisition, inadequate supply of fish feed, high feed cost, poor extension services, irregular electricity supply, poor finance, disease and poaching, and poor market/price.





**Figure 7.** Constraints to the business environment in Nigeria. Source: Authors' computation from Enterprise Survey, 2014.

The construction and industrial sectors require high skill levels compared with some other sectors. Consequently, there is low entrance into these sectors with the exception of lower levels that require limited or no skills. Some of the identified constraints from the KII include high tariffs on construction materials, inadequate access to land, unfavorable exchange rates, and stringent building regulation, standards, and codes.

In recent times, the services sector has been crucial in employment generation for youths and especially those with little or no education. Some of the challenges in the sector include inadequate access to finance, inadequate infrastructure, and fiscal and monetary policy inefficiencies. Based on findings from the KII from the education sector, the key economic constraints include inadequate access to capital, skills mismatch, high interest rates by the lending agencies, inflation, limited training opportunities, and unfavorable policies that limit investments and discourage investors. Some political constraints include policy without financial backing, insecurity, corruption, and policies that are politically motivated and devoid of fairness.

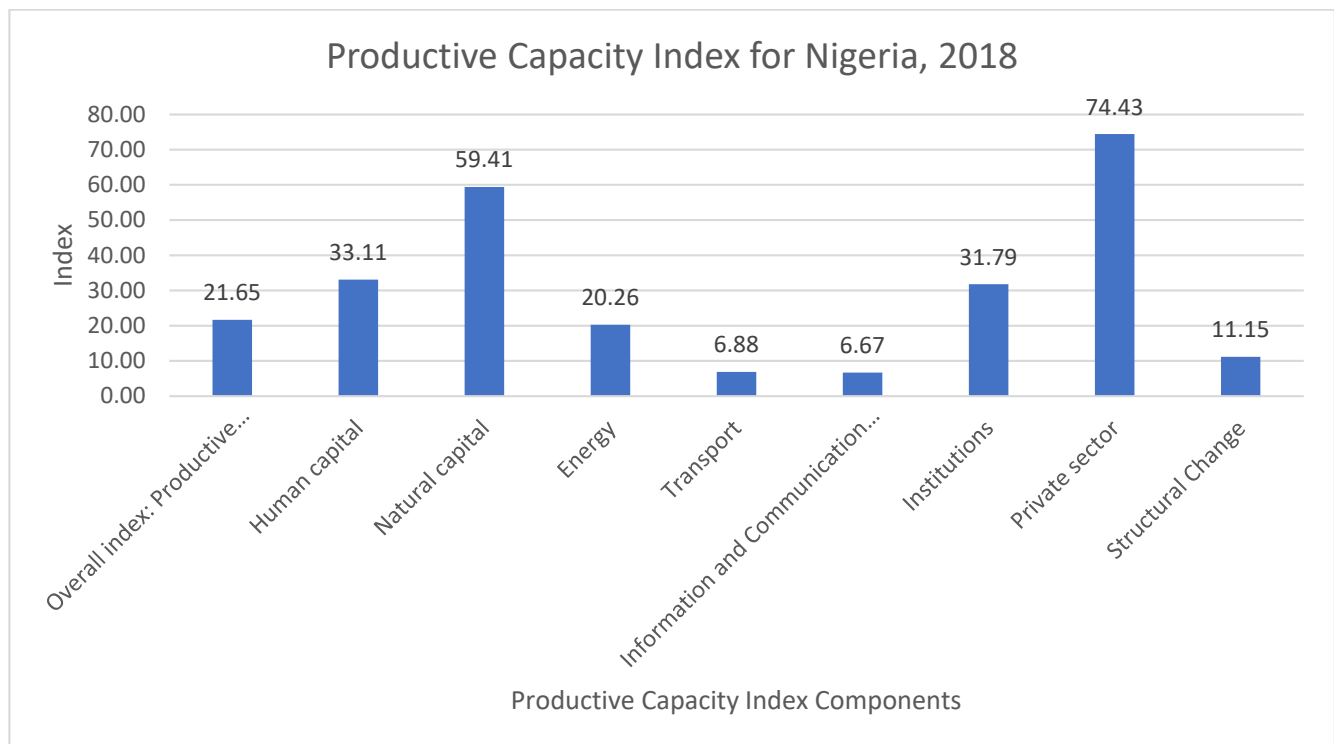
In the telecommunication sub-sector, economic constraints include high cost of mobile phone technologies, high cost of real estate, poor power supply, unimproved ultra-modern internet facilities in the region, while political constraints include high expenses associated with skill development and job searches and unfriendly government policies. For example, the ban on subscriber identity module (SIM) card registration in December 2020 left approximately 500,000 youths jobless.

In the health sector, economic challenges include inadequate access to finance and inadequately skilled personnels. Due to inadequate funds, hospitals and other health related organizations may be unable to integrate fresh graduates into their internship and fellowship programs. In the financial sector, constraints include high public debt, limited tenure securities, and weak liquidity. McKinsey Global Institute [72], reported that poor or limited interest from international and domestic investors was because of the prolonged administrative procedures associated with listing, coupled with high transaction costs, lack of transparency, corruption, malpractices, inadequate training and knowledge about capital markets, poor regulatory compliance and enforcement, and weak corporate governance in some marketplaces.

### 3.5. Conditions Required for Local and Foreign Private Sectors to Invest in Identified Sectors in Nigeria

In harnessing the potential of the three key economic sectors (agriculture, industry, and services) for employment creation, it is crucial that the business environment be conducive to increase their efficiency and attractiveness to investors.

From the 2018 Nigerian Productive Capacity Index (PCI) presented in Figure 8, it is obvious that Nigeria is a resource rich country with natural resources (59.41) and high human capital stock (33.11) due to the over 200 million population. A key challenge is providing jobs for the non-graduates and graduates. The private sector's role in the economy is very important as it accounts for a high proportion of businesses and it is a major employer of labor. Under the context of PCI, the private sector covers the ease of cross-border trade (with respect to import and export cost) and business support via domestic credit and time linked with business start-up. The PCI for the private sector was quite high (74.43). Nigeria had a fairly low score (31.79) for political stability on a scale of 1 to 100. Businesses succeed when the business environment is situated within a politically stable environment. The score for infrastructure (transport and ICT) was very low, thus, implying that Nigeria is still lagging behind in terms of infrastructure. Hence, it is important to improve infrastructure to enhance the ease of doing business.



**Figure 8.** Nigerian productive capacities index, 2018. Source: Authors' computation from [73].

Under an enabling environment with access to improved road networks, access to capital or funds for new start-ups or existing businesses, improved power supply (electricity), reduced taxes or introduction of tax holidays, access to market, and favorable monetary policies, amongst others; efficiency would likely increase as businesses in different sectors will be operate at their optimal capacity with adequate room for expansion, and this, we believe, will ultimately result in increased employment opportunities, especially for the youths.

Table 4 presents a breakdown of the conditions that are required for investment in identified sectors in Nigeria from the KII. Across the various sectors identified with high youth employment creation potentials, the most crucial factor that stakeholders identified

is increased access to finance. This is an important condition for business start-ups and for production scale up.

**Table 4.** Conditions required for investment in identified sectors in Nigeria.

Sector	Sub-Sector	Conditions/Enabling Environment to be Put in Place
Services	Digital Economy	Increased access to finance and infrastructure
Services	Education	Increased access to training opportunities, favorable policies such as tax reductions, stable exchange rate, increased access to lands for investors in the educational sector, politically stable environment, corruption reduction, and access to improved infrastructure (good road, water, and electricity).
Services	Health	Access to well-equipped infrastructure, health insurance, competitive salaries, and welfare packages.
Services	Telecommunication	Access to infrastructure and finance to scale up broadband, introduction of investor-friendly policy for ease of business, and improvement in national security and social stability
Service	Finance	Improve regulation and introduce incentives such as tax breaks, provide technical capacity building to enhance staff capacities, and ensure compliance with the central bank regulations.
Agriculture	General	Increase access to finance, improve land access and tenure securities, introduce technical and vocational education, trainings and other training programs, curb corruption, make the economy more politically stable by addressing insecurity challenge from Fulani Herdsmen, and increase access to productive inputs at subsidized rates.
Construction	Construction	Access to finance and infrastructure, curb corruption, reduce expenses and capital allowance, and introduce the exemption of withholding tax on foreign loans and capital gains tax.

Source: Authors' computation from Key Informant Interviews.

Another priority area stakeholders perceive as important is access to infrastructure. Access to good feeder roads, airways, waterways, and rail transport reduces the time taken for product delivery and cost associated with transportation. For highly perishable agricultural products, the incidence of losses would also be substantially reduced. Access to other infrastructure such as power, energy, water, and storage facilities will greatly reduce production cost. In sectors with some elements of trade (exports and imports), stakeholders expect the government to come up with favorable policies through reduced taxes, tax exemptions, and stable exchange rate policies that improve the ease of doing business and boost trade facilitation.

Other key conditions that would stimulate investment in the identified economic sectors include political stability, security, and lack of corruption. Investors will be more willing to invest in an economy that is politically stable and that they consider safe compared to one in which their lives and investments are perceived to be under threat. There is need to urgently address the insurgency challenge in the country to preserve lives and reduce capital flight. Doing this will stimulate investor interest. These findings are still similar to some of the major conditions (economy stability, increased access to finance, stable political environment, and reduced corruption) reported by [63] as a means of tackling political and economic constraints to the business environment.

#### 4. Conclusions

The study assessed the conditions that stimulate youth employment in important economic sectors of the Nigerian economy. This study has revealed that unemployment has been on the rise during the past decade, with youth employment (15–34 years) more prevalent amongst rural males and lower among urban females. Interestingly, all Nigerian economic sectors have potential for generating employment, though at varying levels. The financial, transportation, real estate, business services, government services, construction, other services, and trade services sectors were determined to be sectors with more ability to create jobs as a result of their high employment elasticities. Even though the employment elasticities of the agriculture and manufacturing sectors were low, they were still considered sectors with high job creation because of the untapped potential associated with these sectors due to the comparative advantage the country has in some products such as cocoa, cashew nuts, and leather, amongst others. Furthermore, there is the presence of several trade and production clusters and high deposit of natural resources across the country. Similarly, the Nigeria government has over the past two decades formulated well targeted policies that have helped increase the productivity of the sector. This is also coupled with the fact that the national association of manufacturers is very effective with the presence of well-equipped industrial clusters. All of these have greatly enhanced the sectors, thus, making them attractive to investors.

In determining the drivers of gendered youth employment in Nigeria, it was discovered that a rise in age and education significantly and positively increased male employment, while marital status and receipt of remittances increased female employment. Employment in the urban areas was higher among male youths than female youths while more male youths were employed in the services, construction, and industry sectors compared to female youths, who were more engaged in the trade sector, which confirms that the alternate hypothesis was accepted.

Several limitations (economic and political) were identified pertinent to all sectors that affected their capacities to generate employment. They include inadequate access to finance and electricity, high incidence of corruption, and high tax rates. All of these challenges would negatively impact the capacity of these sectors to sustainably scale up their production and reduce their competitiveness and efficiency. Firms within each sector are more efficient and capable of creating jobs especially for youths when an enabling environment is created through increased access to finance. The creation of a single registration/payment portal for all business registration enhances transparency and curb corruption; reduces business licensing processing time; repairs existing and/or establishes infrastructure, especially in rural areas such as feeder roads, ports, and airway networks, railways, power grids; introduces favorable exchange and taxation rates; and addresses the issue of insecurity and ethnic clashes.

With the employment of more males in the construction, industry, agriculture, and services sectors, as compared to the trade sector with more female youths, the study, therefore, recommends that effort should be focused on supporting these sectors through targeted welfare schemes through capacity building for sectoral relevance. In addition, the government will be able to attract both local and foreign investors by encouraging public–private partnerships in a politically stable economy using both fiscal and monetary instruments such as the substantial reduction of taxes or the introduction of tax holidays or through the provision of matching funds or the introduction of favorable lending or exchange rates. Finally, concerted effort should be targeted at mainstreaming gender in all sectoral policies to assist the country in her bid towards sustainable development goals.

**Author Contributions:** Conceptualization was by S.E.E. and G.B.K.; methodology, S.E.E.; software, S.E.E. and I.J.O.; validation, S.E.E., G.B.K. and I.J.O.; formal analysis, S.E.E.; investigation, S.E.E.; data curation, S.E.E. and I.J.O.; writing—original draft preparation, S.E.E. and G.B.K.; writing—review and editing, S.E.E. and I.J.O.; supervision, S.E.E.; project administration, S.E.E.; funding acquisition, S.E.E. and G.B.K. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research is part of broader research funded by the African Economic Research Consortium (AERC), Nairobi, Kenya (grant number RC21523) under the “Work and Income for Young Men and Women in Africa: A Political Economy and Social Equity Approach to the Employment Potential of Specific Sectors and Subsectors in Africa Economies—Growth Sectors for Youth Employment project” and “The APC was funded by AERC”. The full report titled “Sectoral Development: Assessing the Conditions that drive Youth Employment in Key Sectors of the Nigerian economy” can be found at: <http://publication.aercafricallibrary.org/handle/123456789/3429>, accessed on 13 September 2022.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Public links to the data used for the study can be found at <https://www.wider.unu.edu/project/etd-%E2%80%93-economic-transformation-database>. <https://microdata.worldbank.org/index.php/catalog/3557>. <https://microdata.worldbank.org/index.php/catalog/2361>. All the data used can be found in this folder: [https://drive.google.com/drive/folders/1cMvjwdo8-XMtowATfYg9qjNf2jgTvQb\\_?usp=share\\_link](https://drive.google.com/drive/folders/1cMvjwdo8-XMtowATfYg9qjNf2jgTvQb_?usp=share_link) (all accessed on 22 February 2023).

**Acknowledgments:** We express our profound appreciation to the African Economic Research Consortium (AERC) for the support that facilitated undertaking this research. Furthermore, we are very grateful to the INCLUDE Secretariat for financial and technical support, as well as the Overseas Development Institute (ODI) and Economic Research Forum (ERF) for intellectual support.

**Conflicts of Interest:** The authors declare no conflict of interest.

## Appendix A

**Table A1.** List of sectors and definitions.

Sectors	Definition
Agriculture	Agriculture; fishing and forestry
Mining	Quarrying and mining
Manufacturing	Manufacturing
Utilities	Electricity, steam, gas and air conditioning supply; water supply; sewerage, remediation activities; and waste management.
Construction	Construction.
Trade services	Trade (retail and wholesale); accommodation activities, motor vehicles and motorcycles repair; food service activities.
Transport services	Transportation and storage.
Business services	Information and communication; administrative and support service activities, professional, scientific and technical activities.
Financial services	Financial and insurance activities.
Real estate	Real estate activities.
Government services	Public administration and defense; education; human health and social work activities; compulsory social security.
Other services	Arts, recreation, and entertainment; other service activities; households as employer’s activities; undifferentiated goods- and services-producing activities of households for own use; activities of extraterritorial bodies and organizations.

Source: [55].

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