

Information Communication Technology as an Effective Tool for Reducing Rural-Urban Drift in Nigeria

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Abstract

One of the tools that determine if a particular environment is urban or rural, is technology. Technology plays crucial role in promoting economic development of any nation. Most developed countries have embraced technology both in their respective cities and villages that is why one hardly distinguishes rural from urban areas. However, developing countries still face challenges in the development of their nations which Nigeria is not an exemption. It is important to note that over 70% of the Nigerian environments are still rural, the mentioned urban centre had been congested due to over population as this has continue to result in health pollution and environmental degradation. This study examines technology as a means of reducing rural-urban migration in Nigeria. The paper adopts qualitative research method. Secondary data were sourced from journals, textbooks, newspapers and internet. Findings reveal that the nature of drift from rural to urban is as a result of lack of basic social amenities that make life easier for the rural dwellers including technology, many people in developing countries have to travel several miles to access technology. Also, findings reveal further that exodus of people from rural to urban centres will continue to be evident in Nigeria due to fertility rate and need for knowledge. The paper, however, recommends smart village in the rural areas and also suggests that there should be an appropriate legal framework that can promotes technological strategy on the rural dwellers on income diversification to non-agricultural activities, promotion of public and private partnerships on natural resources endowed in the rural areas and management of value chains of this resources through technology and effective mainstreaming of disadvantaged youths into development processes of the country.

Keywords: *Development, Rural-Urban drift, Rural youths, Smart City, Information communication technology, Urbanisation*

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Background to the Study

Globally, the nexus between migration, technology and development has remained an issue under vigorous academic debate. Thus, the development of countries globally cannot be achieved without the development of the rural community as it has been proven that the arrival of technology at the rural areas in the developed world has abate the rural-urban migration which has promote the economic and social viability of the countryside and rural areas (Bello, 2015). Meanwhile, in Africa, the inflow of migrants from one country to another, from rural to urban within the country has been exacerbated as a result of little or absence of technology in this region which Nigeria is not exempted. This is because 75 to 80 percent of the people in Nigeria live in the rural area need positive, relevant and prompts attention in their daily activities as a result of rural neglects. This neglect brings negative consequences such as exodus of rural dwellers to urban areas, with resulting inconsistent policy from the governments. The inactive, unconscious, insensitive, and unorganised governments that exist in Africa create the gaps in the rural communities i.e. lack of development has a positive correlation with the neglect of rural areas (Alegbeleye, 2017).

The advent of technologies brought about a lot of changes in everyday living. The access and non-access to it has significantly influenced our ability to acquire social resources, such as education, employment, financial support, political expression and social position (Chauer, 2013). Researchers such as Bello (2015), Kolapo (2017), Alegbeleye (2017), et al believe that access to technological tools especially among rural dwellers has brought about movements in form of rural-urban drift. This believe is based on the fact that access to technological tools such as the internet provides an unlimited information on every aspect of human endeavors-jobs, education, commerce, social and political systems of living thereby bringing a rapid deterioration of the rural economy leading to chronic poverty and food insecurity (Kolapo, 2017).

Moreso, technology helps in improving the livelihoods of poor individuals, families and communities in rural areas and increase their income opportunities, thereby improving their chances of escaping from persistent poverty. This is believed to be panacea to rural-urban drift in Nigeria because migration in this parlance means an economic survival strategy and the rural-urban economic migration pattern in Nigeria is associated with push from rural restrictive poor economic environments and pulled to urban areas with economic opportunities (Olawole, 2016). However, one of the tools that determine if a particular environment is urban or rural, is technology. Technology plays crucial role in promoting economic development of any nation. Most developed countries have embraced technology both in their respective cities and villages that is why one hardly distinguishes rural from urban areas. However, developing countries or mostly African countries still face challenges in the development of their nations which Nigeria is not exempted. It is important to note that over 70% of the Nigerian environments are still rural, the mentioned urban centre had been congested due to over population as this has continue to result in health pollution and environmental degradation (Bello, 2015).

People movement is basically due to infrastructural development, innovations and technology, which are available in urban environments. Technology as the centre of attraction which government is supposed to make available in rural environments to reduce urban drift, is giving less attention subsequently resulting in the emergence of slums and informal settlements, unemployment, crimes, prostitution, child labour, insecurity, money laundering, bribery, poverty, proliferation of shanty living areas, spread of diseases, and overstretching of the facilities and infrastructures in the urban areas (Festus, 2014).

The challenges cited above relating to rural-urban drift in Nigeria left some gaps. Scholars such as Olawole (2016), Festus (2014), Kolapo (2017) et al have so far focused on rural-urban migration from the perspective of human development rather than technological angle. This study tends to fill the lacuna by examining the technological factor, in order to reduce the inflow of rural-urban drift in Nigeria.

Objectives of the Study

The study tends to examine how information communication technology serves as an effective tool for reducing rural-urban drifts in Nigeria and to suggest ways to check rural-urban migration through technology.

Conceptual Clarifications

Information Communication Technology

Information Communication Technology has transformed the socio-economic status of many nations. Today's economy is measured on the availability and production of information which ease applicability of technologies in our socio-economies engagement, otherwise known as knowledge economy. This present day economic status has potential to become fast economic development and thereby brings about high level of poverty reduction. Its greatest effect in businesses is the access to a wider global market through e-commerce (Achimugu, 2009). The areas of health, education, social policy, commerce and trade, government, agriculture, communications and science all benefit from access powered by ICT. These resources are interlinked and synergetic; individuals can visit and exploit relevant information sources, which often point to additional sources of information and to knowledgeable individuals (Andrew, 2015).

The correlation between ICT and economic growth are well known, making the significance of networks apparent. Electronic networking is a powerful, rapid and inexpensive way to communicate and exchange information. When networks are available, developmental changes can be sporadic. Access to GSM and satellite TV networks also improves the effectiveness of the development of communities which comprises the representative of international agencies, staff of non-governmental organization and others working locally and abroad.

Urbanisation

Urbanization is generally regarded as the transformation of areas with rural character into towns. It is, in other words the growth of towns from their hitherto statuses of rural settings.

In an ideal and orthodox setting, such processes of urbanization should usually come along with industrialization through the establishment of factories and the expansion of employment opportunities, which ideally should however produce a thriving industrial town. The obvious relationship between urbanization and industrialization is the nexus of labor attraction not only in the commercial and manufacturing activities but more importantly in agricultural production (Okali, 2013). Thus, as the conditions of opportunities expand in the urban areas, they, however, dialectically worsen in the rural areas as people are continuously attracted into the urban areas where they are dangerously forced to abandon rural life to seek a means of frivolous livelihood in the towns. The rural residents apparently see the attractiveness in the towns with seeming better opportunities. But in actual reality, many people abandon rural life in preference to the crowded and often substandard, squalor and shanty housing in the towns where they cannot find suitable employment opportunities (Festus, 2014). What provokes such rural residents to uproot their places for such urban life can be better appreciated in this discourse.

Rural-Urban Migration

Migration is the crossing of the boundary of a political or administrative unit for a certain minimum period of time. It includes the movement of refugees, displaced persons, uprooted people as well as economic migrants (Okpara, 2013). This movement from the rural settlements to the urban centres is considered essential to achieving economic and social success. Young men who do not migrate are seen as 'lazy'. Destinations for rural-urban movement include local centres. Migrants engaging in menial occupations or in activities carrying social stigma, such as prostitution, often prefer distant destinations since this will decrease the possibility of their situation being known in their home village. Latent insecurity in Nigeria influences movement direction – for example, clashes between the herdsmen and farmers in the North-Central and also the activities of the Boko - Haram in North-Eastern Nigeria has led many people to migrate from their villages and towns to Lagos. Hitherto, this also occurs to people from the South to Lagos in search for economy prosperity (Olawole, 2016).

Return migration from the urban centres to the rural settlements is high. Most migrants tend to return to their home villages upon retirement, often leaving behind their grown-up children who will support them through remittances. However, the average age of returnee migrants is becoming lower, especially in those rural and peri-urban settlements, which offer non-farm employment opportunities. Another reason for return migration is the increasing competition in the urban labour markets. Migration between rural settlements is primarily related to farming activities and therefore includes seasonal as well as long-term movement. Because migrants have restricted access to land ownership, kinship ties are a major regulator of rural to rural movement (Okpara, 2013).

Theoretical Framework

To get a better understanding of technology as the tools to reduce rural-urban drift in Nigeria, number of scholars and researchers have highlighted the theoretical foundations of migration as regard technology and also from the economic view, although there is no unified theoretical

basis for this discourse. It is on this premise that this paper will be anchor on Technological, Organisational, Environmental (T.O.E) Theory given the specific nature of the country.

Technological, Organisational, Environmental (T.O.E) Theory of Migration

This theory was proposed by DiPietro in 1990 to analyse the adoption of technological innovations on migration (Sanchez, 2011). The theory asserts that the ability of a nation to successfully implement technological innovations is influenced by the technological and environmental context of such country (Sanchez, 2011). TOE framework lies on three pillars - technology, organisation and environment which influence the process by which nations adopts and accepts new technology that aim to reduce rural-urban drift.

There are several reasonable motivations which make TOE framework feasible for migrants especially on the rationality of economic self interest. The decision to move to cities would be determined by wage differences, plus the expected probability of employment at their destination (Lewis, 2011). Meanwhile, the nature of migration in this context of permanent rural-urban drift promotes demographic response to poverty and environmental stress, uses a concept of 'multi-active households', with members of households engaging in different income generating activities which can only be mitigated through technological advancement in the rural areas. Authors like Raphael (2012) emphasized on family background as crucial elements in migration decisions. Using household as the central unit of analysis fits in with difficulty in defining households in different contexts, and the need to take cultural factors more serious which is so common in Africa. Moreso, appropriate technologies possess certain characteristics that are unique and are of utmost important for development of rural dwellers to understand in identification and for its promotion. Development and dissemination of appropriate technology for rural areas is considered to be critical in the rural areas if policymakers are thoroughly sincere with it. The adoption of appropriate technology and the characteristic features of rural setting is a determinant of the environmental, cultural and economic situation. In essence, an appropriate technology typically requires fewer resources, which means lower cost and less impact on the environment.

The theory has been criticised on the ground that it focus on threat to social and political stability, or environmental pollution and degradation in the urban areas rather than the effects it will contributes on the rural dwellers in terms of risen income, employment generation and poverty eradication through technology.

Methodology

The aim of the paper is to examine technology as an effective tool for reducing rural-urban drift in Nigeria. The data for this paper were drawn mainly from secondary sources. While the paper is exploratory in nature and it meant to investigate whether technology can be used in reducing rural-urban drift and also if adoption of technology can have positive implications on the life of the rural dwellers in terms of infrastructural development. Based on this, the study maintains the qualitative paradigm of social research such as textbooks, journals, articles, newspapers and other publications. To improve on the reliability and validity of the study, multiple secondary sources were used to minimize the risk of error.

Causes of Rural-Urban Drift in Nigeria

Available studies indicated that rural-urban migration is a suitable mechanism to improve own and families' living standards. Most of the studies agree that the Nigeria rural areas are characterized by weak socio-economic conditions, unreliable weather for agricultural activities, poor infrastructure and environmental pollution and degradation as a result of population density (Alegbeleye, 2017). According to Faleke (2015), migrants in urban center have revealed rural poverty as their initial and main reasons for the migration of male migrants and the main push factors are rural vulnerability and lack of assets expressed in the form of diminishing farmland sizes in all their rural localities and shortage of landholdings, lack of rain, recurrent drought, absence of an effective extension system, limited investment in irrigation based agriculture, high population pressure, lack of off-farm employment opportunities, and imposition of heavy taxes. In addition to this, pull factors for their step migration mentioned by urban male migrants included increasing construction activities, demand for urban domestic workers, better pay for service work and the presence of social support from the long term migrants (Faleke, 2015).

Malek (2010) indicated that rural-urban drift could be triggered by low income generated in the agricultural sector and need to diversify activities in other sectors. However, the majority of cases in Nigeria show that the poor have more inclination for migration than the rich. Unlike experiences in other countries, with diminishing income opportunities, the poor tend to migrate than the rural rich. Hence, the nature of the factors would happen to be more of problem driven. Similarly, the agricultural policy, population pressure, recurrent drought and famine, inter-ethnic and political crisis were the major factors responsible for mobility and they also stated that the difficulty of locating all the various factors causing rural exodus. This is evident as government failed to provide necessary extensive social services that can mitigate this challenges through appropriate policy. Therefore, there is the needs to promote policies and strategies which include engaging rural youth in non-farm activities and establish different income generating activities by providing loan and extension service for the rural people.

Technology as a Tool to Rural-Urban Drift in Nigeria

Nigeria is one of the countries in the world with very high rural-urban dichotomy. Although the nation is generally characterized by poor social amenities, both in quality and quantity, rural communities are disproportionately more disadvantaged than urban centres due to governmental neglect. Consequently, the number of rural inhabitants that migrate to cities with high hopes of overcoming powerlessness consistent with rural life is unprecedented (Nwokocha, 2007). In Nigeria as in most developing countries of the world, internal migration has become a major issue influencing government policies and program efforts. Crucial among these issues are lack of technology to curb rural-urban drift, ill-technology that can promote economic viability in the rural areas, problems of unplanned urbanization, growing urban crimes, rural poverty, neglect of agriculture and unbalanced population concentration. These suggest the effect of the dominant pattern of rural-urban migration and its effect on national life (Akinyemi, 2015). Meanwhile, people tend to be pulled to the areas of prosperity and pushed from areas of decline. Migrants are usually concerned with the benefits

they hope to gain by moving and usually give less thought to the problems that may be generated as a result of the process which includes; pressure on fragile urban infrastructure and possible environmental pollution and degradation (Raphael, 2012).

Rural-urban drift in Nigeria is therefore inevitable and sometimes a desirable resultant effect that can lead to technological innovation which will aid urban industrialization. Interestingly, Nigeria is practicing a non-regulatory system which allows for uncontrolled internal migration. Hence, the decision to migrate to urban centers is not usually agonizing as a result of the perceived advantages of so doing. Perhaps, these migrants are more than the unavailability of urban infrastructures and if the migrant later discovers that infrastructures in most urban centers in Nigeria are mere camouflages, hardly able to improve human conditions they would have confined themselves in their permanent areas. The experiences from different States who have witnessed rapid development infer that the above mentioned are the key for progress in rural areas (Akinyemi, 2015).

Many of the cities are facing threats with failed attempts towards technology transfer and developing agriculture in the rural areas is an urgent and concentrated demand for applicable technologies. The issue of inadequate specific technology for promoting rural areas has been a criticism by several migration scholars. It is therefore essential to put emphasis on appropriate technology in the process of promoting agricultural production, raising farmers' income and ensuring sustainable rural development. Experiences revealed that where appropriate technologies are promoted through capacity building with critical inputs by the government institutions, the strategy of modernizing rural agriculture under the principles of "high quality, high yield, high efficiency, eco-friendliness and safety will reduce rural-urban drift which can easily lead to growing production, relative prosperity, high ethical standards, clean and orderly smart villages and democratic management (Kolapo, 2017). In this context, the technology at the rural areas should not only focus on agricultural production, such as increase of food grain output, but more on promoting urbanization, protecting rural ecosystem, improving farmers' living conditions and building a long term mechanism for raising farmers' income (Okpara, 2013).

Potentials and Benefits of Technology in Rural-Urban Drift in Nigeria.

Some of the potential areas for rural development as elaborated by Festus (2014), which has been identified as the possible areas to be applied in different sectors are:

1. **Agriculture:** The potential areas for the application of technology in agriculture are improving land use, reclamation of waste land, introduction of new cropping patterns, supply of improved seeds, agricultural tools, dissemination of improved techniques of cultivation, marketing facilities and post-harvest technology. For instance, Farm crowdy is another source of digital technology that is used in improving our agricultural system in Nigeria. It is the Digital Agriculture Platform that empowers rural farmers by providing them with improved seeds, farm inputs, training on modern farming techniques and provides a market for the sale of their farm produce. This gives the farmers the capacity to farm more acres and by extension leads to increased food production and security in Africa. Farm crowdy has empowered over

11,000 small scale farmers across Nigeria. They are committed to expand and continue to empower local farmers, positively impact their lives and their families while boosting food production and sustainability in Nigeria.

2. **Animal Husbandry:** Improvement in livestock dairy, improvement in fodder supply, development of new fodder, development of poultry, fish culture, etc. are the possible areas for the application of technology in livestock and dairy sectors in rural Nigeria.

3. **Rural and cottage industries:** One of the key areas that technology can be apply in rural sectors are the cottage industries that is, Rural engineering.

4. **Health:** Application of technology in health sector is one of the prominent area and the applications are towards improving health services such as prenatal, childbearing, immunisation, supply of pure drinking water, improvement in sanitation, supply of low cost balanced diet.

5. **Water-minor irrigation:** Application of technology in water and irrigation are on the water management including storage and conservation coupled with equitable distribution systems i.e. repair and maintenance of water supply systems.

Energy: Development of practical application of renewable sources like solar, wind and hydro power and bio gas. Introduction of improved smokeless energy that are eco-friendly also form part of the areas that technology can be applied in the energy sector.

Rural housing: Developing economies needs to work on rural housing strategies and the areas to apply technology are towards designing, constructing and fabricating cheap and affordable houses in rural areas using locally available material and local labour.

Rural Education: Computer technology, literacy campaigns, improvement in attendance, reduction of dropouts, etc.

Meanwhile, author like Olawole (2016) stated numerous benefits that can be enjoy while applying technology in rural areas at different levels. Adoption of technology in rural areas can benefit rural dwellers as well as the whole society in the following ways;

- a. It leads to the formation of smart village. Smart village is a new model of city that migration scholars have been promoting using technology to bring greatest happiness to the greater number of people at the rural area. Hence, smart village has help in reducing rural – urban drift in developed nations like USA, Europe, and Canada. For more info on smart village, check the appendix below.
- b. It creates fuller employment and also promotes increased productivity without displacing labour of the weaker sections in the rural areas which includes landless and migrant labour, slum dwellers.
- c. It facilitates equitable distribution and social equality.
- d. It motivates people towards self – reliance, drudgery eradication and also helps in improvement of the quality of life of the people.

- e. It helps in accelerating agricultural and industrial productivity such as rational conservation and use of natural resources in providing basic necessities of life (food, clothing, shelter, education, energy, etc) so that the standard of living of people will improve.
- f. Modernize communication networks in order to meet up with the 21st century technological advancement.

Technological Challenges of Rural-Urban Drift in Nigeria

It has been shown and argued that there are serious crises in both the rural and urban habitats of the Nigerian society as a result of low or absence of technology, which have continued to assume wider dimensions and implications. Part of the crises centres on the food production and food shortage, persistent poverty and socio-economic disparity which, more often than not engineers the provocative rural-urban drift and the consequences thereof (Akinyemi, 2015). However, the government intervention adds further impetus to the worsening situation as the agricultural pursuits, seen largely as rural, have nevertheless turned out to be unbearable and unaffordable by the rural peasantry, thus making the society completely vulnerable to food deficit.

The challenges of urbanization inevitably challenge the rural question. Thus, it must be stressed that any design and strategy to improve the urban condition must correspond with similar design and strategy to improve the rural areas in order to stamp out the prevalence of rural-urban migration. In other words, the tackling of the issue of sustainable development, infrastructural distributions are crucial in ameliorating the urban drift (Kolapo, 2017). Hence, rural infrastructures in Nigeria are abysmal and dismal, the disparities in the provision of such amenities have enabled rural residents to continue to move *en-masse* into the urban centres; a situation that has transformed and depleted rural agricultural productivity with soaring food prices and thus turning rural development policy and strategy into a colossal exercise in futility.

The neglects of rural environment must be reversed in order to ensure a sustainable rural development as well as the overall national development. To further curtail rural disruptions, basic needs must be provided and the communities directly involved in the affairs must participate in policy making and implementation. Hence, the role of Community Development Associations in overturning the *status quo* should be pursued in order to lessen the problems associated with the population and housing pressure in the cities characterized with poor, squalor and inhabitable housing condition. The progress recorded in Nigeria with regard to providing housing settlements has rapidly degenerated as the houses already built by the government have been sold out to a few in disregard of the explosive homeless and under-privilege population (Nwokocha, 2007).

This policy has far reaching consequences on land, shelter, water, transport and other socio-economic issues also. Thus shelter and settlement problems with food production and inadequate infrastructures have become elusive to most Nigerians. The poverty content in such circumstances has become the motive force and trend in rural depletion and drift in Nigeria.

Conclusion and Recommendations

This paper has been able to discuss technology as an effective tools that can be used to reduce rural-urban drift in Nigeria. The paper shown that the situations and challenges in developing rural area are different due to the constraints and opportunities. Many researchers believe that the existing technologies developed for the smart city may be useful for the smart village concept.

The paper thus concludes that the nature of drift from rural to urban is as a result of lack of basic social amenities that make life easier for the rural dwellers including technology that many have to travel several miles to access technology. Also, findings ascertain that the movement of people will continue to be evident in Nigeria due to increase in childbearing at the rural areas and need for knowledge. In view of this, the paper recommends the following:

1. Promotion of Smart village system can be developed on the lines of smart city model. The components taken in to consideration will vary from rural to rural, based on the available resources and opportunities. Such as social - economic component and environmental component that can address the issues related to resources and infrastructures available at local level. It will covers cleaner technologies, public and alternative transportation, green spaces, smart growth, climate change etc.
2. Introduction of innovations and best practices of self-management which public private partnership is included in the management of natural resources at the rural areas. The key feature of this technique is that, it will promotes important strategy for the smart village, knowledge management along with ICT that will strengthening both capacities and systems of the community.
3. Management of value chains of these resources through technology and effective mainstreaming of disadvantaged youths into development processes of the country should be encourage.

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Smart Village in Senegal



Smart Village in Singapore