

Impact of Chinese Technology Transfer on Nigeria's Economic Development

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Abstract

China's transformation and rejuvenation is largely attributed to its ability to discover, improve and anchor its rapid development on technology. Consequently, contemporary relations and engagement between China and Nigeria is expected to leverage on the many technological advantages possessed by the Chinese government which has informed its sporadic rise and breaking every development indices across the world. This study examines the impact of technology transfer in the development of the already existing areas of cooperation between China and Nigeria and situates same within the internal dynamics that might adversely affect the chances of Nigeria in properly harnessing the gains in her ever expanding areas of cooperation and engagement with China. Data for the study were obtained from secondary sources and subjected to content analysis. The study concludes, given the current state of the international system which is driven by technology, it is only when the gains inherent in this global force of development is properly obtained from Nigeria's development partners that the country can be viewed from a major contender within the continent of Africa and consequently the World. In negotiating infrastructural agreement with China, Nigeria should employ tact bearing in mind the peculiarity of the country in order to profit from the various technology inspired strides that the Chinese economy is witnessing.

Keywords: China-Nigeria, Cooperation, Development, Economic, Engagement and Technology

Introduction

It is difficult for developing countries to sustain self-development or compete evenly in the global economies without advancement in science and technology either through transfer or acquisition. Also, the emerging importance of science and technology in the

development of nations cannot be over-emphasized. Therefore, if a country especially a developing country such as Nigeria desires development and specifically sustainable development, the pursuit and domestication of technology is needed especially from its development partner such as China whose presence is visible across all sector of the country (Ubi, 2013).

One of the core principle guiding Beijing's proposed Economic and Technological Cooperation between China and African countries which is a clear departure from the supportive role given for liberation movement and opposing hegemony for the development of mutually beneficial economic as well as technological cooperation, with emphasis on practical results, diversity in the form, and pursuit of common development is through technological transfer which will drive national development (Ubi and Ibonye, 2017).

According to Brautigam (2009:15), "China's economic and technological cooperation with African countries takes a variety of forms suited to the respective country's specific conditions. These include offering technical services, training technical and management personal, engaging in scientific and technological exchanges, undertaking construction projects, entering into cooperative and joint ventures..."

One major issue and accompanying development of the 21st century is the discovery and advancement in human existence and means of conducting individual, state and national businesses and interaction through Information Communication Technology (ICT) and especially as regards advancement in technological know-how. Therefore, development in recent times and the possibility of actualizing development by any nations is tied to its level of advancement in technological know-how because development is often assumedly technological, socio-economic and political biased.

Arguably, the concept and characteristics of development is a complex one. Its difficulty is not only in terms of definition/description but also in terms of measurement because what constitute the description of development is usually individual based. Specifically, the progress of African societies in the early centuries when compared with their European counterpart leaves a major gap in the description of development.

However, the need for collaborative engagement between countries of the world cannot be overemphasized. This is due to the fact that development efforts especially amongst the Less Developed Countries (LDCs) of the world has necessitated collaboration and collective engagement with nations that are more developed than the other. But in

establishing this collaboration, the developed countries are always posed to explore the content of bilateral agreement for their primary interest thereby making the LDCs loss what they are poised to gain. Therefore, the need to diplomatically seat on the offensive when dealing with these advanced countries whose primary interest is largely to explore the advantage these small countries possess cannot be over-emphasized.

Albeit, Chinese education aid and interaction with developing world and specifically Nigeria is based on its own experience both positive and negative in terms of domestic growth and development. Specifically, Chinese interaction with developing countries such as Nigeria focuses on technical training which include a wide range of issues such as information technology, manufacturing technology, agricultural and infrastructural technology which were very primary in China's own development history (Ubi & Ibonye, 2017).

According to the United Nation Report on World Economic and Social Survey (2018:10), technologies hold great hopes for humanity and the development of nations. They can help eradicate hunger and epidemics, increase life expectancy, reduce carbon emissions, automate manual and repetitive tasks, create decent jobs, improve quality of life and facilitate increasingly complex decision-making processes. Frontier technologies can indeed make sustainable development a reality, improving people's lives, promoting prosperity and protecting the planet. Therefore, any nation that intends to meet the growing needs of its citizens is expected to integrate technology in its development process especially when dealing with countries with more advanced technological architecture such as countries in Europe and the emerging Asian tigers such as China.

China presents its self as the new bride of the contemporary world with its vast investment in areas where the USA and other big economies of the world has withheld and refused investment. World emerging economies like Brazil, Russia, India and mostly China in Africa is making available huge development finance which enable it play prominent role in the development of developing countries such as Nigeria, thus challenging the existing and traditional bilateral multilateral international development architecture (Kharas & Rogerson, 2012).

Noteworthy also is the fact that China is the second and fastest growing economy especially since the introduction of economic reforms in 1978; China's economy has been one of the world's fastest-growing with annual growth rates consistently above 6 percent. According to the World Bank, China's Gross Domestic Product grew from \$150 billion in 1978 to \$12.24 trillion by 2017. According to official data, China's GDP in 2018 was 90 trillion

Yuan (\$13.5 trillion). Since 2010, China has been the world's second-largest economy by nominal GDP.

These above advantages and most importantly the integration of technology in China's development process presents it as the next destination for bilateral and multilateral cooperation and engagement by third world countries especially countries in the continent of Africa and Nigeria. China has multilateral engagement with Africa under the auspices of Forum on China-Africa Development (FOCAC) established in 2000 at Beijing, and with respective countries across the continent which was entered at different times. Specifically, China-Nigeria relations was officially entered in 1972 (Ogunsanwo, 2010) and covers wide different areas of interest such as trade, investment, infrastructure, cultural, education, military and health, etc.

The remarkable influence and rise of Chinese economy is largely attributed to its technological advantage with visible advantages and these advantages China often bring to the table in all its sphere of cooperation and engagement with its partners. Evident in these are light speed trains that are currently in use by the Chinese government and also been replicated in Nigeria in the development of rail infrastructure.

However, the question thus is how can Nigeria improve and maximize the inherent benefits in China-Nigeria cooperation and engagement? Is China ready to help Nigeria actualize its development agenda through the transfer of China's technological advantage into the country's development process? What are the internal contradictions that will hinder Nigeria's quest for technological advancement and how can these challenges be addressed? Hence, the focus of this paper is to seek answers to the above questions while also advocating a diplomatic positioning that will allow Nigeria and its representatives fully explore all options to its advantage presented in the ever improving China-Nigeria cooperation and engagement.

China-Nigeria Cooperation and Engagement

According to Owoeye (1986:12), Nigeria's first contact with China is designated as "the era of informal ties, 1960-1971." At independence, Nigeria political leadership was not only pro-West but vividly anticommunist. The resultant effect of this peculiar disposition was that Nigeria's attitude towards communist China followed what had then emerged as a clear pattern of most of her relations with the Socialist States diplomatic isolation accompanied occasionally by bitter attacks against communist 'subversive' ideology at home.

As Ogunsanwo (2007:12), noted, “at independence, the worldview of Nigeria’s political leadership did not factor close relations with the People’s Republic of China as one of the elements which the country would need to cultivate.” This was despite the fact that Nigeria was the third largest market in Africa for Chinese goods, with a steady growth in import from China. At the same time, the Chinese did not allow Nigeria’s diplomatic snob and ideological preference for capitulation to stand in the way of their obviously very lucrative trade relations with the country (Alli, 2007).

However, China’s multilateral cooperation and engagement with the African continent as donor and investment partner has existed for over seven decades and over those periods, China has made available to Africa huge amount of political, economic and technical aid. Also, a percentage of these aids and interventions are often channeled through multilateral agencies such as the African Development Bank (AfDB), World Health Organization (WHO) and other UN agencies. Their efforts and purposes have been considerable and worthy of commendation. Also, China is today adjudged a huge market for Africa’s export as well as financier and investor. Chinese presence is most visible in the most remote part of Africa with cooperation opening up investment and helping in the development of infrastructure (Ubi, 2014).

With Chinese presence in Africa, is an ambitious bilateral cooperation and engagement with respective countries in the continent such as Nigeria. China-Nigeria bilateral relations and engagement has existed for over six decades which commenced officially in 1972, (Ogunsanwo, 2010; Ubi, 2014) with areas of engagement covering trade and investment, import of finished goods and export of raw material which has accounted for a high percentage of financial exchanges between Chinese many businesses and Nigerian business community, infrastructural development such as rail construction, construction of rail tracks and supply of train coaches from China.

According to Kwanashie (2007), trade liberalization is the key to logic of the current global strategy for growth driven by neo-liberal or orthodoxy. This presupposes why the present China-Nigeria relations is fundamental. Nigeria’s first contact with the Peoples Republic of China (PRC) was in 1960, when she was invited to the country’s independence celebrations.

Alongside China’s oil corporation entry into Nigeria, it has no conditionality for development aid and this enables Nigeria grow as the country gains higher revenues and new opportunities. The global South-South relationship of both countries is a significant opportunity in African history because it is a representation of Africa’s withdrawal from

Western neocolonial ties. Hence, this relationship of Nigeria-China as trading partners is beneficial as Nigeria sees the Chinese economic development model as a catalyst for growth and development that can be applicable in the African context.

Nigeria-China bilateral agreement cuts across various spheres of business and developmental interest. China investing in Nigeria is a good development however; Nigeria has focused immensely on the oil sector, which is detrimental to the country's economy as it discourages diversification. Although, information about Chinese activities in Nigeria points to increasing economic (trade and investment), social (health and education) and technical relations, the composition of Chinese FDI into Nigeria is fragmented. According to statistics, China has set up over 30 solely owned companies or joint venture in Nigeria actively involved in the construction, oil and gas, technology, services and education sectors (Ogunkola, 2006:134).

Usually, as it has been noticed, the economic policies in Nigeria works against its perceived objectives, while it strongly encourages investments and investors, there are no institutions (policies) that conduct checks and balances on the activities of the companies and the countries that invest in the Nigerian economy. Ogunsanwo seems to be pessimistic about the sincerity in China's developmental intentions in Nigeria by saying that China "cannot honestly be extremely enthusiastic in encouraging the conversion or transformation of crude oil exporting countries such as Nigeria, to petroleum products exporting countries" (Ogunsanwo, 2008:17). This is because "China needs enormous amounts of imported crude oil for its industry and is searching everywhere including Angola, Sudan, Nigeria, Gabon and other African countries where such oil is accessible".

In any given relationship amongst two or more parties, each party tries to accomplish their agenda, whether this is at the detriment of the other parties involved, it often could be subjective. As in the case of Nigeria and China, both countries are pursuing their foreign policies and they owe it to themselves and their people to negotiate smartly. Finding a common ground means both parties are aware of what the deal entails. Perhaps, if Nigeria were an ordinary developing country with no resources, the Chinese government could, conceivably, have been at a loss on the Nigerian resources (because their economy needs oil) and possibly concentrated on its relations with other countries to provide them with this valuable resource. But the country has superpower potential that make it impossible to ignore: its enormous oil reserves, to which China still wants access, a substantial appetite for new infrastructure and a large population with growing consumer demands.

So, the Chinese government has various agreements with the new Nigerian government's preferred "oil for cash" approach. Nigeria is a country that undoubtedly has much potential

and while this is a blessing, it gives room for exploitation by world powers. Nigeria on the other hand is clouded with deep-rooted corruption, which will involve taking an overhaul to rid the system of the poor accountability and transparency in different ministries responsible for the ensuring of growth in the economy. Thus, a government like Nigeria will be playing into the hands of foreign investors who seek to enrich themselves through deals that will require trading crude oil for cash or infrastructure.

Nigeria-China trade relations revolve majorly around the oil and natural gas sectors. Prior to oil production, which surged after the 1970s, agricultural production was the largest export sector for Nigeria. Over dependence on the oil sector has caused the stagnation of the country's economy. The discovery of oil in the 50's, which is a blessing in itself, caused the Nigerian government to overlook sectors like the agriculture and mining. These are sectors other countries like Malaysia have used in building a formidable economy. Agricultural investment was imperative given the impediment of growth in this sector of the Nigerian economy; food security had remained a severe challenge for Nigeria. With China's demonstration of growth in agriculture over the years, there are a number of lessons to be shared with Nigeria so as to enable her attain agricultural growth that will in turn lessen poverty.

China's investment in Nigeria is particularly timely in light of the recent strengthening of China and Nigeria's economic cooperation. Sustainable commercial agricultural production is vital to the wellbeing of Nigeria's economy and people. After the economic reforms of 2005, the Nigerian government started making efforts to diversify its investment and export profile beyond the oil sector, to other critical sectors like agriculture.

Chinese Development and Technological Advantage

China is regarded as the fastest growing economy across the world with its economic and technological edge and its growing relationship with countries of the world. China's win-win policy has endeared it to majority of countries in the international system and also given its aid assistance to countries in the African continent. Chinese economic growth's rate is placed at 6.1% in 2019 compared with 6.6% growth in 2018. The 2019 rate was described as the lowest in the country's growth pace since 1990 (NBS, 2019). The growth in China's economy according to sources is largely attributed to its technological power which is evident across all sector of its productive economy.

Importantly, one fundamental characteristics of developed or industrialized country is the level of and application of technology across all aspect of its development. The economic power of western or developed nations are attributed to the possession and integration of

technology in agriculture, economic, trade and production, governance, education and importantly across all sector of the nation.

Since 70 years of Communist Party rule in China, its economy shows sign of slowing growth against predictions but remains among the fastest-growing in the world, with huge investments in technology and innovation. China has “experienced the fastest sustained expansion by a major economy in history,” according to the World Bank. Now the world’s second-largest economy is transitioning to what President Xi Jinping has referred to as the “new normal,” where consumption and services become more important drivers of expansion than investments and exports (Charlton, 2019).

According to Charlton (2019), comprehensive growth across China is attributed to research and development, with spending in the area 70% higher in 2017 than in 2012, according to analysts at Matthews Asia. It is also investing in high-tech industrial parks and incubators focusing on technologies such as artificial intelligence, robotics and big data. Internet companies like Alibaba, Tencent and Baidu are investing billions in new research centres, Artificial Intelligence experts and data scientists.

According to Ruchir (2020), Chinese economy for years is largely digital driven. Right from passport scanner at the airport which addresses visitors in their native tongues to payment apps which have replaced cash to outsiders trying to use paper money that get blank stares from store clerks. Also in the city of Hangzhou a prototype hotel called FlyZoo uses facial recognition to open doors, no keys required. Robots mix cocktails and provide room service. In Shenzhen, we flew the same drones that are making e-commerce deliveries in rural China. Traffic flowed smoothly, guided by synced stoplights and restrained by police cameras.

Importantly, by 2017, technology has accounted for as large a share of output in China when compared with what is obtained in Germany. According to a Tufts University survey, it ranked China the world’s most rapidly evolving digital economy. Visa’s CEO quoted a Beijing regulator saying 18 months earlier, the tech giants “were way too small to worry about, and now they’re way too big to do anything about”. The available studies rely on data at least two years old and probably understate China’s emergence as a tech power. It now spends \$440 billion a year (Ruchir, 2020).

The impact of technology is visible in the development of Chinese agricultural sector, transport sector especially the development of light rail as the major driver of Chinese

transportation for the movement of persons and goods within the many regions of the country. Also, the country's textile sector accounts for large export earnings for the country courtesy of technological advancement.

Consequently, the surge and growth of Chinese economy in all its ramification is largely attributed to the impact of technology which has accounted for impact across the world especially amongst its partners who are desirous of development.

China-Nigeria Technological Engagement for Development

Studies on China-Nigeria relations, cooperation and engagement have often been focused on economic, trade, investment, political and infrastructural development; while less attention has been devoted to other areas such as technological transfer. Though China-Nigeria relations has improved tremendously within the workings of China's technological advantage, however no specific pact has been established to specifically address this China's area of strength and advantage.

China is in no doubt an economic giant, but the question is, China be able to assist African countries in transforming their resource wealth from a curse to a blessing, thus, acting as a catalyst for socio-economic development? Here are some of the impacts of the bilateral trade of both countries on the Nigerian economy.

Constructively, it is very difficult to remove the whole of China-Nigeria technological engagement from the totality of all China-Nigeria bilateral economic, trade and investment cooperation and engagement. Hence the lack of cumulative body of literature on technological transfer because most of these discussions are addressed under the other existing areas of China-Nigeria relations. Before China intensive engagement with Nigeria and subsequent establishment of FOCAC in 2000, the advantage Chinese conglomerates have over its Nigerian counterpart is embedded in its technology which is the main driver of its economic life and has accounted for its sporadic rise and influence across the world. The new millennium saw the establishment of Strategic Partnership for the sole development of wide range of Chinese areas of interest with its partners such as Nigeria. The idea behind FOCAC through the Strategic Partnership framework was to better the lots of parties to the various engagement and cooperation through concerted win-win agenda in order to address the challenges of globalization and development as evident across third world states.

For accelerated development of Nigeria economy through trade and investment, Chinese investors were able to establish Free Trade Zones in Lagos and Ogun State known the

Lekki Free Trade Zone (LFTZ) and Ogun Guangdong Free Trade Zone (OGFTZ) which was a product of 2006 FOCAC summit held in Beijing, China. The zones marked a clear departure from the import centered existing relationship between countries with the aim of building local economy through organized production built on improved technology.

Within the salient discourse of technology transfer, the Chinese government through the fulfillment of Corporate Social Responsibility and in collaboration with the Ministry of Transportation had established a specialized transport University in Kastina State, Nigeria, where issues relating to the development of the transport sector will be learnt and domesticated for the sector. Here, training of graduates will be the focus to further increase the number of Nigerians studying for various classes of degree and specialty across Chinese University in transport engineering and other aspect of the sector.

To further this, the Chinese government recently established rail-track assembly plant in Kajol, Ogun State where the production of the needed raw materials for the construction of the many Nigerian railway lines which cuts across the country will be produced. The most significant in all of these is that the expertise needed for producing this equipment has been domiciled in the country which will further technology transfer.

In the final analysis, all issue raised above points when strategically harnessed will led to the domestication of Chinese technology which accounted for its sophistication and economic development. Therefore, for the purpose of comprehensive development of all sector of the Nigerian economy, a technological friendly environment and development conscious government policy must be put in place to address the obvious flaws undermining the actualization of foreign policy especially within China-Nigeria bilateral cooperation and engagement.

What is the way forwards in China-Nigeria technological transfer?

The quest for equity in the global economy is embodied in phases such as win-win development, mutual benefits, sustainable development and South-South cooperation etc. Basically, these phases have become a common reference point in the day to day discourse of international economic relations and engagement especially between developed and developing countries of the world. These phases are more importantly a driving force of China foreign policy in its interaction with the outside world and within the same vein establish its place as a global power (Ubi, 2013).

China's foreign policy with Nigeria as with other countries of the world has been built upon core policies such as win-win, promotion of equality, non-interference, mutual trust, inclusiveness, mutual leaning, sustainable development and mutual beneficial cooperation,

therefore engagement with China and its vast investment and areas of strength should be adequately explored by Nigeria in its dealings with China.

The inability of Nigeria to deepen the many areas of cooperation and engagement with China will threaten the bright future and gains in the relationship through the transfer of technology, capacity building and the protection of each other's interest in the global arena. Therefore, for Nigeria to adequately lay claims to the many gains in China-Nigeria relations, issues that are inherent in Nigeria's domestic politicking and peculiarities must be addressed.

The country's domestic setup especially as regards uncoordinated efforts of the political class in its handling of bilateral issues must be properly addressed to cater for the immediate and long term need of the Nigerian economy.

Also, the technological architecture of the country and other issues that will address the totality of a successful China-Nigeria technology transfer across trade, investment, economic, political and infrastructural development must be adequately addressed. Specifically, electricity and other requirement for the country's holistic development require urgent attention.

Finally, the process of bilateral negotiation and engagement between China-Nigeria must take into consideration the larger need of the majority of the masses without an agenda to serve pecuniary interest which is characteristic of both Nigerian politicians and diplomats. The progress recorded thus far in China's development is a product of technology and sincerity of the leadership class which has positively affected its year-year GDP and economic performance.

Conclusion

The study focused on Chinese economic strength and transformation which is hinged on technological advantage and the need for Nigeria to carefully optimize this factor in the course of its cooperation and engagement with the various Chinese investments seen across Nigeria. To this end, the ability or inability of Nigeria to carefully harness the vast technological advantage in China-Nigeria relations will go a long way in improving its developing economy or otherwise.

Recommendation

Based on the findings of this study, the following recommendations are suggested;

- i. The internal working environment in the country with its present stature cannot drive technological advancement; therefore, to make any meaningful gain from

Chinese technology, the country's technology architecture should be worked-on in order to impact economic development.

- ii. The Nigerian foreign policy processes such as policy formulation and implementation should be accorded some level of consistency in order to overcome policy inconsistency which is synonymous with regime change across third world states in general and especially Nigeria where foreign policy is often a function or trial and re-trial and situate same for the country's economic development.
- iii. Furthermore, all sectors of the Nigerian economy should be inter-function to drive to much desired development that is needed across the country. This inter-sectoral collaboration will aid the development of all the sectors concurrently as against the individualistic character evident across public sector in the country.
- iv. Finally, career public officers and political office holders should clearly define the priorities of their respective offices and ministries and pursue same to logical conclusions especially within the agenda of government's comprehensive effort for national development of the citizens with China-Nigeria cooperation and engagement.

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