Digital Divide and its Socio-Psychological Implications on Rural Dwellers in Nigeria

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ABSTRACT

Unprecedented growth in the use of ICTs has contributed to digital divide in Nigeria. Despite global efforts in bridging the digital divide in developed and developing nations, digital equality is yet to be achieved in nations. Government's effort in bridging the digital divide in Nigeria has become a daunting task due to several barriers hindering the use of ICTs by the rural dwellers such as low income, low deployment of telecommunication infrastructure, lack of skills, access, language and cultural challenges among others. In view of this, the aim of this paper is to unravel the socio-psychological consequences of the digital divide on rural dwellers in Nigeria. This paper further discussed dimensions and perspectives to digital divide, causes of digital divide, global efforts in bridging the digital divide, barriers militating against digital divide, and social psychological consequences of the digital divide on rural dwellers. Policy recommendations were made towards addressing the socio-psychological implications of digital divide on rural dwellers in Nigeria.

1. INTRODUCTION

The unprecedented growth in the uptake of Information Communication Technologies (ICTs) such as computers, mobile phones, broadband, internet among others have contributed immensely to the economy of both developed and developing nations in numerous ways such as sharing of global knowledge and expertise across nations, better communication with trading partners through e-commerce, marketing tourism and participating in trade opportunities (Cullen, 2002). However, the use of ICTs has continued to widen the gap between the developed and developing nations across countries, states, races, ethnic groups, urban and rural areas respectively. For instance, Samuelson (2002) pinpointed that the growth of the internet is unevenly distributed, it reaches fewer than 7% of the world population; it tends to reach the wealthier and educated elites who appreciate the usefulness and relevance of ICT tools. These inequalities created through the use and non-use of ICTs has been widely referred to as "digital divide" around the globe- internationally, nationally and at local levels.

Digital divide can simply be defined as the gap between the "information – haves and have-not" that is, those who use or have access to telecommunication and information technologies such as computers, internet cable, telephone, satellite, wireless among others and those who do not or have limited access (Lennard & Angela, 2013). In another sense, digital divide is the disparity between the technology rich and the technology poor or have- not. For instance, PC ownership levels differ

dramatically and numerically between developed and developing nations. In South Asia, for example, 4 persons per 1000 own a PC compared to 585 per 1000 in the United States. These figures depict a high level of inequality across nations in their internet usage and PC ownership. Apart from the internet and PC ownership, levels of disparities have been found in the use of other types of ICTs across nations such as broad brand deployment, mobile phones and other telecommunications infrastructure (Lennard & Angela, 2013). Global initiatives such as UNICT task force, G8 Digital Opportunity Taskforce (DOT) among others have been embarked upon to bridge the digital divide taking into consideration specific groups of people that are marginalized in the uptake of ICTs across nations.

Specifically, in a country like Nigeria, digital divide also cuts across different categories of people both in the urban and rural communities respectively. These categories of people are digitally divided along the lines of gender, age, class, socioeconomic status, disability among others in varying proportions. Rural people are those living in the remotest areas such as villages where the basic amenities of life are lacking such as pipe borne water, electricity and facilities such as hospitals, information centres, cybercafés etc. According to the literature, rural people have demonstrated a low uptake of ICTs due to reasons of low income, low education, health status, cultural differences, and lack of telecommunication infrastructure among others (Caspary & O'connor, 2003; Gbenga-Ilori & Ibiyemi, 2010). Rural population are digitally excluded from the rest of world in the use of ICTs due to their backwardness and high level of illiteracy which account for lack of skills and inability to use information for their personal and collective advantage. Chowdhury (2000) identified a number of factors that characterized the rural people such as lack of access to accurate information, lack of telecommunication infrastructure and appropriate skills which accounted for the gap in technology use.

Coming down to the African Continent, high level of poverty and low level of education are prevalent factors responsible for low internet usage among the rural poor, with a resultant high level of digital divide across nations (Joseph & Hollifield, 2003; Akanbi & Akanbi, 2012). Similarly, Fong (2007) also found a significant relationship between GNI per capita and adoption of ICTs such as mobile phones, personal computers and telephone. This implies that majority of rural poor are low income earners and as such, accessing and procuring ICTs for use appears challenging. Amidst such challenges, the rural poor first considers his immediate needs- food, shelter and clothing before he/she engages in the utilization of ICTs. Therefore, in making the benefits of ICTs realizable, rural people need to be aware of the usefulness and relevance of ICTs to their development and the various ways it can contribute to meeting the Millennium Development Goals (MDG).

In the context of Nigeria, the situation experienced by the rural people are not totally different from the experiences of rural dwellers in other parts of the world; except that the government of some of these countries have enacted digital inclusive programmes and policies for the rural poor to promote ICT use for development. A low level of ICT use is still apparent in rural communities in Nigeria due to socio-economic factors that have been identified in the literature, therefore, widening the digital divide. Rural communities in Nigeria suffer from marginalization due to illiteracy and lack of access to the many opportunities that ICTs offer (Gbenge-Ilori & Ibiyemi, 2010). Despite the efforts of the Nigerian government in bridging the digital divide through several initiatives and collaboration with International bodies and private investors, the drive towards bridging the gap in rural areas have not been very productive, rather, the evolvement of new ICTs have continued to widen the gap between the rural and urban people. It may be appropriate to say that government must develop a strategic plan to bridge digital divide in urban and rural communities, therefore, combating digital inequality.

Digital divide has its attendant problems if not tackled successfully by the government, thereby affecting negatively rural dwellers socially and psychologically due to their lack of preparedness, lack of readiness to embrace technologies, ineptitude, low confidence, and backwardness. In view of this, the aim of this paper is to examine the socio-psychological implications of digital divide on the rural dwellers in Nigeria. This paper will further delve on the causes of global digital divide, the barriers and challenges of digital divide in the rural areas, policy interventions in bridging the digital

divide in rural areas and lastly, recommendations will be made towards positive measures that can be undertaken by the government in combating the digital divide in rural areas.

1.1. Objective of the Study

Considering the challenges faced by rural dwellers in the use of technologies, the objectives of this research paper are as follows:

1. To conduct a literature search on the socio-psychological implications of the digital divide on rural dwellers in Nigeria;
2. To examine the dimensions and causes of global digital divide;
3. To examine global efforts in bridging digital divide in some selected countries;
4. To identify the barriers and challenges of digital divide in the rural areas in Nigeria;
5. To suggest policy interventions in bridging the digital divide in rural areas in Nigeria.

2. DIMENSIONS AND PERSPECTIVES TO DIGITAL DIVIDE

The term "digital divide" is a global concept that has been examined widely by different authors, International bodies from varying dimensions and perspectives across nations, within racial and ethnic groups and among marginalized groups such as women, girl child, elderly people and the rural people among others. In spite of the various definitions of digital divide in the literature, it gives one the impression of a gulf, dichotomy or separation between two entities (Cuneo, 2002).

Pippa Norris (2001) in her book on "Digital Divide" highlighted the multi- dimensional perspectives of digital divide which constitute: (a)Global divide – divergence of internet access between industrialized and developing nations; (b)Social and economic divide constituting the gap between the information rich and information poor within a nation; (c) Democratic divide depicts the difference between those who use ICT to engage, mobilize and participate in political life and those who do not and cannot. DiMaggio and Hargittai (2001) also perceived digital divide as beyond the question of inequality in the use and non-use of the internet, instead they defined digital divide as the inequalities in access to the internet, extent of use, knowledge of search strategies, quality of technical connections, evaluating information and knowledge transmitted through the technology. In other words, digital divide is connected to the differences in computer skills needed to search for information, evaluating and use of information. In essence, rural people that are not able to read and write cannot possess the information searching and evaluating skills, therefore computer literacy is sine qua non to bridging digital divide in rural areas.

In the same vein, Cuneo (2002) analyzed digital divide from 12 perspectives along the views of various professionals in the use and non-use of technology such as demographers, geographers, engineers and political scientists, economists, sociologist and many others. For instance, demographers view digital divide in terms of population count or census of internet users versus non- internet users; while geographers perceive digital divide in terms of space and location, that is the developed north and west are referred to as digital-haves; while the underdeveloped south are the digital have not.

In spite of the different angles to defining digital divide, the most popularly adopted definition in the literature is a one-dimensional approach to the digital divide (Wresch, 1996). The one-dimensional approach therefore, differentiates between the digital haves and digital haves- not or the technology rich and the technology poor in the areas such as usage level, access, skill level, ownership among others. The rural dwellers fall in the category of the digital haves-not due to the low level of penetration and use of technology for developmental purposes.

2.1. Causes of Digital Divide

Global digital divide is referred to the International differences in the use and diffusion of information and communication technology across countries (Menzie & Robert, 2004). In other words, there is

high level of inequality and disparity in the area of access to ICTs across countries to aid information distribution and timely usage for development. Studies from the literature have identified determinants of global digital divide among countries which include differential income, human capital, policy regulatory effectiveness and telecommunications infrastructure (Dasgupta, Somnik and David, 2001; and Wallsten, 2003).

Besides, Pohjola (2003) observed investment in information and communication technologies in 49 countries from 1993-2000. Findings from the study revealed differential investment in ICTs across these countries due to factors such as income per capita, relative price of ICT equipment, human capital measures, the share of agriculture and openness to international trade. Similarly, Kilsko and Pohjola (2001) examined internet penetration, that is, internet host per 1000 across a total of sixty OECD and developing countries. Variables such as income per capita, telephone access cost and average year of schools accounted for differential usage of the internet. Differential Income per capita is a key variable that was ranked high in other studies and is important in explaining the global digital divide across the countries understudied.

Menzie and Robert (2004) also examined cross country analysis of PC ownership and internet penetration on a larger sample comprising 161 countries from 1999- 2001 period. Findings revealed that sets of variables were statistically significant in relation to computer ownership with the exception of trade openness and telecomm pricing measures. These variables were categorized as: Economic variables (income per capita, years of schooling, illiteracy and trade openness), Demographic variables (youth and aged dependency ratios, urbanization rate) Infrastructure indicators (telephone density, electricity consumption) telecommunication pricing measures and regulatory quality. A similar trend holds true for internet use except telephone density and aged dependency. It was concluded that public investment in human capital, telecommunication and regulatory infrastructure can mitigate the digital divide in PC and internet use across countries. Furthermore, independent results from different countries using microdata have concluded that income and education are strong determinant of computer ownership and internet use (OECD, 2001 for several countries, Primose (2003) for Australia, Singh (2004) for Canada.

Based on the foregoing, the determinants of digital divide across countries include per capital income, education, differences in ICT investment, prices of ICT equipment, regulatory and telecommunication infrastructure among others. These numerous factors are predictive of the digital divide in the Nigerian environment, especially in the rural areas where most of the inhabitants are poor, low income earners and illiterates, thereby, hindering their ICT skill acquisition, access and use of these technologies.

3. GLOBAL EFFORTS IN BRIDGING THE DIGITAL DIVIDE

Multiple initiatives, however, have been implemented through international agencies, private investors and individual countries across the globe in addressing the barriers hindering efforts in bridging the digital divide, most importantly in the rural areas. Success stories have been recorded so far in some countries such as United States, Thailand, China, India among others in their efforts in bridging the digital divide. For instance, Indian government embarked on various IT projects to ensure the accessibility and availability of information to the rural population. One of the successful projects called Gyandoot project designed for the rural information network in the Dhar district of Madya Pradesh. Gyandoot literally means knowledge messenger, and it aided local farmers to get better yields through appropriate information dissemination channels. Also, e-voice and e-chat mechanisms brought farmers to solve problems in agriculture and farming (Singh, 2007).

Similarly, China invested heavily in the creation of telecommunications infrastructure in rural and remote areas to bridge the widening internet connection between the rural and urban areas. China embarked on specific projects for the rural areas tagged "Every Village has a Phone", and "Gold Farm Engineering project" which promoted telephone access and internet applications in rural areas.

Furthermore, China initiated the online and enterprise programme in the 1990's to facilitate information access at all levels of government. E-government programmes gave the citizens the opportunity of accessing or obtaining government information on policies, regulations law and enterprise services (en.wikipedia.org/wiki/).

In the case of Nigeria, deliberate efforts have also been made towards bridging the digital divide among its citizenry at all levels of government. Akanbi and Akanbi (2012) identified some of the initiatives implemented by the Nigerian government in collaboration with the international Community and private investors to address digital divide in rural areas. For instance, the Universal Service Provision Fund (USPF) was established by the Nigeria Communications Agency in 2003 to provide ICT access by rural and urban population. Other projects include Community Communication Centre, Schools, Universities access programme (SUAP), Rural broadband Internet (RUBI) and Access, Accelerated mobile Phone Expansion (AMPE) among others. Apart from these initiatives, policies of liberalization, deregulation and privatization of the telecomm sector and regulatory bodies have succeeded in bridging the digital divide in the urban cities and rural areas in several states in Nigeria to a certain extent considerably (Akanbi & Akanbi, 2012). For instance, the privatization of the telecommunications sector have given the internet service providers ((ISPs) a leverage to operate in the Nigerian market. As a result, Mobile phones have been widely embraced in both urban and rural areas due to reason of affordability and accessibility, reduced cost of line, service charges and improved interoperability. In spite of this milestone achievements, Nigeria as a developing nation is still grabbling with problems associated with` ICT diffusion in the area of access, skill access, disparity in telecommunications facilities between the rural and urban areas (Akanbi & Akanbi, 2012).

3.1. Barriers and Challenges in Bridging the Digital Divide in Rural Communities in Nigeria

Digital divide occurs when there are disparities in skills and access in the use of information communication technologies between two or more groups of people as identified in the literature, Crosby, (1997) mentioned some barriers hindering the use of ICTs among rural dwellers which include lack of knowledge and awareness, lack of infrastructure, lack of access, complexity in the use of new technologies and cost in the area of access, learning, training and development. Nigeria as a developing country is still experiencing these aforementioned barriers affecting ICT diffusion and use in rural areas most especially.

Several challenges militating against the realization of digital equality in rural areas are mentioned below, though in varying degrees. These are:

1. Infrastructural barriers which is as a result of lack of robust infrastructure with sufficient and reliable bandwidth for internet connection. Apart from telecommunications infrastructure, lack of stable supply of electricity has been hindering the effective use of ICTs in both urban and rural areas, therefore, constituting a divide between the "digital haves" and "digital haves-not";
2. Lack of literacy and access skills have also affected the use of ICTs in the rural areas where majority are not able to read and write coupled with the lack of knowledge in the use of ICT tools such as computer, internet among others. Inequality in literacy and skill levels has continued to widen the digital gap between the haves and haves-not among the different categories of people in the rural and urban areas;
3. Language and cultural barrier also constitute a big hindrance in bridging the digital divide among the rural people in Nigeria due to lack of local contents on the internet. Most of the contents on the internet and other ICT tools are in foreign language, therefore causing the problem of access and use of such information for the people whose primary language is not English. This means the contents are not indigenous in nature, therefore hindering the use and application of such knowledge to their day to day living. Unless the language barrier is adequately tackled, rural people will continue to be digitally divided and left behind;

4. Economic barrier is another factor that hinders the rural people from accessing information and procuring ICT tools due to lack of financial resources. The rural people, being economically disadvantaged cannot afford the use of ICTs due to high cost of access and service charges;

5. Attitudinal barriers which connote cultural and behavioural inclinations have negatively affected the use of ICTs among rural dwellers. Rural dwellers have wrong and erroneous beliefs about the use of technologies, they believe it is meant for the elitist group and not for people like them that are illiterates, backward, and lacks knowledge in the use of technologies.

Therefore, unless these barriers militating against the use of ICTs among rural dwellers are adequately tackled, it would continue to widen the digital divide in the area of access, skills and usage. Apart from this, digital divide has its negative consequences socially, economically and psychologically on the rural people (Parker, Husson, Dillman, Strover & Williams, 1992; Lennard & Angela, 2013).

4. SOCIO- PSYCHOLOGICAL CONSEQUENCES OF THE DIGITAL DIVIDE ON RURAL COMMUNITIES IN NIGERIA

Technology use has its social consequences on the society, groups and individual person. It is believed that technology users are engaged in social relations as they interact and communicate with one another (Cuneo, 2002). At the same time, non-use of technology has its social and psychological implications that maybe negatively inclined. Therefore, non- accessibility and availability of appropriate ICTs are responsible for the social psychological problems experienced by the rural people. However, the social psychological implications of the digital divide cannot be undermined, but government must painstakingly address these issues. These include:

1. Lack of development and empowerment due to non-access to information and technologies. Access to relevant information is a key to development and vice versa. Therefore, rural people need relevant information to meet specific MDG goals. However, non-access to information widens the gap between the digital haves and digital haves-not. If the digital divide is left unaddressed, rural communities remain backward socially, attitudinally and are totally isolated from the rest of the world. This is in line with Parker et al. (1992) who pinpointed that the lack of information and communication technologies in rural communities will result in their lagging behind in development with growing gaps socially, economically and welfare;

2. Rural urban migration is another negative consequence of the digital divide especially for the youths in those communities. There will be a drift from the rural to urban life which may lead to the urban areas being over populated. The youths in the rural communities will be attracted to the urban life where they are better informed, empowered and educated, thereby making those communities desolated and under developed;

3. Fourthly, there will be rise in the Poverty level due to lack of access to relevant information that will improve their standard of living. The rural dwellers are affected negatively, and as such cannot contribute positively to the development of their local communities. The rural people will end up living a life of impoverishment with no hope for the future;

4. Another socio psychological consequence is that rural dwellers will exhibit low self-esteem, inferiority complex due to inability to compete favourably with urban dwellers. Rural dwellers may feel socially excluded from the rest of the world due to their inability to access and use ICT tools;

5. Rural people may also experience technophobia due to anxiety and their non-familiarization with ICT tools, therefore, widening the digital divide There is the need to enlighten rural people on the usefulness and relevance of ICTs to their local development. This can be accomplished through community training, awareness programmes that will repose their confidence in the use of ICTs.

4.1. Policy Interventions in Bridging the Digital Divide in Rural Communities

In bridging the digital divide, speedy interventions are necessary in ameliorating the effect of the divide on rural dwellers, through the enactment of appropriate policies that will address the digital divide in rural communities. To this end, Nigeria must embrace an all-inclusive ICT policy for the rural population that will specifically address the needs of marginalized groups such as women, girl child, elderly people and the disabled. These Policy issues will invariably address these following areas:

1. Basic literacy and IT literacy programmes for rural communities especially for women, girl child and elderly people that cannot afford the cost of procuring ICT tools for their use. These literacy programmes will afford them the opportunity of reading and writing and being skilled in the use of ICT tools due to the high level of illiteracy;
2. Development of local content in the language of the rural communities is a key issue in promoting the use and access to these technologies. Policies must drive the development of local contents in order to improve accessibility and usability of indigenous knowledge such as agricultural information for local farmers;
3. The role of the library cannot be undermined in bridging the digital divide in rural communities. Policy must drive the setting up of libraries in rural communities with the aim of promoting life-long learning and continuous access to evolving ICTs. The library will be a one stop point for the rural dwellers in the area of access to ICTs such as internet, computer among others, and also other programmes such as community centres for training, awareness creation, enlightenment and the maintenance of communities' cultural values and heritage;
4. Government must budget substantial amount of money for the procurement and installation of ICT infrastructure in the rural communities as a way of bridging digital divide. Several initiatives through the collaboration and support of private investors will go a long way in reducing cost of procuring the equipment. Efforts must be geared towards measuring the project outcomes and following it to a logical conclusion.

5. RECOMMENDATIONS AND CONCLUSION

Bridging the digital divide in rural communities remain a daunting task for government, nevertheless, digital divide and its attendant problems cannot be overlooked due to its adverse effect on rural dwellers. Some of these problems emanating from the digital divide in rural communities include social isolation inferiority complex, lack of development and empowerment, increase in poverty level, rural urban drift and technophobia resulting from fear and anxiety to use ICTs.

In view of the above, the following recommendations are made in addressing the socio-psychological consequences of the digital divide on the rural dwellers in Nigeria.

Government should continually exercise effort in bridging the digital divide by increasing the penetration and usage levels of specific ICT tools in rural communities such as computers, internet, mobile phones, and broad band among others. Also, government should collaborate through partnership with external bodies such as World Bank, International community or donor organizations in seeking for funds to facilitate evenly distribution and diffusion of ICT tools in rural communities. In essence, if the digital divide is successfully bridged, its socio-psychological effects are adequately combated. Furthermore, challenges peculiar to rural areas such as low education, low earning capacity among others must be addressed in bridging the digital divide in rural communities.

In conclusion, the evolvement of new ICTs in this technological age will continue to widen the digital divide in Nigeria; therefore, government should be relentless in her efforts toward bridging the existing disparities in access, skills and use of ICT tools through appropriate training programmes and implementation of the digital inclusive policy for the rural dwellers.

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