

## STAKEHOLDERS' PERCEPTION ON THE USE OF ELECTRONIC-PROCESSES AT UNIVERSITIES IN RIVERS STATE, NIGERIA

Dorcas Dappasika OTTO<sup>1</sup>, Godly OTTO<sup>2</sup>, Wilfred I. UKPERE<sup>3</sup>

<sup>1</sup> *University of Port Harcourt, 5323 Choba, East-West Rd, Port Harcourt,  
Rivers State, Nigeria, Phone: +234(0)8481794,  
Email: [www.uniport.edu.ng](http://www.uniport.edu.ng)*

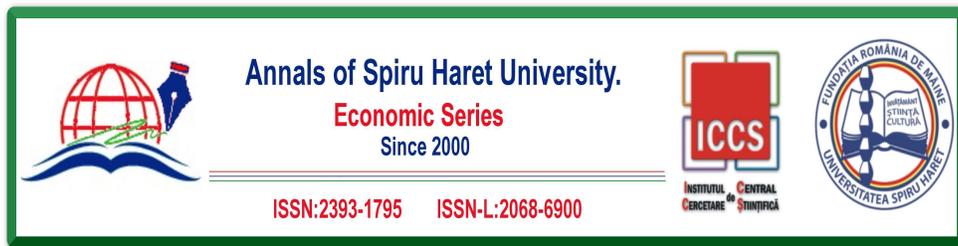
<sup>2</sup> *University of Port Harcourt, 5323 Choba, East-West Rd, Port Harcourt,  
Rivers State, Nigeria, Phone: +234(0)8481794,  
Email: [godly.otto@uniport.edu.ng](mailto:godly.otto@uniport.edu.ng)*

<sup>3</sup> *University of Johannesburg, Department of IPPM, Faculty of  
Management, Auckland Park, Johannesburg, Gauteng, 2006, South  
Africa, Phone: +27115594555, Email: [wiukpere@uj.ac.za](mailto:wiukpere@uj.ac.za)*

**How to cite:** OTTO, D.D., OTTO, G. & UKPERE, W. (2020).  
“Stakeholders’ Perception on the Use of Electronic-Processes at Universities in  
Rivers State, Nigeria.” *Annals of Spiru Haret University. Economic Series*,  
20(1), 91-112, doi: <https://doi.org/10.26458/2015>

### Abstract

*The use of electronic (e) processes in the workplace has become pervasive in many countries in recent years. In Nigeria, the pervasive use of information technology is quite new. The adoption of this new technology is gaining momentum at Universities in Nigeria. Concepts as e-Senate, e-Campus, e-Examinations, among others depict the extent to which Universities are adopting e-processes. To drive the processes, investments in hard and soft wares are being executed with huge sums of money. This is done in the belief that the new ethos is cost effective, modern and competitive. However, as an innovation, the e-processes are new and will be driven by stakeholders. These stakeholders include Management, Staff and Students; their views, reactions and actions are key*



## Issue 1/2020

*determinants of its sustainability. This work is a study of stakeholders' responses to the use of e-processes (using Rogers' Diffusion of Innovation Theory) for service delivery by Universities in Nigeria. The outcomes of the research show that about 32% of staff members are fully compliant and another 55% are concerting efforts to achieve compliance. In all, 87% of those interviewed have keyed into the process. Only about 13% are yet to key in, these may be seen as Laggards using Rogers categorization. Since, the new process has taken off, there is need to perfect it by resolving the problems of power supply, internet access, accessories, among others that are limiting its success rate.*

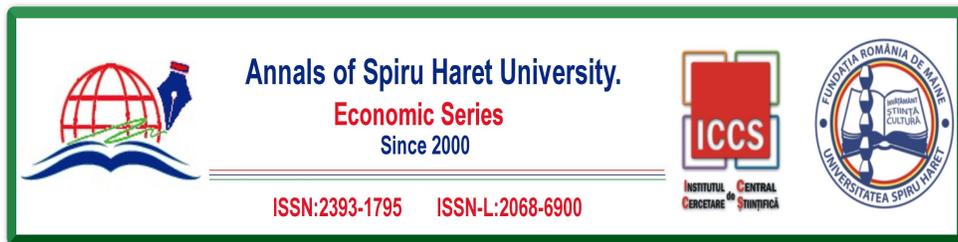
**Keywords:** stakeholder; electronic processes; digital technology; university.

**JEL Classification:** I21, I23, I25

### Background

The electronic computer has evolved from being simply a computational device for mainly scientific uses to being an essential and official business tool. This change in the essential nature and role of the computer has been due to several factors. For instance, the steady progress being achieved in the field of electronics today has enhanced the use of computers. The computer has a very huge capacity for information storage and processing [Owolabi, 2006]. Though the origin of the internet may date back to 1812 in Britain, its widespread usage is of more recent origin. According to Igwe and Ukazu (2011), in the 1980s, a new United States backbone was funded by the National Science Foundation, this coupled with other private commercial backbones has informed world-wide growth and development of electronic technology and the integration of many networks. Subsequently from the 1990s, interconnectivity and use of e-processes has become pervasive across countries and sectors [Ukpere, 2009].

Digitalization, information communication technology (ICT) or the use of electronic processes for official business is progressively entrenching in Nigeria [Ovia, 2001]. From primary to tertiary educational institutions, from economic to religious, social or political organizations, the use of electronic means of business operations are fast replacing manual methods and making transactions easier, faster and sometimes cost efficient in immediate monetary terms. For instance, the Central Bank of Nigeria (CBN), taking advantage of electronic banking, had adopted the



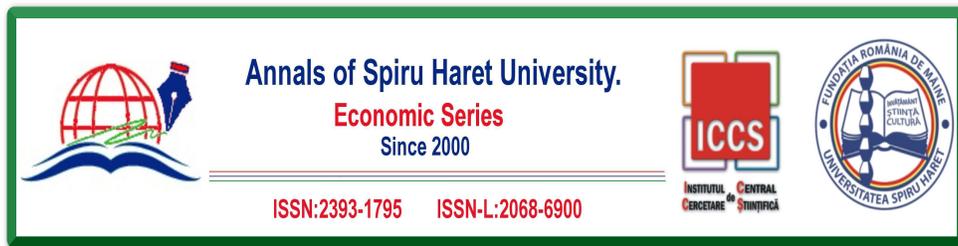
Issue 1/2020

cashless or cashlite policy [Igwe & Ukazu, 2011]. The policy was first implemented in Lagos from December 2013. The policy was later extended to many more cities including Port Harcourt, Aba, Enugu and Kano in Nigeria [Igwe & Ukazu, 2011]. The cashlite policy is facilitated by the use of the internet, pervasive use of modern computers among other hard and softwares. The internet has enhanced modern human communication. As a global data communication system, it has boosted the volume of commercial transactions in various firms [Igwe & Ukazu 2011].

In Nigeria, the pervasive use of internet is fairly recent, especially in the conduct of commercial and administrative duties [Otto, 2008]. As everything new, there are some challenges associated with it. For instance, access to internet services is not widespread across the country. There are many rural communities and even suburban communities without access to internet facilities [Otto, 2008]. Even in cities and places where internet facilities are available, access is not without cost, an addition to the cost of service delivery [Otto, 2008]. More importantly, the electronic means of transaction is predicated on the availability of power supply, but power supply is a rare commodity in Nigeria [Otto, 2008]. In essence, it is possible to have all other facilities to activate a process, but if the Power Distribution Companies in Nigeria have not powered the lines in the particular location, the transaction cannot be effected, except there is an alternative means of power supply [Otto, 2008]. For example, if a client has forty eight hours to turn in a Form online and the client has all the other requirements but there is no power within this period, delays may arise owing to no fault of the client.

For these and many more reasons, there are mixed feelings about the pervasive use of the new technology in commercial and administrative services. However, the use of internet or electronic (e-)processes is an automated activity which has been beneficially implemented in countries such as Turkey and the United States of America [Aristovnik, 2012; Khan, 2007]. Currently even the emerging countries are increasingly adopting the ICT as a mode of service delivery, although the adoption has not been problem free [Khan 2007; Hassan *et al.*, 2002, England *et al.*, 1998]. Much depends on the perception and social responses of stakeholders. Considering the volume of investments in soft and hardware, there is a renewed need for a study, which could identify 'perception and reactions to the increasing use of e-processes for service delivery. The result of such studies can facilitate the process and mitigate challenges. stakeholders

This work's focus is on the use of e-processes in the educational sector in Nigeria. This is informed by the fact that studies had been done on some other sectors of the



## Issue 1/2020

economy. For instance, empirical studies had been done and are burgeoning on the use of internet on Banking Service provision (e-banking) in Nigeria [see Agboola, 2011; Igwe & Ukazu, 2011; Awamah, 2008; Ugwuanyi, 2010 amongst others]. There are also studies of e-processes relating to the general economy [see Leo, 2013, Otto, 2008; Furst *et al.*, 2002; Santos, 2003], though some of these works lack depth. This current paper attempts to examine e-processes in the educational sector. Education is a fundamental vehicle for socialization, if the e-processes or this new orientation is achieved at this level, sustainability is more assured. What are the perceptions of stakeholders and how sustainable or efficient is the use of these e-processes for service delivery in Nigeria? The Rogers Diffusion of Innovation Theory will be the guiding light of this study.

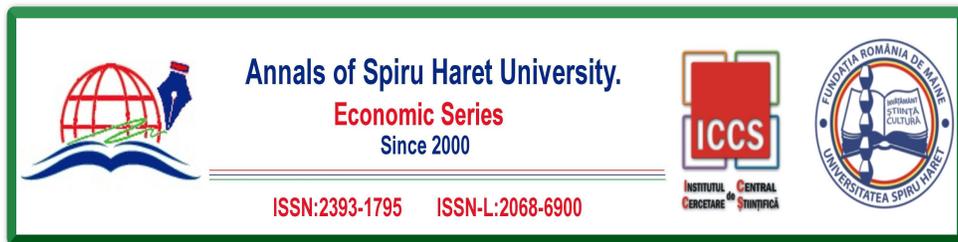
### **The Challenge**

In the Educational Sector, especially at the tertiary level, Application Forms for Admissions at different levels of study are done through electronic means; payments for various services to and from the institutions are through the internet, even registration of students and release of examination results are through electronic processes [Ovia, 2000]. The reasoning is that manual methods of processing Transcripts, Senate Minutes, Students' Examination results and sometimes conducting examinations are more expensive, slow, and susceptible to corruption or cumbersomeness [Ovia, 2000]. Therefore, there is a shift towards the e-processes. Concepts as such as e-Senate, Computer-Based Tests (CBT), e-campus, e-results, among others are buzzwords amongst Universities in Nigeria. As a matter of fact, a lot of automation has happened since Nigeria launched its satellite into orbit and introduced the Global System of Mobile Communication in 2001 [Johnson, 2013]. It is however important to identify the perceptions of the critical stakeholders, namely staff and students. This work attempts to identify social perceptions and responses to the new dimension within Nigerian Universities.

### *Objectives*

The objectives of this paper are to identify among stakeholders:

- (i) The awareness level of the relevance and use of e-processes;
- (ii) The level of adaptation (i.e. compliance level);
- (iii) Challenges affecting the implementation of the process.



Issue 1/2020

### *Significance of Study*

The use of e-processes for service delivery in Nigeria and specifically in Universities, as aforementioned, is quite new and involves substantial level of investments especially of financial resources. It is therefore necessary to do a proper analysis before huge sums of money are invested in an irreversible form on a project that may not be sustainable. Secondly, a new technology or method generally elicits different kinds of reactions. It is important to timely understand and deal with these reactions. Identifying challenges that are fundamental and seeking ways of appropriately addressing the challenges can enhance efficiency. Understanding the implications of unmitigated challenges is also necessary. This is important for better service delivery and indeed is urgent to drive the implementation of e-processes in universities with minimal stress, disruptions or opposition. A proper study of this nature can identify in advance likely bottlenecks in the operations of e-processes in the Universities and suggest solutions that can mitigate those challenges in advance.

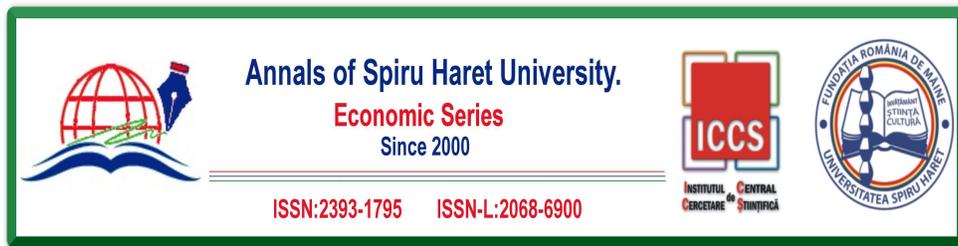
Theoretically, this landmark study will provide a baseline for future studies on e-processes in Universities in Nigeria, especially if such studies relate to Universities in Rivers State. Studies on the use of e-processes in Foreign Universities may exist, but the circumstances and conditions obtainable in those Foreign Universities may not be the same as those in Rivers State and may even be dissimilar to those in Nigeria. Therefore, the results may not exactly apply to the Nigerian context, though there may be lessons to appropriate therefrom. This study will provide a threshold for future studies. For policymakers, this study is important to help them decide if e-processes should be encouraged and what policies are optimal to enhance best practices in Nigeria.

### *Method of Study*

This study relied on a sequential explanatory mixed method. Questionnaires were used to elicit information from stakeholders. These stakeholders include Students, Teaching Staff, and Non-Teaching Staff, since the views of these participants affect the implementation of the processes. The authors were also participant observers, being employees of the university. The data obtained were analysed with appropriate templates including pie charts.

### **Literature Review**

The Social Sciences attempt to explain the behaviour of people in society especially within specific contexts. Sociology focuses on the behaviour of groups;



## Issue 1/2020

ranging from studies of delinquent groups, school classes, workers, to studies of institutions (e.g. education, family, etc.), studies of whole societies and so forth [Haralambos & Holborn, 2007]. Economics focus on reactions in the face of limited resources, which have exchangeable values. Political Science looks at authoritative allocation of values and Geography is focused on spatial interactions. This study is about group responses to innovation, a procedural change or in the language of Moldaschl (2010), a novelty, novelty in the sense of being a new paradigm.

For a study of this nature therefore, there is need for literature review in order to take advantage of extant results of related studies in Nigeria or elsewhere. The review would help focus the study better and as well enrich its contributions to the body of knowledge. This brief review will be done in three sub-sections namely: (a) Review of Theoretical Literature, (b) Review of Empirical Literature, and (c) Summary of the State of Literature.

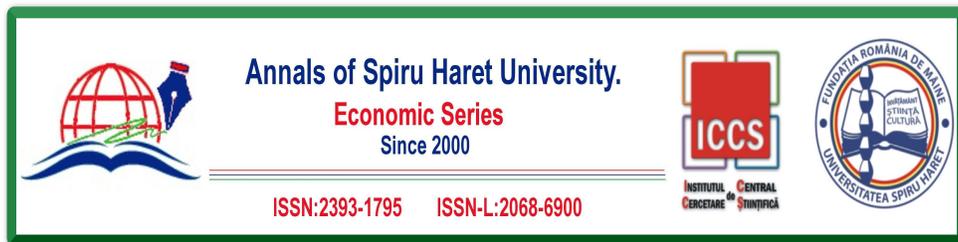
### *Theoretical Literature*

Diffusion research examines how new ideas are spread among social groups [Moldaschl, 2010]. In other words, it examines the responses of social groups to new paradigms, novelties or innovations. This work adopts the Rogers Diffusion of Innovation Theory to examine stakeholders' perception to the utilisation of e-processes in Nigerian Universities.

As far back as 1912, Schumpeter has defined innovation as the

*Production of a new... product or a new quality of product, Introduction of a new... production method..., Opening of a new sales market..., Conquest of new supplier of raw material or semi-finish product..., Completion of reorganization...* [Schumpeter 1912/1987, p. 100f cited in Moldaschl, 2010:1]

However, in his latter Economic Cycles theory, he limited innovation to only phenomena that are commercially exploitable. In other words, for it to be an innovation in the Schumpeterian sense there must be a marketable value [Moldaschl, 2010; Otto, 2006]. The introduction of e-process anywhere in the world has exchangeable or commercial value [Greenan & Walkowiak, 2005, ICTNET, 2011]. In fact, e-processes are believed to have become one of the main driving forces towards economic growth [see Aristovnik, 2012]. And as its diffusion spreads,



Issue 1/2020

wherever it gets to, its adoption is new. This explains the term *New Media* used to describe ICT [Haralambos & Holborn, 2007].

In the last thirty years or so, businesses have been transformed and reorganized due to the pervasive use of modern technology including the ICT [Greenan & Walkowiak, 2005]. The adoption of ICT affects communication among stakeholders and coordination in such organizations and drives performance, among other effects [Greenan & Walkowiak 2005].

However, one puzzling question about the adoption of ICT has to do with the net effect of ICT on work outcomes. Another critical issue is the social acceptability of the technology. This is because the system must be driven by people and no matter how efficient or beneficial its potentials are, if it is not well understood and accepted by the stakeholders, the likelihood of its success could be thwarted.

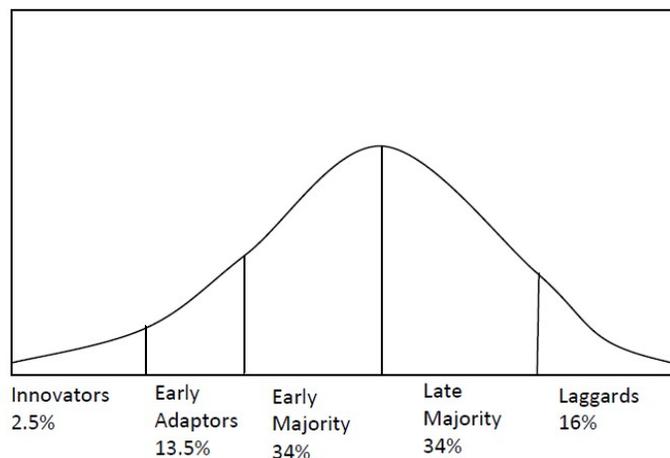
#### *The Theoretical Framework*

According to Sahin (2006), the process of adopting innovations had been extensively studied for over 30 years, and one of the most celebrated Theory of Diffusion of Innovation was postulated by Everest Rogers (1962). The Theory attempts to give clue to the kinds of ideas and technology and how these are assimilated. The work of Rogers has been updated and is currently in its fifth edition (i.e. 2013 edition). Though Rogers was a rural sociologist, his theory of diffusion may also apply to an urban industrial setting when a new technology, such as the application of the e-processes is newly introduced as a new method of business practice [Sahin, 2006]. Diffusion may be seen as processes through which innovations are shared using some channels among members of a social system over time [Rogers, 2013]. He notes that there are four main elements that influence the spread and adoption of a new idea: (i) the innovation, itself; (ii) channels of communication; (iii) the social system; (iv) time. The process relies heavily on human capital.

As noted in Rogers (1971), innovations are not adopted by all individuals in social systems (in the case of this work, the University) at the same time. The adoption is likely to be done in a time sequence. For instance, older members of staff of the University who are on their way out by way of retirement may find it uninteresting to adopt the new technology more than young and upcoming members of the workforce [Greenan & Walkowiak, 2005]. Therefore, it is important to classify these stakeholders into adopter categories based on how long it takes for them to

**Issue 1/2020**

begin using the new idea. It is also useful to empirically identify which category of stakeholders are early adopters, and what percentage of stakeholders are positively responding to the innovation. This will facilitate adoption, in addition to the fact that diffusion of innovation (or new idea) could be facilitated by human interaction through interpersonal networks [Greenan & Walkowiak, 2005]. For instance, if it is known that 20% of a section of stakeholders, such as lecturers, are early adopters, this 20% can facilitate the adoption for another 20% through interpersonal network and these now 40% can discuss with another set and in this way facilitate the adoption and sustainability of the new ethos in these institutions in Nigeria. Using a bell-shaped curve, Rogers (1971) has shown a typical form of adoption (see Fig. 1); 2.5% are regarded as innovators, 13.5% are early adaptors, 34% are early majority, another 34% are regarded as late adaptors while 16% are referred to as laggards.



**Fig. 1. Rogers Diffusion of Innovation Theory**  
Source: Rogers (1971)

These are different social responses to innovation. These responses can inform the level of success or sustainability of a new ethos.

A study is therefore necessary to identify what percentage of people is being carried along in the new scheme and to ensure sustainability of the use of ICT in



Issue 1/2020

Nigeria. This will save the University colossal sums of failed investments based on wrong assumptions. More succinctly, if the University assumes that adoption was 80% and goes ahead to invest in the technology and finds out later that only 10% of its stakeholders were adopters, this could lead to frustration, loss of resources and impact negatively on the emotions and psychology of Management.

#### *Empirical Literature*

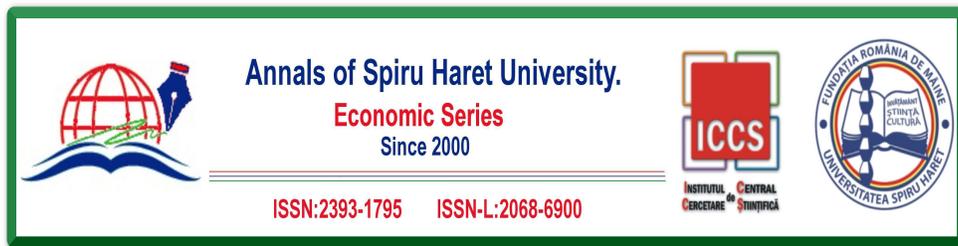
The impact of ICT on productivity has been extensively reviewed in different countries [Jorgenson Ho & Shroh, 2008]. Since the mid-1990s, an expansion in the production of ICT equipment has informed a fall in prices of this equipment, thus attracting more investments and capital deepening in e-processes [Jorgenson *et al.*, 2008]. These falling prices have led to the expansion and enhancement of the internet and larger and faster digital storage technologies, thus popularizing the use of e-processes.

This widespread cheap access to the internet and flowed rapidly from the UK and USA to many other parts of the world [digital technology Haralambos & Holborn, 2007]. In 2006, an estimated 57% of people in Britain had internet access [National Statistics, 2006]. In the last twenty years, many countries have made huge investment in ICT [Haralambos & Holborn, 2007]. In fact, ICT using firms have enjoyed an improved multi factor productivity (MFP), especially in Market Services [Triplett & Bosworth, 2006], thus, enhancing their competitiveness. In fact, as noted by Van Ark *et al.* (2008), the differential productivity growth rate between United States and Europe from 1995 may be due to the speed of expansion and use of ICTs; the spread and use of ICTs in Europe has been slower. Van Ark *et al.* (2008) noted that growth performance between the United States and Europe can be grouped into three periods:

(i) From 1950-1973, when growth in production in Europe followed an old-fashioned catching-up configuration, which was sustained by robust investments and very supportive institutions.

(ii) From 1973-1995, when growth in productivity in both Europe and the U.S. plummeted, but comparatively, yearly average labour productivity growth in Europe was double what it was in the U.S.

(iii) From 1995 and afterwards, when productivity accelerated in the United States. Conversely, it fell in Europe. In 2004, work per hour in Europe was approximately 10% points lower than the U.S. level.



## Issue 1/2020

The impact of ICT or e-processes on productivity was also reinforced by efficient labour [Aristovnik, 2012]. Aristovnik (2012) is of the view that ICT is the main force driving economic growth in Turkey. Nevertheless, it is not clear whether the beneficial effect of ICT is due to higher total factor productivity growth or due to improved labour efficiency arising from better-educated work force.

Aristovnik (2012) notes that the uses of e-processes in training and education have enjoyed priority in Organization of Economic Cooperation and Development (OECD) countries and in Europe in the last ten years though the rate of progress is not the same for all countries. In some countries, states or institutions, the use of ICT is at its early stages of adoption while in others, the use of ICT is in an advanced stage [see Balanskot, Blamire & Kefala, 2006].

In many Universities in Nigeria, these processes are at their early stages. The process has also been inhibited by cost constraints, poor access to power supply, and human reactions [Otto, 2008]. However, Nigeria has become a member the *Alliance for Affordable Internet*, which is an organization, whose main aim is to reduce the cost of internet connectivity and bridge the internet divides in most emerging countries, where there is restriction of access for a majority of the populace owing to high cost barriers [see Amaefule, 2013].

Expectedly therefore, the cost of internet services may become cheaper, and access will soon become more pervasive. Before this alliance, the cost of access may take up to 30% of household earning in some countries in Africa, while in advanced countries, on the average, the cost is only 1.7% [Pepper, 2013].

Pepper (2013) stated that the alliance aims at reducing the cost burden to 5% of household monthly income. This will enhance access and connectivity of two-third of the people in the world currently without connectivity.

The fact is, ICT has become universal and has permeated all aspects of life. Without access to ICT, it would be difficult to be part of modern society [Johnson, 2013, cited in Business News, October 10, 2013]. According to Omobola Johnson, a former Minister of Communication Technology in Nigeria:

*If we extrapolate based on current trends in the adoption and assimilation of technology and in particular Information and Communication Technology, our conclusion would be that our future will be technology-enabled... In the future, people who do not have access to ICTs and who do not have the capabilities to utilize them will have*

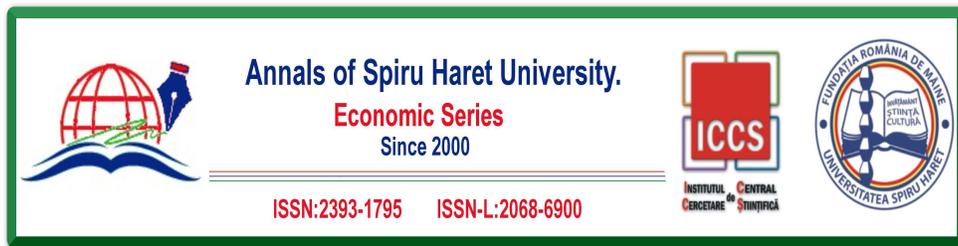


Issue 1/2020

*significantly limited experiences and life styles to people with access and the capacities to make use of technology.* [Johnson, 2013]

The bulk of the empirical literature discussed above paint a very positive picture of the use of ICT. However, this is not the complete picture. Kang *et al.* (2008) observed that accomplishments, which arise purely from the immediate impact of ICT use, are not readily available. Efforts to identify and monitor the effective utilisation of ICT within the educational sector such as the Second Information Technology in Educational (SITE) investigation, whose sponsorship came from the International Association for the Evaluation of Educational Achievement (IEA) have identified and described ICT utilisation within 26 countries without clearly showing a direct impact of ICT on productivity [Kang *et al.*, 2008]. Balanskat *et al.* (2006) reviewed several studies on the impact of ICT utilisation in some sectors in Europe and concluded that there is no proper evidence to substantiate that, as each of the reviewed study did not utilise the same method. Similarly, Trucano (2005) reviewed a series of studies and concluded that the effect of utilising ICT in relation to scholarship outcomes is quite blurred. Other studies confirm that outcomes from the use of ICT in Schools or Universities are inconclusive. In fact, Kirkpatrick and Carban (1998) observed that there seems to be no solid as well as established empirical evidence to support the anticipated benefits ensuing from the utilisation of e-process, based on the realities that various studies resulted in mixed findings.

However, with respect to the relationship between ICT and organisation or firms, numerous studies in microeconomics confirm complementarity. Milgrom and Roberts (1990) have noted that any two creative undertakings are perceived as harmonising, when the advancement of anyone of them leads to increase in the productivity of the other. In other words, it was assumed that advancement in the use of ICT is capable of improving managerial effectiveness. However, studies in Sociology favour a dissimilar dimension by placing more emphasis on social aspect that determines the distribution of personal computers to work stations with state-of-the-art organizational features [see Greenan & Walkowiak, 2005]. The focus on social factors as determinants is quite important because the adoption of new technology, a new idea or innovation is largely people cantered. If stakeholders' perception and responses to a particular innovation is negative, its chance of success will become slim, conversely if perception and responses are good, sustainability for the particular idea could be more assured.



## Issue 1/2020

As shown by the National Economic Empowerment and Development Strategy (NEEDS, 2004), Nigeria is a labour abundant economy with high rate of unemployment. Ordinarily such an economy should target labour-intensive technology instead of capital-intensive technology, such as ICT, which may drain its scarce financial resources. However, it is also possible to posit that with globalization, international competitiveness is required. Hence, obsolete and inefficient methods which increases cost are counterproductive [see Ukpere, 2013]. Hence, instead of using local technology that will increase cost of production and lead to uncompetitive output, it is necessary to pursue *efficiency and competitiveness through best practices*.

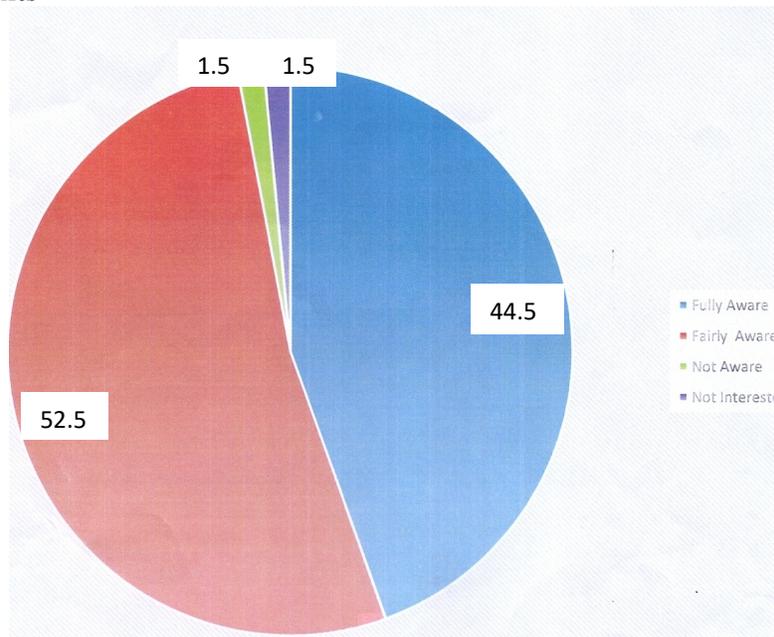
Hence, there seems to be a strong argument for utilising ICT, which explains the raising trend in the use of e-processes in Universities in Nigeria and other sectors of the economy, especially in the banking sector.

### *Summary of Literature Review*

Historically, the first Theory of Diffusion of Innovation was advanced in 1903, by Gabriel Tarde, with an S-shaped diffusion curve. This theory was followed by another, which was propounded by Ryan and Gross in 1943 who introduced the adopter categories. Everett Rogers popularized Diffusion of Innovation Theory and he had since improved on the theory, showing clearly that diffusion is affected by the innovation itself, communication channels, time and the social system, which in our context is the University system. Each of those factors is important – already the innovation is here. The communication channels format can define the efficiency of diffusion. How long will it take to become effective is unknown and the peoples attitude or responses is not known with any degree of certainty. This is what this study informed us.

There are those who feel that e-processes as unnecessary imposition that has no prospects especially given the epileptic power supply situation in Nigeria, the high cost of access, high unemployment rate and the current level of technology in Nigeria. There are others who see ICT as novel and new method of operation, which should be imbibed. There are still people who believe researches related to the influence of ICT on output seems unsettled, so investments and current efforts are not well placed. As mentioned earlier, this study hopes to examine empirically, the issues on ground and determine, with some level of exactness, the perception of stakeholders to the current use of e-processes for official duties among Universities in Nigeria with a focus on Rivers State. The stakeholders will include Management, Staff and Students of Universities in Rivers State, Nigeria.

**Results**



**Fig. 2. Awareness of Use of e-Processes in Nigeria Universities**  
Source: Field Data

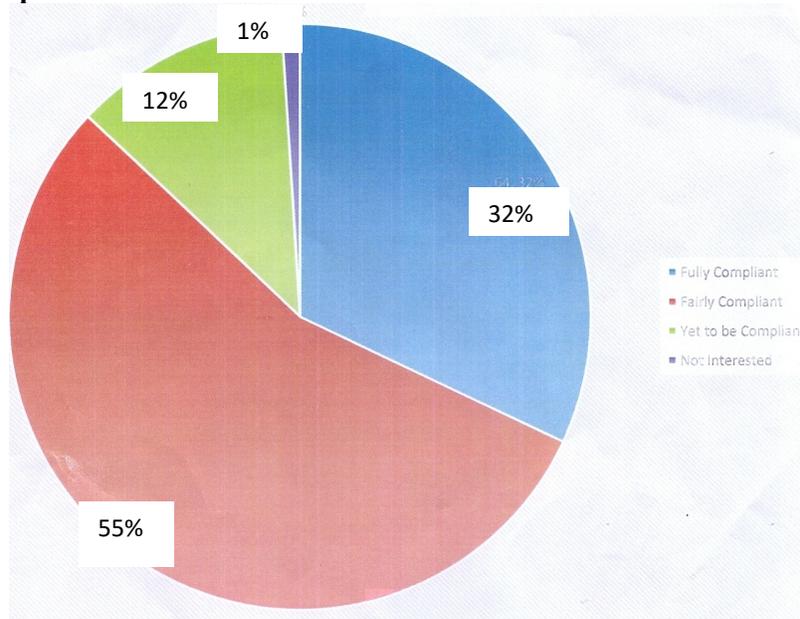
From the Survey (see also Appendix 1), the results show that 52.5% of the respondents indicated that they were fully aware and appreciate the role of e-processes in University administration. This means that to them such services are advantageous over manual methods. Another 44.5% indicated that they are fairly aware of e-processes as used in University administration. In other words, they observe the activities going on, but are yet to fully understand the motives or the utility of e-processes as used in the Universities, especially given the fact that automation is mutually exclusive to manual methods.

A third category, are those who do not think e-processes should replace manual methods in the University System. These think that, given the problems associated with electronic methods, the manual methods that had been in vogue over the years and had been tested should be continued. These respondents constitute only about 1.5% of the respondents (see also Appendix 1).

**Issue 1/2020**

A fourth and last category are those who have no interest of the new ethos or are indifferent. Some of these are people who are approaching retirement and fairly elderly. These are Laggards using the concept of Roger (2013). These constitute about 1.5% (see also Appendix 1).

**Compliance Level**



**Fig. 3. Compliance to e-Processes in Nigerian Universities**  
Source: Field Data

Figure 3, Appendix 1 shows the results of the survey on compliance level. About 32% of respondents are e-processes compliant, thus can effectively use modern e-processes including computers, internet, the social media among others. These constitute those who may be termed early adapters.

About 55% are fairly compliant. This second group acknowledges the utility of e-processes, and has actually aligned themselves to the modern method, but are yet to perfect the process. They include those who may use computers but with less speed, those who could use the Email and access the World-Wide Web.

The third category is those who are yet to be compliant. These may also be referred to as Laggards using Rogers' classification. These include those who may need people to assist them connect to internet when they have the need. More of these people are those beyond forty years of age and this category constitutes 12%.

The last category includes those who are uninterested or indifferent; these constitute 1% of the respondents. Theoretically, according to Rogers' theory, this group (Laggards) could be as high as 16%. In other words, if over 80% had keyed into a programme, or a new idea, it has gained acceptance [see Rogers, 1971]. Thus, the level of adaptation of ICT in Universities in Nigeria is high when compared to Rogers' theory; there is about 87% compliance, while 13% are yet to comply effectively. Within the 13%, 12% have prospects with only 1% showing no interest.

### **Perception of Challenges Affecting e-Processes**

Our field data also show that several problems affect the implementation of e-processes in Universities in Nigeria. They include personnel related problems, power related problems, issues of spares and maintenance, funding, bandwidth, security of the electronic platforms, problems of inadequate facilities and infrastructure and lastly problems associated with corruption and institutional will.

These are briefly discussed below.

#### *1. Personal Related Problems (P1):*

Personnel problems include inadequate technically equipped staff to set up platforms including the competence to tailor different programmes to suit different needs at different contexts. They also include the efficiency and speed of desk officers to administer built programmes or platforms. These constitute 17.5% of the problems affecting the processes according to the survey (see table 1 and Fig. 4).

#### *2. Power Supply (P2):*

Power supply challenges, from the survey, constitute the greatest source of problems in the perception of respondents. Power supply challenges constitute 26.3% of the Challenges. These problems include irregular power supply problems of voltage, frequency of disruption in supply among others. In fact, the e-processes may not successfully go on without power.

#### *3. Spares Parts and Equipment Maintenance (SM):*

Issues of availability of spare parts for computer hardware exist. Many of the parts are not manufactured locally, so they have to be imported into the country. Expertise for the maintenance of this hardware is also not widespread in Nigeria.

## Issue 1/2020

The perception of this problem is 4.7% of the total challenges affecting e-processes in Nigeria.

### 4. *Funding Problems (FP):*

This is also a key problem in a developing country, moreover because of the import component. Hardware has to be bought and installed. Even patronising the e-services by the general public involves cost. These constitute 9.9% of the problems in the view of respondents.

### 5. *Bandwidth and the Security of Platforms (BS):*

The problems of bandwidth and the security of platform is also a major challenge in the use of e-process in Nigeria. Perhaps because of cost, the Universities are unable to acquire sufficient bandwidth to accommodate the large number of users, queuing to use platforms. This leads to delays and complains of cyber network. Ancillary to this is the problem of network security. There are incidents of integrity failure of programmes arising from intruders. The opinion is that this problem constitutes about 18.98%, approximately 19%. (see Table 1)

**Table 1. Perception of Problems Inhibiting e-Processes**

S/No.	Problem	Total No.	%	Ranking
1.	Personnel (P <sup>1</sup> )	48	17.5	4
2.	Power Supply (P <sup>2</sup> )	72	26.3	1
3.	Spares and Maintenance (SM)	13	4.7	6
4.	Funding Inadequacies (FU)	27	9.9	5
5.	Bandwith and Online Security (BS)	52	18.98	3
6.	Facilities and Infrastructure (FI)	53	19.3	2
7.	Institutional will and Corrupting (IC)	9	0.3	7
	<b>TOTAL</b>	<b>274</b>	<b>100</b>	-

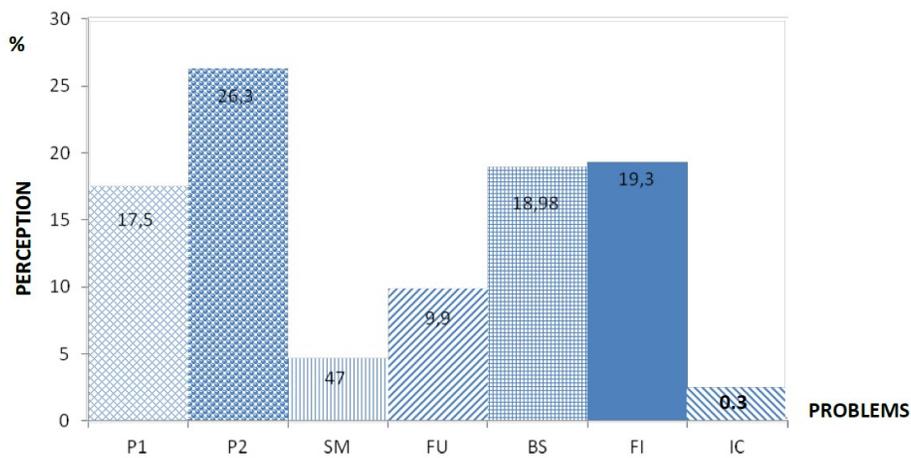
Source: Field Work Data (2015)

### 6. *Facilities and Infrastructure (FI):*

Apart from the major and very expensive infrastructure required to set up, there are also challenges with facilities and terminals for use by staff. Staff complains of insufficient computers, laptops and others. The problems of distribution of the few available laptops among staff also generate issues. This problem constitutes 19.3%.

*7. Institutional Will and Corruption:*

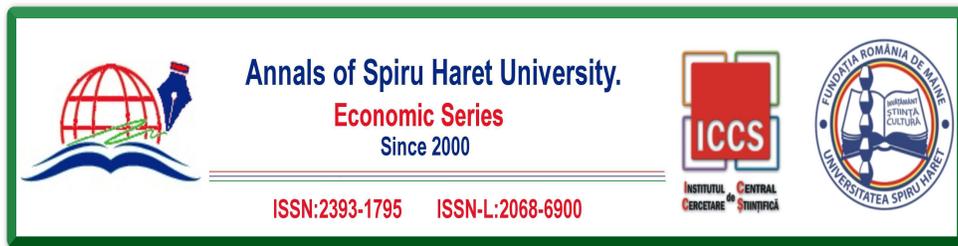
The problem here is largely administrative; it includes problems of space, budgeting for the procurement of internet facilities, and the desire to actualize e-processes in identified areas beyond rhetoric. In fact, this last point may be expanded to accommodate all other minor issues that affect e-processes.



**Fig. 4. Bar Chart Showing Perception of Identified Problems**  
Source: Drawn from Table 1

**Conclusion and Recommendations**

From the data analysis above, it is obvious that the use of e-processes in Nigerian Universities is getting its deserved attention. The process will facilitate learning, research and inter-connectivity with the rest of the world especially in the current era of globalization. As such, the e-process has prospects in Nigeria. However, there are several challenges that are negatively affecting the adaptation and use of e-processes in Nigerian Universities. These challenges include irregular power supply, the dearth of or insufficient access to hardware (i.e. computers), the problem of commitment on the part of administration to provide finance to address these shortages, applicability of the use of e-processes to particular situations. For example, beyond objective or



## Issue 1/2020

subjective examination questions, electronic processes may not be efficient for examination.

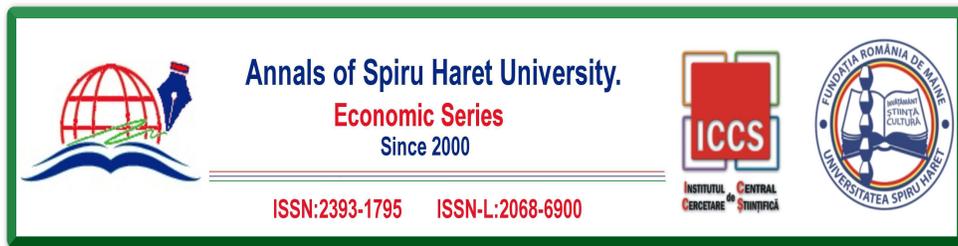
In summary, the use of e-processes for administrative duties in Nigeria is efficient and timely too. The new system is gradually gaining acceptability and facilitating processes. However, currently, it is affected by some challenges, which include finance, technological constraints, power related issues, attitudinal factors, knowledge limitations, etcetera.

Government can, with a right policy or mix of policies, assist universities with bandwidth or access to the internet, which will bring down the cost of using internet and, thus, also reduce the cost of managing the e-processes in the universities. This will improve the speed and ease of administration in many aspects of university business in Nigeria, especially students' registration, access to examination results, information dissemination, research and many more. The private sector could also assist to provide such access as part of corporate social responsibility. In Ghana, for instance, one of the GSM providers had indicated interest to make access to internet easier and affordable. This should also be possible in Nigeria.

## References

- [1] Achour, H. & Bensedrine, N. (2008). *An Evaluation of Internet Banking and Online Brokerage in Tunisia*, in Proceedings of First International Conference on E-Business and E-learning (EBEL), Amman, Jordan, pp. 147-158.
- [2] Agboola, A. A. (2001). "Impact of Electronic Banking on Customer Services in Lagos, Nigeria" in *Ife Journal of Economics and Finance*. Department of Economics, O.A.U. Ile-Ife, Nigeria, Vol. 5: 1-2.
- [3] Amaefule, Everest (2013), "Nigeria Joins Alliance for Affordable Internet." *The Punch*, 9 October, p. 32.
- [4] Aristovnik, Alexander (2012). "The Impact of ICT on Educational Performance and Its Efficiency in Selected EU and OECD Countries: A non-Paramoble Analysis." *Turkish Journal of Educational Technology*, vol. 11 (3):144-152.
- [5] Awamieh, R., & Fernandes, C. (2008). "Internet Banking: an Empirical Investigation into the Extent of Adoption by Banks and the Determinants of Customer Satisfaction in the United Arab Emirates." *Journal of Internet Banking and Commerce*, Vol. 10, No. 1, pp. 1-12.
- [6] Balanskot, A., Blamire, R., & Kefala, S., *ICT Impact Report: A Review of Studies of ICT Impact on Schools in Europe*. Brussels, 2006.

- [7] England, K.L., Furst, K., Nolle, D.E. & Robertson, D. (1998). "Banking Over the Internet," *Quarterly Journal of Office of Comptroller of the Currency*, vol. 17, no. 4, December, pp. 25-30.
- [8] Furst, K., Lang, W., & Nolle, D.E. (2002). "Internet Banking," *Journal of Financial Services Research*, Vol. 22, issue Yz, pp. 95-117.
- [9] Greenan, N. & Walkowiak, E., *ICT, Work Organization and Social Interaction*. Orleans: University of Orleans, 2005.
- [10] Haralambos, M., & Holborn, M., *Sociology Themes and Perspectives*, 7<sup>th</sup> Ed., London: Harper-Collins, 2007.
- [11] Hassan, I., Maccario, A. & Zazzara, C., *Do Internet Activities Add Value? The Italian Bank Experience, Working Paper*, Berkley Research Centre, New York University, 2002.
- [12] ICT NET (2011). *The impact of ICT on Productivity and Growth*, ICT NET Assessment Paper I Sept. 2011.
- [13] Igwe, S.R., & Ukazu, Julian Nkechi (2011). "The Impact of Internet on Quality of Service in the Banking Sector in Nigeria." *Trend Journal of Management and Social Science*, Vol. 4 (1): 40-61.
- [14] Jelassi, T. & Enders, A. (2004). "Strategies for E-business: Creating Value through Electronic and Mobile Commerce," *Financial Times*, Prentice Hall.
- [15] Johnson, O. (2013). *Government to connect all Nigerians to the Information Super high way*, Keynote Address of the Minister of Communications Technology presented at 2013 Annual Conference of Communication Wealth Telecommunications Organization. Cited in Business News.
- [16] Jorgenson, D.W., M.S. HO & Shroh, K.J. (2008). "A Retrospective Look at the US Productivity Growth Resurgence," *Journal of Economic Perspectives*, Vol. 22 (1), pp. 3-24.
- [17] Kang, M., Heo, H., Jo, I., Shin, J., & Shin, S., *The New Millennium Learners and Educational Performance: the 2<sup>nd</sup> Year report*, Technical report KERIS, 2008.
- [18] Kang, G.D. & James, J. (2004). "Service Quality Dimensions: An Examination of Gronroos' Service Quality Model," *Journal of Managing Service Quality*, Vol. 14 (4): 266-277.
- [19] Khan, B.S. (2007). *Consumer Adoption of Online Banking: Does Distance Matter?* See <http://www.repositories.cdlib.org/cgi/iber/Econ/Eo4> – 338
- [20] Kirkpatrick, H., & Cuban, L. (1998). "Computers make Kids Smarter-right?" *Technos Quarterly for Education and Technology*.
- [21] Leo, S.E. (2013). "Achieving Sustainable Transformation with ICT." *This Day*, 15 August, p. 32.



## Issue 1/2020

- [22] Liu, C. & Arnett, K.P. (2000). "Exploring the Factors Associated with Website Success in the Context of Electronic Commerce," *Information and Management*, Vol. 38, No. 1, pp. 23-24.
- [23] Madu, C.N. & Madhu, A.A. (2002). "Dimensions of e-Quality", *International Journal of Quality and Reliability Management*, Vol. 19, No. 3, pp. 246-258.
- [24] Moldaschl, M., *Why Innovation Theories Make No Sense*, Department of Innovation, Research and Sustainable Resource Management (BWLIX), University of Technology Chemnitz, 2010.
- [25] National, Statistics (2006) *Internet access* [www.http://Statistics.gov.UK/cci/nugget.asp?id=8](http://Statistics.gov.UK/cci/nugget.asp?id=8).
- [26] Nwezeh, C.M.T. (2010). The Use ICT in Nigerian Universities: A Case Study of Obafemi Awolowo University, Ile-Ife. *Library Philosophy and Practice*. (e-journal). Paper 494. <http://digitalcommons.unl.edu/libphilprac/494>
- [27] Otto, G. (2008). "The Impact of Mobile Communication Services on the Nigerian Economy." *Journal of Geographic Thought*, Vol. 9 (1&2), pp. 107-115.
- [28] Otto, G., *Elements of Business Economics*, Emhai Press Port Harcourt, 2006.
- [29] Ovia, J. (2000). "From Banking Hall to e-Platform," *Financial Standard*, January, 15.
- [30] Ovia, J. (2001). *Internet Banking Practices and Potentials in Nigeria*. A paper at the conference organized by the Institute of Chartered Accountants of Nigeria (ICAN), Lagos, September 5.
- [31] Owolabi, O. (2006). "Computerized Information Systems" in *Filling Systems and Documents Care* G. Otto (eds) (pp. 2-13).
- [32] Parasuraman, A., Zeithami, V.A., & Berry, L.L. (1985). "A Conceptual Model of Service Quality and Its Implications for Future Research," *Journal of Marketing*, Vol. 49: 41-50.
- [33] Pepper, Roberts (2013). "Interaction of the Global Technology Leader at GSCO with Journalists after the Inauguration of the Alliance for Affordable Internet." *Punch*, Wednesday 9 Oct, p. 32.
- [34] Rogers E.M., *Diffusion of Innovations* (4<sup>th</sup>ed.), New York. The Free Press (orig. 1962), 2013.
- [35] Sahin, Ishmail (2006). "Detailed Review of Rogers Diffusion of Innovation Theory" *The Turkish Journal of Educational Technology*, vol. 5 (2), pp. 14-23.
- [36] Santos, I. (2003). "e-Service Quality: A Model of Virtual Service Quality Dimensions," *Management Service Quality*, Vol. 13, No. 3.
- [37] Savoie, M.J. & Raisinghani, M.S. (1999). "Identifying Future Trends in Information Technology," *Industrial Management and Data Systems*, vol. 99 (6): 247-250.
- [38] The Nigerian Accountant (2010). "Electronic Banking as Solution to Robbery," *Journal of the Institute of Chartered Accountants of Nigeria*, 43 (2).
- [39] Tripett, J. & Bosworth, B.P., *Productivity in the US Service Sector*. Washington DC: Brooking Institution Press, 2006.



**Issue 1/2020**

- [40] Trucano, M., *Knowledge Maps: ICT in Education*, Washington D.C Info Dev/World Bank, 2005.
- [41] Ugwuanyi, C.C. (2010). “e-Banking: Enhancing Service Delivery in Banks Today,” *Quality Service Management*, 2 (5).
- [42] Ukpere, W.I., *Globalization and the End of a Single Orthodoxy*. Inaugural Lecture Series, University of Johannesburg, South Africa, 2013.
- [43] Ukpere, W.I. (2009). “Distinctiveness of Globalisation and It Implication for Labour Markets: An Analysis in Economic history from 1990-2007.” *Indian Economic Journal*, 56(4):3-20.
- [44] Van Ark, B., O’Mahony, M. & Timener, M. (2008). “The Productivity Gap between Europe and the U.S.” *Journal of Economic Perspectives*, Vol. 22, no 1, pp. 25-44.

Issue 1/2020

Appendix 1

**Questionnaire Responses**

AWARENESS	Freq.	Percent	Cum.
1	3	1.50	1.50
2	3	1.50	3.00
3	105	52.50	55.50
4	89	44.50	100.00
Total	200	100.00	

. tabulate compliance

COMPLIANCE	Freq.	Percent	Cum.
1	2	1.00	1.00
2	24	12.00	13.00
3	110	55.00	68.00
4	64	32.00	100.00
Total	200	100.00	

Correlation

	AWARENESS	COMPLIANCE
AWARENESS	1	
COMPLIANCE	0.318870014	1

Source: Field Data 2015