Assessment of Communication, Science, Technology and Innovation Application in Reducing Stress during Economic and Global Distress.

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Abstract

Communication, Science, Technology and Innovation (STIs) are transmitted to the public through the aid of media which is a good channel for heterogeneous community. Science, technology and innovations entails on how to improve and utilize the new ideas that reduces environmental risks and ecological security that aims for sustainable development without degrading the environment. It may seem closely related to economics but more politically focused in application. Communication, Science Technology Innovation and promotes equity within and between generations as well as able to create and enjoy prosperity. Is a novel entrepreneur development program by Nigerian contents. It is important because we are in the fourth industrial revolution where technology is positively disrupting every sector including but not limited to financial, education, health, transportation, entertainment, communication and retail. STIs will challenge next generation of Nigerians to think of innovative ways to apply science and technology in solving the deep problems experienced in every sector of the Nigeria economy. In 2020, winners of STI's competition were not just given prices but assigned to industrial experts, to monitor them to scale their innovation into business ideas that will remain profitable, while providing more jobs and creating wealth especially during the Covid-19 lock down. This study anchored on technological determinant and development communication theories of mass communication. Survey method was used to obtain data from two hundredrespondents residing at Abuja. Simple percentage and table was used for data presentation.We recommendamong other things that government and development agencies should maximize the potentials of communication, science, technology and innovation in achieving greater National Development.

Keywords: Science technology and innovation, developmental challenges, communication and assessment, global distress.

Introduction

Communication, science, technology and innovation are continuously evolving, influenced by structural shifts in the world economy. It goes with the steady globalization of innovation activity as well as the rising in new actors and new ways of innovating several things. It also governs the management of existing technology and non technology innovation which also accounts to National and International policies, intellectual property system that need to adapt to this evolving environment and address the special needs of different countries mostly, the least developed countries (LDCs) Rogers (1969, p. 228) says it clear, simple and succinct terms:

> When I can accept the fact that I have many deficiencies, many faints, make a lot of

> mistakes, am often ignorant where I should be knowledgeable, often prejudiced when I should be open-minded, often have feelings, which are not justified by the circumstances, then I can be much more real.

Rogers statement means that people should be aware that self feelings and experience is freely and unconditional available as well as communication when applies appropriately as need arises.

Communication, Science, Technology and Innovation have deeply changed ways government, bank, transporters, commerce operates. In government, e-government encourages e-procurement; it allows greater transparency and accountability across governmental agencies. The record of e-government projects in both developed and developing countries has been mixed. Heeks (2003) in his study discussed that "35 percent of e-government initiatives were total failure in developing and transitional countries, 50 percent were partial failures and only 15 percent were successful. The government of South Korean introduced an e-procurement system that offers online information in more than 420,0000 standardized products. The system has enhanced transparency and public trust, and flow for cross-agency comparisons of procurement, making the system more accountable. Chile in 1998 introduced an online taxation which has improved their national tax service and made it easier for citizens to access vital information on taxation. After three years, the project was launched, over 400,000 tax payers had checked their tax assessment online. Chilean exchequer had collected US $1.943 billion in taxes. Countries like Philippines provides a good mobile phone network as their own innovative means. They called it Globe Telecom's G-Cash application which enables micro monetary transaction between families, friends and local merchants to transact their businesses. The text based messaging service allows users, including those without bank accounts or credit cards to do send money phone-to-phone, buy goods and services, pay for business permits and receive micro-financing and international remittance. In education, places like China have up to one million students studying online. In 2003, United States of America (USA) has about 1.9 million online higher education students which was increased to 2.6 million students in 2004. Although most of the internet service providers based in United States.

Communication, Science, Technology and Innovation is applied in election which gave birth to card reader machine. That hard copy registers absence is not inherence to voters to vote even when is not accessible, will not hinder electorate from voting. Mullainathan and Shleifer (2005) stated that "the impact on voting was smaller in focusing with more cable channels, which is consistent with a moderating effect of competition". In United States the entry of tax news channel into local cable markets improved the rate of voting. Dellavigna and Kaplan (2007) opine that thus "we present new results on voters turnout for US senatorial election, as well as a more general analysis of persuasion rates.

In Nigeria, according to Eubuomwan (1997:26) the Nigeria government launched

various schemes, programmes and projects, primarily to increase agricultural output which will improve the well being of the masses but they didn't succeed due to poor planning and ineffective implementation. Other projects like community banks presently renamed Microfinance banks, Directorate of Food, Road and Rural Infrastructure (DFRRI) National Directorate of Employment (NDE) the People's bank, Better life for Rural women, Family Support Programme, Family Economic Advances Programme (FEAP). The Open Apprenticeship Scheme (OAS) were established by different administrations to address various manifestations of poverty such as unemployment, lack of access to credit, the rural and gender dimension of poverty. The response of various administrations to poverty problems appears to have been adhoc. Uncoordinated and based more or less on a fire-brigade approach which made it not to last and do not have a significant lasting and sustainable positive effect.

In Kenya, agricultural sector experienced decline which made them to employ clustering. Clustering according to farms, enterprises and other actors in the sector give farmers opportunity to interact, which is a network and collaborate with others.Mylelka (2004) has argued that is important stimulus for innovation and long-term competitiveness. The collation of enterprises allows for a continual exchange of information, encouraging learning and flow of knowledge in solving problems in the society. It gave room to farm owners to consult each other on technological advancement, new varieties, market information, and regulatory requirements. The workers exchange ideas on labour, growing techniques, pest and diseases management, although spill over occurs often in areas of technological transfer, and labour mobility. Clustering which is part of modification of agricultural process through STIs facilitates subcontracting, marketing support and technical assistance between large and small scale farms.

Statement of Problem

The government of Nigeria has not created an enabling environment for the development of an efficient and dynamic manufacturing sector. Inconsistencies in macroeconomics policies, an unreliable electricity supply, and the absence of a clustering policy, this makes entrepreneurs to be contending with a very high risk business environment. Apart from poor infrastructure, property rightsare poorly specified and often difficult to enforce, poor market information is effective the whole sphere from progressing. The poor advancement of a country in capacity STIs and effective application in productivity activities made it impossible to achieve a robust economic growth while maintaining environmental sustainability. Often, market-based approaches do not guarantee the promotion of new technologies because many of them are still not from commercially viable or are very expensive for developing countries.

Literature Review

Sofela (2012) in his work titled "The Effect of STIs on Education" (A paper presented in Craft Magazine October 23, 2012). The research pointed out hat awareness of science, technology and innovation has grown rapidly which covers social network like twitter, Instagram,

facebook, my space which allows social interaction among students and various group. The study examined the positive effect of such sites on the users, it states thus:

> Gene are those days when events happen and it stays a while before people begin to hear about it. But now, through advanced of technology, events and news are now known within splits second after they are shared. It offers users a channel for entertainment, communication, and meeting friends and those you have not seen for a long time.

The study analyzed the negative implication of the site in areas of development. It was revealed that it serves as distraction to some of the users who do use it only for entertainment instead of going for more beneficial use like using it for research, study trading, booking for transportation (air and load), sales and so on. The researcher recommends that government and the internet users should concentrate in utilizing the services science, technology and innovation offers in a more positive way for benefit of all concern.

Seyi (2012) wrote on social media and Nigerian Burden (A paper presented in Blue Print Newspaper, December 12, 2012). This study stressed on the effect of giving much time and undue attention to online socialization and advanced equipments. According to the researcher, "the 21" century brought with it the advent of the new media with its fast tracking means of sending and receiving information through internet in our contemporary society. The study noted that most of these new technology are powered by electricity in many a times light were out the operators will not bother to go and use the manual machine they have been using. Delaying job and limiting that income. Some users are exposed to hazard, as in the case of Cynthia, who was raped to death and the perpetrators posted her pictures in the net. The study revealed that sometimes communication, science, technology and innovation hinder development when it is not properly implemented. She recommend that checks and balances should be applied to see that in absences of new inventions, people can still function for the necessary benefits.

Moreso, the Countries Development Programme (CDP) report achieve their targeted policy interventions which aimed at promoting widespread use of technologies by investing in them for artificial attractiveness. Subsidizing such investments includes research and development activities. Is on possible alternatives that tax exemptions and the provision of guarantees of a monopolistic position in the market for certain duration of time.

Such interventions can induce the deployment of new technologies, thereby spurring technological learning and allowing producers to reap economic of scale. Alternative approaches towards industrial policy or organizational innovations at a national level as already suggested in the 2012 CDP report relying on innovative public private institutional arrangement needs to be contemplated to promote entrepreneurship and innovation through mixed market based approach (Momeka, 2012).

International cooperation is another critical factor that have been assisting the late comers to catch up with the learning

possibilities of Least Developed Countries (LDC). External help may be demanded to enable them to establish minimum technological platform from which the process is initiated. The initial access can make it for a country to click up the ladder participate in the generation of new technology. But international cooperation is also required in related enhancing the governance of new technology.

Achieving a balance between the need to provide incentives for the generation access to knowledge and innovation is not less. In this regard, the role that intellectual property rights play in the technological development of a country has been the subject of an intense debate. Kinyanjui (2000) stated that entrepreneurs learn from each other every day, whether through a simple exchange of ideas on raw materials, production and marketing, or the full-scale copying of new product designs. On-the-job learning is common and facilitates the intergenerational transmission of knowledge and technology. In a related work he did with MC Cormick and Kinyanjui (2004) the study of cluster revealed that it "focuses on knowledge and technology, they are fairly limited. It is said that most of the cluster is Kenya, as in Africa lack dynamism and are likely to remain static unless public policy interventions are carried out.

Brief History of Communication, Science, Technology and Innovation

It is true that many scientists that worked for the advancement of science and technology went about it with calmness of temper, spiced with reasoning and objectivity, they enunciated principles underlying the particular department of knowledge under investigation and anchored their principles in laws susceptible to universal application. Mogbo, (2001) concurred that "this implies that scientific facts enjoy a philosophical underpinning to the extent that there will always be progressive development". This implies to some extent, falsification of the acclaimed views of a predecessor may open up fresh things to be discovered and false hypothesis to be falsified.

Some of the early scientists were immortalized because of the following deeds; Albert Einstein 1879 – 1955, a Jew that broke heavy element uranium and discovered the energy released by the fusion of just 1kg of uranium is equal to burning 1 million kg of coal. This is basis of the nuclear reactor and the nuclear bomb. Isaac Newton (1642 – 1721), an English physicist and Mathematician, his study covered the trial on sound, mechanics, heat, light and electricity. He will long be remembered for his telescope, rings, laws of cooling, reflection and retraction of light, velocity of sand in air, experiments on spectrum, and most importantly his laws of motion.

Michael Faraday (1791 – 1867)an English Physicist, passionately involved with experiments of electricity. The includes experiments on electricity, electrolysis, electrochemistry, induced currents, transformers, electro-magnets and electrons. His findings are employed by all power, industries, including our National Electric Power Authority (NEPA). Another Scientist is Konard Von Roentgen (1845 – 1923) a German Physicist who discovered rotgen rays (or x-rays) or electric magnetic of intense penetration that lead to discovery of DNA. William Henry Pekin (1883 – 1907)energist

chemist that discovered the first artificial dye, Robert Boyce (1627 – 1761) an English chemist, that discovered relationship between pressure Paid volume V. of gasses of constant temperature P x V = a constant as long as there is no alteration intention variables and so on. Is incredible that 90% of our daily activities depends on science and technology? It doesn't matter when it involves business or flaunting our taste and acquisition for luxury standards, even at school, hospital, in the battle field, on transit, at meetings, in law courts, during anniversary celebrations, technology in response to man's guest for survival, for qualitative living gradually changed the environment. Rivers can be demanding valleys filled and to ground level stage, rocky maintain are smashed, up to smitten in order to make work for dual carriage ways, desserts are acclaimed and luxuriant plants made to flourish on them, tropical trees have been conditioned to temperate weather jowly villages long known for their lack-lustre existence suddenly come to life, boisterous in the day, twinklight at night. All these progress are possible because of technological impact.

In this technological age, the world has suddenly become smaller place turning all the revolving miniculturalspolesinto on hub. Even ideological differences, colour glades, ethnic loyalties, class consciousness and religious inclinations are slowly but surely closing up to a significant level of tolerance; ie. Barring the selfish appetite of power hustles, holders and brokers in politics. All these are result of technology advancement with its in built agencies of electronic and print media, telephone, telex, e-mail, internet, jet travel and music which is termed universal language.

Technological dependence is a function of status, the higher the echelon placement, the greater the dependence. This, infact, explains the urge to raise the quality of the life style in the rural areas and thus stem the tide of flow of the rural population to the urban centresthrough the provision of electricity, water, comfortable shelter, cheap and adequate wear, good medical facilities, and good network of roads and facilities for leisure activities.

Objective of the Study

The purpose of this study is to determine that communication, science, technology and innovation contributes to the Nigerian development. The following questions were asked:

1. To ascertain if communication is needed by science, technology and innovation to implement development in Nigeria.
2. To determine communication, science, technology and innovation contribute in globalizing and modernizing Nigeria.
3. To determine the rate people rely on communication, science, technology and innovation for current discovery.

Research Question

1. How useful is communication to relating science, technology and innovation discovering to development in Nigeria?
2. To what extend do communication, science, technology and innovation contribute in globalization and modernization of Nigeria?
3. To ascertain the rate people rely on communication, science, technology and innovation for recent discoveries?

Theoretical Framework:

The study anchored on the Technological Determinism and Development Communication theories of Mass Communication.

1. Technological Determinism: It stated that media technologies shape how we as individuals in a society think, feel act and how society operates in the move from one technology to another. Griffin (2000) elaborateCluhantheory that we feel, learn and think the way we do because of the message we receive through the current technology that is available (Luhan, 1972), the Gulenberg Galaxy: The making of typography and explains that the radio are required is to listen and develop our sense of warning. In other hand, media engages both our learning and visual senses (broadcast media). We then transfer those developed senses into our everyday lives and we want to see them again. The medium is then our message. With the development of technology the profession of journalism after test running the effects of latest medium then explores its potentials to each the audience. Today internet is the latest through which journalism thrives.
2. Development Communication Theory: The theory underlying the fact behind genesis of this theory was that there can never be as development without communication. Under the four classical theories, capitalism was legitimized, the media undertook the role of carrying out positive developmental programmer. Hence the stress on "development communication" and "development journalism". There was tacit support from the UNESCO for this theory. The weakness of this theory is that 'development' is often equated with government propaganda.

According to Max Corden (March 2012) articles are seen by various authorizes attempt to dissect or describe the teenage audience, especially in regards to Science, Technology and Innovations. However, response to what is discovered in Science, Technology and Innovations is accepted voluntarily. They theory do not have it that every communication must induce action. Self censorship by the user of media determines the action and response of the media user which is voluntarily.

Methodology

This is a case of assessment of communication, science, technology and innovation in effectiveness in Abuja – Nigeria during distress challenges. The global pandemic shut down every system for period of 8 months. Although movement was restrained, human need wasn't. Communication, science and technologies and innovation became the handy man at this global pandemic of year 2020. On line sales assist many households to have their need at their door steps. The population for the study comprises 200 respondents who were domiciled in Abuja during the pandemic.

The measuring instrument was the questionnaire and nine item schedule was used together both biographic data and communication data within Abuja metropolis. The questions were structured to

ensure uniformity in the data collected.

Data Presentation and Analysis

Under thebiometric data, as many as 72% of the respondents are males, the remaining 28% were female. All where educated because of the nature of study and the sample area is an urban area.

Table 1: Sex

Response	Frequency	Percentage
Male	144	72.0%
Female	56	28.0%
Total	200	100%

Field Survey 2023

The sample population have more males which is 72.0% which reflects 144 and female 28% which is 56.

Table 2: Education

Level	Frequency	Percentage
OND	42	21.0
HND/B.Sc	136	68.0
PGD/M.Sc	15	7.5
Ph.D	5	2.5
Others	2	1.0
Total	200	100%

Field Survey 2023

In response to questions on whether they could read and write, and in what language(s) – they were literate 68% of the respondents indicated that they have B.Sc/HND, 21% of the population obtained ND these population could read and write in English language and their various native language. Some are conversant with other African and foreign languages.

Table 3: Accessibility of Internet gadgets

Level	Frequency	Percentage
Laptop	38	19.0
Android phone	147	73.5
Desktop	5	2.5
Cable network	6	3.0
Satellite dish	4	2.0
Total	200	100%

Field Survey 2023

One hundred and forty seven of the respondents have android phone that make it possible to have access to internet to get information on latest study and implementation of innovation during the 2020 lock down and used the channel which is 73.5%, 19%, have laptop that enables them to access internet which is equivalent to 19%. It is indicated that all the respondents are bonafide owners of those gadget, which they use as often as necessary.

Table 4: Sources of general information

Level	Frequency	Percentage
Social media	101	50.5
Radio	69	34.5
Television	13	6.5
Relatives/friends	12	6.0
Phone calls	5	2.5
Total	200	100%

Field Survey 2023

Respondents were asked to indicate their main sources of general information, many pointed at social media outlet which is 50.5% and radio is the next source of information to them which is 34.5%.

Table 5: Sources of Social Technology and Innovations.

Level	Frequency	Percentage
Radio	19	9.5
Television	3	0.5
Friends/Relatives	11	5.5
Churches	6	3.0
Phone	162	81.5
Total	200	100%

Field Survey 2023

The respondents indicated that they receive information on the android phone which is 81.5%, the result from the five show the overriding importance of android phone as a source of information on science innovations in this regard.

Table 6: Do the use of communication increase the more patronage to science innovation.

Response	Frequency	Percentage
Strongly agree	150	75.0
Agree	32	16.0
Undecided	11	5.5
Disagree	6	3.0
Strongly disagree	1	0.5
Total	200	100%

Field Survey 2023

The table indicated that information people receives encourages them to go to these innovations. 75.0% or 150 of the respondents agreed in totality that the information they receive does that to them followed by 16% which agree that the information received encourage them to be using these innovations.

Table 7: Global pandemic and distress time boosted STI usage in the society

Response	Frequency	Percentage
Strongly agree	180	90.0
Agree	10.	5.0
Undecided	7	3.5
Disagree	3	1.5
Strongly disagree	0	0.0
Total	200	100%

Field Survey 2023

90% or 180 of the respondents indicated that the global pandemic and distress boosted the use of science innovation. Housewives engage them to assist them in doing shopping,washing cloth, drying, sweeping the delivering items reducing their stress.

Table 8: Is there improvement in doing thing easier, faster and better when these innovation are applied?

Response	Frequency	Percentage
Strongly agree	38	19.0
Agree	147	73.5
Undecided	5	2.5
Disagree	6	3.0
Strongly disagree	4	2.0
Total	200	100%

Field Survey 2023

147 of the respondents 70% strongly agree that where the innovations are applied that things are done easier, faster and better.

Table 9: Global pandemic and distress time boosted STI usage in the society

Response	Frequency	Percentage
Strongly agree	85	42.5
Agree	89	44.5
Undecided	23	11.5
Disagree	2	1.0
Strongly disagree	5	0.5
Total	200	100%

Field Survey 2023

85 or 42.5% of the respondents strongly agree that STI improves organizational productivity in every sphere of life. 89 or 44.5% agrees that organization productivity is improved by STIs.

Discussion of Findings

The result of this study reveals and confirms the communication science technology and innovation in a greater sense provide a better ways of doing things at naturals. Crisis just as during Covid-19 world lock down. The use of online services eased most of our problems globally. House delivery of goods and services were received at our various door steps. The restriction of movement to curb the disease boosted the economy of internet servers operators immensely. The study reveal that innovations same how is reducing patronage to the former ways of doing things. Although new technology mares vocational opportunities among youth although the benefit of STIs raise their standard of living.

Conclusion and Recommendations

Concluding, the study establishes that communication, science, technology and innovation has wide-range of positive effect on the society. It creates job even areas local language translators, website developers,

internet gadget repairs and more, it encourages job creation. Skills are taught online especially for youths. It also foster social coerision and promote unity among the citizens. Based on the findings of the study, I recommend that the government, philanthropists and social workers should engage the world especially in the developing areas to see that new paradigm will take over the whole system for better result and meaningful living.

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