Direct Research Journal of Engineering and Information Technology
Vol. 7 (7), Pp. 163-171, December 2020
ISSN 2354-4155
DOI: https://doi.org/10.26765/DRJEIT41303679
Article Number: DRJEIT41303679
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Full Length Research Paper

Barriers to information technology adoption in universities in the Niger Delta region of Nigeria

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Received 23 October 2020; Accepted 20 November 2020; Published 30 December 2020

ABSTRACT: This research study identifies barriers to ITA (Information Technology Adoption), by means of a comprehensive review and survey study carried out in BRACED (Bayelsa, Rivers, Akw-Ibom, Cross-Rivers, Edo and Delta) States Universities in Nigeria. Questionnaires and interviews were conducted on 113 respondents to identify the enabling and deterring factors affecting ITA. The results of the study revealed the barriers to ITA in Nigeria include attitude to technology, cultural resistance, inadequate funding, lack of infrastructure, fear of change, as well as political inclined policies. A reliable analysis was further conducted using the Relative Importance Index (RII) to rank barriers factors and address the research question. Hence, lack of electricity was rated as the core barrier factor. Kruskal Wallis test was deployed to test research hypothesis which exists between attitude to ITA and lack of infrastructure barrier factors. The test shows one percent variance between attitude to ITA and lack of infrastructure. It was then recommended that Government, Stakeholders and University Administration work hand in hand to ensure the following: The government should adequately fund education and set up governed ITA enforcement policy to ensure strict compliance by Universities in this Region. Universities should make it a point of call to train both students and lecturers to improve IT efficacy and establish collaboration with IT experts from developed IT nations to bring ITA to bear.

Keywords: Information technology, barrier, adoption, university, communication, IT acceptance and continuance, South-South Zone of Nigeria

INTRODUCTION

ICT Within education is viewed as a tool that promotes educational change, improves learner's skills and prepares them for the global economy and information society (Kozma 2005). Consequently, information and communication technology has been proven to have the capacity to enhance educational tools and learning environment as it allows for multiple means of material presentation, engage and motivate the student in learning processes, nurtures exploration, inquiry, offers access to information resource globally (Haddad 2003). On the part of the teacher, ICT is relevant in the professional development of teachers as it serves as a guide to knowledge source. Teachers of modern-day society require large, effective and easy access to knowledge base- information and teacher's support development technologies (Gallimore and Stigler 2003). Also, teachers; been considered as long-life learners, needs new knowledge to keep abreast informative ideas, technology and also increase material availability and enhance collaborative learning (World Bank,2003), Thus, successful implementation of ICT in higher education in Nigerian can improve teachers competence through digital libraries, virtual institutions, and other Internet resources. According to Robertson (1995), ICT is the force behind greater economy and self- reliance which also extends to environmental sustainability and work opportunities. ICT improves societal welfare, employability as higher education sustainable environments are not just high-quality educative content, it also spans beyond university times because it influences individual performance and wellbeing all through their lives (Robertson 1995; Robertson and Patel

2007). In support of this view, Kraemar and Derick (2010) gave the correlation between ICT investment, growing GDP and productivity through the empirical research conducted in Latin America. According to the researchers, Information Technology represents key breakthroughs as a general-purpose technology or a techno-economic paradigm that can boost productivity and economic growth (Devries et al 2010).

BACKGROUND

After Nigeria gained its independence on the 1st of October, 1960, the country still went ahead to retain the educational policy bestowed by its colonial masters; the British Government. Thus, as a Federation country with 36 states; a single centralized educational system operates in a nation of over 130 million people with over 250 ethnic groups. According to Isreal, Chetta and Lebe (2014), from 1970 to 1990 Nigerian education was analogous to the developed countries of the world which were mainly attributed to the colonial master's strategy, the policy which was still imbibed instructional. But afterward, the decline in the educational sector became obvious from 1990. Almost thirty years after Nigerian independence, the educational sector departed miserably because the country didn't progress and update with the emergence of new technologies. The U.S Congress (1988) attest to this fact that academic establishments experienced delayed as an effect of lag in new technology adoption (Leidner and Jarvenpaa1995). Philip (2003) confirmed that: the ability of any organization, society, institution or nation to learn and subsequently applies the learned concept is what determined the survival, sustainability, progress, development, advancement and ranking of the institution in the global competitive market. Furthermore, Kozmas and Voogt (2003) acknowledged that the profound shift in the role of knowledge and technology has driven production and economic growth to a large extent. Increases in new technologies have affected most socio-economic activities thereby changing the approach to learning, teaching, belief, value, culture and religion.

On a more generic viewpoint, several strategies were adopted by the Nigerian government in order to develop the educational system in the country. The first reform program took place in 1969 through a curriculum conference held in Lagos which brought radical change in the sector (Fafunwa 1974). According to Olalere and Taiwo (2009) a known lexicon in Nigeria education system; anticipated the objective of education reform whose goal, concept and strategies have attracted stakeholders as they look forward to how Information Technology can be systematically used to revive the issue of the failed education system in Nigeria. In a quest to revive the ailing educational sector, the country held another independent educational policy premeditated towards meeting the nation's local need and was almost achieved because of strict compliance to the recommendation by the conference (FRN, 1977).The Universal Primary Education Scheme (UPE), Adult Education Scheme (AES) and the Research Program (RP) were introduced as far back as the 1970s. But despite the colossal amount spent in implementing these educational development programs, no significant impact has been recorded.

Nigeria as a country went further to acknowledged the immense importance of information technology in education. This was seen in the education reform policies targeted at integrating the use of computers in Nigerian schools. The first program was the Federal Government policy document on the use of computer 1988 (FME 1988, Olalere and Taiwo 2009). The document emphasis on the introduction of the computer into primary schools and the use of computer system to facilitate learning with regards to writing, data entry, and computation. For secondary education also, the aim was to pilot computer education and to teach computer science further into tertiary institutions as a subject discipline and also to integrate computer education into schools administration and academic instruction. However, the implementation was never effective. In 2004 the reform document was reviewed, this time, it was an acceptance to go beyond computer education to the level of ICT integration and also the need for technological facilities. Later on, towards the end of President Olusegun Obasanjo administration, another reform which covers the grade level education, agencies, curriculum and administration was held to bring global changes to the country education system as well as the economy, social and political system in Nigeria. These changes the economic state of the country led to the adoption of National Economic Empowerment and Development Strategy (NEEDS) in 2004 (Obioma and Ajagun 2006). The main target of NEEDS was to entirely re-orientate all sectors of the economy by reducing poverty, create jobs and generate the nation's wealth. As a result, the need to redefine education sector as exemplified in the reform from theoretical to practical knowledge orientation was desperately needed. Sadly, the policies did not materialize because of its inadequacy to address two core issues such as computer skills and ICT for the disabled in the society; little or no emphasis was placed on ICT integration into the educational institution and also e-education initiative was mentioned. Though, another document by FME 2004(Federal Ministry of Education) on ICT stress that strategies outlined in the document were not followed because of the removal of the Federal Minister who initiated the document. Subsequently, no other national document had been developed on the integration of ICT in Nigerian educational institutions (Agbetuyi and Oluwatayo 2012). Then in 2007, the Federal ministry of education initiated and formed the ICT

department to collaborate with other agencies both private and government stakeholder to initiate Information Technology programs and projects to influence educational sector in Nigeria positively. As a matter of fact, universities in Nigeria scuffle and strive to admit technology as the only measure to establish academic excellence through e-learning and teaching (Osakwe 2012). Okhiria (2007) mentioned that National Universities Commission (NUC) in Nigeria recommended that at least two lecturers can use one computer and four students per computer in the universities. NUC further established e-learning platforms to revive the situation by organizing twenty fitted mart boards in twelve federal universities in the country to promote information technology; unfortunately, a higher number of these universities within the country have not yielded to this recommendation. Although few universities have shown compliance which is: the University of Jos, University of Nsukka, University of Nigeria, Obafemi Awolowo University and the latest technology blast in South-South zone Rivers State University of Science and Technology and few private owned universities like Covenant University, Afe Babalola and the American University of Nigeria. The question still remains, what could be the reason why other universities have not made any effort towards ICT adoption? (Adevbiele, Justina and Ajegbebelen 2016).

Statement of problem

Over the years, thousands of Nigerian students who graduated from Universities in southern Nigeria never wished to further their education in any of those universities because of the gross inadequacy of academic Information Technology resources, manpower, IT infrastructures and a poor tertiary curriculum on information technology courses as well as lack of innovative information technology applications in those universities. This has affected the quality of graduates and the overall economy of the states and Federation as students opt out of indigenous schools for foreign universities (Adesulu 2015). Students as academic consumers choose those universities that are sure can bring a return on academic investments (Sheila and Gary 2004; Becker 2002). Altbach (2004), approximated that over two million Nigerian student's study outside their home country. The report further estimates that the number will increase to 8 million by 2025. Other countries generally have generated interest in student's inflow across borders for several reasons. Technologically advanced countries are beginning to identify the needs to provide students with comprehensive awareness in order to compete in the worldwide economy (Altbach 2004). According to Hanushek et al (2008), it is common sense that countries must have quality and standard educational system to prosper economically.

As a state, we must dedicate ourselves to reform the educational system as to maintain the slim competitive edge for the benefit of all, to invest in human resource for the nation's economic future (Hanushek 2008). As a developing country, there are unprecedented challenges identified in the educational sector of Nigeria. These challenges include: continuous strike by universities, lack of electricity supply, poor financial investment, misappropriation of public fund, lack of skilled tutors in some field, lack of infrastructure/facilities, lack of distance learning tools, lack of online study materials, lack of information technology training for academic staff, failure to review reliance fund for journals and books production in higher institutions (Oyaziwo, Philipa and Justina 2012). In addition, the Joint Admission and Matriculation Board (JAMB) hinders and constrained access to higher education as well as the role of private institutions, governance autonomy, Institute management challenges, gender inequality (women in some part of Nigeria are denied access to higher education), communication and language issues (Teferra and Altbach 2004). According to Gylfason (2001), the neglect of education is one of the transmission channels that can bring a nation from economic-abundance to a stunted economic growth and development.

Research aim

The research aim at proposing strategies for information technology adoption in Nigerian Universities in order to improve professional skill, knowledge building, enhance economic growth, support distance learning, build the human resource, improve socially sustainable development, improve information organization within the concern universities and management of information system.

Objectives of this research

1) To uncover the barriers of information technology adoption in Universities within the south-south region of Nigeria.

2) To improve academic and human resources.

3) To enhance information technology acceptance, adoption and information technology continuance in Nigeria universities especially in the Niger Delta region.

4) To give recommendations on how to resolve the identified barriers so as to rebuilding the standard of education through technology in Nigeria.

Research question

What are the barriers to the acceptance and continuation of information technology in Nigerian universities in the

Niger Delta region?

Research hypothesis

Between attitude to Information technology adoption intention and lack of IT infrastructure which of this has a greater effect on ITA in these Universities?

LITERATURE REVIEW

Information technology adoption overview

The term Information technology (IT) is the use of computers, storage, networking and other infrastructure and processes to create, process, store, secure and exchange all forms of electronic data Yacob (2001). IT is being seen as various information technology tools and resources in communicating, disseminating and management of information (Blurton 1999).Technology is the application of scientific knowledge (including tools, techniques, products, processes, and methods) to practical tasks (Czaja 2006). Information technology in cooperates telecommunication technology which is telephony, satellite, Television, cable, radio, and television and digital technology such as (Information, computers, networks, software applications, and World Wide Web) (Chisenga 2006). Adoption, in general, refers to the decision to use an innovation (Yuan and Anand 2013). In Nigeria today, universities located in the Niger Delta region are commonly faced with an inept fallen standard of education. Varied reasons may be attributed to these militating challenges but the most obvious is the lack of continued commitment towards keeping abreast with globally acceptable standard and methodology to new educational applications, advances and sustaining approach through the adoption of information technology. Using Information Technology as a tool in the educational system will enable effective and efficient communication, innovation, creativity, and interaction. Information Technology and communication is likened to utilities like water and electricity which is essential and plays a vital role in the quality of learning and teaching, as well as conducting research (Oduma 2013). ICT expedite sharing of ideas, increases opportunities by connecting the university to the globe as learning extends beyond the classroom to establish real-time scenario (Dotima and Ekeke, 2013). The adoption of information technology into the educational system will change the way education is conducted and administered if appropriately implemented. It will pave way for new didactic methods where students become an active participant in knowledge creation and not just recipient.

According to Aja and Eze (2016) the introduction of ICT in the school setting has a great impact in contributing to the achievement of the educational objectives, aims, and goals as well as improving teaching and learning standard. Ugwu and Oboegbulem (2011) also held that effective use of ICTs in schools guarantees more access to information and experience in this era of globalization. Likewise, Hadda and Draxler (2002) opined that ICTs have brought about a personalized, just-in-time, up- to-date and user-centred educational activities. Adeyemi (2005) posits that for any teacher at any level to be able to contribute to national development in this global world, he/she must be empowered to provide ICT based training for the students. Therefore, adopting ICT to teaching will empower the students with immeasurable opportunities for access to vital information especially of their interest as well as interact with professionals and experts in other parts of the world. Additionally, Nebraska (2015) mentioned that information technology support distance learning by making a learner-centred education possible which is more effective from the conventional learning processes that require more to have an effective learning outcome. According to Dickson (2012), Mobile learning intersects mobile computing, communication devices, and e-learning through information technology. While, Sharples et al. (2007), added that m-learning is fundamental in activity-based and technology-based learning. Therefore, ICT is now viewed as the means to improve efficiency, accessibility, and quality as it stretches educational boundaries through the internet, m-learning, and e- learning. Sharples et al. (2009) called these new boundaries an evolving model penetrating the society driven by technology streams, effective communication, competitive strength and developed intelligence. In our society today, the significance and impact of information technology (IT) adoption are apparently overwhelming. Information technology enhances a general economic development, improves organizations services and productivity Kraemer and Derick (2001). ICT in educational sector facilitate teaching and learning, speed up information delivery, facilitate effective research method, increase information availability and its access make education widely available, foster cultural creativity, and enhance the social integration of individuals with different abilities and groups of different cultural backgrounds Kozma (2005). Abascal and Nicolle (2005) observe that success of the educational sector in developed countries is tied to information technology as it is an integral part of the system. These researchers noted that developed countries of the world have to exploit internet potentials to bridge educational barriers and transformed educational scenery. Gillwald and Esselaar (2005) orated that the reason these universities have not extremely adopted technology hitherto is as a result of lack of government support, inadequate funding, student attitude of technology usage and lack of infrastructure. Hence, this research seeks to focus on ITA and to uncover the barrier of Information Technology adoption in south-south universities of the geopolitical zone of Nigeria.

METHODOLOGY

The research study employed focus group and Survey approach to collect analyze and interpret barriers to information technology adoption. Survey strategy has a practical advantage because it is inexpensive, can be conducted on massive population and adaptable. It can be dispensed via email, social media, through mobile phone compared to others. This was done through BOS (Bristol Online Survey), questionnaire link was sent to respondents. Furthermore, The survey method employed in this research study questionnaire includes a bipolar five-pointer Likert scale questions to help classify questions from, strongly agree to the strongly disagree which avail respondents the chance to respond reasonably since many options are presented. Meanwhile, most surveys conducted invites respondents to complete anonymously, this result in truthful and well-defined replies compared to what is usually received from other survey strategies (Snapsurveys 2017).

Research design

The research design was chosen to take into account the questions and resolve the way the study is carried out (Saunders and Tosey 2012). According to Creswell (2013), research design is a plan and procedures for research that covers decisions from extensive assumptions to a detailed methodology of data collection and analysis. Hence, research study used the survey approach to obtain information from respondents on what they felt is responsible for non- IT adoption in their respective Universities.

Sampling

The questionnaire was targeted at students, Academic staff, Technologist, Lecturers, Professionals who are familiar with IT application in managing information technology Projects and the 14 Universities within the south-south geopolitical zone of Nigeria.

Validity of data

Data validity refers to how well an instrument measure what is intended to measure or how efficient the test quantifies what it is claimed to quantify. Research data validity can be classified into two groups: internal and external. Internal validity state how the research findings match reality, while external validity refers to the extent to which the research findings can be replicated to other environments (Pelissier, 2008). However, Leedy and Ormrod (2010) research subscribe that questionnaire may not properly measure what it claimed; therefore, modification of collected data and drawing of a satisfactory conclusion is necessary on analysis data. Data validity certifies that measurement covers a large area within the topic under consideration. Moreover, the researcher did a broader literature review to make certain a reasonable investigation on the BITA was properly done. Is was possible through the extractions of some of the question in the questionnaire from past research studies in the area of Technology adoption

Reliability of research data

According to Allen and Bennett (2010), Data reliability is the uniformity of data and the degree of reliability to produce a unique result over personal and questionnaire items. Additionally, Yang and Peng (2008), articulated that "Reliability is the prerequisite for measuring validity". Thus, Cronbach's alpha, calculated will target at measuring the credibility used in the reliability test analysis (Wong and Vimonsatit 2012). However, Leedy and Ormrod (2010), posit that there might be troubles in the lack of procedures in the questionnaire to produce reliability with the outcome of other research. Therefore, that challenges would be checked before questionnaire.

Data analysis and result

Data were analyzed using Statistic Package for Social Science (SPSS), scores for each question entered and feedbacks from 77 respondents were mathematically analyzed. Kruskal Wallis Test conducted to test the assumption that attitude to ITA has a greater impact on technology adoption than Lack of IT physical components. The outcome of this test reveals that there is no significant gap/ impact between this two barrier categories since Barrier attitude ranked only one percent over barrier IT infrastructure (Figure 1, Tables 1 and 2). RII was used to rank range the barriers, check the correlation between various variables from respondent and classify the most critical Barrier factors these Universities are experiencing. Research has it those researchers such as Cohen (2013); Heejun, Vincent, and Williams (2004), adopted RII in their research to demonstrate the significance of effective knowledge management execution in an organization setting.

The RII is expressed as shown below:

RII (%) = $\boldsymbol{\Sigma\Sigma WW}$ $(\mathbf{00} \leq RII \leq \mathbf{11})$---------- (1)

$A*N$

Where,

Table1: Depicting barrier category frequency.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Knowledge of computer usage	23	31.9	31.9	31.9
	Attitude towards IT	25	34.7	34.7	66.7
	Availability of IT infrastructure	24	33.3	33.3	100.0
	Total	72	100.0	100.0	

Table 2: Kruskal Wallis test result on barrier factors.

Test Statistics[ab]

	Q15_1	Q15_2	Q15_3	Q15_4	Q15_5	Q15_6	Q15_7	Q15_8	Q15_9	Q15_10	Q15_11	Q15_12	Q15_13	Q15_14	Q15_15	Q15_16
Chi-Square	.871	6.117	.881	3.027	9.001	1.358	.719	.597	2.214	2.365	.405	.091	1.469	.291	.389	1.143
df	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Asymp. Sig.	.647	.047	.644	.220	.011	.507	.698	.742	.331	.306	.817	.955	.480	.863	.823	.565

a. Kruskal Wallis Test

b. Grouping Variable: Q13

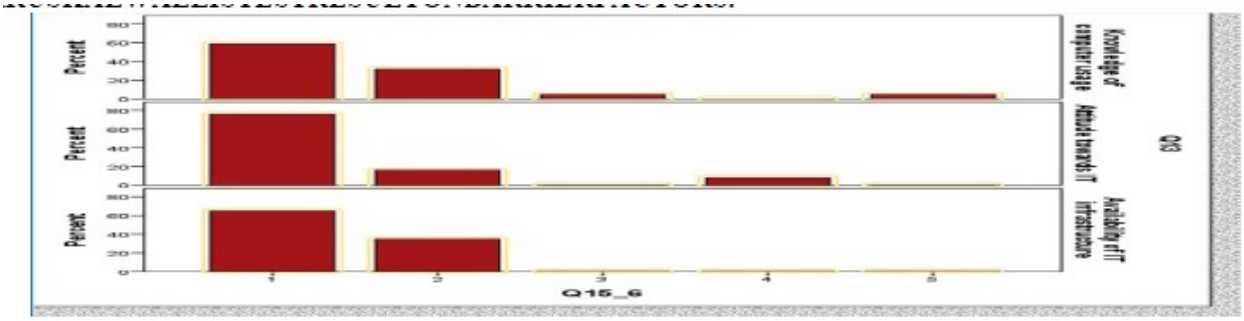

Figure1: Kruskal wallis test out come on barrier categories**.**

W = weighted value of each barrier factors, choices of the participants which range from 1 to 5, (where 1= Strongly Disagree and 5 = Strongly Agree as adopted in the survey).

A = maximum weight (which is 5 in this context) N = Total Number of Respondents

This expression can be shown in the formula below;

RII = $\mathbf{55}(n\mathbf{55}) + \mathbf{44}(n\mathbf{44}) + \mathbf{33}(n\mathbf{33}) + \mathbf{22}(n\mathbf{22}) + n\mathbf{11} * \mathbf{110000}$ ---------- (2)

$\mathbf{55}(n\mathbf{11}+n\mathbf{22}+n\mathbf{33}+n\mathbf{44}+n\mathbf{55})$

Where, n5, n4, n3, n2 and n1 signify the total number of the respondent who chooses: 1- Strongly disagree, 2 – Agree, 3- Neither Agree, 4 – Disagree, 5 – Strongly Disagree. Again, the greater the RII value, the greater the representation of significant barrier factor. (That is if RII falls between 0 and 1).Receive data was exported from BOS imported to MS Excel, SPSS to rank the barrier factors.

Gender demographic for survey participant

The Technology Acceptance Model 3 (TAM 3), observed technology acceptance theory to be an individual difference (gender), system features, social impact and simplifying conditions. The gender demographic showed a significant variation between male and female respondents as 51(65.4%) of the total respondents were males, females were 26(33.3%) while only 1(1.3%) of all responses choose to prefer not to say. This suggests that male have high dominance in information technology adoption than female though there exist different claims as to whether gender matters or not in technology adoption. Similarly, Hui and Wan, (2007), Zhang et al., (2011) studies observed that males are more involved in e-commerce technology activities than females.

Furthermore, gender was identified as the moderator of social impact on mobile learning adoption intention (Wang et al., 2009). Conclusively, Venkatesh et al. (2012) mentioned that gender moderates the effects of social influence, enabling conditions, performance effort expectancy, and price on behavioural intention to use IT. Hence, women placed greater importance on external supporting elements whereas men rely less on aiding conditions when using new technology (Faqih and Jaradat 2015).The researcher then concluded that male showed positive intention compare to Female in Information technology adoption base on the data realized from the Survey.

Respondent location in the south-south zone

The location of respondent's University helped the researcher to analyze if there exist any changes of the barriers to technology or any hidden barrier that emerged as a result of location, language or profession of the locality. Nevertheless, the three states with the highest rate of participation in order of ranking are River State with 23(31.9%) of respondents, Delta State 13(18.1%) of respondents and Edo 12(16.7%). While Bayelsa State 9 (12.5%) of the respondents, Cross Rivers State 8 (11.1%) of respondents and Akwa-Ibom7 (9.78%) of respondents participated in the survey.

Conversely, by evaluating the above data it can be deduced that Rivers state is more open to Technology than any other states. The results also indicate that Universities in Rivers state are more enlightened on the benefit of Information Technology to education. Also, information gathered from the online interview showed that this awareness comes from Rivers State University of Science and Technology as there are no computer-based exams held in the state which the university is not used as the venue due to reliable internet and computer availability.

University it acceptance level

Previous relate researchers observed that the core determinant of information technology adoption is behavioural intention which is based on social influence, usefulness, efficiency, and result. Several researchers study gave a varying opinion as to why the information technology Acceptance intention level is low. According, to Aguele (2007), while Mudasiru (2005), and Culp et al (2003). Low intention and acceptance decision to ITA is from the academic staff(s) of the Universities. Data from the survey and online interview showed a different view on the acceptance level to what other research studies said. Majority of the academic staff(s) (lecturers) who participated indicated the willingness to IT adoption giving the total of 76 counts compare to 1 count for not willing. The researcher then concludes that both students and Lecturers are now willing to embrace information technology within the region and universities under study.

Information technology projects executed by the universities

Result from the analysis shows that 48.53% of the total projects executed are information communication technology, 32.35% is Wi-Fi Project, 8.82% is Library Automation Project, and 4.41% is Software Upgrade, while Database and virtual learning project have the same percentage of 2.94 %. Considering the information gathered during the interview and that data provided above, the researcher concludes that yes information communication technology must have ranked high but still has not been effectively utilized. Secondly, the Wi-Fi on campuses are only accessible on some location probably around most VC offices, for Library Automation, only a few Universities have adopted this services, for the rest of the Universities, this service is at one developmental stage or the other. Virtual learning and Database management projects are rated very low because these two IT services are not in existence in the region. Universities around South-South still operate the manual filing system where a heap of papers is used as Database and chalkboard as the only lecturing tool.

DISCUSSION

Lack of Electricity: Lack of electricity ranked first with greater RII value of0.912which indicates that electricity is a major barrier to information technology adoption as any technology functionally depends on electricity. This confirms to what Shaibu and Joy (2014) said that lack of power supply is a hitch to ITA. Also, Passer (1953); Byatt (1979) mentioned that electricity weakness has a damaging effect on development in all spheres of life. Britain was able to accelerate economic decline due to the technology change (power supply) they put in place (Williams 1987, Schumpeter (1939).Is sadden that despite the continuous lamentation by Nigerian, federal Government still play deaf ears and choose to take a bribe on generator importation while leaving the country and those who can't afford generator in lasting darkness.

Resistance to change

Resistance to change was ranked 2nd with a RII value of 0.883 which indicates that people are often threatened by the change which information technology brings. Fear of losing their job or position in connection with lack of skill has brought this barrier factor to the highest point. This agreed to what Schneider and Barsoux (1997) said that cultural resistance undermined the adoption of information technology.

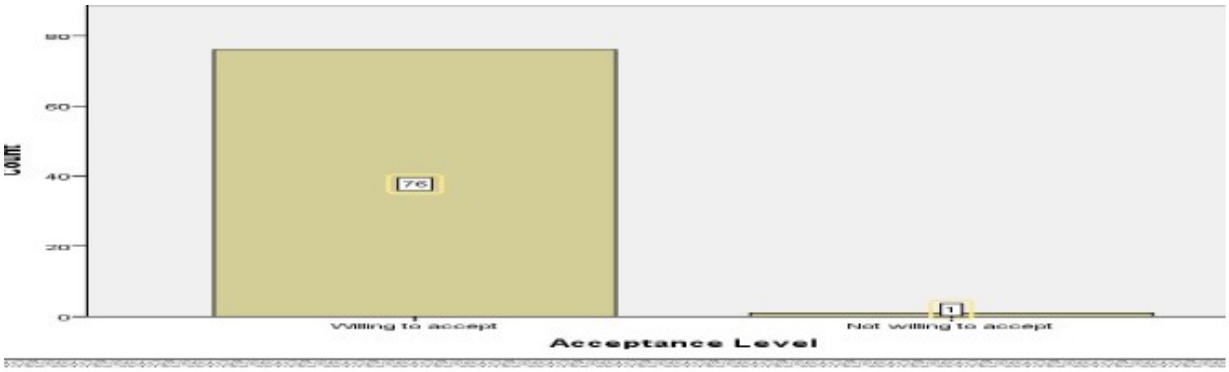

Figure 2: Bar charts preading respondents' information technology acceptance level.

Lack of training and skilled personnel

lack of training and skill ranked 3rd with a RII value of 0.872, which indicates that lack of training brings anxiety and reduces self- efficacy as people are afraid to make mistakes or usual doubt themselves if a system or service seems not to work well. This confirms what Montealegre (1998) said that the skill required to use Information technology scares; therefore we must consciously work to develop it.

Lack of fund: Lack of financial resources, Diversion of fund ranked 4th with a RII value of 0.855 for lack of financial resources(inadequate funding) and 0.857 for diversion of fund .this shows that lack of financial support or inadequate funding is a major contributory factor to non- adoption of information technology. This agreed to what Nnamani (2012) said that lack of IT skill and adoption is a result student and lecturer financial handicap or fiscal factor since they cannot afford the needed IT devices or services. Also, Ani, Esin, and Edem (2005) posit that inadequate funding is the major cause of IT adoption in Universities Library.

Lack of Government Support(Policy Making) was ranked 5th with a RII value of 0.845 which shows that government are inconsistency or does not take ITA policy seriously. Therefore, Universities fault or operate below the supposed standard of IT without warmed or noted. This work in line with what Unit (2009) said, that for education to achieve its objectives in human and society, development exclusively depends on government policies and political will of the government to render its policies on education into positive action.

Lack of Internet and change of University Administration: Connectivity and change of University Administration were ranked 6th with a RII value of 0.837 for lack of internet connectivity and 0.843 for change in University administration. These portray the fact that education cannot function without communication, sharing, and access to educational resources. This confirms what Adekunbi (2016) said, lack of computer is an obstacle to IT adoption. Statistical evaluation in 2014 report shows the 95 percent of Nigerians are without computer and internet.

Corruption Incline Policy ranked 7th with a RII value of 0.832 which directs that policies set up by Government has not shown strength against corruption. This obliged to the research study by Mudasiru (2005), Culp et al (2003) which states that students and lecturer lack of interest in ITA is as a result of Nigerian national IT policy been silent on teacher education and teachers' ICT professional development. Again, No such policies against breach of IT contracts exist even when it is, the corruption giant of God Father becomes the order of the day. As such embezzlement, diversion and misappropriation of fund become the National Cake.

Cultural resistance

This ranked 8th with a RII value of 0.778, this specifies that the environment in which one is born and raised determined what they feel is acceptable and familiarized themselves with (Tully 2003). This confirms what Odedra (1992) observation, that culture is a strong factor capable of dictating if any technology will be accepted, adopted and implemented or not. Lack of Infrastructure was ranked 9th with a RII value of 0.744, this indicates that even when the intention is there, academic staff and students can't really do much since the enabling facilities are not available. This affirms the statistical data by Shaibu (2014) which analyzed that 72 percent of respondents agreed to lack of infrastructure to support IT implementation of Technology Adoption. Misappropriation of funds by the University was ranked 10th with a RII value of 0.698. This indicates that misappropriation of fund has been one of the lingering issues since inspection as fund given to Government-owned universities cannot be properly accounted for because of insincerity and dishonesty which is a direct result of lack of Monitoring Committee and corruption.

Conclusion

A finding of this research to uncover the barriers to ITA shows that the core barrier to Information technology Adoption in the universities in South-South region of Nigeria is lack of electricity. Respondents have recommended key strategies to ensure ITA in the Universities covered in this research. Their recommendations are: Enforcement Policy, Routine IT training, partner with international ICT companies, Monitoring Committee on IT facilities, Adequate Funding, Universities should benchmark international IT procedures, Prioritized IT use, Stakeholder Involvement.

Future research study

This research study emphasizes on the immense advantage that accrues a national educational institution on adoption of information technology, especially in universities domicile in the Niger Delta Region, South-South Zone of Nigeria. Future research of similar topic can be conducted on a wider scale to uncover barriers to information technology adoption which researcher believes may open up different Barriers in different sector, at different location even within the country may experience unique barrier factors.

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