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Factors Influencing Administrative Staffs toward the Adoption of Cloud Computing

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ABSTRACT

Adoption of new Information and Communication Technologies (ICT) has been one of the most challenging issues in developing part of the world. Uptake of new ICT innovations involves fulfilling many requirements ranging from technical to human resources. This study investigated factors influencing administrative staffs toward the adoption of cloud computing. Unified Theory of Acceptance and Use of Technology (UTAUT) model serves as an assessment framework to understand administrative staffs' behavioral intention towards cloud computing. The results of T-test showed that there is no significant influence of gender on effort expectancy, performance expectancy and social influence of administrative staffs towards the adoption of cloud computing. Similarly, results of ANOVA revealed there is no significant influence of age on effort expectancy, performance expectancy and social influence of administrative staffs towards the adoption of cloud computing. On the other hand, the result of Linear regression showed that there is a significant relationship between effort expectancy, performance expectancy, social influence and facilitating conditions on administrative staff's behavioral intention towards the adoption of cloud computing. Knowledge gained from the study is advantageous to both the tertiary administrative staffs and the Nigerian ICT policy makers.

Keywords: Demographic factors, Cloud computing, Information and communication technology, UTAUT, Administrative staffs

1. INTRODUCTION

Information and Communication Technologies (ICT) have influenced all sectors of mankind including personal life and organizational management. Their prevalence has resulted in powerful and transformative products which influence our daily life (Laudon & Laudon, 2010; Scheuermann & Pedró, 2009). The developments in ICT has resulted into varied innovations aimed at improving services and products. Organizations are engaged in innovations which are aimed at delivering new business solutions to improve effectiveness and efficiency. Universities have adopted cloud computing as an ICT innovations not only to improve and enhance their service delivery, but also to provide competitive and strategic advantage (Gülbahar, 2007).

Nigeria has placed considerable emphasis on the importance of cloud computing in its Education Sector Support Programme and other endeavors as evidenced in the promulgation of the National ICT Strategy for Education and Training (Farrell, 2007). Universities in Nigeria are experiencing increased use of information systems in an attempt to harness the benefits, which come with the new technologies including improved processes, services and creating strategic advantage. (Chumo, Muumbo & Korir, (2011) revealed some major challenges in adopting and using cloud technology. These challenges include the high cost of deploying the technologies, lack of ICT institutional strategies and policies, lack of technical skills and cultural issues such as resistance to change.

Success in implementation and adoption of cloud system innovations in an organization depends on many factors ranging from the availability of infrastructure, the dependability of the software systems, the policies guiding and the human factors such as skills, attitude and culture. Literature in Information systems has identified individual acceptance of cloud computing as a recurrent issue over decades (Bhattacharjee & Sanford, 2006). Understanding technology acceptance is vital since the anticipated benefits of cloud computing usage, such as improved efficiency, effectiveness, productivity cannot be achieved if individual users do not accept to use these systems (Kessio et al., 2012; Afarikumah & Acheamong, 2010).

It is perceived that integrating technology in administration is very valuable asset in the process of office management and therefore it is vital to adopt cloud technology in education. According to Sife, Lwoga and Sanga (2007) level of cloud computing adoption in many developing

countries is low due to socioeconomic and technological challenges including lack of a system approach to learning, awareness and attitudes towards cloud computing, administrative and technical support, staff development, and lack of ownership, inadequate funds, and transforming higher education.

Information and communication technologies could be used to achieve novel administrative activities (White et al., 2002). Universities being institutions of higher learning are in the forefront in exploring the use of information systems to deliver their core business of teaching and learning as well as in managerial aspects such as student and staff records management (Cheon et al., 2012; Loogma, Kruusvall and Ümarik 2012). However just like other sectors there are numerous challenges in introduction, deployment and sustainability of the systems. For an information system to be successfully deployed the users' mindsets have to be changed to avoid resistance (Vinkashkumar, 2005; Birch & Irvine, 2009). This study used UTAUT model to evaluate the adoption of cloud technology systems at Adeyemi College of Education, Ondo. The UTAUT model is based on eight technology acceptance theories and models including Theory of Reasoned Action (TRA), the Motivation Model, the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), and the model of Personal Computer Utilization, the Social Cognitive Theory and the Innovation Diffusion Theory (Venkatesh et al., 2003). This UTAUT model helped to form the basis of the conceptual model for this study which led to the hypotheses tested in the study.

2. RESEARCH HYPOTHESES

The following hypotheses were tested at < 0.05 level of significant.

H0₁: there is no significant influence of age on the performance expectancy of administrative staff toward the use of cloud computing.

H0₂: there is no significant influence of gender on the performance expectancy of administrative staff toward the use of cloud computing.

H0₃: there is no significant influence of age on the effort expectancy of administrative staff toward the use of cloud computing.

H0₄: there is no significant influence of gender on the effort expectancy of the administrative staff toward the use of cloud computing

H0₅: there is no significant influence of gender on the social influence of administrative staff toward the use of cloud computing.

H0₆: there is no significant influence of age on the social influence of administrative staff toward the use of cloud computing.

H0₇: there is no significant influence of performance expectancy, effort expectancy, social influence and facilitating conditions on the behavioural intention of administrative staff to use cloud computing.

3. LITERATURE REVIEW

Cloud computing refers to the applications delivered as services through the aids of the Internet, hardware and systems software in the datacenters that make available those services. Armbrust et al (2009). According to Mell and Grance (2011) Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing that can be rapidly provisioned and released with least management effort or service provider interaction. In recent years, Cloud computing is a new dawn for education activities in many institutions of learning. Cloud computing is enabling students, researchers, lecturers and administrative staff at colleges and universities to access services provided by new computing paradigms (Sultan, 2011). Higher institutions of learning are migrating to cloud computing environments for a variety of reasons (Sultan, 2011). Particularly economic (Mircea and Andreescu, 2011). The cloud computing is a balance between control and economy of scale form an educational side of view, offering a lower total cost of ownership model (Katzan, 2010).

The core advantage of cloud computing is cost effectiveness in the implementation of hardware and software (Rao, Sasidhar and Kumar, 2010). Other advantage includes cost reduction, energy savings, and increased speed to markets, service scalability and other technical benefits. Cloud computing offers large amounts of computing power, storage for relatively small budgets and at lower energy consumptions (Buyya et al., 2009). Cloud computing can be used to develop

quality, low cost education on a global basis (Rao, Sasidhar and Kumar,2010). The demand to reduce costs and rapid advances in technology is compelling arguments for cloud computing adoption by colleges and universities (Sultan, 2011). Cloud computing improves competence, cuts costs, and is convenient for the educational sector which has resulted to a paradigm shift for university IT departments (Sultan, 2011).

Technically speaking, cloud computing can ably handle spikes in demand by the virtualization of computer resources (Aymerich et al., 2008). Furthermore, cloud computing can provide instant and persistent access to stored data, anytime and anywhere, through the use of mobile devices by the virtualization of storage resources (Aymerich et al., 2008). In summary, cloud computing offers several technical and economic benefits. Adoption is an important pebble which contributes to a extensive use of the technology in any organisation. Understanding the user adoption of new technologies, and the ability to use this information in the implementation process, can improve the use of new technologies in education. The adoption of a new technology is not an effortless process; it includes many factors which influence the intention to use and different phases the user experiences.

Institutions of learning are implementing one of three different cloud computing models. First, colleges have created their own cloud computing environments or private clouds (Schaffer, et al 2009). Second, colleges have formed consortiums with other institutions to build cloud computing infrastructures (Crawford, Angers and Dunington, 2015) and governments are investing in shared cloud infrastructures for universities (Information Age, 2011). Third, universities are purchasing cloud computing services from third parties (Microsoft, 2010). Cloud computing adoption has been studied both in post-secondary education and firms (Behrend, et al, 2011; Sarkar and Young 2011; and Laisheng and Zhengxia 2011). Regardless of these studies, there is concern as to whether users of cloud computing in higher institutions of learning are enough ready to integrate the cloud computing system that is accessible to them into effective use for their needed activities. There are numerous models of technology acceptance that have been established over the past decades some of which have deployed to focus on a people's intention to use new technologies (Kripanont, 2007; Louho et al, 2006). However, this study applies the model of Unified Theory of Acceptance and use of Technology (UTAUT),

propounded by Venkatesh et al (2003) which is considered to be more accurate than other model in examining adoption of cloud computing among administrative staff. Until now, the model has been applied in several studies to examine the usage of ICTs in different settings (Kripanont, 2007; Louho et al., 2006; Al-Qeisi, 2009; Ramli et al., 2013). However, it has rarely been applied in cloud computing related studies, especially in developing country like Nigeria. These model attempts to advance in an effort to improve implementation success rates and better predict adoption. This study is more interested in the Unified Theory of Technology Acceptance and Use (UTAUT) model in the process of formulating the research framework because it accounts to be a more adequate model than others, with the ability to explain 70% of variance in usage behavioral intention where the other models just explained between 17 and 53% of variance (Venkatesh et al 2003).

A large amount of studies has been conducted on validation of UTAUT model over the years. Such as, Al-Gahtani et al (2007) who applied UTAUT model in an environment on business disciplines. In this study, the model explained 39.1% of intention to use variance and 42.1% of usage variance. Eckhardt et al (2009) found that the impact of system information on adaption significantly differ with regard to both peer groups and adopters and non-adopters of the influence. Also in a study conducted by Im et al. (2008) research applied the UTAUT model to higher education disciplines in order to investigate four moderating variables including new perceived risk, technology type, user experience and gender. It found that model fits the so well.

The UTAUT has four key constructs namely; Performance expectancy, effort expectancy, social influence and facilitating conditions. These constructs are direct factors of usage behavioral intention and individual factors include age, gender and experience are labeled as key moderators that influences on behavioural intention. These moderators influence each of the factors in different ways (Venkatesh et al 2003). Gender, for example, is shown to affect PE, EE and SI. Previous research discovered that male is more likely than female to use and adopt behaviours of technology (Kripanont and Tatnall, 2009). The UTAUT posit age is considered to play moderating roles on PE, EE, FC and SI while people who are more likely than younger age to be influenced by other (Pervan and Schaper, 2004).

4. RESEARCH METHODOLOGY

This study adopted a survey research design. The population of the study comprises all the administrative staff in Adeyemi College of Education Ondo, Ondo State, Nigeria. The simple random sampling technique was adopted in selecting the sample population for the study. A total of eighty (80) administrative staff in Adeyemi College of Education, Ondo, Nigeria was selected in this study. A structured questionnaire designed by the researchers was used to collect data for the study. The instrument was titled “Influence of Demographic factors of the school administrative staffs toward the adoption of cloud computing” (IDSASACC). The questionnaire was divided into two parts. Part A was on demographic data. Part B was further divided into five (5) sub-sections asking questions on each of the variables of the study. The data collected was analyzed using descriptive and inferential statistics. Descriptive statistics such as frequency counts and percentages was used to describe the demographic data while ANOVA, T-test, and linear regression analysis were used to test for hypotheses at 0.05 level of significant.

5. RESULTS AND DISCUSSION OF FINDINGS

Parameters	Classification (n=80)	Frequency (%)
Gender	Male	50(62.5)
	Female	30(37.5)
	Total	100.0
Age	24-30	28(35.0)
	31-40	18(22.5)
	41-50	24 (30.0)
	51-60	10(12.5)
	Total	100.0

Table 1 shows the frequency and percentage distribution of respondents by gender, and age. The result on table 1 indicates that 62.5% of the respondents were male, while 37.5% were female. This shows that majority of the respondents are male. Analysis of the respondents by age indicated that majority of the respondents were between the age range of 24-30 (35.0%). This was closely followed by those within the age range of 41-50 (30.0%). The other respondents fall within the age range of 31-40 (22.5%) and 51-60 (12.5%) The result reveals that majority of the respondents were still within the active ages which implies that majority of the respondents are still in their productive years and they could still be open to embracing of new technology for their work activities.

5.2. TESTING OF HYPOTHESES

To test the hypotheses postulated for the study, seven hypotheses were tested and were run on the Statistical Package for Social Sciences (SPSS) version 20.0 at 0.05 level of significance.

Hypothesis One: There is no significant influence of age on the performance expectancy of the administrative staff toward the use of cloud computing.

Table 2: Result showing the Influence of Age on Performance expectancy of Administrative staff toward the use of Cloud computing

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	5.687	3	1.896	0.226	0.878
Within Groups	636.800	76	8.379		
Total	642.488	79			

$p < 0.05$, $df = 3, 76$, $F\text{-crit} = 2.758$

Table 2 shows that F-calculated value of 0.226 was less than F-critical value of 2.758 at 0.05 level of significance given 3, 76 degree of freedom. Since the calculated value was less than the critical value it infers, that age has no significant influence on performance expectancy of administrative staff toward the use of cloud computing. Therefore the null hypothesis which states that age has no significant influence on performance expectancy was accepted.

Hypothesis two: There is no significant influence of gender on the performance expectancy of the administrative staff toward the use of cloud computing.

Table 3: Result showing the Influence of Gender on the Performance Expectancy of the Administrative Staff toward the Use of Cloud Computing.

Gender	N	Mean	Std. Deviation	Df	t-calc	t-crit
Male and Female	50	16.36	3.11	78	0.494	1.645
	28	16.03	2.39			

$p < 0.05$, $df = 79$, $t\text{-crit} = 1.645$

Table 3 shows that t-calculated value of 0.494 was less than t-critical value of 1.645 at 0.05 level of significance given 79 degree of freedom. Since the calculated value was lesser than the critical value then there exists no significant influence of gender on performance expectancy. Therefore the null hypothesis which states that gender has no significant influence on administrative staffs toward the use of cloud computing was accepted. Summarily, both gender and age has no significant influence on the performance expectancy of administrative staff toward the use of cloud computing.

Hypothesis three: There is no significant influence of age on the effort expectancy of the administrative staff toward the use of cloud computing.

Table 4: Result showing the influence of age on the effort expectancy of the administrative staff toward the use of cloud computing

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	24.057	3	8.019	1.496	0.223
Within Groups	407.493	76	5.362		
Total	431.550	79			

$p < 0.05$, $df = 3, 76$, $F\text{-crit} = 2.758$

Figure4 is an ANOVA table; it shows that F-calculated value of 1.496 was greater than F-critical value of 2.758 at 0.05 level of significance given 3, 76 degree of freedom. Since the calculated value was lesser than the critical value then we infer that age has no significant influence on effort expectancy of the administrative staff toward the use of cloud computing in Adeyemi College of Education, Ondo, Nigeria. Therefore the null hypothesis which states that age has no significant influence on performance expectancy was not rejected.

Hypothesis four: There is no significant influence of gender on the effort expectancy of the administrative staff toward the use of cloud computing

Table 5: Result showing the influence of gender on the effort expectancy of the administrative staff toward the use of cloud computing

Gender	N	Mean	Std. Deviation	Df	t-calc	t-crit
Male	50	14.72	2.186	78	-1.013	1.645
and Female	28	15.27	2.672			

$p < 0.05$, $df = 78$, $t\text{-crit} = 1.645$

Figure5 above shows that t-calculated value of -1.013 was lesser than t-critical value of 1.645 at 0.05 level of significance given 78 degree of freedom. Since the calculated value was lesser than the critical value then, the null hypothesis which states that there is no significant gender difference on administrative staff's effort expectancy was accepted. This really means the effort expectancy of administrative staff on the usage of cloud computing is not based on the fact that such staff is either male or female.

Hypothesis five: There is no significant influence of gender on the social influence of the administrative staff toward the use of cloud computing.

Table 6: Result showing the influence of gender on the social influence of the administrative staff toward the use of cloud computing.

Gender	N	Mean	Std. Deviation	Df	t-calc	t-crit
Male and Female	50	8.48	1.83	78	0.176	1.645
	28	8.40	2.19			

$p < 0.05$, $df = 78$, $t\text{-crit} = 1.645$

Figure 6 shows that t-calculated value of 0.176 was lesser than t-critical value of 1.645 at 0.05 level of significance given 78 degree of freedom. Since the calculated value was lesser than the critical value then there exists no significant influence of gender on social influence of the administrative staff toward the use of cloud computing Adeyemi College of Education, Ondo, Nigeria. Therefore the null hypothesis which states that gender has no significant influence on social influence of administrative staffs was accepted.

Hypothesis six: There is no significant influence of age on the social influence of the administrative staff toward the use of cloud computing

Table 7: Result showing the influence of age on the social influence of the administrative staff toward the use of cloud computing

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	10.827	3	3.609	.936	0.427
Within Groups	292.973	76	3.855		
Total	303.800	79			

$p < 0.05$, $df = 3, 76$, $F\text{-crit} = 2.758$

Figure 7 shows that F-calculated value of 0.936 was less than F-critical value of 2.758 at 0.05 level of significance given 3, 76 degree of freedom. Since the calculated value was less than the

critical value, we then infer that age has no significant influence on social influence on administrative staff. Therefore the null hypothesis which states that age has no significant influence on social influence was accepted.

Hypothesis seven: Performance expectancy, effort expectancy, social influence and facilitating conditions cannot significantly predict the behavioural intentions of administrative staff.

Table 7.1: Results showing Regression Analysis of the Effect of Performance expectancy, effort expectancy, social influence and facilitating conditions on behavioural intentions of administrative staff.

R	R²	Adjusted R Square	Std. Error of the Estimate
.336 ^a	.113	.065	2.601

a. Predictors: (Constant), Facilitating condition, Performance expectancy, Effort expectancy, Social influence

b. Dependent Variable: Behavioural intention

The output of the first table shows the model summary and overall fit statistics. We find that the adjusted R² of our model is 0.065 with R² = 0.113, this means that the linear regression explains 11.3% of the variance in the data.

Table 8.2: ANOVA table showing Regression Analysis of the Effect of Performance expectancy, effort expectancy, social influence and facilitating conditions on behavioural intentions of administrative staff.

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	64.454	4	16.113	2.882	.059 ^b
Residual	507.434	75	6.766		
Total	571.887	79			

a. Dependent Variable: Behavioural intention

b. Predictors: (Constant), Facilitating condition, Performance expectancy, Effort expectancy, Social influence

Table 8.2 is an ANOVA table; the linear regression's F-test has the null hypothesis that performance expectancy, effort expectancy, social influence and facilitating conditions cannot significantly predict staff's behavioural intentions. With $F_{cal} = 2.882$ and from $df(4, 75)$ $F_{crit} = 2.758$, the test is then highly significant, thus we can assume that there was linear relationship between the variables in our model. We therefore reject the null hypothesis which states that there is no significant relationship between the models. This simply means that performance expectancy, effort expectancy, social influence, and facilitating conditions can be used to predict the behavioural intentions of administrative staff.

Figure 8.3: Results showing the relative effect of Performance expectancy, effort expectancy, social influence and facilitating conditions on behavioural intentions of administrative staff.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	B		
(Constant)	1.951	2.257		.865	.390
Performance expectancy	.078	.119	.083	.658	.512
Effort expectancy	.128	.151	.111	.847	.400
Social influence	.121	.184	.088	.655	.515
Facilitating condition	.218	.166	.170	1.312	.193

a. Dependent Variable: Behavioral intention

The next table shows the regression coefficients, the intercept and the significance of all coefficients and the intercept in the model. From the table, we find that our linear regression analysis estimates the linear regression function to be;

$$\text{Behavioural Intention (Y)} = 1.951 + 0.078X_1 + 0.128X_2 + 0.121X_3 + 0.218X_4$$

Where;

Y is the dependent variable (Behavioural Intention)

X_1, X_2, X_3, X_4 are the independent variables that measure cloud computing.

It can be inferred from the table that behavioural intention do not really have a full dependence on performance expectancy, social influence and effort expectancy unlike facilitating conditions. In testing the relative effect of Facilitating condition, Performance expectancy, Effort expectancy and Social influence on Behavioural Intention Table 8.3 shows the relative effect of each of the indicators was following; Facilitating condition ($\beta = .170$, $p > 0.05$); Performance expectancy ($\beta = .083$, $p < 0.05$); Effort expectancy ($\beta = .111$, $p > 0.05$) and Social influence ($\beta = .088$, $p < 0.05$) in other words, Facilitating condition has a relative effect of 17% on Behavioural Intention of administrative staff while Performance expectancy has relative effect of 8.3%; Effort expectancy has relative effect of 11.1%; and Social influence has relative effect of 8.8%. Although from earlier findings in this study, it was observed that the predictor variables (performance expectancy, effort expectancy, social influence and facilitating conditions) are not really influenced by their moderating variables (gender difference, age difference).

6. DISCUSSION AND RECOMMENDATIONS

This study examined the influence of demographic factors of administrative staff towards the adoption of cloud computing in Adeyemi College of education, Ondo, Nigeria. The study has tested seven hypotheses using, ANOVA, t-test and liner regression analysis. Demographic factor of age was found to have no significant influence on the performance expectancy of the administrative staff toward the use of cloud computing. This could be explained because majority of the respondents were still within the active ages which implies that majority of the respondents are still in their productive years and they could still be open to embracing of new technology form their work place. Similarly, Gender differences of administrative staffs in Adeyemi college of Education has no significant influence on the use of cloud computing, Hence is can be concluded that the demographic factors (Age and Gender) has no contributing toward the use of cloud computing. Furthermore, age was found to have no significant influence on performance expectancy of administrative staff toward the use of cloud computing. While result shows that the effort expectancy of administrative staff on the usage of cloud computing is not based on the fact that such staff is either male or female. Gender has no significant influence on social influence of administrative staffs. Likewise, gender has no significant influence on social influence of administrative staffs. Also, the age of administrative staffs of Adeyemi College of Education has no significant influence on their social influence toward the use of cloud

computing. Our finding is supported by Maldifassi and Canessa (2009) who found that gender has the least importance when explaining differences in the use of ICT and perception regarding the usefulness of ICT. In another study, Zhang (2005) reported the view that there is no statistically significant difference in terms of ICT subscale usefulness between male and female employees. Also, findings on age and gender having no influence on the performance expectancy, effort expectancy, social influence, and facilitating conditions respectively contradicts findings of (Venkatesh et al 2003; Kamal, 2012) who both found out that age and gender have a relationships with performance expectancy, effort expectancy and social influence and users' behavioral intention.

Lastly, performance expectancy, effort expectancy, social influence, and facilitating conditions were found to predict the behavioural intentions of administrative staff. Social influence was found effective factor that affect the behavioral intention to use cloud computing by administrative staffs in Adeyemi College of Education, Ondo. The findings of this study are in agreement with the findings of the literature. Those who examine the effect of social influence on the behavioral intention found similar results (Wu, 2011; Park & Ryoo, 2013; Lian, 2015; Hayder& Zainuddin, 2015). In the same way, previous studies have found performance expectancy to have an effect on the behavioral intention to use cloud computing. Park and Ryoo (2013) found significant influence between performance expectancy and the behavioral intention to adopt cloud computing storage services. Similar result related to the cloud computing usefulness were found by Wu (2010, 2011) and Shin (2013, 2015) Effort expectancy was also found to affect the behavioral intention of administrative staff. This result is similar with the findings of Wu (2011), and Burda and Teuteberg (2014). Conclusively, Facilitating condition was found to significantly have affects positively on the behavioral intention of administrative staff toward the use of cloud computing services. The finding of the present study is in agreement with the findings of the literature. Cao et al. (2013) concluded that Facilitating condition is significant for the adoption of the cloud. Similar findings were found by Muthur and Dhulla (2014), Hayder& Zainuddin, 2015 and for Chang et al. (2015).

This study has successfully deployed the UTAUT model. The findings showed that the UTAUT could be used to explain the adoption of cloud computing. The findings of the study are

generalized for the higher institutions in Nigeria, which share with Adeyemi College of Education similar characteristic. The findings of the study are related to individual users specifically, administrative staffs. Furthermore, we found that performance and effort expectancy, social influence and facilitating conditions all positively influence the behavioral intention to use cloud computing by administrative staffs. This study confirms the validity of the UTAUT model in the educational system in developing countries. Knowledge gained from the study is advantageous to both the tertiary administrative staffs and the Nigerian ICT policy makers. It is therefore, important that decision makers in higher institutions of learning are to increase awareness about productivity and performance of cloud computing especially for respective categories of staffs (academic and non-academic staff). More workshops and seminar should be conducted. In addition practical lessons must be provided to users to know how cloud computing works. The internet must be provided on campus where users can access the technology consistently at the campus. Finally, tertiary institutions in Nigeria should try to utilize hybrid cloud to increase the confidence and security of its services.

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