

Examination of the Contributions of ICTs as Digital Tools in Sensitizing and Creating Employment Opportunities amidst Dwindling Economy in Nigeria

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Abstract

Digital tools as turnout of ICTs have brought a lot of sensitizations, innovations and digital employments for many school leavers which resulted in boosting the economy of many countries. This paper examined the various areas by which these ICTs have created job opportunities as well as the innovations acquired through them. Structured questionnaire was used to acquire data from academic institutions and the questionnaires were distributed randomly and answers were provided. Four hundred (400) samplings were involved but a total number of three hundred and eighty five (385) copies of the questionnaire were retrieved from the respondents. The findings were analysed based on the three hypotheses developed. The first hypothesis revealed that ICT as digital tools has significant relationship in innovative and creating job opportunities because the $X^2_{Cal.}$ is greater than $X^2_{Tab.}$ ($16.14 > 14.04$). This showed that ICT is influencing employment by giving access to new forms of work in more flexible ways, making labour markets more innovative, inclusive and global. It can be employed to sensitize the school leavers about the available jobs in circulation. In the second hypothesis, ICTs have significant relationship in producing series of jobs because the result showed that $X^2_{Cal.}$ is greater than $X^2_{Tab.}$ ($13.35 > 12.59$). This implies that ICT creates Mass media, graphics design, word processing job opportunities, network technicians as well as Web developers. In the third hypothesis, ICTs have detrimental effects on Nigerians in terms of employment opportunities because $X^2_{Cal.}$ is greater than $X^2_{Tab.}$ ($23.63 > 12.59$). This has revealed the possibility of jobless or displacement for ICT non-knowledgeable and this ICT gives avenue for fraud and scamming which is disastrous to its usefulness in our society Therefore, ICT should be apprehended with high esteem in order to bring expected transformation to Nigerian economy.

Keywords: Digital tools, sensitizations, innovations, digital employments, academic institutions and detrimental.

Introduction

ICT has been globally recognized as influencing employment digital tools as industry that creates jobs. It is equally applauded as a tool that empowers human resources to contact new forms of work in more resilient ways. E-work is an emerging process which supports the development of a new business model and its activities differ by countries, with impact in various fields (Marius-Razvan, Surugiu & Mazilescu, 2018). Vizo *et al*; (2020) opined that ICT is instrumental in transforming various sectors like transportation, banking, manufacturing, education, employment, health and other essential sectors. Recent developments in information and communication technology (ICT) as well as the ICT-

enabled service areas have opened up promising economic opportunities for the radical reshaping of how products, services, processes and practices are created and delivered by the labour market generally, and by the youth segment of the labour force in particular (Clarke et al., 2012). Agbatogun (2011) therefore opined that technology been a significant tool in almost all human endeavours.

With the current emphasis placed on ICT skills development in education, accurate information about how well students make these skills become invaluable. (Vonkova, Papajoanu & Kralova, 2022). Jaiyeola (2007) referred ICT as an engine that could be used in so many ways just like the same engine that makes the aircraft to move, could make a conveyor to convey finished product from production line to the storage location, the same could be used for automobile and grinding machine. The emerging ICT-enabled employment opportunities matter because countries around the world are concerned about how to create more lucrative jobs for millions of school leavers who are roaming about with their certificates. This eventually is having positive economic and social implications to workers and our society at large. The critical quest for this ICT is becoming one of the leading means of boosting economies in the next five years, as spelt out in the Vision 20:2020 agenda. Thus, the world at large is increasingly becoming technology-driven in which ICT remains a key driver of our country's economy as it has the potential to address the rising unemployment trend we are facing here in Nigeria. Hence, a recent policy note released by the World Bank says that the application of information and communication technologies (ICTs) are transforming the world of work, creating new job opportunities and making labour markets more innovative, inclusive, and global.

According to Oluleye (2006), Information and Communication Technology (ICT) is a compound term, which embodies three important concepts which are; Information (processed data or that which aids decision making), Communication (the transfer or exchange of information from person to person or from one place to another) and Technology (scientific knowledge to invent tools that assist human beings in their efforts to overcome environmental hazards and impediments to comfort). In this regard, technology refers to the things like the computer, telephone, cell phone, GSM handsets, television and radio. Putting all this together, ICT has been recognized as the acquisition, analysis, manipulation, storage and distribution of information. Ofodu (2007) likewise described ICT as computerized gadgets, helped by man and intelligent materials that can be utilized for an extensive variety of educational activities and for individual use. Also, Ofurum and Ogbonna (2008) expressed information technology as the combination of computing, telecommunication and video techniques for the purpose of acquiring, processing, storing, and disseminating vocal, pictorial, textual and numerical information. This ICT incorporates electronic technologies and techniques used to manage information and knowledge, including information-handling tools used to produce, store, and process, distribute and exchange information (Chandrasekhar and Ghosh, 2001). Uzoka (2002) corroborated this

by expressing information technology as the harnessing of electronic technology in its various forms to improve the operations and profitability of the business.

From every indication, this ICT has greatest effect on individuals in increasing access to information and services that has accompanied the growth of the Internet instantaneously and inexpensively. Thus, a Nigerian who has a good knowledge of ICT has no business with unemployment because the Internet is a wealth creator and the engine house that makes this happen is the Information Technology which is the biggest market place in the world. This information and communication technology has revolutionized the work of the office, changing work patterns and attitudes of employees and this people are now working towards an acceptance of change (Khalid, 2000).

Findings had even revealed that more than 75 percent of people around the world, Nigeria precisely now has access to a cell phone, with the number of global mobile-cellular subscriptions quickly approaching one billion (Charlie, 2013). This implies that the ICT sector in Nigeria is currently boosting the federal government's effort in job creation with the creation on an average of about 12 million jobs from 2012 to date, that is, a significant improvement on the 2.5 million jobs the sector created between 2002 and 2012.

However, one of the largest negative effects of ICT can be the loss of a person's job. This has both economic consequences, loss of income, and social consequences, loss of status and self-esteem. Job losses may occur when manual operations being replaced by automation like robots. For instance, a worker on a supermarket checkout can serve more customers per hour if a bar-code scanner linked to a computerized skill is used to detect goods instead of the worker having to enter the item and price manually. Therefore, promoting youth employment and employability requires important integrated efforts that include actions in the areas of education, skill development, job supply and support for young low-income entrepreneurs (Chowdhry, 2013). However, this potential will be really effective when the country has a range of supporting strategies in place, including an enabling environment (Sunkara *et al.*, 2015).

Thus, ICTs have been thought of as an important catalyst in the economic transformations during the last two decades and for policy makers it has become a major thrust area while framing policies for job creation through increased economic activities (Warhurst *et al.*, 2006). Antonelli, (2016) argued that ICT sector assists in determining productivity in the context of economic competitiveness that relies more on level of productivity and knowledge economy. Hence, a country's economic competitiveness largely dependent on a vibrant ICT sector. Now-a-days graduate jobseekers need not check and apply to various jobs offline rather they take the help of internet, computers to search and apply online from their comfort zone (Vizo *et al.*, 2020). Also, according to Vizo *et al.*; (2020), the ICT centers in the developing world are now becoming center of attraction as youth engage themselves to seek employment as well as to propagate social and political views among others and it also provides job opportunities.

Statement of the Problem

Despite the technological advancement era of the entire world as a result of ICT invention, it is extensively observed and discovered that numerous school leavers are still redundant and jobless. This unemployment is a major macroeconomic malaise in Nigeria which has been high and rising over the years across dictatorship, democratic, administrative and economic regimes (Adeniyi, 2021). In order to get this fact established, the National Population Commission released the rate of unemployment in Nigeria that rose from 21.1 per cent in 2010 to 23.9 per cent in 2011 (Ogbonna, 2012). This implies that majority of these school leavers have not embraced the application of these digital tools to liberate themselves from unemployment challenge they are confronting. Although according to Nigerian Communications Commission, one million indirect jobs have been created by the mobile telephony sector in the past five years (Ramey, 2008). This figure indicates that mobile telephony could boost job creation and poverty alleviation as well as other digital tools like mass media and entertainment, blogging, graphic design and word processing as we have millions of school leavers who are yet to secure employment. Thus, it is highly imperative to be enlightened and exposed to the significance of ICT as digital tools for job creation.

Objectives of the Study

The following are the objectives for this study:

1. To determine if Information communication and technology (ICT) as digital tools can be embraced and explicitly utilized for creating job opportunities in Nigeria.
2. To identify various types of jobs that can be created with the use of Information communication and technology (ICT).
3. To identify the detrimental effect of Information communication and technology (ICT) use on Nigerian school leavers.

Research Hypotheses

1. Information communication and technology (ICT) as digital tools has no significant relationship in innovative and creating job opportunities for school leavers in Nigeria.
2. Information communication and technology (ICT) as digital tools has no significant relationship in creating and providing different types of jobs to many school leavers in Nigeria.
3. Information communication and technology (ICT) as digital tools has no detrimental effects on school leavers that are seeking for employment.

Significance of the Study

The research will open and guide the general public especially unemployed Nigeria school leavers on how they can tap the advent of ICT for the purpose of creating self-employment and other scholars and researchers interested in carrying out further research on ICT and job creation.

Research Methodology

The descriptive research design was used for this study and the researcher discarded causal and explanatory research system because accurate findings and data analysis may not be achieved. Academic Institutions viz; Emmanuel Alayande College of Education, Oyo, Ekiti State University, EACOED Campus, Federal College of Education, Special, Oyo, University of Ibadan, Lead City University, and The Polytechnic, Ibadan were used as the study area for this research since the areas contain a fairly large number of computer science lecturers and students. In order to have sizeable data collection and effective analysis of the study based on the population sampling, a sample size of four hundred (400) respondents were randomly selected and involved out of which three hundred and eighty-five (385) were returned and analyzed upon. The researcher saw it as a good area to conduct the study, since the findings from the study will reflect the true view of the contributions of information communication and technology (ICT) in creating and providing employment opportunities for majority of our school leavers in Nigeria.

In getting data from respondents, structured type questionnaire was used as the main research instruments which contained twenty-two statements for the study to gather necessary data from the respondents with options or alternatives provided for each respondent to pick or tick one of the options. In order to determine the reliability and validity of the study, the test-retest method was used. To have a valid instrument, the questions in the questionnaire will be free from ambiguity. Having gathered the data through the administration of questionnaire, the collected data will be tabulated and analyzed according to the research question and hypothesis. Also, Chi-square statistical analytical method was used in the research work as a statistical technique in testing of hypothesis so as to predict what the relationship between two variables should be. It is used in drawing and reaching conclusion by collecting the observed values from the questionnaire administered to respondents, testing the degree of freedom and carrying out a decision in determining the critical value of the hypothesis.

The formula being

$$X^2 = \frac{(F_o - F_E)^2}{F_E}$$

where F_o = Observed Frequency

F_E = Expected Frequency

The X^2 value obtained from the formula is compared with the value of tabulated X^2 for a given significance level and degree of freedom. If the calculated chi-square is greater than the tabulated chi-square at significant level of 0.05, then the null hypothesis is rejected and if the calculated chi-square is less than tabulated chi-square, the null hypothesis is accepted at the same level of significance.

Hypothesis 1: H_{01} : Information communication and technology (ICT) as digital tools has no significant relationship in innovative and creating job opportunities for school leavers in Nigeria.

Table 1.1: Questionnaire and the Responses of Hypothesis 1

S/N	ITEMS	SA	A	D	SD
1.	ICT is influencing employment by giving access to new forms of work in more flexible ways	130	120	65	70
2.	ICT contributes to the overall economic development in Nigeria	125	79	105	76
3.	ICT plays a vital role in advancement of technology and computing infrastructure	111	122	90	62
4.	ICT is making labour markets more innovative, inclusive and global	142	102	66	75
5.	Telecommuting and outsourcing have become standard business practices globally	120	69	99	97
6.	Higher percent of market penetration through mobile telephones in greater connectivity	99	101	85	100
7.	Poverty reduction in Nigeria obtained through ICT discovery	115	88	81	101
8.	ICT tools sensitize applicants about the available jobs in circulation	127	93	85	80
	TOTAL	969	774	676	661

Figure 1: Field Survey 2022

$$F_e = 1743/3080 * 385 = 217.875$$

$$\text{Chi-square } (X^2) = \sum (F_o - F_e)^2 / F_e$$

$$\text{Chi-square } (X^2) = 4.74 + 0.88 + 1.05 + 3.13 + 3.83 + 1.47 + 1.02 + 0.02 = 16.14$$

$$\text{Degree of freedom} = (8-1)(2-1) = (7)(1) = 7$$

$$\text{Thus, } X^2 \text{ Cal.} = 16.14$$

$$X^2 \text{ Tab. at } 0.05 = 14.07$$

Table 1.2: Possibility of ICT to create job opportunity for school leavers

Variables	No	DF	Level of Sig.	X ² Cal	X ² Tab	Decision
ICT and Employment Opportunity	385	7	0.05	16.14	14.04	Rejected

The chi-square calculated is equal to 16.14 and the chi-square tabulated is 14.04. Therefore, from the above Table, the chi-square calculated is greater than chi-square table ($X^2 \text{ Cal } 16.14 > X^2 \text{ Tab } 14.04$). Hence, the stated hypothesis was rejected which means ICT can be used as tools for creating job opportunities for school leavers in Nigeria.

Hypothesis 2. H₀₂: Information communication and technology (ICT) as digital tools has no significant relationship in creating and providing different types of jobs to many school leavers in Nigeria.

Table 2.1 Questionnaire and the Responses of Hypothesis 2

S/N	ITEMS	SA	A	D	SD
9.	ICT creates Mass media, graphics design and word processing job opportunities	130	124	47	85
10.	ICT helps to create new jobs like network managers, network technicians and system engineers	141	133	62	49
11.	Web developers are jobs responsible for building websites and the infrastructure	142	83	90	70
12.	Computer system analyst and system programmer are the jobs discovered of ICT	123	97	84	81
13.	Network engineering are responsible for security, data, storage and disaster recovery	142	134	77	32
14.	ICT makes it possible for an individual to work in cybercafé	170	89	65	61
15.	ICT helps in providing teaching jobs for many computer professionals	135	126	73	51
	TOTAL	983	786	497	429

Figure 2: Field Survey 2022

$$Fe = 1769/2695 * 385 = 252.71$$

$$\text{Chi-square } (X^2) = \frac{\sum (F_o - F_e)^2}{F_e} = 0.01 + 1.79 + 3.04 + 4.23 + 3.15 + 0.86 + 0.27 = 13.35$$

$$\text{Degree of freedom} = (7-1) (2-1) = (6) (1) = 6$$

$$\text{Thus, } X^2 \text{ Cal.} = 13.35$$

$$X^2 \text{ Tab. at } 0.05 = 12.59$$

Table 2.2: Digital tools and series of job available for school leavers

Variables	No	D.F	Level of Sig.	X ² Cal	X ² Tab	Decision
ICT and series of Jobs available	385	6	0.05	13.35	12.59	Rejected

The chi-square calculated is equal to 13.35 and the chi-square tabulated is 12.59. Therefore, from the above Table, the chi-square calculated is greater than chi-square table ($X^2 \text{ Cal } 13.35 > X^2 \text{ Tab } 12.59$). Hence, the stated hypothesis was rejected which means that there is

significant relationship between ICT and different types of jobs created through its usage among Nigeria school leavers.

Hypothesis 3. H_{03} : Information communication and technology (ICT) as digital tools has no detrimental effects on school leavers that are seeking for employment.

Table 3.1: Questionnaire and the Responses of Hypothesis 3

S/N	ITEMS	SA	A	D	SD
16.	Possibility of making many who are not ICT knowledgeable to be jobless or displaced	133	139	70	43
17.	Tendency of having a repetitive strain-injury and eyes strain when spending hours and days on computer screen	129	157	34	65
18.	Workers who are displaced through ICT innovations may find it difficult to regain another one as new job required advanced skills	147	153	21	64
19.	ICT gives avenue for fraud and scamming which is disastrous to its usefulness in our society	163	121	51	50
20.	Security hacker explores methods for breaching defenses and exploiting weaknesses in a computer system	121	106	89	69
21.	Internet addiction and social isolation may lead to loneliness, decrease of self esteemed and widespread of anti-social behaviours	137	124	53	71
22.	The cost of using ICT may lead to joblessness among school leavers	101	112	98	74
	TOTAL	931	912	416	436

Figure 3: Field Survey 2022

$$F_e = 1843/2695 * 385 = 263.29$$

$$\text{Chi-square } (X^2) = \sum (F_o - F_e)^2 / F_e = 0.29 + 1.96 + 5.12 + 1.63 + 5.00 + 0.02 + 9.61 = 23.63$$

$$\text{Degree of freedom} = (7-1) (2-1) = (6) (1) = 6$$

$$\text{Thus, } X^2 \text{ Cal} = 23.63$$

$$X^2 \text{ Tab. at } 0.05 = 12.59$$

Table 3.2: Detrimental effects of ICT use as Nigeria school leavers

Variables	No	D.F	Level. of Sig.	X ² Cal	X ² Tab	Decision
ICT and Detrimental Effects	385	6	0.05	23.63	12.59	Rejected

The chi-square calculated is equal to 23.63 and the chi-square tabulated is 12.59. Therefore, from the above Table, the chi-square calculated is greater than chi-square table ($X^2 \text{ Cal } 23.63 > X^2 \text{ Tab } 12.59$). Hence, the stated hypothesis was rejected which means that there is significant relationship on the detrimental effect of ICT on Nigeria school leavers despite it numerous benefits in transforming the economy of our country.

Discussion of Findings

It was revealed in the first hypothesis that ICT as digital tools has significant relationship in innovative and creating job opportunities because the $X^2 \text{ Cal.}$ is greater than $X^2 \text{ Tab.}$ ($16.14 > 14.04$). The result showed that ICT is influencing employment by giving access to new forms of work in more flexible ways, making labour markets more innovative, inclusive and global. This higher percent of market penetration through mobile telephones is in greater connectivity. Apart from ICT related job opportunities, ICT tools can be employed to sensitize the school leavers about the available jobs in circulation.

In the second hypothesis, ICT as digital tools has significant relationship in producing series of jobs because the result showed that $X^2 \text{ Cal.}$ is greater than $X^2 \text{ Tab.}$ ($13.35 > 12.59$). This implied that ICT creates Mass media, graphics design and word processing job opportunities. Others are network managers, network technicians and system engineers as well as Web developers who are jobs responsible for building websites and the infrastructure. ICT professionals can equally become a system analyst and system programmer while Network engineering from ICT is responsible for security, data, storage and disaster recovery,

In the third hypothesis, ICT as digital tools has detrimental effects on Nigerians in terms of employment opportunities because $X^2 \text{ Cal.}$ is greater than $X^2 \text{ Tab.}$ ($23.63 > 12.59$). This has revealed the possibility of making many who are not ICT knowledgeable to be jobless or displaced and those who are displaced through ICT innovations may find it difficult to regain another one as new job required advanced skills. It was also discovered that ICT gives avenue for fraud and scamming which is disastrous to its usefulness in our society and Internet addiction results in social isolation which may lead to loneliness, decrease of self-esteem and widespread of anti-social behaviours.

Conclusion

ICT and employment creation have been the subject matter of this research and most developing nations have embarked on various reformation and strategies to encourage the use of ICTs in boosting their economies. Its relevance has positive effects on our society and has changed life for better by looking at how individual's organizations and society are affected as a result of huge increase in access to information and services. This brings new opportunities for leisure and entertainment, the facility to make contacts and form relationships with people around the world, and the ability to obtain goods and services from a wider range of suppliers. However, as ICT has the highest potential for job creation and is one for the eight critical sectors in the Nigerian economy, one of the largest

negative effects of ICT can be the loss of a person's job. The ICT sector also is important as it can drive job creation in another sector as well.

Recommendations

Based on the study and the study findings, the following recommendations are made;

1. The Nigerian government should see ICT as golden opportunity to create jobs for our teeming youths, recognize and embrace it in its totality.
2. Workshops and seminars on ICT innovations should be made available for majority of our school leavers to open their eyes to its relevance.
4. Nigerian government should educate youths that are unemployed in order for them to catch the initiation of ICT for the purpose of being self-employed instead of seeking for employment.
5. ICT professionals and interested non-professionals should be empowered and mobilized to establish ICT related centers to practice what they had learnt and even become employers rather than becoming employees.

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