

ICTs, Rural Entrepreneurship and Food Security in the Oke-Ogun Region of Oyo State, Nigeria

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Abstract

Information and communication technologies (ICTs) are very important in the development of individuals, regional and national economy and food security. Despite the importance of ICTs, rural areas in the Oke-Ogun region of Oyo state were having issues with communication and accessing information technologies that may be attributed to their marginalisation which will definitely affect the food access of the entrepreneurs. It is therefore imperative to: examine the existing ICT facilities and infrastructure in rural areas of the Oke-Ogun region; examine the status of the ICT facilities in these areas; identify how information on new technology, products, raw materials and market price were accessed; and investigate the benefits and challenges of ICT on rural entrepreneurs in the region. Data were sourced through the primary and secondary means. Sampling methods adopted were multi-staged and purposive samplings whereby samples were drawn from all the LGAs, settlements and rural entrepreneurs in Oke-Ogun region, making a sample size of 250. Findings revealed that 51.2% of the rural areas in the region had no mobile network, 36.4% experienced fluctuation of network thereby hindering their access to vital information on new products, market price and/or raw materials. Those with GSM network service covered 10.0%. In addition, large number (39.2%) of the respondents got information majorly through rumors, radios, televisions and telephones. This paper was concluded by recommending that the existing service stations should be boosted to extend GSM services to the rural areas, installation of masts to the rural areas of the region and the ruralites should go for devices with high network reception level.

Keywords: ICTs, Entrepreneurship, Rural, Development and Oke-Ogun

Introduction

Information and Communication Technology (ICT) is a wonderful tool which benefits all spectrums of people in the world, rural and urban dwellers (Nagamani and Veni, 2016). Going by history in Nigeria, in the olden days, rumours, Kings' messengers through town crying, newspapers, postages, and radios served as the major sources of information and communication in the rural areas. Many times, it calls for the rural dwellers to assemble at the town centre mostly very close to the King's palace to receive information. An entrepreneur waited until somebody was sent to the cities before knowing the price of some goods or collect information on how it was made. According to Nagamani and Veni (2016), through the invention and penetration of ICTs, the situation has changed considerably. Moreover, these authors established that ICT consists of several segments such as telecommunications, television and radio broadcasting, computer hardware, software and services and electronic media. Other segments listed by these authors are Television and mobile phones/cell phones. It was concluded that to some extent the internet has reached a remarkable position in making the world a global village.

Timmons and Spinelli (2004) opined that entrepreneurship is a way of thinking, reasoning and acting that is opportunity based, holistic in approach and leadership balanced. In another words, concept of entrepreneurship indicates the creation of an enterprise in response to an identified opportunity for profit making by a rural entrepreneur (London School of Business and Management (LSBM), 2016). Therefore, this author submitted that entrepreneurship development is the process of enhancing entrepreneurial skills and knowledge through structured training and institution-building programs. Zimmerman (2008) established that the concept of entrepreneurship became a prominent policy in many nations during the 21st century regarded as information age. It later becomes the economic engine of rural economic development, poverty alleviation and job creation (Nieman and Nieuwenhuizen, 2009). In addition, the use of ICT brings about new products and new production technologies and creates a global market place for all businesses (Clementine and Shava, 2016). Doyle (2008) averred that ICT is more than computer systems but include all forms of communication, internet and broadband.

According to Okeke (2014), the advent of ICT facilitated and enhanced entrepreneurship skills, facilitated training through on-line learning and helped in the area of enhanced business environment. This author established the fact that to scan, organise and store documents are possible with computer but not with the old technologies used in business by entrepreneurs. Uchegbu (2002) pointed out that the introduction and use of internet have caused an important revolution in communication as it improves the way people communicate, contract and transact business. In addition, Ogidan, Adekola, Emmanuel and Okogun, (2017) submitted that ICT has been regarded as a source for the social economic development of a region and country especially a developing country like Nigeria.

Despite the advantages of ICT, rural areas in Oke-Ogun region had not yet tap the benefits of ICT in enhancing entrepreneurship skills. The reasons could be attributed to the fact that the rural entrepreneurs in the region have been denied the expected efficient and effective communication system for socio-economic development; and denial of affordable and fast access to information that have the capacity to lift them to a higher level of entrepreneurial development. The consequence is that large number of entrepreneurs has moved to the urban areas leaving rural areas in the region entrepreneurship deserted, which is seriously affecting the economy of the region.

From the foregoing, rural areas in the Oke-Ogun region lacked or had inadequate ICTs that supposed to be ubiquitous and useful infrastructure for rural entrepreneurs in the aspects of production and distribution of goods and services and to improve human life in innovative ways. Therefore, this paper aims at assessing the effect of ICTs on rural entrepreneurship development and food security in Oke-Ogun region of Oyo state.

The Problem

Rural entrepreneurship which is a means of guarantee food security can be referred to as the development of a new enterprise that produces new products and services, creates a new market for its offerings or uses advanced technology, in the rural area (International Labour Organisation (ILO), 2001). According to Olaniyi and Ismaila (2016), ICTs enable easy and rapid access to reliable quality and quantity information to households, farmers and entrepreneurs especially on food security dimensions. Despite the advantages of ICT tools or services, rural areas in the Oke-Ogun region had not yet tap the benefits of ICTs in promoting entrepreneurship within the region. It is therefore imperative to assess the effects of ICTs on rural entrepreneurship and food security in the region.

Objectives of the study

The aim of this study is to assess the effect of ICTs utilisation on rural entrepreneurship and food security in the Oke-Ogun region of Oyo state, Nigeria. The objectives to achieve this include to:

1. Assess the existing ICT facilities within the region;
2. Examine the means of accessing information on new technology, raw materials and market price
3. Investigate the benefits and challenges of ICTs within the Oke-Ogun region.

Conceptual Overview

Concept of Enabling Business Environment

The meaning of enabling business environment seems to be cloudy as many scholars just discussed different sets of policies that support enabling environment and some, the conditions that can act as barriers or enablers. According to FAO (2013), the concept of enabling business environment is used interchangeably with the term conducive/favorable business climate. The author explained that, an enabling business environment should create opportunities and incentives for firms and entrepreneurs of all types. In another vein, Christy et al. (2009) established that enabling business environment is a set of policies, institutions, support services and other conditions that collectively improve or create a general business setting where enterprises and business activities can start, develop and thrive. These authors cap it all by submitting that the concept of an enabling environment is closely associated with private sector development and generally refers to the business-friendly conditions that must be in place to propel private sector dynamism.

According to Ogunro (2014), enabling business environment entails social political, cultural and economic factors or conditions that are capable of affecting the life, growth and development of business outfit or venture. This author stated these conditions to range from customer's choice, changes, to government policies. Enabling environments from business perspective are sets of policies, institutions, support services and other conditions that collectively improve or create a general business setting where enterprises and business activities can start, develop and thrive (Christy et al., 2009). Having established that, these authors averred that the concept of an enabling business environment is closely associated with private sector development and generally refers to the business-friendly conditions that must be in place to propel private sector dynamism.

Moreover, Heinrich-Fernandes (2016) posited that the business environment in its broad sense is a range of context-specific factors that have an impact on business activity – and that are set or shaped in many ways by domestic governments. USAID (2016) submitted that enabling business environment in the case of small and medium businesses could referred to a mix of laws, regulation, infrastructure, international trade agreements and so forth, that either facilitate or hinder the daily activities of business. According to Hagyar, Bačík and Fedorko (2016), effective service delivery increases the attractiveness of a city. It could be inferred from this submission that absence of effective ICT service delivery makes the rural areas not attractive to the entrepreneurs. Keller and Kellermann (2014) recognised that the “design and reform of quality infrastructure systems has become increasingly recognised as a critical element of an enabling business environment” and published complementary guidance on this. Therefore, Johnson (2004) recommended that, it is the responsibility of any government to provide basic services to its businesses and citizens and these services should be provided at a high level of effectiveness, responsiveness and efficiency through good management. In conclusion, Ogunro (2014) opined that in Nigeria, businesses have packed up, staggered, collapsed, and relocated from rural to urban areas because of unfavourable conditions of the environment. Although government at the various levels in Nigeria are faced with challenges in service delivery and management, but the truth of the matter is that ICT infrastructure is a required

enabling business environment for the development of entrepreneurship both in the rural as well as urban areas. Therefore, this concept is relevant to the evaluation of the effect of ICT on rural entrepreneurship development and food security in the Oke-Ogun region of Oyo State, Nigeria.

Literature Review

ICTs, Entrepreneurship and Food Security

Clapp (2016) and Namubiru, Ngaka and Picho (2018) observed that the importance of food security and its essentiality for all aspects of life make it to continue gaining more attention even in the recent years. Namubiru et al. (2018) posited that one of the ways to improve households' food security is to promote ICTs in the rural areas which increase the flowing of information for market access. It could be deduced from these submissions that there are serious links among food security, rural entrepreneurship and ICTs when it comes to business transaction, marketing exchange of ideas (Adeniran and Aristide, 2020). The conceptualization of food security into food availability, food access, food utilization and food stability by FAO (2015) revealed that the relationship that exists among ICTs, entrepreneurship and food security provides physical, social and economic access to food. It could be said that, efforts to provide ICTs in the rural areas and for the rural entrepreneurs is an ability to improve the availability and quality of information which directly or indirectly guarantees food security.

According to Vignesh, Sasikumar and Devi (2018), ICT is a strategy of rural entrepreneurship development that provides better infrastructure for agriculture development, food security, public health services, business and financial services, education, and employment in rural area. Despite this, Kyobe (2011) opined that lack of expertise in the use of cell-phone by the rural entrepreneurs and farmers definitely affected their businesses. Therefore, Kamutuezu, Winschiers-Theophilus and Peters (2020) submitted that the adoption of ICTs in rural areas is more complex considering the infrastructure conditions. These authors summarised their findings that inadequate or lack of ICT adoption by the rural entrepreneurs could be attributed to a variety of reasons ranging from infrastructure problems, skills deficiency, cost of incurring ICTs, limited awareness of the benefits, language barriers and a bad enabling environment.

To Kigoni and Ervin (2010), much attention has been given to the use of mobile phone technology as a development solution to ICT problem in the rural areas leaving behind other mutually supportive technologies. According to the World Bank (2002), ICTs are set of technologies that include equipments such as: newsletters, wireless local loops, village kiosks, rural radio broadcasting, including farmer listening groups and radio. Others listed by the World Bank (2002) include: (1) digital communications, and specifically satellites, Global System of Mobile communication (GSM), and digital radio; (2) computers, personal data assistants (PDAs), email, speech recognition technologies, global positioning (GPSs) and Internet; (3) delivery mechanisms (e.g. public access, Market Place for Agricultural Information and Service (MPAIS) and on line centres where buyers and sellers of information meet and trade on agric information and services and telephone centres, mobile internet vans,); (4) computer assisted distance learning which is increasingly acknowledged as having potentials of contributing to promotion of agro based enterprises. Therefore, mobile phone technology is just a part of them.

ICTs improve the ability of a rural entrepreneur to search for the available quality and quantity information, basically reducing uncertainty and enhancing food security. It is evidenced in the literature that rural entrepreneurs should see ICTs as tools for food security and socio-economic improvement/development, communication and sharing of information on businesses between the rural and rural/urban areas. Although, the effect of ICTs on food security has been demonstrated by

the mentioned researchers, little attention has been put to understand the links among ICTs, rural entrepreneurship and food security most especially in the Oke-Ogun region of Oyo state.

ICTs and Rural Entrepreneurship Development in the Developing Countries

Pramanik, Sarkar and Kandar (2017) professed that about 46.147% of world population are from rural areas and from developing countries like India, China, South Africa, Bangladesh and Indonesia with 67, 44, 35, 66 and 46 percent respectively. These authors expressed that most developing countries trail far behind developed country markets in the availability and access to the ICT technologies and infrastructure. It was revealed that, 90 percent of households in the developed countries have a telephone (International Telecommunication Union (ITU), n. d). However, ILO (2001) stated that the local/rural entrepreneurs in developing countries have a lot to benefit in the use of ICTs. These include notable areas such as savings in communication costs, increased availability of information both qualitatively and quantitatively, affordable global reach, reduced transaction costs, lowered barriers to entry and new sources of revenue.

According to Anoemuah (2019), ICT provides developing countries the opportunity to meet important rural entrepreneurial development goals such as education and poverty alleviation activities more than before. The author expatiated that the nations that succeeded in exploiting the potential of ICT can look forward to expanding their economic growth and drastically improving human welfare. Ebo, Amosa and Adenusi (2012) examined the offering of ICTs to rural development and identified the ways by which ICTs can bring about rural development. They concluded by proffering some solutions to the entrepreneurial development of rural areas in Nigeria. These included provision of ICT facilities in the rural areas and training the farmers on how to use them. In the same vein, the International Labour Organisation (ILO) (2001) declared that, it is not enough to just put the ICT physical infrastructure in place. The author expressed further that, once the infrastructure is in place, an enabling environment would require the availability of inexpensive computer hardware and software, wide and unrestricted access to Internet at inexpensive rates, reliable electric power, and a banking system supportive of entrepreneurship. All these will favour rural entrepreneurship in developing countries.

Cases of developing countries using the ICT facilities in their rural areas were cited by the ILO (2001). These include: 1. The rural producers in Cambodia that use mobile phones to maintain regular contact with wholesalers and salespeople in urban centres. 2. In several African countries, individuals in the rural areas are offering phone services on roadside pavements and on the move to communicate with customers/clients. 3. In Bangladesh, 'mobile' phone-booths were converted to be Banks' promotional platforms for attracting rural folks to some of their loan schemes. It could be concluded that ICTs facilities, if well tapped can promote rural entrepreneurship and guarantees food security.

Materials and Methods

Glimpse of the Oke-Ogun Region

The Oke-Ogun region, also known as Oyo North is located in northern part of Oyo state and according to the National Bureau of Statistics (2013), it had 731,929 people in 1991 and 1,485,158 people in 2006 and projected by Oyediran (2018) to be 2,244,176 in 2018 using the growth rate of 3.5%. The Oke-Ogun region has locational advantages that support the prosperity of rural entrepreneurship as it is close to the national boarder and shares boundaries with Ogun and Kwara states which are good market places for entrepreneurs' goods and services. Apart from this, the principal occupation in this region is farming and that is why it is tagged "the food basket of Oyo State" (Oyediran, 2014).

According to www.getamap.net (n. d), the Oke-Ogun region is a populated place which is delineated into city, town, village, or other agglomeration of buildings where people live and work. In addition, the region has a landmass covering an area of 15,550km² more than 1/2 of total landmass (28,454.30 km²) (NPC, 2006) with abundant resources. The landmass favours the practice of agriculture. All the mentioned factors favour the establishment of rural enterprises within the Oke-Ogun region of Oyo state. The types of rural entrepreneurship in this region include agro-based enterprises which indulge in the direct selling or processing of agriculture products such as food items and other items from the farm. In addition, the forest-based industries that deals with the supply of wood or wood products, honey making, and bamboo products. In the Oke-Ogun region, there exist other rural entrepreneurship which includes textile industry in Iseyin LGA that deals with weaving, tie and dye. Lastly, the engineering services that include hiring, selling and buying of tools and equipment used in agriculture such as tractors and pumps. In terms of ICT, the region is marginalised as evidenced in absence of mobile networks in some settlements, fluctuation of network in some and in some settlements, the international radio stations are clearer than Nigeria stations.

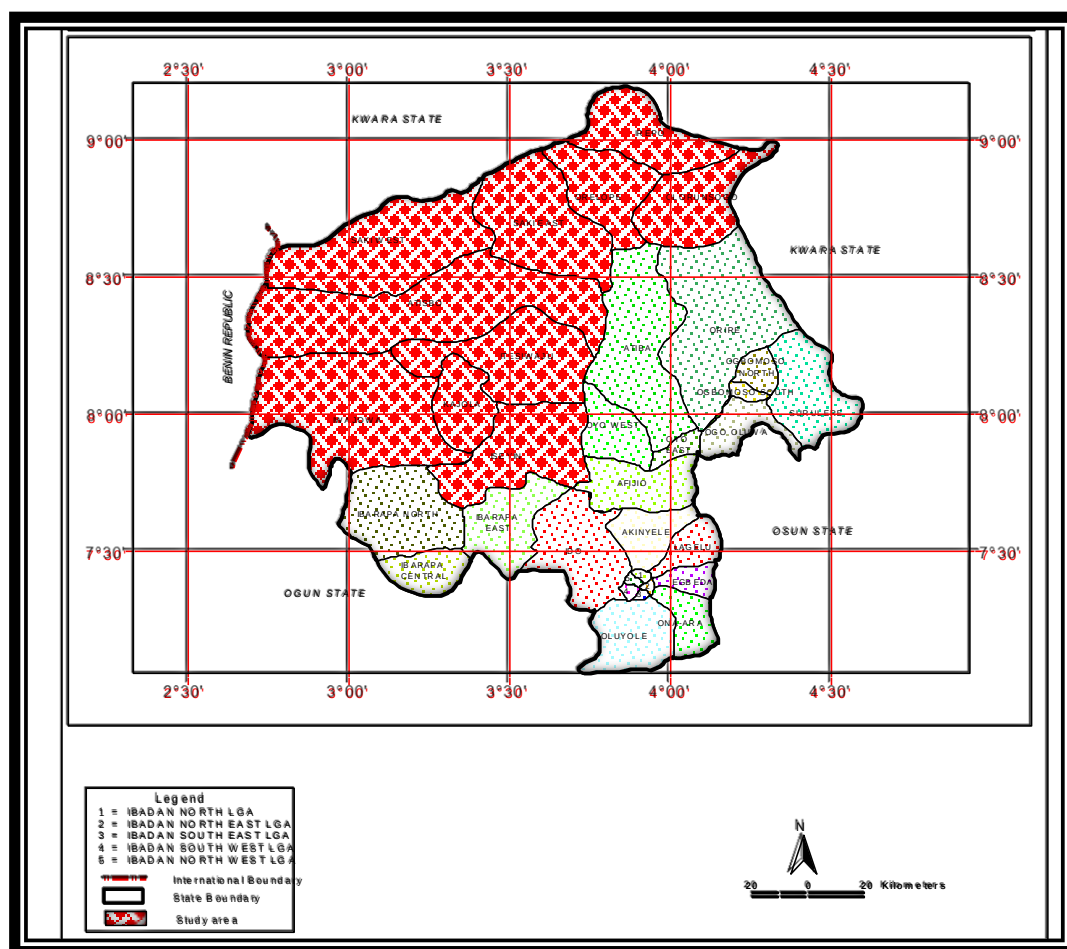


Figure 1: Oke-Ogun in Its Regional Setting

Source: Iseyin Town Planning Zonal Office, 2021

Data, Sampling Procedure and Data Analysis

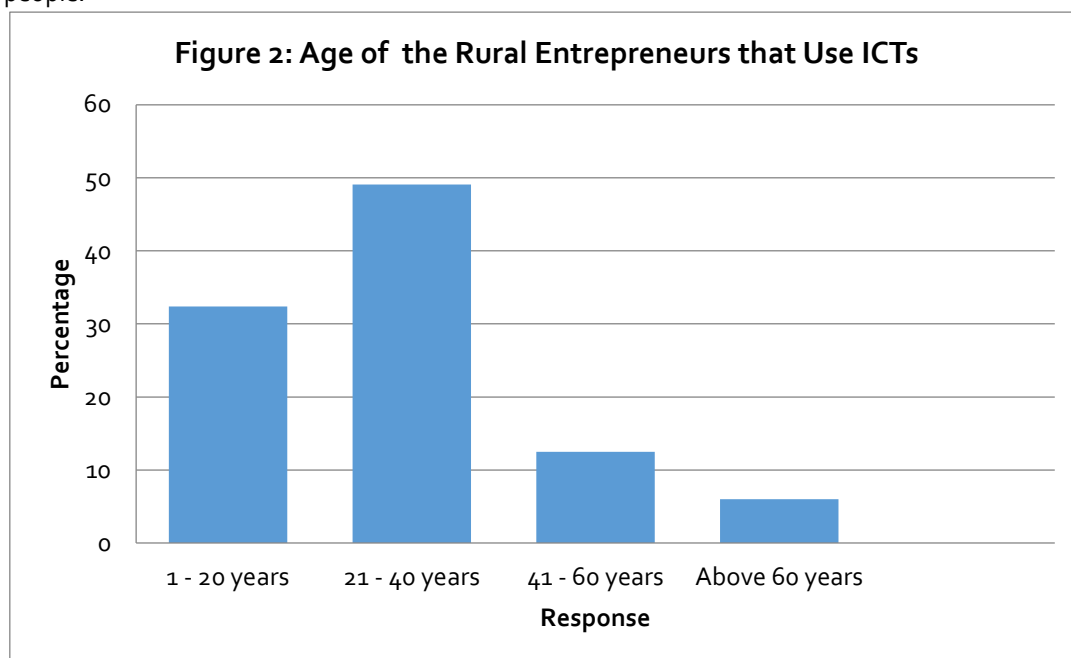
Data used in this paper were primary and secondary data. Primary data were sourced through observation, key informant interview and structured questionnaires. Secondary data were sourced

from journal articles, thesis, textbooks and internet materials. It should be noted that the secondary data formed major parts of the introductory sections of this paper. Multi-staged and purposive sampling methods were adopted for this study. These involved selecting five LGAs (50%) from the ten that constitutes the region, from these settlements were selected and purposive sampling was used to select the rural entrepreneurs that were interviewed. Sample size for the study was 250 respondents selected from different LGAs and settlements. The data obtained through the structured questionnaires were analysed using descriptive statistics and the results were presented in tables and charts.

Findings and Discussion

Age

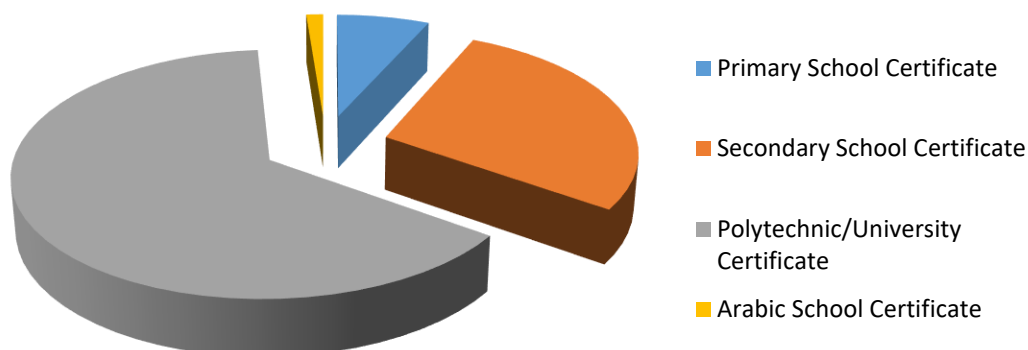
In terms of the age of the rural entrepreneurs using ICT for transactions, getting information on their products and scouting for raw materials, Figure 2 shows that large number of the respondents (72.40%) that used ICT fell between age 1 and 50 years. Fifty six (22.40%) of the respondents that used ICT were above 51 years. This shows that the young set of respondents used ICTs than the older people.



Source: Field work, 2022

Education

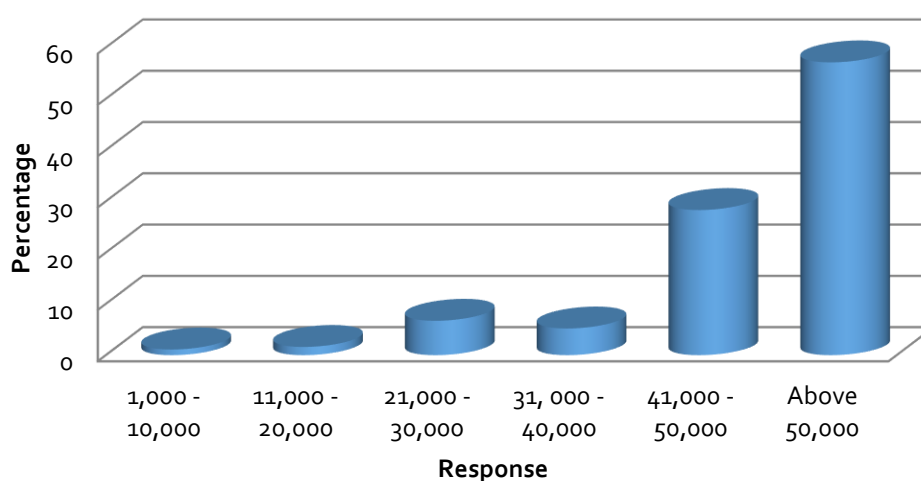
Research results revealed that the rural entrepreneurs required high level of education before using ICTs. The presentation in Figure 3 revealed that the majority (62.3%) of the rural entrepreneurs using ICTs had the Polytechnic and Universities certificates as their highest education attainment, followed by 27.7% respondents with the secondary school certificates. The implication of this is that this set of industrialists because of their level of education, exposure and the knowledge acquired on entrepreneurship in schools and during industrial attachments, may welcome new technology and innovation more than those that had little or no education.

Figure 3: Highest Educational Qualification

Source: Field work, 2022

Income Range per Month

It is noteworthy that income depends on factors such as: the number of household size, engagement of the ICTs in making transaction and receiving market information, and the number of years put in by the entrepreneurs. Therefore, Figure 4 presents the gross income range per month in naira for the rural entrepreneurs in the Oke-Ogun region of Oyo state. 67.1% of the respondents claimed to realise above ₦50,000 in a month. This was followed by those that realised between ₦41,000 and ₦50,000 in a month. This shows the contribution of the ICTs to profit making in enterprises. The reason/s for low income could be attributed to lack of access to information.

Figure 4: Respondents' Income Range per Month in Naira

Source: Field work, 2022

The Existing ICT Facilities and Major Enterprises in Rural Areas of the Oke-Ogun Region

The term ICT include transmission infrastructure such as cables and cell towers; wireless signals such as radio, satellite and microwave; end-user devices such as radios, mobile phones and computers; and buildings and equipment such as data centres (USAID, 2012). Based on this, the ICT infrastructure in Oke-Ogun region from the field observation and interview conducted include: 2 radio stations (only the one at Alaga village was functioning while the Oje-Owode station was not functioning), wireless signals, GSM masts and base stations, and broadband access (not ubiquitous). According to a respondent:

“The Radio stations in the neighbouring countries such as Republic of Benin and Niger Republic are many times clearer than our own here in Nigeria and the NTA given to us at Saki is now off air”

On the other hand, the breakdown of the major rural enterprise in the region revealed by the findings include cassava processing industries, blocks making, fisheries/ aquaculture, photography, farming (crop), interior decoration, printing and animal husbandry (poultry, piggery, goat, etc). Others were bees keeping, plumbing, ceramic production, metal working (steel aluminum doors and windows), brick laying/ making, iron welding and bending, building drawing, carpentry, blacksmith, tinsmith, sanitary wares and trading. All these enterprises require updates on current price of raw materials and finished products, latest styles/fashion and new technologies from those in the urban areas.

Entrepreneurs using ICTs for Transactions and how Often

Table 2 reveals that 77.6% of the respondents were not using ICTs for business transaction while 22.4% of the respondents were using. At this point, how often those (22.4% of the respondents) that said they were using ICTs for business transactions were determined. Those that were seldom in the use of ICTs for business transaction had the highest percentage (67.9%); and followed by those that often used ICTs (19.6%). It could be inferred that the respondents that even submitted that they used ICTs for business transaction were not often in using it, which could be attributed to ignorance, network failure/data connection problem or inadequate enlightenment about e-transaction or other benefits.

Table 2: Entrepreneurs Using ICTs for Business Transaction and how Often

Entrepreneurs Using ICTs for Business Transaction		
Yes	56	22.4
No	194	77.6
Total	250	100.00
If Yes, State the Rate		
Seldom	38	67.9
Often	11	19.6
Very Often	5	8.9
No Response	2	3.6
Total	56	100.00

Source: Field works, 2022

ICT Tools Often Used by the Rural Entrepreneurs

The ICT often used by the respondents including the mobile phone, the internet and personal or public computers (palmtop, laptops and desktop) and fixed lines were investigated to know the preferred tool for doing business and communicating with clients, customers and suppliers in the

Oke-Ogun region and other areas/regions within and outside the state. Table 3 shows the three often ICT infrastructure/tools used by the respondents.

Table 3: The Often-Used ICT tools/Infrastructure

Communication Tools/Infrastructure	Often Used	Rarely Used	Not Used	Total
Computer (palmtop, laptops and desktop)	5(2.0%)	17(6.8%)	228(91.2%)	250(100.0%)
Mobile Phone	198(79.2%)	37(14.8%)	15(6.0%)	250(100.0%)
Fixed Line (Telephone Land Line)	9(3.6%)	21(8.4%)	220(88.0%)	250(100.0%)

Source: Field work, 2022

Reasons for frequently using the Selected ICT Tool

The reason/s for frequently using the selected ICT facilities by the respondents was revealed. Table 4 shows the various reasons. The majority (30.0%) of the respondents submitted that they frequently used the chosen ICT tools because it was easier to operate, cost less and could be moved from one place to the other easily. This was followed by those that said it cost less and could be easily moved. Other respondents (3.6%) specified that they were using the tool because it was introduced to them by their friends.

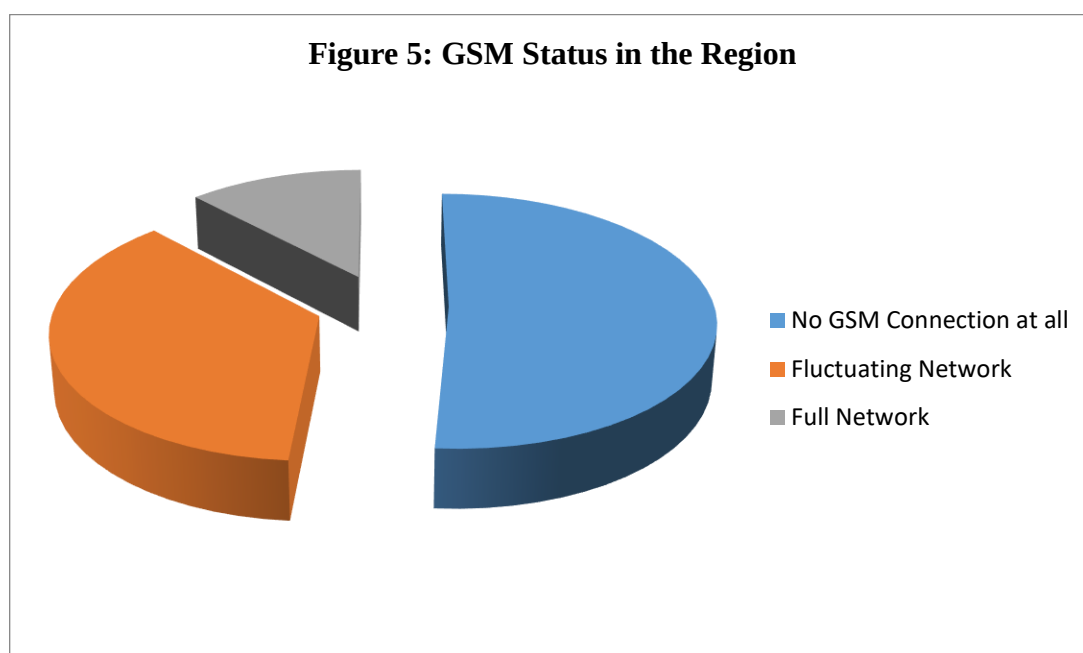
Table 4: Reason/s for using the Selected ICT Tool

Reason	Frequency	Percentage
1.Easier to operate	17	6.8
2.Cost Less	21	8.4
3. Mobility (Not fixed)	54	21.6
4. Other reason/s specify.....	9	3.6
1 and 2	11	4.4
1-3	75	30.0
2 and 3	63	25.2
Total	250	100.0

Source: Field work, 2022

The Status of the GSM Facilities within the Region

Findings revealed that 51.2% of the rural settlements in the region had no mobile network connection, 36.7% experience fluctuation of network connection thereby hindering their access to vital information on new products, market price and/or raw materials (Figure 5). Also, the Figure presents that those with GSM network service/connection covered 12.1%. On the other hand, urban settlements in the region had some networks. According to a respondent: "We don't have all the networks in Lagos and Ibadan but we can boast of having MTN and Glo" The same situation was recorded for the radio stations.

Figure 5: GSM Status in the Region

Source: Field work, 2022

Means of Accessing Information on New Technology, Products, Raw Materials and Market Prices

Table 5 presents the means of receiving information on businesses/enterprises. Large number (39.2%) of the respondents received information on their businesses/enterprises through rumor, local meetings and telephoning; followed by those (26.0%) that received their information through the various newspapers, radio and televisions and 13.20% (33) of the respondents received information through internet and social networks. According to the respondents, the internet and social networks engaged include WhatsApp, Facebook, IMO, Instagram and Telegram. It could be deduced that those ICTs that require no network but signals were majorly used in the study area, which could be attributed to connection or network problems. Furthermore, those that used internet and social networks were asked how often they received information from them. Twenty-seven (27) of the total respondents (33) responded that they used them on seldom and only one (1) respondent submitted that he used internet and social network very often.

Table 5: Means of Accessing Information on Businesses/Enterprises

Means of Accessing Information on the enterprise		
Rumor, local meetings and telephoning	98	39.2
News Paper, Radio and television	87	34.8
Internet and Social Network	65	26.0
Total	250	100.0
If Internet and Social Network, State the Rate		
Seldom	27	81.8
Often	3	9.1
Very Often	1	3.0
No Response	2	6.1
Total	65	100.00

Source: Field work, 2022

The benefits and challenges of ICT on Rural Entrepreneurs in the Region

The outcome of the oral interview conducted with the rural entrepreneurs that used ICTs reveals the benefits they derived from ICTs. These include easier and low cost of inter- and intra-regional business transactions. According to them, they sent to other regions or states mostly Ibadan region, Kwara, Ogun and Lagos states the picture of any goods/products their clients demanded through mobile phones and used mobile transfer to pay for them. It could be deduced from this that ICTs saved them from travelling for some of their business transaction thereby saves time, resources and risk of lives. In addition, the respondents submitted that at times they exchanged ideas on new products through ICTs.

In terms of challenges, these respondents listed inadequate access to the internet, non-availability of electricity even to charge their mobile phones and network connection failure/fluctuation. On the reason some of the rural entrepreneurs were not using the ICTs to transact business, these respondents listed computer illiteracy and ignorance of the different benefits derivable from the use of ICTs such as e-business transaction, mobile banking and so on. In addition, limited financial resources that restricted them from getting a computer or a browsing mobile phone was mentioned as another challenge by the respondents, which presented their level of poverty and marginalisation as even secondary school students in the urban areas are using browsing phones.

Conclusion and Recommendations

Conclusion

Findings in this study revealed that, there is much evidence that ICTs are drivers of economic growth. However, the ICTs situation in the rural areas of Oke-Ogun region showed that there exist information disparities between the rural and urban entrepreneurs, which presented the rural areas as highly marginalised in terms of infrastructure and basic services. These situations called for a serious government intervention, if an enabling business environment that encompasses an equitable access to ICTs and food security are to be guaranteed.

Recommendations

The following recommendations were made to improve these conditions in the region:

- Provision of access to the internet at low rate considering the socio-economic characteristics of the residents. With this, considering the fact that the network providers are after profit making, they should be offered some incentives by the government which may be in terms of regulation/policy like subsidisation.
- The existing rural infrastructure, most especially, the ICTs infrastructure and rural electric power supply to power the ICTs should be enhanced to create an enabling rural business environment for the rural entrepreneurs.
- Organisation of training for the rural entrepreneurs in the region by the agricultural extension workers. In addition, the Federal government initiative of national free ICT training across the 36 states of the Federation (The get help investment Nigeria. 2019) should be applauded and continue until everyone is ICT compliance.
- Agricultural Banks should grant soft loans to the entrepreneurs that were unable to buy any ICT facilities. ICTs infrastructure should be everywhere as it is in the urban areas to check rural-urban migration of the rural entrepreneurs.
- Provision of mobile phone technology with no network failure or ones with high reception or secure network booster. This will solve the problem of network failure/fluctuations.

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