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Computer Self-Efficacy and Use of Cloud Computing for Personal Information Management among Undergraduate Students in a Nigerian University

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Abstract
This study investigated self-efficacy and use of cloud computing for personal information management among undergraduate students in Nigerian university. The descriptive survey research design was adopted for the study. The population of the study consists of all undergraduates in University of Ibadan, Nigeria. The study adopted a multistage sampling technique. The sample size for this study was 173 undergraduates. A structured questionnaire was the research instrument used for this study. Results was analysed using percentages, Mean and Standard Deviation. Findings revealed that the level of computer self-efficacy of undergraduates was very high (Mean=3.33). It was also revealed that most of the respondents 157 (91.3%) indicated to have used Google cloud platform (Gmail. Google Docs, Google Drive e.t.c), Furthermore, It was revealed that majority of the respondents, 113 (65.7%) were daily users of Google cloud. It was revealed that majority of the respondents agreed that slow data entry and slow downloading in database format rated as major challenge of the use of cloud computing for personal information management by the undergraduates. The study concluded that the use of cloud computing for personal information management by undergraduates is not only important for the building of their academic activities, but could also add value to their social relationship if deployed properly. It is therefore recommended that they should expand their scope beyond Google cloud platform in which majority of them are used to.

Key Words: Computer Self-Efficacy, Cloud Computing, Information Management, Undergraduate Students and Nigerian University

INTRODUCTION

Cloud computing is a kind of computing application service that is like e-mail, office software, and enterprise resource planning (ERP) and uses ubiquitous resources that can be shared

by the business employee or trading partners. Cloud computing is involved in applications ranging from Google services (e.g., G-mail, Google Docs and Google Drive) to Dropbox, the services depend on the servers provided to users. The applications are diverse, ranging from business to education. In this new information age, universities use information technologies (IT) in line with the requirements of age of students and their expectations. Aydin (2021) affirmed that universities must be in an effort in shaping themselves according to the requirements of the new IT and to renew themselves technologically. Today, cloud computing is one of the new technologies whose name is heard very often anywhere around the globe. This technology has a wide usage area in finance, health, insurance, automotive, military fields and also in universities.

Thomas (2011) defines cloud computing as virtualized computers that allow users to begin or stop the services subscribed to when necessary. Thomas further divides cloud computing into three service categories. First, cloud computing manages service software that provides application tools in the cloud, such as Google Docs, Google Drive, YouTube and social networks. Students are able to upload their work in any format to the web while feeling that their documents and files are secure and will not be lost. Secondly, cloud computing acts as a service platform from which to purchase online products (e.g., Amazon). Third, it works as an infrastructure that provides the utility of virtual hardware, including data storage and web hosting. Cloud computing and its functions provide an enormous benefit to students in higher learning. Students are able to store their work, share with their peers and collaborate through editing and adding information. According to Sultan (2011), cloud computing enables academic and non-academic staff as well as students and researchers of Higher Educational Institutions (HEIs) to access resources and services provided by the cloud service providers.

Cloud Computing have been widely accepted by the undergraduate students in the universities and there is no doubt that it has positive impact in contributing to their improvement of academic performance. Software as a service (Saas) is the most common cloud computing service model used by university students. SaaS is a form of cloud service. It is made up of systems that can receive, process, and deliver software and applications over a network. SaaS is a service model of cloud computing that has the potential to provide students with improved academic experience by providing them with anytime anywhere access to learning, communication and collaboration materials. Nowadays, information and communication technologies (ICTs) are important tools that aid student's effective learning. SaaS has the potential to provide students with all these features of effective learning and can therefore lead to the creation of a conducive academic environment for students. Students are now able to access, share and synchronize learning materials that are stored in the cloud at anytime from anywhere for academic activities leads to the search of information and this search needs personal information, (Akande and Belle, 2016).

Personal Information Management Systems (PIMS) aim to inform and empower users by equipping them with mechanisms for mediating, monitoring and controlling how their data is accessed, used, or shared. Their purpose is to provide an alternative to the data processing practices common today through platforms, (Janssen and Singh, 2022). *Platforms* are the organisations that provide the Personal data service and/or manage the ecosystem. There will be a range of platforms that differ in their offerings. Often a platform's core offering is equipping a user with a device; though this could vary from merely providing the codebase for users to compile and self-manage

the operation of their devices, to providing the entire operational infrastructure perhaps including hardware, managed cloud services for backup, and so forth (Janssen et al., 2020b).
Moreover, some platforms envisage hosting 'app stores' or 'data marketplaces' that broker between users and the organisations seeking to process their data, while many platforms require adherence with 'best practices', have defined terms of service, and may even have contractual agreements with users and organisations. In this way, platforms vary in their level of involvement in the operation of the PDS ecosystem.

Computer self-efficacy is based on an already formed sense of self-efficacy and represents the fundamental elements applied to the field of the use and mastery of computer self-efficacy has been associated with training effectiveness, intentions to use computers, their perceived ease of use (Chien, 2012). Computer self-efficacy consists of three dimensions; namely, magnitude, strength, and generalizability (Compeau & Higgins, 1995). First, the magnitude of computer self-efficacy refers to the levels of support needed. Users who possess high magnitude believe that they can accomplish tasks with less support. Second, the strength of computer self-efficacy is the confidence in beliefs of their capabilities in using computers. Lastly, the generalizability refers to the levels of beliefs in using computers in various platforms such as various software and operating systems.

Computer self-efficacy has been identified as essential in determining that individual's intention to engage in current or future use of an information system. Individuals who are more confident in their computer skills are more likely to expect positive results in their computer use (Okike and Adetoro, 2019). Computer self-efficacy also impacts decisions, goals, and amount of effort in performing a task, and the length of time they would persist through challenges and complications. Computer self-efficacy builds up motivational base of an individual in navigating a computer-based environment. Studies have shown that computer self-efficacy increases performance and reduces computer induced anxiety. Claggett and Goodhue (2011) have noted that teachers' computer self-efficacy is a significant factor determining their patterns of computer use. For pre-service teachers, their computer self-efficacy significantly predicted their ability to integrate technology use in the classroom. Wolverton, Guidry and Lanier (2020) examined students' perceptions of computer self-efficacy impact on students' engagement and found out positive impact.

Personal information management according to Janssen, Cobber and Singh (2020b) typically involve an ecosystem, which generally entails a platform providing the PIMS infrastructure. The platform provides users with some components for handling their personal data. Within this ecosystem, third parties seek to process user data (Janssen et al., 2020b). PIM employ technical, legal and organizational measures that enable users to manage and control their data, and to ensure and validate that the behaviours of third-parties accord with user and platform requirements. Though the specifics of which vary by offering, measures often include the data collected, captured, stored, or that otherwise available for processing; that computation, analytics or other processing performed over that data; as well as providing oversight measures to validate, review and to audit what happens to their data. There are growing concerns regarding the opacity concerning how data is being processed and (mis)used, where individuals typically lack meaningful transparency, visibility and control over what, how, why and by whom their data are captured, analysed, transferred, stored, or otherwise processed and used.

Afari, Eksail, Khine and Alaam (2023), affirmed that students become more actively involved in their studies when teachers integrate ICT into their lessons. Since computer self-efficacy is positively related to the integration of technology in education, improving pre-service teachers' computer self-efficacy could increase their intention to use technology.

Statement of the Problem

The growth and use of Information and Communication Technology (ICT) has been on the increase among undergraduate students. This was attributed to improved mobile telecommunication devices which have also made the use of cloud computing for personal information management by undergraduates an easy task. Despite this, it has been observed that there is low use of cloud computing by undergraduate students for personal information management. It was discovered that undergraduate students make use of cloud computing for socializing, playing games and sharing of irrelevant items online amongst one another instead of using it for personal information management. It was also observed that computer self-efficacy of some undergraduate students are very low as many of them cannot use the computer confidently and this invariably affects their usage of cloud computing for personal information management. Low computer self-efficacy of the undergraduate students will more likely discourage them from using cloud computing and the basic activities related to personal information management. It is on this basis that the study intends to explore computer self-efficacy and use of cloud computing for personal information management by undergraduate students in University of Ibadan, Nigeria.

Research Questions

1. What is the level of computer self-efficacy of undergraduates in University of Ibadan?
2. What are the types of cloud computing services used for personal information management by the undergraduates?
3. What is the frequency of use of cloud computing for personal information management by the undergraduates?
4. What are the challenges to the use of cloud computing for personal information management by the undergraduates?

REVIEW OF LITERATURE

Definitions of cloud computing vary widely depending on the services and applications for which it is being used. According to Voas and Zang (2009), cloud computing refers to clusters of distributed computers that provide on-demand resources and services over the Internet. Thomas (2011) defines cloud computing as virtualized computers that allow users to begin or stop the services subscribed to when necessary. For instance, cloud computing is involved in applications ranging from Google services (e.g., G-mail, Google Docs and Google Drive) to Dropbox, the services depend on the servers provided to users. The applications are diverse, ranging from business to education. Thomas divided cloud computing into three service categories.

First, cloud computing manages service software that provides application tools in the cloud, such as Google Docs, Google Drive, YouTube and social networks. Students are able to upload their work in any format to the web while feeling that their documents and files are secure

and will not be lost. Secondly, cloud computing acts as a service platform from which to purchase online products (e.g., Amazon). Thirdly, it works as an infrastructure that provides the utility of virtual hardware, including data storage and web hosting. These categories of cloud computing and its functions provide an enormous benefit to students in higher learning. Students are able to store their work, share with their peers and collaborate through editing and adding information.

Cloud Computing is defined by the National Institute of Standards and Technology (NIST) as a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction". Cloud computing is a kind of computing application service that is like e-mail, office software, and enterprise resource planning (ERP) and uses ubiquitous resources that can be shared by the business employee or trading partners. Thus, a user on the internet can communicate with many servers at the same time, and these servers exchange information among themselves.

Cloud Computing has become a critical player in the world of information technology According to SaediandIahad, 2013, the term Cloud Computing (CC) "can be explained in two parts: First, using a web browser on the internet to dynamically allocate or de allocate the access of the remote computing resources based on the users' demands and the second part refers to paying for the real use of the computing resources and facilities" (Hoover and Martin 2008; Kim et al. 2009). Cloud Computing includes three different types of services: Software as a Service (SaaS), platform as a Service (PaaS), and Infrastructure as a Service (IaaS) In SaaS, customers rent software applications from cloud service providers via the internet (Sultan, 2010) instead of installing them on their own computer (Salesforce.com, Customer Resource Management (CRM), and Google Apps). PaaS provides a virtualized platform in the cloud over the internet, upon which applications can be developed and executed (Salesforce.com, Microsoft Azure, and Google App Engine).

The last category, which is the delivery of computer infrastructure as a service (IaaS), offers computing power and storage space. In this category clients pay on a per-use basis and services are presented by Amazon.com AWS, IBM Blue Cloud, SUN Network.com, Rackspace, and GoGrid. Therefore Cloud Computing is defined as the ability of businesses and individual users to access applications from anywhere in the world on demand (Low *et al*., 2011; MisraandMondal, 2010; Sultan, 2010). Computer self-efficacy refers to the perceived competence to perform specific computer tasks and to the extent to which individuals perceive themselves capable of using computers for diverse applications. In academic settings, computer competence is viewed differently by students, depending on whether they are using technology for personal or course related tasks.

Compeau and Higgins (1995) refer computer self-efficacy as the perceived competence to perform specific computer tasks and to the extent to which individuals perceive themselves capable of using computers for diverse applications. Abdullah and Mustafa (2019) also defined computer self-efficacy as an individual's judgment toward his or her own capability of computer use. Similarly, the computer self-efficacy was divided into three major components or levels among the users. These computer self-efficacy levels include; beginning *skills*, advanced *skills,* file and software skills. The beginning skills entail the users having confident entering and saving data

(numbers or words) into file, write or type easily, exiting from software, storing data and software easily and correctly in a computer amongst others. The advanced skills involve having confident understanding the three stages of data processing; input, processing and output , using computer to organize information, describing the function of computer hardware (e.g. keyboard, monitor, disc driver, computer processing unit, learning to use a variety of programs (software), using computer for data analysis amongst others while the file and software skills involve confident getting the software up, installation and running, adding and deleting information from a data file, organizing and managing file, explaining why a program (software) will or will not run on a given computer, troubleshooting e.t.c.

Santoso, Lawanto, Becker, Fang, and Reeve (2014), in their study titled "High and Low Computer Self-Efficacy Groups and their Learning Behavior from Self-Regulated Learning Perspective While Engaged in Interactive Learning Modules" using both quantitative and qualitative approaches found that the students achieved the highest average score on beginning skills compared to advanced skills and file and software skills for their CSE. Noa (2015) noted that individuals with high self-efficacy will take more challenging tasks than those with low self-efficacy; it indicates that they will be more willing to try to use information systems. Noa (2015) also points out that the amount of time spent in a systems librarian position may significantly affect the subjects' attitude towards computers and computer related anxiety. Hence, both their computer self-efficacy and effectiveness at implementing information system security beyond that measured by training alone.

Lunenburg (2011). conducted a study to test several factors in relation to the intention to violate cyber security policy and found that employees with low self-efficacy are more likely to violate cyber security policies. This was an important finding as it stresses the importance of boosting employees' self-efficacy. Researchers have recently noticed that technology alone is insufficient to ensure security and have started to pay attention to the human aspect of security. According to Bass (2013), personal information management is described as both the practice and the study of the activities people perform to acquire, organize, maintain, retrieve, use and control the distribution of information items such as documents (paper-based and digital), Web pages, and email messages for everyday use to complete tasks (work-related and not) and to fulfil a person's various roles (as parent, employee, friend, member of community, etc.).

Personal information management studies are also used to discover innovative ways to assist individuals in managing excessive volumes of digital information more efficiently through the design of successful software and hardware to meet specific objectives in what may be referred to as personal information management tools or applications. The development of personal information management applications is in most cases commercially driven to assist individuals in the short-term management of a particular technological format such as email, text, image and music files, or Web bookmarks. For example, ubiquitous personal information management applications include email client software (Microsoft Office Outlook and Mozilla Thunderbird), file manager applications (Windows Explorer and Mac Finder), as well as organizational calendars (Google Calendar) and music file managers (iTunes).

Personal information management technologies invariably involve three primary functions: to create, arrange, and (re)access information in personal digital collections. However, archivaly oriented personal information management adds a fourth function, which may be

referred to as the long-term preservation of personal digital information. Archival personal information management considers the factors involved in maintaining personal digital information throughout its entire life cycle and "is directed at securing authentic personal digital objects and making them readily available for use and reuse by the individual creators and owners beyond the immediate future (Bass 2013).

METHODOLOGY

The descriptive survey research design was adopted for the study. The population of the study consists of all undergraduates in University of Ibadan, Nigeria. The total number of undergraduates in University of Ibadan is fifteen thousand one hundred and fifty seven (15,157) for the sixteen (16) Faculties. The study adopted a multistage sampling technique. In the first stage simple random sampling technique was used to select six (6) faculties (Agriculture, Arts, Technology, Education, veterinary and sciences) totaled 9870, based on a sampling fraction of 40%. The second stage involved a purposive selection of two departments with the highest numbers of undergraduates selected from the selected six (6) faculties). The departments are Animal Science, Agricultural Economics (Faculty of Agriculture), Philosophy, English (Faculty of Arts), Agricultural and Environmental Engineering, Electrical and Electronic Engineering, (Faculty of Technology), Teachers Education, Educational Management, (Faculty of Education) Chemistry, Computer science (Faculty of Science) and Veterinary Medicine totaled 3453 (Table 3.2). The last stage involved selecting 5% of the students in the selected departments. Veterinary Medicine does not admit students into departments but into Faculty at undergraduate level. So, a sampling technique of 5% was used directly for veterinary medicine while a sampling technique of 5% was also used for the other selected departments. The total number of undergraduates selected was 173. A structured questionnaire is the research instrument used for this study. The structured questionnaire consists of four (4) sections in all. The research instrument for this study was self-developed by the researcher except the computer self-efficacy scale which was adapted and validated appropriately. Face validity was used in testing the validity of the instrument. The analysis of the data collected was based on the use of descriptive statistical analysis of frequency, percentage numbers, mean and standard deviation.

FINDINGS

A total of 173 copies of the questionnaire were administered to respondents in the six (6) Faculties (Arts, Agriculture, Education, Science, Technology and Veterinary medicine) out of which 172 were duly completed and returned and found valid for analysis. This represents a total of 99.4% response rate

Research question 1: What is the level of computer self-efficacy of undergraduates in University of Ibadan?

Table 1: Level of computer self-efficacy of undergraduates in University of Ibadan

S/N	Items	Very high level (%)	High level (%)	Low level (%)	Very low level (%)	Mean	SD
A	**Beginning skills**						
1.	I feel confident entering and saving data (numbers or words) into file.	86 (50.0)	79 (45.9)	7 (4.1)	-	3.46	0.58
2.	I feel confident using computer to write a letter or essay.	86 (50.0)	73 (42.4)	13 (7.6)	-	3.42	0.63
3.	I feel confident exiting from software.	76 (44.2)	82 (47.6)	13 (7.6)	1 (0.6)	3.35	0.65
4.	I feel confident handling a flash/USB drive correctly.	85 (49.4)	78 (45.3)	8 (4.7)	1 (0.6)	3.44	0.61
5.	I feel confident storing software correctly.	77 (44.8)	86 (50.0)	8 (4.7)	1 (0.6)	3.39	0.61
	Mean					**3.41**	**0.62**
B	**Advanced skills**						
6.	I feel confident understanding the three stages of data processing; input, processing and output.	81 (47.1)	83 (48.2)	6 (3.5)	2 (1.2)	3.41	0.62
7.	I feel confident using computer to organize information.	83 (48.3)	77 (44.8)	10 (5.8)	2 (1.2)	3.40	0.65
8.	I feel confident describing the function of computer hardware (e.g. keyboard, monitor, disc driver, computer processing unit e.t.c.).	80 (46.5)	76 (44.2)	12 (7.0)	4 (2.3)	3.35	0.71
9.	I feel confident learning to use a variety of programs (software).	70 (40.7)	89 (51.7)	10 (5.8)	3 (1.7)	3.31	0.66
10.	I feel confident using computer for data analysis.	73 (42.4)	74 (43.0)	22 (12.8)	3 (1.7)	3.26	0.75
	Mean					**3.35**	**0.68**
C	**File and software skills**						
11.	I feel confident getting the software up and running.	68 (39.5)	90 (52.3)	6 (3.5)	8 (4.7)	3.27	0.74
12.	I feel confident adding and deleting information from a data file.	71 (41.3)	92 (53.5)	4 (2.3)	5 (2.9)	3.33	0.67
13.	I feel confident copying an individual file.	62 (36.0)	95 (55.2)	9 (5.3)	6 (3.5)	3.24	0.71

14.	I feel confident organizing and managing files.	69 (40.1)	89 (51.7)	6 (3.5)	8 (4.7)	3.27	0.74
15.	I feel confident explaining why a program (software) will or will not run on a given computer.	52 (30.2)	92 (53.5)	13 (7.6)	15 (8.7)	3.05	0.85
	Mean					**3.23**	**0.71**
	Overall Mean					**3.33**	**0.67**

Decision rule: If mean is ≥ 0 -1=very low level, ≥1.1 – 2= low level, ≥2.1 – 3= High level, ≥3.1 -4= very high level.

Therefore, since overall mean is 3. 33, the level of Computer self-Efficacy of the undergraduate students is very high.

Research question 2: What are the types of cloud computing services used for personal information management by the undergraduates?

Table 2: Types of cloud computing services used for personal information management by the undergraduates

S/N	Types of cloud computing services	Yes (%)	No (%)
i.	Google cloud platform (Gmail. Google Docs, Google Drive e.t.c)	157 (91.3%)	15 (8.7%)
ii.	Microsoft Azure	70 (40.7%)	102 (59.3%)
iii.	Oracle cloud	52 (30.2%)	120 (69.8%)
iv.	IBM cloud computing	41 (23.8%)	131 (76.2%)
v.	Amazon web services	69 (40.1%)	103 (59.9%)
vi.	Verizon wireless	37 (21.5%)	135 (78.5%)
vii.	Alibaba cloud	45 (26.2%)	127 (73.8%)
viii.	OpenNebula	39 (22.7%)	133 (77.3%)

Table 2 shows the types of cloud computing services used for personal information management by the undergraduates in the study area. It was revealed that most of the respondents 157 (91.3%) indicated to have used Google cloud platform (Gmail. Google Docs, Google Drive e.t.c) as against 15 (8.7%) who claimed not to use Google cloud platform for personal information management. However, majority of the respondents indicated that Verizon wireless (78.5%), OpenNebula (77.3%), IBM cloud computing (76.2%), Alibaba cloud (73.8%), Oracle cloud (69.8%), Amazon web services (59.9%) and Microsoft Azure (59.3%) were less used as types of

cloud computing services used for personal information management by the respondents respectively.

Research question 3: What is the frequency of use of cloud computing for personal information management by the undergraduates?

Table 3: Frequency of use of cloud computing for personal information management by the undergraduates

S/N	Items	Daily (%)	Weekly (%)	Monthly (%)	Rarely (%)	Mean	SD
1.	Google cloud platform (Gmail. Google Docs, Google Drive e.t.c)	113 (65.7)	39 (22.7)	10 (5.8)	10 (5.8)	3.48	0.85
2.	Microsoft Azure	14 (8.1)	45 (26.2)	18 (10.5)	95 (55.2)	1.87	1.06
3.	Oracle cloud	10 (5.8)	16 (9.3)	22 (12.8)	124 (72.1)	1.49	0.89
4.	IBM cloud computing	9 (5.2)	14 (8.1)	15 (8.7)	134 (77.9)	1.41	0.85
5.	Amazon web services	13 (7.6)	25 (14.5)	30 (17.4)	104 (60.5)	1.69	0.98
6.	Verizon wireless	8 (4.7)	14 (8.1)	16 (9.3)	134 (77.9)	1.40	0.83
7.	Alibaba cloud	11 (6.4)	16 (9.3)	23 (13.4)	122 (70.9)	1.51	0.91
8.	OpenNebula	13 (7.6)	13 (7.6)	14 (8.1)	132 (76.7)	1.46	0.93
	Overall mean					**1.79**	**0.91**

Table 3 shows the frequency use of cloud computing for personal information management by the undergraduates in this study. It was revealed that majority of the respondents, 113 (65.7%) were daily users of Google cloud platform (Gmail. Google Docs, Google Drive e.t.c) with a mean value of (3.48). However, majority of the respondents indicated that Verizon wireless 134 (77.9%), IBM cloud computing134 (77.9%), OpenNebula 132 (77.3%), Oracle cloud 124 (72.1%), Alibaba cloud 122 (73.8%), Amazon web services 104 (60.5%), and Microsoft Azure 95 (55.2%) Amazon web services (59.9%) and Microsoft Azure (59.3%) with their various mean value range within (1.41 and 1.87) were rarely used as types of cloud computing services used for personal information management by the respondents respective

Research question 4: What are the challenges to the use of cloud computing for personal information management by the undergraduates?

Table 4: Challenges of using cloud computing for personal information management by the undergraduates

S/N	Items	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	Mean	SD
1.	Costly and more expensive for me	45 (26.2)	66 (38.4)	52 (30.2)	9 (5.2)	2.85	0.87
2.	Poor quality of software	24 (14.0)	53 (30.8)	84 (48.8)	11 (6.4)	2.52	0.81

3.	Small size of the phone	28 (16.3)	74 (43.0)	56 (32.6)	14 (8.1)	2.67	0.84
4.	Limited size capacity of the phone storage/memory	38 (22.1)	80 (46.5)	43 (25.0)	11 (6.4)	2.84	0.84
5.	Slow data entry and slow downloading in database format	37 (21.5)	87 (50.6)	40 (23.3)	8 (4.7)	2.89	0.79
6.	Slow speed of the phone	31 (18.0)	73 (42.5)	58 (33.7)	10 (5.8)	2.73	0.82
7.	Not easy to use	15 (8.7)	37 (21.5)	92 (53.5)	28 (16.3)	2.23	0.82
	Overall mean					**2.68**	**0.83**

Table 4 revealed the results of the challenges to the use of cloud computing for personal information management by the undergraduates in this study. It was revealed that majority of the respondents agreed that slow data entry and slow downloading in database format rated as major challenge of the use of cloud computing for personal information management by the undergraduates with a mean value (2.89), followed by costly and more expensive (2.85), Limited size capacity of the phone storage/memory (2.84), slow speed of the phone (2.73), Small size of the phone (2.67), Poor quality of software (2.62) and complex to use (2.23) in that order respectively.

Discussion of Findings

The aim of this study was to investigate computer self-efficacy and use of cloud computing for personal information management by undergraduate students in University of Ibadan, Nigeria. Response on the level of computer self-efficacy of the undergraduates showed that respondents scored highest mean in beginning skills (17.06) compared with advanced skills and file and software skills with means (16.73) and (16.16) respectively. The study further revealed that students achieved highest average in having confident entering and saving data (numbers or words) into file with mean (3.46) while the least average scored in file and software skills with mean (3.05) with item 15 (i.e. having feel confident explaining why a program (software) will or will not run on a given computer). These findings corroborated Santoso *et al*., (2014) which revealed that students achieved the highest average score on beginning skills compared to advanced skills and file and software skills for their computer self-efficacy.

According to the data gathered and analysed on the types of cloud computing services used for personal information management by the undergraduates, response showed that majority (91.3%) preferred using Google cloud platform for personal information management. This finding is in line with Woo and Reeves (2008) as cited in Wang (2017) that Google cloud is widely used by students, because it provides a stable service and secure platform and programs running on the cloud computing technologies that do not require extensive memory capacity on the computer using them. Secondly, it enables a number of students to simultaneously edit or comment on a document without geographical or temporal limits and also allows students and instructors share documents with 200 email addresses instantly and securely. With Web 2.0 technology tools, students are given lots of possibilities to interact with each other, work on a project together, edit/modify each other's saved files, and thus increase the effectiveness of instruction. Third, Google cloud supports synchronous communication through synchronous chat services during the

cloud activities in real time. It therefore fosters students' self-expression from interacting at the same time.

The findings on the frequency of use of cloud computing for personal information management by the undergraduates showed that majority of the respondents, 113 (65.7%) were daily users of Google cloud platform (Gmail. Google Docs, Google Drive e.t.c). This is supported by the study of Ameen (2016) that most frequently used tools for personal information management by students for relocating information once found are downloads on personal computers is Google cloud, MSWord, Excel, e.t.c.).

The major challenges encountered in using cloud computing for personal information management by the undergraduates are 'slow data entry' and 'slow downloading in database format. However, the study of Mathew (2012) stated that the challenges of cloud computing for personal management include; expenses, flexibility, access to information and technology. In addition, Mathew (2012) who also found that a lot of universities' students improved the fundamental structures of IT and data and the challenges which include; expenses, flexibility, access to information and technology.

Conclusion

The use of cloud computing for personal information management by undergraduates is not only important for the building of their academic activities, but could also add value to their social relationship if deployed properly. Through the use of cloud computing undergraduates student can acquire knowledge in different fields and in different formats like documents, videos and the likes. It was found that the level of the computer self-efficacy among the undergraduate students was very high and Google cloud platform (Gmail. Google Docs, Google Drive e.t.c.) was frequently used and preferred by the undergraduate students for personal information management. However, most of the undergraduate students were not aware of the other cloud computing let alone of using them for personal information. Majority of the students focused on Google cloud platform (Gmail, Google Docs, Google Drive e.t.c.) frequently for personal information management.

Recommendation

- It is recommended that university should expand their scope beyond Google cloud platform (Gmail. Google Docs, Google Drive e.t.c.) in which majority of them are used to.

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