Information technology availability and its utilisation by academic staff of Covenant University, Nigeria

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Abstract

Information technology (IT) availability in organizations may not necessarily translate to utilization. This study therefore investigated the availability and utilization of IT among the academic staff of Covenant University Nigeria. Survey research design was adopted. Using total enumeration technique, data were collected from the academic staff in all the 16 academic departments in the institution using a questionnaire tagged Information Technology Availability and Utilization Questionnaire ITAUQ (a=0.72). All the 300 academic staff in the university were sampled, however, 175 questionnaire were eventually retrieved and used for the study. This represents 58.3% response rate. The study found that internet (=3.37; SD=0.97), computers (=3.06; SD = 1.47), Online/CD-ROM databases (= 2.97; SD = 1.17), photocopiers (=2.93; SD=1.30); local area network (=2.47; SD=1.60), audio-visuals (=2.47; SD=1.36) and printers (=2.14; SD=1.48) were available; while computers (=3.76; SD=0.73), internet (=3.53; SD=1.10), photocopiers (=2.74; SD=1.40), printers (=2.70; SD=1.41) and Online/CD-ROM databases (=2.06; SD=1.59) were found to be frequently utilized. IT availability had significant relationship with IT utilization (r=0.666; P<0.01). There was no significant difference in the utilization of IT resources based on gender (t=0.1745, df=173; P>0.05). The study recommends periodic upgrade of IT resources and staff IT skills improvement through training.

Keywords: Information technology (IT); information technology availability; utilization, academic staff; Covenant University.

Introduction

Information technology (IT) utilization in academic institutions of learning can act as a catalyst for staff productivity and a means of improving institutional services. IT use has gained global prominence as one of the key tools for the actualization of organizational objectives. IT refers to the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by micro-electronic based combination of computing and telecommunication (Langley and Shain, 1985).

IT is now regarded as one of the three fundamental assets of an organization (Watson, 1987). According to Prichard (1987), it is important that an enterprise develop the capacity to use IT creatively to collect, make sense of and disseminate information. Most organizations are now dependent on IT (Foster, 1993).Academic institutions such as universities are no exception. Today's academics must have the capability to deploy IT to facilitate effective teaching, learning and research functions. Universities can also utilize IT towards achieving effective and efficient institutional resources management (Ekireghwo, 1998)

The achievement of the foregoing depends largely on the availability of these technologies. This is why academic institutions have now realized the need for IT as it relates to job performance and now make IT available to their staff. It is apt to state here that the availability of IT in a University or an organization may not translate to its utilisation though studies such as

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Melott (2003) and Haliso (2007) had shown that IT availability can positively influence utilisation. Indeed, it is expedient to say that IT availability and its functionality may precipitate utilization.

The National Universities Commission (NUC) in Nigeria adjudged Covenant University as the foremost private University in Nigeria; going by its accreditation exercise of 2005. The institution so far has provided and encouraged the use of IT among its staff and students. This study investigates IT resources availability as a correlate of its utilization among academic staff of Covenant University.

Statement of the Problem

The availability and utilization of IT by academic staff in universities is crucial to job performance, increased productivity and attainment of organizational objectives. Observations suggest that utilization of IT by academic staff of Covenant University may have dwindled and this cast doubts on the range of IT resources availability in the institution and the frequency of their utilization.

Research Questions

The under-listed research questions were raised for the study

What are the IT resources available at Covenant University?

What is the frequency of IT utilisation by academic staff of Covenant University?

Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance.

Ho_1: There is no significant relationship between IT availability and utilization by academic staff of Covenant University.

Ho_2: There is no significant difference in the frequency of IT utilization by academic staff of Covenant University based on their gender.

Literature Review

Ekireghwo (1998) defined IT as the application of computing, micro-electronics and telecommunication technologies and how these are used to collect, store, process, retrieve and disseminate information. IT are generally needed to ease the acquisition, storage and dissemination of relevant information to the right users at the right time; irrespective of locations in the most effective and efficient manner (Mohammed, 2001). This line of thought and definitions has been supported by American Library Association (1983), Langhley and Shain (1985), Marghalani (1987), Zaman (1993) and Oketunji (2001) to mention a few.

With IT, Universities are now building new opportunities and improving staff productivity. This requires an IT management structure that will apply available and emerging technologies such as personal computers, databases, local area networks for achieving organizational objectives (Prichard, 1987).

Rosenberg (1997) submits that utilisation of IT by African universities for information management and access has become prevalent. Other related studies with reports on the positive use of IT for information management in universities include Horton and Ilcheva (1995), Adeniran (1997), Chisenga (1997) and Formson (1999). Availability of IT in organizations does not necessarily translate to utilization though IT functionality has correlation with utilization (Chisenga, 2004). Indeed studies such as Gardner (1994), Jimba (2000), Melott (2003) and Haliso (2007) have evidence to the effect that IT availability positively influence utilization.

Davis, Bagozzi and Warshow (1989), Compeau and Higgins (1995) had highlighted that organizations and individuals have utilized available IT for attainment of organizational and individual goals while Goodhue and Thompson (1995) and Goodhue (1995) had focused their studies on task-technology fit.

Subair and Kgankenna (2002) studied the utilisation of IT by agricultural researchers and reported that IT is well valued and consequently used. Other related studies include Goense, Hofstee and Van Bergeijk (1996) and Armarteifio (2001).

Odesanya and Ajiferuke (2000) reported that availability and use of IT by advertising agencies in Lagos was encouraging. IT resources were available and functioning in the agencies and IT usage led to increased productivity, profit levels and customer satisfaction.

Idowu and Mabawonku (1999) investigated the application of IT in Nigerian Research and

University libraries with positive findings in terms of level of IT availability and utilization while Winter, Chudoba and Gutek (1998); Jones, Sprague, Nankivell and Richter (1999); Adekunle, Omoba and Tella (2007) all found a correlation between attitude towards IT and its utilization. These studies, also corroborated by Jones (2007) reinforce the significance of positive attitude towards the deployment, availability and utilization of IT in organizations.

Methodology

Research Design

The study is based on survey research method.

Population

The study population is the academic staff of Covenant University which comprised of lecturers spread across the institutions sixteen (16) academic departments and the librarians in the University library. The academic records unit of the university puts the population of academic staff at three hundred (300).

Sample and Sampling Procedure

The study employed the total enumeration method in which all the 300 academic staff in the 16 departments were sampled. Questionnaires were distributed to all the 300 staff. Some of the questionnaires were not returned while others were found to be defectively filled. In all 175 questionnaire were found usable for the study. This represents a response rate of 58.3%.

Instrument

A self constructed questionnaire tagged Information Technology Availability and Utilization Questionnaire (ITAUQ) was used for data collection. The instrument had three sections A-C with eight items. Section A elicited biographical information from respondents, section B gathered information on IT availability while section C focused on IT utilization. Sections B and C were all structured on a four point likert rating scale.

Validity and Reliability

For the validity of instrument, IT experts in Covenant University examined the questionnaire which led to useful corrections, additions and suggestions. The reliability of instrument was determined using test-retest method. A reliability co-efficient of (a = 0.72) was derived on the section on IT availability while (a = 0.73) was derived for the section on IT utilization. The reliability scores were obtained using Cronbach Alpha test.

Data Analysis

The data gathered were analyzed using mean, standard deviation, Pearson product moment correlation and t-test analysis.

Result

Research question 1

What are the IT resources available at Covenant University?

For the purpose of making decision, IT resources with a mean score of (=2.0) and above was considered as available and vice-versa. The study showed that IT resources available at Covenant University includes: Internet (=3.37; SD=0.97); Computers (=3.06; SD=1.47) Online and CD-ROM databases (=2.97; SD=1.17); photocopiers (=2.93; SD=1.30); local area network (=2.47; SD=1.60); audio-visuals (=2.47; SD=1.36) and printers (=2.14; SD=1.48) while Fax machine (=1.47;SD=1.17) Modem (=1.41; SD=1.39); Microfilm (=1.28; SD=1.14 and Microfiche (=1.17; SD=1.18) were considered not available.

This result reveals clearly that an appreciable variety of IT resources are available at Covenant University for staff use.

Table 1. IT Resources availability at Covenant University

IT Resources	$\overline{X}$ mean	Standard Deviation	Decision
Internet	3.37	0.97	AV
Computers	3.06	1.47	AV
Online/CD-ROM Databases	2.97	1.17	AV
Photocopiers	2.93	1.30	AV
Local area networks	2.47	1.60	AV
Audio-visuals	2.47	1.36	AV
Printers	2.14	1.48	AV
Fax machine	1.47	1.17	NA
Modem	1.41	1.39	NA
Microfilm	1.28	1.14	NA
Microfiche	1.17	1.18	NA

Decision

AV = Available

NA = Not Available

Research Question 2

What is the frequency of IT resources utilization by academic staff of Covenant University?

In providing answer to the above question, the respondents were asked to rate their utilization of IT resources on a four point scale of Daily, weekly fortnightly and monthly. The result revealed that the frequently used IT resources were Computers (=3.76; SD = 0.73); Internet (3.53; SD = 1.10) Photocopiers (= 2.74; SD = 1.40); Printers (= 2.70, SD = 1.41), Online and CD-ROM databases (= 2.06; SD = 1.59). The less utilized IT resources includes Local Area network (= 1.67; SD = 1.48); Audio visuals (= 1.67; SD = 1.66) Microfilm (= 0.94; SD = 1.10) Modem (= 0.87; SD = 1.30) Fax (= 0.83; SD= 1.25) and Microfiche (= 0.68; SD = 0.95).

Table 2 Ranked order of IT resources utilization by academic staff of Covenant University

IT Resources	$\overline{X}$ mean	Standard Deviation	Rank
Computers	3.76	0.73	1
Internet	3.53	1.10	2
Photocopiers	2.74	1.40	3
Printers	2.70	1.51	4
Online/CD-ROM databases	2.06	1.59	5
Local area networks	1.67	1.48	6
Audio-visuals	1.62	1.66	7
Microfilm	0.94	1.10	8
Modem	0.87	1.30	9
Fax	0.83	1.25	10
Microfiche	0.68	0.95	11

n = 175

Test of hypotheses

Hypothesis 1

There is no significant relationship between IT availability and its utilization by academic staff of Covenant University.

Table 3. Correlation between IT availability and utilization

Variables	N	Mean (x)	Std. Deviation	R	Sig. Value	Remark
IT availability	175	27.2627	8.9680	0.666**	000	P<0.01
IT utilization	175	23.7086	6.1905			

**Correlation is significant at 0.01 level (2 tailed)

r= 0.666; p<0.01

Decision: significant

The analysis showed significant relationship between IT availability and its utilization by academic staff of Covenant University. The analysis revealed a correlation co-efficient value r=0.666; p<0.01. This mean the hypothesis is rejected.

Hypothesis 2

There is no significant difference in the level of IT utilization by academic staff of Covenant University based on their gender.

Table 4. T-test comparison of utilization of IT resources based on academic staff gender

Gender	N	Mean ($\bar{x}$)	Std. Deviation	df	t-cal	Sig. Value (2 tailed)	Remark
Male	135	23.2667	6.8166	173	-1.745	0.083	p>0.05
Female	40	25.2000	2.8930				

Significant at 0.05 level

t-cal =0.1745; df = 173; p>0.05

Decision: Not significant

This result showed no significant difference between male and female academic staff IT resources utilization in Covenant University. The analysis revealed a t-test value t=0.1745, df=173; p>0.05. This indicates that the hypothesis is hereby accepted.

Discussion

This study revealed that computers, internet, on-line and CD-ROM databases, photocopiers, local area network, audio-visuals and printers are available for use by academic staffs of Covenant University. These IT resources can help to enhance job performances and to ensure productivity. This finding is in consonance with Horton and Ilcheva (1995), Rosenberg (1997) and Chisenga (1997).

The frequently utilized IT resources are also computers, internet, photocopiers, printers and online/CD-ROM databases. This result is consistent with the findings on availability of IT resources. It can be inferred that academic staffs at Covenant University actually utilize the available IT resources. This is in agreement with Melott (2003) and Jimba (2000) who found that a wide range of available IT resources were utilized by agricultural scientist in Nigeria. The less utilized IT resources include fax, modem and microforms. This is also in agreement with the result on IT resources availability and therefore may be due to their non-availability and non-use at Covenant University.

This study also found that IT resources availability had positive relationship with IT utilization. In effect, IT availability at Covenant University has positive influence on its utilization. This corroborates the findings of Odesanya and Ajiferuke (2000), Oluwatoyin (2003) and Haliso (2007) that IT availability will most times bring about the utilization.

Further, it was revealed that there was no significant difference in the utilization of IT resources by the academic staffs based on their gender. In essence, sex or gender is not a factor that will influence IT utilization.

Conclusion and Recommendation

The availability of IT resources at Covenant University can be described as appreciable going by the number of IT resources available in the institution. This study has established that IT resources are adequately utilised by the academic staff in their daily activities. However, there is

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always enough room for improvement. IT resources availability resulted in its utilization and there was no difference in the utilization of IT resources based on gender of academic staff.

It is therefore recommended that Covenant University management should periodically upgrade the institution's IT resource profile in terms of increase in the range of IT resources available with a view to sustaining the level and frequency of utilization for optimum job performance.

The academic staff members should also be encouraged to always improve upon their IT skills through organized on-the-job and off-the-job training in form of workshops and conferences.

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