

Conceptual Exploration of Foreign Direct Investment Inflow Towards Improving Food Production in Nigeria

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Abstract: Amid Nigeria's ongoing economic backdrop, this study was conducted to explore the potential of Foreign Direct Investment (FDI) inflows towards improving food production in Nigeria. This objective was engineered as Nigeria continued to face food shortages, thus leading to a rise in the prices of food products across the country. On the other hand, FDI was found to have the capacity to leverage the challenges facing food production through imported skills, investment capital, technological innovations, and improving infrastructures that could boost food production advancement. This study was conducted using a literature review-based approach. Information on FDI and food production was obtained from journals and publications of previous scholars, both local and international. The findings of this study revealed that a level of positive relationship exists between FDI inflow and improved food production, as advanced food productivity and processing largely depend on the positive injection of skills, investment capital, technologies, and improving infrastructures. However, it was also revealed that FDI had not attained its optimal level in Nigeria, as the country has been under the yoke of political crises and insecurity, which also affects the sustainable growth of agricultural food production. As such, Nigeria continues to face limited availability and accessibility of food products, increased prices, and continuous importation of food products. To improve food productivity in Nigeria, stakeholders and policymakers within these sectors should provide an enabling environment to attract more FDI inflow. This recommendation is based on the findings that FDI is a growth engine for advanced food productivity and processing, which could lead to food security in Nigeria. This study, unlike previous studies, unveiled the potential of FDI inflow towards improved food production in Nigeria, with a theoretical foundation that underpins the integration of FDI variables towards advanced food productivity.

Keywords: Foreign Direct Investment; Food Production; Food Security; Nigeria

JEL Classification Codes: D24; F650; F660

1. Introduction

Availability and accessibility of food is a significant problem facing many developing nations across the globe, with no exemption from Nigeria. It has been accorded in most countries as part of the unending challenge that has continued to cause hunger and malnutrition. Perhaps, the rapid growth of population in most nations has also aggravated the level of food insecurity. Nigeria is currently a victim of a food crisis, with a fast-growing population limiting most of its citizen's access to adequate and quality food (Ayinde, Otekunrin, Akinbode & Otekunrin, 2020; Osabohien, Ufua, Moses & Osabuohien, 2020). Food security, however, reflects stability in the supply and availability of food products within a nation. This informs the number of food commodities consumed and their nutritional

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qualities to consumers (Aluko, 2020; Ayinde *et al.*, 2020). Indeed, the challenges of food insecurity have been traced to the production and processing capacity, which is informed by the state of infrastructural and agricultural advancement in a country. Unfortunately, Nigeria has been confronted with a pathetic state of infrastructural advancement with shallow initiatives towards agricultural advancement, as significant attention has been on oil exploitation. Hence, less attention was given to agriculture and food production, which has resulted in more worsen the situation of food insecurity.

Since the early 1980s, FDI has expanded phenomenally, making the world economy more attractive (Zameer, Yasmeen, Zafar, Waheed & Sinha, 2020; Akhtaruzzaman, Berg & Hajzler, 2017). To leverage this situation, FDI has been used in other advanced nations to reignite and boost food production and processing, as it has played a positive role in the global economy and substantially impacted domestic economic growth. Perhaps, that has informed developing countries across the globe to continually introduce policies and reforms that will enhance the attraction of FDI. Policymakers persistently believe that FDI is more favourable to long-term growth and development than other sources of capital inflows. Justifications for this argument have been numerous but often focused on the premise that FDI brings technological advancement, requisite skills, investment capital and infrastructural development to the host nation. To this end, evaluating the potential of FDI inflows for improving food production in Nigeria is imperative.

2 Motivation and Objectives of the Study

The process of food production includes cultivation, harvesting, crop management, preservation, fermentation, crop production, cooking at restaurants, broiling, grilling, and baking (Aluko, 2020; Caccavale & Giuffrida, 2020). Thus, a sustainable process of food production informs food security, where individuals of a country can easily access healthy food for survival, growth, and healthy life (Kerr, Madsen, Stüber, Liebert, Enloe, Borghino, Parros, Mutyambai, Prudhon & Wezel, 2021; Prosekov & Ivanova, 2018). On the contrary, there has been a continuous trend of the poor state of food production processes in Nigeria for decades, limiting individuals from accessing food products (Ayinde *et al.*, 2020). Although, Logan, Stump, Goldstein, Orijemie and Schoeman (2019) and Jerven (2018) emphasized that food insecurity was not a problem in the 1940s and early 1950s. Nigeria was able to sustain its citizens with healthy food and was exporting the access to earn a better balance of foreign trade. As of the 1940s, every region in Nigeria was known to produce one or two major crops, whether food or cash crops, which helped the country maintain relative sustainability and availability of agricultural food products. Northern Nigeria, as in the 1940s, has the groundnut pyramids, while cocoa production was in Western Nigeria, oil palm and kernel in Eastern Nigeria and rubber plantation in the Midwest Nigeria.

However, the attention on agricultural production started fading gradually in 1956 when oil was discovered, and exportation started in 1958. As prices of oil rises in the international market, Nigeria lost interest in agricultural food production and neglected the sector. Consequently, the neglect of food production processes has not only marked the beginning of food insecurity experienced in Nigeria today but has also caused increased prices and continuous importation of food products.

Ironically, the Nigerian population continue to grow with limited access and availability of food products to meet food demand (Salman, Salawu, Salawu & Osawe, 2021). As such, the big question remains unanswered on how Nigeria could improve food production to meet the food demand of its citizens. To this end, FDI is vital to boost agricultural-oriented infrastructures supporting optimal food

productivity. Perhaps, in advanced and developed countries such as the United States of America, China, and Germany, to mention but a few, FDI has proven great potential in providing needed capital investment to boost the required infrastructures that improve agricultural food production and processing. In this context, it becomes essential to explore how FDI potential could be used to leverage the poor state of food production in Nigeria, as previous studies have revealed that FDI is a growth engine of domestic production and local economic development (Mbukanma & Rena, 2021; Zameer *et al.*, 2020; Akhtaruzzaman, Berg & Hajzler, 2017). However, limited studies have revealed the conceptual relationship between FDI inflows and improved food production, especially in the Nigerian context. Hence, the objective of this study which aims to explore the potential of FDI inflows and how they could be employed to improve food production processes in Nigeria.

3. Research Methodology

According to Kumer (2019), research methodology refers to the techniques and philosophical ideas used in doing research. It entails the researcher's selection of methods for carrying out a research project; the approach dictates the tools utilised in the study (Yang & Tate, 2012). The tools refer to how the researcher collects, analyses, and interprets data. Perhaps this is conceptual-based research, and as King and He (2005) noted, this kind of study employs various research techniques, including narrative review, vote counting, meta-analysis, exploratory review, and descriptive review. An exploratory literature review was conducted for this study. This entailed collecting and synthesising readily available research on a particular topic area. Bennison, Miller, Summers, Minnis, Sussman and McGuinness (2017) and Burns (2017) emphasised the importance of this kind of literature review in sharing with readers the findings of previous research directly connected to the current investigation. As such, this research performed a concise assessment of the previous literature, consulting and acknowledging the work of both domestic and international scholars working within the area of the subject under investigation. Thus, the exploratory literature review approach used in this research aided in developing comprehensive logical ideas about the contribution of FDI inflows towards improving food production.

4. Literature Review

4.1. The State of Foreign Direct Investment Inflow in Nigeria

Unlike most related forms of Investment (such as portfolio investment), FDI grants the foreign investor partial or absolute control of the company in which they invest and, therefore, the right to influence the company's decision-making process. Admittedly, FDI inflows are regarded as critical in stimulating economic growth and integrating a country into the global market. It is expected to contribute more to economic growth and development in a developing country like Nigeria than domestic Investment (Ketteni & Kottaridi, 2019; Dunning & Lundan, 2008). It is often regarded as one of the most important channels by which nations can access global finance. However, Masipa (2018) and Jones and Wren (2004) described FDI as a permanent interest (direct investor) of a company in a specific economy in an entity residing in an economy other than the shareholder's (direct investment company). While the literature on FDI and economic growth is not entirely conclusive, it is still the case that FDI inflows have increased in recent years, especially in emerging economies. Accordingly, in both theoretical and empirical literature, many arguments indicate that economic

prosperity is associated with significant FDI inflows into a country (Mbukanma & Rena, 2021; Zameer *et al.*, 2020).

Nigeria is one of Africa's most promising growth poles, attracting many investors in the hydrocarbon, energy, and construction sectors, and manufacturing, among others. Nevertheless, after Egypt and Ethiopia, Nigeria is Africa's third largest FDI recipient (UNCTAD, 2020). FDI inflows to Nigeria total USD 3.3 billion in 2019 (see Table 1), dropping 48.5% from the previous year (USD 6,4 billion in 2018) due to the impact of austerity policies (UNCTAD, 2020).

Table 1. FDI Inflow in Nigeria (Million USD)

	2017	2018	2019
FDI Inflow	3,813	6,401	3,299
FDI Stock	88,917	95,318	98,618
Number of Greenfield Investments	36	57	76
Value of Greenfield Investments	4,841	7,954	10,196

UNCTAD (2020) * Greenfield Investments are kinds of FDI in which a parent corporation establishes a new business in a foreign country by building new operating facilities from scratch.

In 2019, the overall stock of FDI was reported to be USD 98,6 billion, with the United States, China, the United Kingdom, the Netherlands, and France among the significant investors in Nigeria. Besides, Nigeria seeks to diversify its economy beyond the reliance on oil production by developing a dynamic manufacturing sector that will further integrate its economy into global supply chains and increase productivity (Osabohien, Oluwalayomi, Itua & Elomien, 2020). The recent integration of trade, industry, and Investment under the auspices of the Federal Ministry of Industry, Trade, and Investment reflects Nigeria's goal of better coordination between these three major areas to improve its trading and investment environment. However, a predominantly privatised economy, a favourable taxation system, abundant natural resources, and low labour costs have been the country's main advantages in attracting FDI.

The Nigerian government has also recently implemented several programmes to increase the attraction of FDI, especially in agriculture, exploitation and mining, oil and gas production, and exports. Incentives are proposed for pioneering industries deemed beneficial to the country's economic growth; allowances for capital investments and interest on loans for gas producers are also proposed. Perhaps, foreign investors in Nigeria are treated similarly to domestic investors, including tax incentives (Haque, Chowdhury, Shakil & Masih, 2021). However, the Nigerian Investment Promotion Commission's (NIPC) potential to draw new Investment has been constrained due to a lack of solid political and policy support, as well as unresolved barriers to Investment and industry in Nigeria with a growing lack of security, especially concerning the terrorist group Boko Haram, which operates in the countries north-east. Thus, widespread corruption, civil instability, lack of transparency, and poor infrastructure limit the country's FDI potential and intense bureaucracy.

4.2. Determinants of Foreign Direct Investment

There are several explanations concerning why companies pursue FDI, but the sums invested in a country and the choice of where to invest depends on micro and macro determinants. Thus, the micro-determinants of FDI are primarily concerned with certain location-specific variables that influence the profitability of FDI at a company or industry scale (Mbukanma & Rena, 2021; Bhattarai & Negi, 2020; Mbukanma & Rena, 2018). The macro-determinants are the characteristics of the host country

that influence productivity and cost at the micro-level. Accordingly, the macro-determinants of FDI are the variables driving profitability and the options to invest at an economic scale. These are host market size, expansion, and production factors prices. As such, Ali, Faki & Suleiman (2018), Asongu, Akpan & Isihak (2018) and Snyman (2007) gave a summary of both the micro and macro determinants of FDI as detailed in Table 2.

Table 2. Micro and Macro Determinants of FDI

Micro-Determinants of FDI	Macro-Determinants of FDI
Market size and growth	Openness and exports
Labour cost	Exchange rates
Host government policies	Investment and infrastructure
Tariffs and trade barriers	Political risk
Product life cycle	Financial risk
Host nation interest rates	World stock market index

Foreign firms conceptualised and considered a concise approach and consideration of both micro and macro determinants of FDI before embarking on FDI. However, a developing country like Nigeria, which is still developing and growing, owes greater responsibility to a holistic restructuring and reformation of international and economic treaties (Haque *et al.*, 2021; UNCTAD, 2020). Hence, the benefits of industrialised and technological advancement not only promote growth across a nation's economic sectors but also sustain the local economic development that stabilises the cross-sectional economic system, which also contributes to advancement in food production.

4.3. Food Production and its Challenges in Nigeria

The food production process mentioned in the preceding section of this study involves cultivation, harvesting, crop management, preservation, fermentation, crop production, cooking at restaurants, broiling, grilling, and baking. Thus, food production refers to converting raw materials into finished eatable substances. Food is necessary for the human body to perform its vital activities, including sustaining life and providing energy for human survival. Accordingly, a sustainable food production process will ensure the availability and accessibility of food by every individual within a nation in the present and future to sustain active, healthy life (Béné, 2020; Caccavale & Giuffrida, 2020). On the contrary, a poor state of food production results in food insecurity, where individuals of a nation face limited access and availability of healthy food products (Niles, Bertmann, Belarmino, Wentworth, Biehl & Neff, 2020; Pereira & Oliveira, 2020). Perhaps, a nation with limited access and availability of food products will face high prices and continuous importation of food products.

Challenges such as poor land tenure system, low level of irrigation farming, climate change, land degradation, basic infrastructure for mass crop production such as dams and irrigation facilities, and poor means of land preparation, storage and processing facilities have been identified as issues that confront food production in Nigeria. In addition, poor yield per hectare in all the arable and cash crops, inadequate financing systems, poor industrialisation of raw agricultural products, complex business operation environment and grossly epileptic power supply was also identified as challenges facing food production in Nigeria (Ayinde *et al.*, 2020; Igbokwe-Ibeto, 2019). An expert consensus suggests that research and development of enhanced agricultural inputs should be prioritised with

enhanced low-interest financing systems in land preparation technology and equipment, production and processing technology, and post-harvest management technology (Aluko, 2020; Ayinde *et al.*, 2020).

Nonetheless, the growing Nigerian population needs a corresponding growth in food production to meet food demand. Food insecurity is real and has been a global issue for several decades, which was first identified in 1974 at the World Food Conference, attended by nations from across the world to plan how agricultural food products might be enhanced to meet the food demand of the world's rapidly rising population. Similarly, UN Secretary-General Ban Ki-Moon, at the World Food summit in 2009, also warned against the death rate of children across the globe resulting from hunger and starvation. However, it should be noted that a significant variation exists between food availability and accessibility of food. Thus, availability has to do with production and processing, product supply and market dynamics, while the accessibility of food deals with information flow, consumer prices, food varieties, availability, and obtainability (Mathieu, Robitaille & Paquette, 2022; Scott, Colasanti & Parks, 2021). Thus, it is assumed that improved production processes could enhance Nigerians' availability and accessibility of food products.

4.5. Conceptual Dimension of FDI Potentials towards Improving Food Production in Nigeria

Conceptual perspectives of FDI provide a philosophical dynamic of what previous scholars have identified as ideas and characteristics associated with the subject "FDI". Characteristics such as the attraction of expertise, technological and infrastructural advancement, and attraction of investment capital, among others, have been emphasised to be associated with FDI. Nonetheless, to maximise these potential characteristics of FDI, the host nation has a proactive role to play (Cró & Martins, 2020; Masipa, 2018), starting from their policies on treaties and suitable structures to explore those potential associated with FDI (Nguyen, 2020). Similarly, improving the poor state of food production in Nigeria through the exploitation of FDI inflows demands the stakeholders in food and agricultural products to identify the potentials of FDI and structure and align them to improve food production. Thus, Figure 1 presents a framework exploring FDI inflows toward improving food production.

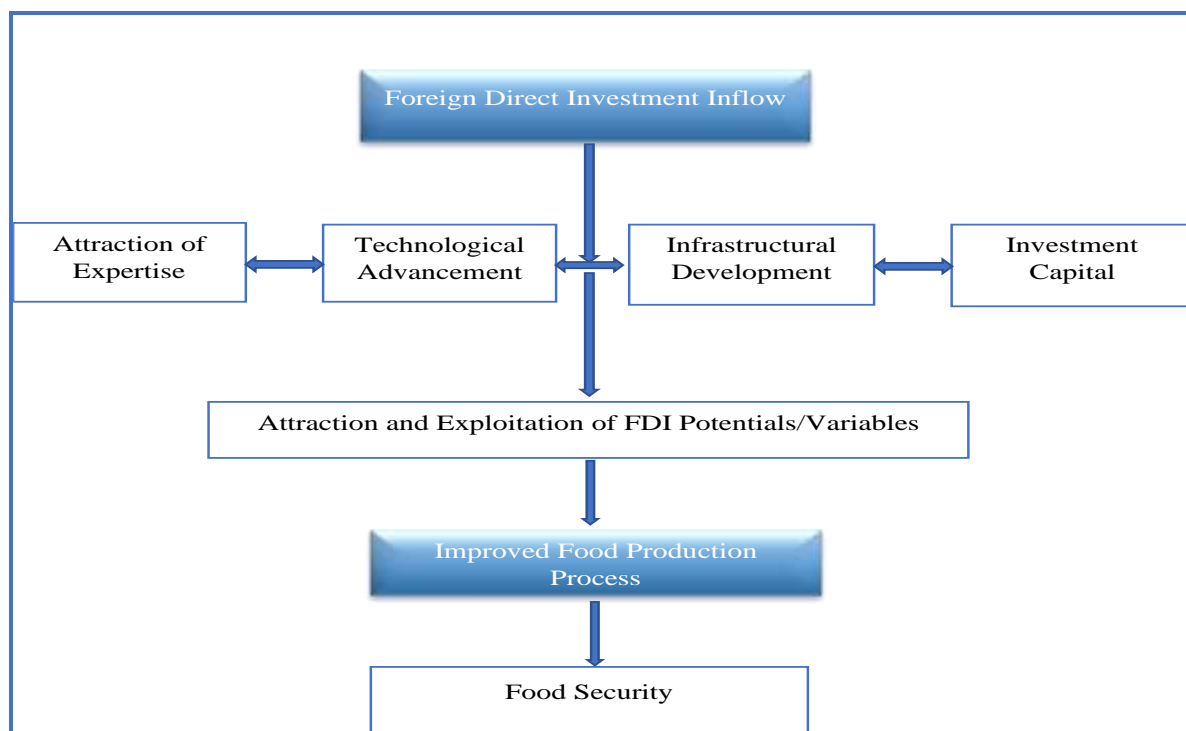


Figure 1. Conceptual framework (Author's idea)

As illustrated in Figure 1, Foreign Direct Investment inflow is associated with growth engine variables that have been used to improve several economic and developmental sectors in different parts of the world. Perhaps, the motivation of this study is to reveal the conceptual influence of FDI on improved food production in Nigeria. Thus, details on these dimensions on how FDI variables could influence improved food production are provided below.

Attraction of Expertise – The rate of food importation, low-quality processed food, and accessibility of food in Nigeria over the past few decades reveals the gap in knowledge and requisite experience needed for food production in Nigeria. Many will argue that Nigeria has abundant human and natural resources; however, modern food production demands requisite skills in agricultural and food processing factories (Bigliardi, 2021; Pitt, 2021). FDI leverages this situation by attracting expertise in skill transfers, innovative ideas, and competency, to mention a few. Thus, harnessing these FDI potentials provides a platform for strategic inputs and innovations in the food processing industry and changes the dynamics within the agricultural sector for good security (Eneji, Dantani & Afu, 2021; Soma, Kozhikode, & Krishnan, 2021).

Technological Advancement – Global productivity has increased in unimaginable ways only a few decades ago, resulting from technological advancement. Although, developing country like Nigeria is still lacking behind in technological advancement when compared to developed nations around the globe. The benefits associated with technological advancement are overwhelming, concerning efficient communication and management processes, efficient production techniques, and manufacturing processes to green production processes, to mention but a few (Barrett & Rose, 2022; Kumar & Sathiyaa, 2021). The introduction of artificial intelligence has also helped make life easier by solving complex problems (Bigliardi, 2021). There is little debate that FDI inflows have contributed significantly to technological advancement in most countries worldwide. To enhance the whole chain of production processes and to make food more available, a mechanized and commercial food

production system requires a higher reliance on the potential of technological advancement (Butt, Zulqarnain & Butt, 2021).

Infrastructural Development – An essential distinction of infrastructure is that, unlike other components, the demand-supply imbalance in infrastructure cannot be filled by importing parts. Because infrastructural facilities are location-based, the domestic economy's capacity may be expanded to meet the demand. Thus, FDI inflows provide the needed structures for infrastructural development within the host nation. Accordingly, Infrastructural development provides structures for improving transportation, power, energy, and efficient communication systems (Ekeocha, Ogbuabor & Orji, 2021; Tomal, 2021). Perhaps, mechanized farmers require infrastructure like irrigation and power to increase productivity, and industrial food producers also need power, good transportation, and an efficient communication system to enable the availability and access to food. As such, an apparent positive relationship could be drawn between the development of Nigeria's infrastructure and improved food production.

Investment Capital – This portion of capital injection comes from multinational investors in the host nation of the FDI. An investor acquires most investment capital in the form of physical assets to further its long-term business aims and objectives (Abeysekara, Perera, Shrestha, Gunaruwan, Kumarage, Sadiq & Hewage, 2021; Adarov & Stehrer, 2021). Thus, the benefits of investment capital within the food production sector are overwhelming, ranging from funding for production, which attracts other variables of FDI (expertise, technology advancement, and infrastructural development). Similarly, investment capital has contributed significantly over the years to the economic growth and development of developed and developing nations worldwide. Perhaps, considering the recent backdrop in the economic situation in Nigeria, the need for investment capital is vital, especially within the agricultural sector, which is considered a channel that will reduce food insecurity and promote economic growth and development.

4.6 Theoretical Foundation of FDI Inflow Towards Improved Food Production in Nigeria

In evaluating the economic effects of FDI on food production, it is essential, in the first place, to understand the structure of the research focus involves concerning its several economic sectors, opportunities, locations and natural environment in the quest to enhance the efficient application of the theories on economic development. As such, the overview of the three most relevant growth theories for this paper and how they could contribute to improved food production are detailed as follows:

4.6.1 The Big Push Theory

Big Push addresses the integration of a central strategy and administrative structures to guide policy changes, direct investment and technical initiatives, and a significant rise in international assistance and the concomitant investment in various economic sectors. It is Rosenstein-Roden's creation, and it is focused on the notion that a substantial amount of capital or investment is needed in infrastructure projects to sustain economic development (Kaya, Tok, Koc, Mezher & Tsai, 2019; Currie, 2018). Since the theory focuses on simultaneously developing industries and reducing shortcomings in coordination, forward and backward links play a crucial role in ensuring a Big Push success. A forward linkage, however, can be seen in these instants as one company purchasing goods from another in development building, while a backward link is when a company purchases products or services from another to be used as their input. In relating this theory on how FDI could improve food

production, simultaneous development of improved food production and FDI activities should utilise the linkage and services between industries within Nigeria. By employing this theory, holistic growth and development of improved food production will be sustained from the engagement and patronage between the multinational investors and the local food producers.

4.6.2 Porter's Cluster Theory

Michael Porter is the founder of cluster theory, a competitive advantage hypothesis based on his prior research. Porter's Theory of Clusters relates with the competitive advantage of industries and companies in nationally and locally regions where clusters play a significant role (Porter, 2000). Porter's cluster theory identifies the regional clusters of producers, interrelated companies, service industries and affiliated organisations interconnected by integration and common interests (Skala & Rydvalova, 2021). However, relating this theory to the growth of improving food production in Nigeria through FDI, it is expected that a cluster of different sectors of industries will create more openings for better industrialisation and growth within the local food producers. Hence, it is recommended that a network of multinational investors and related organisations should be established to sustain the improvement of food production in Nigeria.

4.6.3 Romer's Endogenous Growth Theory

The endogenous growth model of Paul Romer tackles the technological spillover with the industrialisation phase, in which capital supplies around the economy positively impact industrial production (Todaro & Smith, 2015). Romer's endogenous growth theory, often classified as the new growth theory, was created to understand the determinants of technological advancement and its importance for a long-term economic growth not explained in traditional neoclassical theories (Dornbusch, Fischer & Startz, 2014). Romer's theory indicates that the spill-over of one industry due to new research and technology contributes to the emergence of new technologies and information from other companies. This new technology introduced by one company spreads immediately through the economy. This theory could be employed in the Nigerian context, where the development and introduction of new technologies by multinational firms in the food production sector could be spread among other industries in the local regions, thereby boosting the growth and holistic improvement in food production.

5. Conclusion and Recommendations

This paper explores the potential of Foreign Direct Investment inflows toward improving food production in Nigeria. For this purpose, a concise literature review was conducted, which focused on the concept of FDI growth, its economic impacts, and food production in Nigeria. Thus, this study has successfully revealed the state of FDI in Nigeria and the determinant factors that attract FDI. Also, food production and its challenges in Nigeria were discussed, revealing challenges such as poor land tenure system, climate change, land degradation, basic infrastructure for mass crop production such as dams and irrigation facilities; poor means of land preparation, storage and processing facilities as issues that confront food production in Nigeria. In addition, poor yield per hectare in all the arable and cash crops, inadequate financing systems, poor industrialisation of raw agricultural products, complex business operating environment and grossly epileptic power supply was also identified as challenges facing food production in Nigeria.

Furthermore, it was revealed that Nigeria had experienced a constant backdrop in the agricultural and food production sector, resulting from negligence and a holistic focus on oil exploration. Consequently, Nigeria is bearing the brunt of high food commodity prices, significantly the price increase in staple foods caused by inadequate food production and scarcity of food items. Perhaps, a food crisis is imminent in this situation, leading to increased hunger and malnutrition among Nigerians. More seriously, the Nigerian population has grown in recent times with little concern shown by stakeholders to formulate and implement policies that will help meet the demand for food.

However, it was recommended in line with the potential of FDI inflows, which attract expertise, technological advancement, infrastructural development, and investment capital to improve food production processes in Nigeria, holistic policies and reforms that address the growth of agriculture and food production both at the national and the local levels should be encouraged. Secondly, there is a need to formulate and implement proactive policies that attract FDI through critical considerations of the micro and macro determinants and theories that enhance the balance between FDI inflows and improving food production.

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