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ICT COMPETENCE AND THE USE OF E-RESOURCES AMONG FACULTY MEMBERS IN ILORIN METROPOLIS

Adetola Ayotunde Kehinde Mr
University of Ilorin, kennydee055@gmail.com

Abubakar Lanre Folorunsho Dr
National Institute for Sports, abubakarainn@gmail.com

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Abstract

The study investigated Information and Communication Technology (ICT) competence and the use of electronic resources by university faculty members in Ilorin metropolis, Nigeria. The study adopted descriptive survey research design. The population of the study comprised faculty members in Al-Hikmah University and University of Ilorin. Raosoft Online Sample Size Calculator was used to calculate the sample size with precision levels of 5% and confidence level of 95% and the recommended sample size was 309. A simple random sampling technique was used to select the samples from the population. Data was collected through a research instrument titled "Information and Communication Technology Competence and the use of Electronic Resources by Faculty Members Questionnaire (ICTCERFMQ)". Content-related approach of validation was conducted to ensure the validity of the instrument while the instrument has reliability with Cronbach's alpha values between 0.684 and 0.813. Copies of the questionnaire were analyzed with the IBM SPSS version 21.0 using simple frequency counts and percentages. The presentations of the data for the research objectives were done using tables and pie chart. For testing of the hypothesis, Spearman Rank Order Correlation was adopted. The finding generally revealed that there is a significant relationship between ICT competence and the use of e-resources based on the type of e-resources preferred and purpose of using e-resources by faculty members in Ilorin metropolis ($r_s(297)= 0.132$, $p<0.05$). Among other recommendations, the study recommended that university management should ensure that competence in ICT is a major requirement in the recruitment process.

Keywords: Electronic Resources, ICT, Faculty Members, Database, ICT Competence

Introduction

Over the decades, information seeking pattern of individuals has been experiencing a gradual shift from conventional information resources to electronic based resources. This phenomenon can be attributed to the development of Information and Communication Technologies (ICT). It is worthy of note that ICT has been the major drive for rapid advancement and development in the 21st century and this development has been of great significance and importance in scholarly communication.

The development in technology has dramatically increased the rate of conversion of knowledge, information and data into electronic format (Sinha, 2012). This development has created effective and efficient ways of organizing, storing, accessing and retrieval of information. This technological advancement has given rise to what is called electronic resources (e-resources) sometimes interchangeably used with electronic information resources (EIRs).

The emergence of e-resources as described by Ani and Edem (2012) had tremendously reshaped the handling and management of information in Nigerian academic environments and most especially in academic. The adoption of e-resources by faculty members helps in teaching, learning and research of these intellectuals. This made Adetunla (2016) to opine that the new age

of information offers possibilities for the future with information delivered in different formats, limited only by the boundaries of our imaginations and that the potentials of the electronic network are breath-taking.

Okoye and Ugwuanyi, (2012) however characterized e-resources as a package of e-journals or a database of abstracts and indexes that include the full text of some or all articles referenced by the indexes. Electronic sources that are made available electronically and can also be accessed as such (electronically) through facilities like online computer catalogue; the Internet and World Wide Web; digital libraries and archives; government portals and websites; CD-ROM databases; online academic databases such as Medline Online, or commercial databases such as LEXIS and NEXIS all of which are computer networked facilities (Ekwelem, Okafor & Ukwoma, 2009).

Commenting on the benefits of electronic resources, Dadzie (2007) opined that electronic resources are invaluable research tools that complement the print-based resources in a traditional library setting. Their advantages, according to her include: remote access to information, access to latest information and provision of extensive links to additional resources related contents.

However, the successful integration of e-resources being a product of ICT into tertiary education system depends largely on the competence derived from ICT literacy skills acquired over the time and on the attitude of faculty members towards the role of modern technologies for scholarly activities i.e. teaching, learning and research (Ojeniyi & Adetimirin, 2016). Okello-Obura and Ikoja-Odongo (2010) emphasized that an adequate knowledge of computers and retrieval techniques is desirable to search the electronic resources effectively. For such resources to be accessed; ICT competences are needed and institutional ICT infrastructure is important in order to ensure optimal usage of such resources (Wulystan, Frankwell, Andrew & Angella, 2014).

Statement of the Problem

There has been a lot of effort initiated to ensure provision and access to electronic resources. For instance, in Nigeria, the National Universities Commission (NUC) with the support and funding from the Education Trust Fund (ETF), the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the Japanese government have designed and developed a virtual library (NUC, 2012).

A number of studies have been conducted on the use of e-resources. For instance, Satpathy and Rout (2010) studied the use of e-resources by the faculty members with special reference to CVRCE, Bhubaneswar; Omotayo (2010) studied access, use, and attitudes of academics toward electronic journals: a case study of Obafemi Awolowo University, Ile-Ife.; Mulla (2011) studied the use of e-resources by faculty members in HKBK College of Engineering; Ivwighreghweta and Oyeniran (2013) investigated the usage and awareness of e-resources by lecturers in two selected Nigerian universities; Olarongbe and Ibrahim (2013) examined the use of electronic resources by academic staff at the University of Ibadan, Nigeria. Also, Aregbesola and Oguntayo (2014) studied the use of electronic resources by faculty members in Landmark University.

Evidently, from these studies, there have been numerous empirical evidences on the use of e-resources. However, there is a dearth of empirical evidence on the influence of ICT competence and the use of e-resources by faculty members particularly in the context of Nigerian universities. Notwithstanding the fact that some of those studies identified the frequency of e-resources usage, the purpose of using e-resources and the types of e-resources preferred by the university lecturers. However, in addition to what has been identified by the previous studies, this study further seeks to determine the level of university lecturers' ICT competence and find out the relationship between ICT competence and the use of e-resources by university lecturers. It is against this background that this study seeks to investigate ICT competence and the use of e-resources by faculty members in Ilorin metropolis.

Research Objectives

The broad objective of this study is to investigate information and communication technology competence and the use of electronic resources by faculty members in Ilorin metropolis, Nigeria. The specific objectives of the study are to:

i. determine the frequency of use of the e-resources by faculty members;

ii. examine the purpose for using e-resources by faculty members;

iii. determine the level of ICT competence of faculty members in the use of e-resources;

iv. determine whether a significant relationship exists between ICT competence and use of e-resources

Research Hypothesis

H_{01}: There is no significant relationship between ICT competence and the use of electronic resources based on the purpose of using e-resources by lecturers in Ilorin metropolis.

Literature Review

Conceptualizing E-Resources

The current evolution in Information Technology (IT) has brought about major changes in the approach given to information communication. Information Communication Technology (ICT) developments opened up new avenues to e-resources publishing in a big way. E-resources are the distribution of information in an electronic form such as CD- ROM, Floppy Disk or Magnetic tape or across a computer network like e-journals, e-books, ETD etc., accessible dial-up bulletin board or online services (Chandra & Murugan, 2017).

Okiki and Asiru, (2011) defined electronic resources as information stored and transmitted in digital, electronic or computerized formats such as diskettes, CD-ROM databases, DVDs, online public access catalogues (OPAC), bibliographic and full-text databases, electronic journals, scholarly databases, information gateways, e-books, the Internet and electronic mails.

As defined by IFLA (2012), electronic resources refer to those materials that require computer access, whether through a personal computer, mainframe, or handheld mobile device.

They may either be accessed remotely via the Internet or locally on the personal computer of smartphones. Some of the most frequently encountered types are; e-journals; e-books; full-text (aggregated) databases; indexing and abstracting databases; reference databases (biographies, dictionaries, directories, encyclopaedias, etc.); numeric and statistical databases; e-images; e-audio/visual resources (IFLA, 2012).

The term electronic resources are seen by Sharma (2009) as library's information materials that are in an electronic form which include electronic books (e-books); electronic newspapers (e-newspapers); electronic journals (e-journals) as well as Internet resources. In corroborating Sharma (2009) claim, Olarongbe and Ibrahim (2013) posited that those resources are stored electronically and made accessible through electronic systems and computer networks.

Similarly, Das, Anushandhan, Odisha and Maharana (2013) affirmed that electronic resources are systems in which information is stored electronically and made accessible through electronic systems and computer networks. These resources include OPAC, CD-ROMs, Online-Databases, E-journals, E-books, Internet resources etc.

For the sake of this study, e-resources are information bearing materials that are in electronic formats which include electronic books (e-books); electronic newspapers (e-newspapers); electronic journals (e-journals) and internet resources. Particularly, in the higher institution of learning, they provide lecturers an opportunity to offer effective and efficient scholarly services to both the students and the university communities at large.

Frequency of E-Resources Usage by Faculty Members

The frequency of using e-resources deals with the number of time an individual is determined to use the e-resources for teaching, research, learning and other purposes within a specific period of time, usually hours, daily, weekly, fortnightly, occasionally.

Bhatt and Rana (2011) conducted a study in India with the purpose of analyzing and evaluating the use of e-resources by the engineering academics of Rajasthan state. A survey study was conducted using a structured questionnaire; in addition, the interview was conducted with selected academics. The study revealed that academics were using many types of e-resources. The frequency of using e-resources was quite high, most users were either using them daily or several times a week.

Mulla (2011) studied the use of e-resources by faculty members in HKBK College of Engineering, he found out that majority of the respondents (26.67%) use electronic resources once a week and 100% of faculty members use electronic resources for finding relevant information in their area of specialization.

Analysis of the consolidated responses by Olarongbe and Ibrahim (2013) reveals that 59.8% of the respondents use and access e-resources and databases daily, while 19.6% use and access electronic resources weekly. Followed by use of e-resources occasionally with 14.1%, while 3.3% use and access e-resources when the need arises. The result also shows that 2.7% access and use e-resources fortnightly, 0.5% of respondent only use and access e-resources monthly.

Purpose for using e-resources by Faculty Members

Purpose is an anticipated outcome that is intended or that guides an individual planned action towards the usage of e-resources. It is also the reason, motive and objective that trigger the use of e-resources.

Omotayo (2010) studied access, use, and attitudes of academics toward electronic journals: a case study of Obafemi Awolowo University, Ile-Ife. Findings of the study show that 178 (72.7%) of the respondents use e-resources for literature search, 111 (45.46%) of the respondents use e-resources for professional development while 97 (39.6%) of the respondents use e-resources for publishing articles. Thus, majority of the lecturers at Obafemi Awolowo University, Ile-Ife uses e-resources for literature search.

Satpathy and Rout (2010) studied the use of e-resources by the faculty members with special reference to CVRCE, Bhubaneswar. The study was based on survey (questionnaire) method. A structured questionnaire was designed to collect data from the faculty members of CVRCE, Bhubaneswar. Besides, personal interviews were also conducted with library and information science professionals to assess the problems relating to use of e-resources by the faculty members. The findings of the study shows that the main purpose of using e-resources by the faculty members of CVRCE is teaching, it shows that as high as 82%, out of 205 representing 40% indicates the purpose of using e-resources for study and teaching followed by 50 (24.4%) for research work, 31 (15.1%) for presentation seminar/conference/workshops, and 15 (97.3%) is for writing papers. Interestingly 27 responses representing 13.2% of total responses indicate that the respondents use e-resources for all the above-mentioned purposes.

Ivwighreghweta and Oyeniran (2013) investigated the usage and awareness of e-resources by lecturers in two selected Nigerian universities. The investigation result shows that majority of the respondents indicated 70 (47%) that major purpose of using e-resources is for research work. This is followed by paper writing for publication 32 (21%) with leisure 4 (3%) being the least purpose indicated by the respondents for using e-resources.

Olarongbe and Ibrahim (2013) studied the use of electronic resources by academic staff at the University of Ilorin, Nigeria. The results of the study show that majority 163 (88.6%) of the respondents are using electronic resources for doing research work, 124 (67.4%) for curriculum development in their specialization, followed by 118 (64.1%) of respondents who were using it for their self-educational development. Whereas 72 (39.1%) use electronic resources to meet technological growth, 54 (29.3%) of the respondent use it for other purposes.

Level of ICT Competence of Faculty Member

Maharana Sethi and Behera (2010) conducted a study on the use of internet and e-resources by the students of Business Management of Sambalpur University, India The investigation result shows that majority of the students (1/3 of them) have a long experience of using Internet for 2-4 years and all are more or less aware of the applications of Internet technology.

Egberongbe (2011) found out in her study on the use and impact of electronic resources that the majority of scholars were not trained in the use of e-resources. The study also revealed that the level of IT skills among lecturers, scholars and library staff varied and was low. Informal methods of training; one on one consultations, was used to inform users.

In another study conducted by Ojeniyi and Adetimirin (2016) to ascertain the ICT literacy skills and electronic information resources use by lecturers in two private universities in Oyo state, Nigeria. The study revealed that respondents from ACU had high ICT literacy skills in general computer operation with 60 (76.9%) and internet browsing with 59 (75.7%). In LCU, 124 (94.7%) had high ICT literacy skills in each of general computer operation, internet browsing, internet searching and computer appreciation. It was observed that there was no lecturer in both universities who did not have at least one ICT literacy skills or the other.

Relationship between ICT Competence and the use of E-Resources by Faculty Members

There are several studies made across the world that shows the relationship between ICT competencies and use of e-resources. For instance, Ojeniyi and Adetimirin (2016) investigated ICT literacy skills and electronic information resources use by lecturers in two private universities in Oyo state, Nigeria. The outcome of the analysis shows that there is a positive significant relationship between ICT literacy skills and e-resources use of the lecturers ($r=0.397^{**}$, $N=209$, $P<0.01$).

Methodology

The study adopted descriptive survey research design. The population of the study comprised faculty members in Al-Hikmah University and University of Ilorin. Raosoft Online Sample Size Calculator was used to calculate the sample size with precision levels of 5% and confidence level of 95% and the recommended sample size was 309. A simple random sampling technique was used to select the samples from the population. Data was collected through a research instrument titled “Information and Communication Technology Competence and the use of Electronic Resources by Faculty Members Questionnaire (ICTCERFMQ)”. Content-related approach of validation was conducted to ensure the validity of the instrument while the instrument has reliability with Cronbach’s alpha values between 0.684 and 0.813. Copies of the questionnaire were analysed with the IBM SPSS version 21.0 using simple frequency counts and percentages. The presentations of the data for the research objectives were done using tables and pie chart. For testing of the hypothesis, Spearman Rank Order Correlation was used.

Findings and Discussion of the Findings

Demographic Characteristics of the respondents

Table 1: Demographic Characteristics of the Respondents

Variable	Measurement	Frequency	Percent
Lecturers' Designation	Assistant Lecturer	50	16.8
	Lecturer II	82	27.6
	Lecturer I	81	27.3
	Senior Lecturer	54	18.2
	Associate Professor	11	3.7
	Professor	2	0.7
	Graduate Assistant	17	17.5
Total		**297**	**100**
Highest Academic Qualifications	B.Sc./B.A./B.Eng/B.Edu.	27	9.1
	M.Sc./M.A./MBA	129	43.4
	PhD.	135	45.5
	Others	8	2.7
Total		**297**	**100**
Years of Experience	1-10 Years	151	50.8
	11-20 Years	111	37.4
	21-30 Years	31	10.4
	31-40 Years	4	1.3
Total		**297**	**100**
Gender	Male	174	58.6
	Female	123	41.4
Total		**297**	**100**
Age	20-29 Years	24	8.1
	30-39 Years	135	45.5
	40-49 Years	99	33.3
	50-59 Years	39	13.1
Total		**297**	**100**
Marital Status	Single	251	84.5
	Married	36	12.1
	Divorced	8	2.7
	Widowed	2	0.7
Total		**297**	**100**

A total of 309 copies of the questionnaire were distributed, a total of 297 participants responded and completed the survey questionnaire giving a response rate of 96%. Table 1 show that more faculty members in the designation of Lecturer I (27.6%) participated in the study. The table also shows that most of faculty members that participated in the study had PhD (45.5%) as their highest academic qualification. The further reveal that majority of the faculty member (50.8%) has 1-10 years of experience. However, the table shows that there were more males (58.6%), than females (41.4%) most of whom (45.5%) are between the age of 30-39 years and single (84.5%), participated in the study.

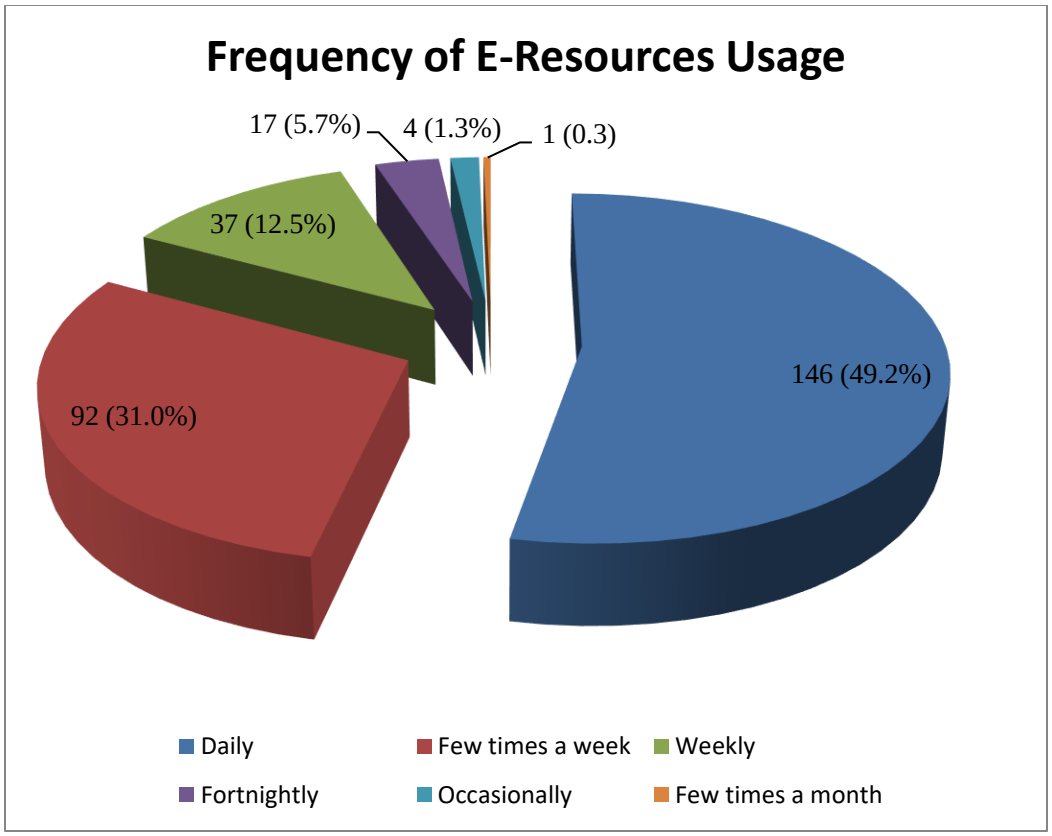

Figure 1: Frequency of E-Resources Usage by Faculty Members

As evident in Figure 1, almost half 146 (49.2%) of the respondents uses e-resources daily, 92 (31.0%) of the respondents uses e-resources few times a week, 37 (12.5%) of the respondents uses e-resources weekly, 17 (5.7%) of the respondents uses e-resources fortnightly, 1 (0.3%) of the respondents uses e-resources few times a week while 4 (1.3%) of the respondents uses e-resources occasionally. The revelation in figure 1 established that faculty members are frequent users of e-resources.

Table 2: Purpose of Using E-Resources by Faculty Members

I uses e-resources for:	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
	F	%	F	%	F	%	F	%	F	%
writing articles for publication	228	76.8	66	22.2	2	0.7	1	0.3	-	-
writing proposal for research	182	61.3	106	35.7	2	0.7	5	1.7	2	0.7
writing articles for seminars	183	61.6	91	30.6	7	2.4	16	5.4	-	-
preparing lesson note and teaching	136	45.8	150	50.5	5	1.7	6	2.0	-	-
updating knowledge in my specialization	187	63.0	107	36.0	3	1.0	-	-	-	-
keeping up-to-date on information outside my specialization	105	35.4	143	48.1	35	11.8	12	4.0	2	0.7
assisting other colleagues in search of vital information	100	33.7	173	58.2	12	4.0	6	2.0	6	2.0

(Sources: Field Survey, 2017)

As shown in Table 2, the respondents strongly agreed that there purpose for using e-resources is for writing articles (76.8%), updating knowledge in their specialization (63.0%), writing articles for seminars (61.6%), as well as writing proposal for research (61.3%). However, 150 (50.5%) of the respondents agreed that they use e-resources for preparing lesson note and teaching while 173 (58.2%) of the respondents use e-resources for assisting other colleagues in search of vital information. Thus, it can be deduced that the usage of e-resources among the faculty members is centered towards achieving quality educational skills and to increase research productivity.

Table 3: Level of ICT Competence of University Lecturers

ICT Competence	Highly Competent		Competent		Averagely Competent		Not Competent		Verdict
	F	%	F	%	F	%	F	%	
Usage of computer	200	67.3	92	31.0	1	0.3	4	1.3	Competent
Usage of Boolean operators	47	15.8	90	30.3	53	17.8	107	36.0	Not Competent
Installation of software	96	32.3	86	29.0	84	28.3	31	10.4	Competent
Database Structure	46	15.5	91	30.6	105	35.4	55	18.5	Low Competent
Navigation in an online environment	143	48.1	131	44.1	16	5.4	7	2.4	Competent
Location of downloaded files on the computer	190	64.0	92	31.0	15	5.1	-	-	Competent
Troubleshooting of computer	61	20.5	108	36.4	83	27.9	45	15.2	Competent
Familiarity with available databases	77	25.9	132	44.4	82	27.6	6	2.0	Competent
Dexterity to operate computer keyboard	117	39.4	152	51.2	28	9.4	-	-	Competent
Selection of directories for downloaded files on the computer	130	43.8	133	44.8	34	11.4	-	-	Competent
Conversion of files e.g. PDF to MS Word	134	45.1	109	36.7	39	13.1	15	5.1	Competent
Ability to use necessary computer application software	116	39.1	116	39.1	51	17.2	14	4.7	Competent

Table 3 shows the level competence of faculty members in Ilorin metropolis. The table shows that there is high competence for location of downloaded files (95.0%), navigation in an online environment (92.2%), usage of computer (91.3%), dexterity to operate computer keyboard (90.6%), selection of directories for downloaded files on the computer (88.6%), conversion of files e.g. PDF to MS Word (81.8%), ability to use necessary computer application software

(78.2%), familiarity with available databases (70.3%) and installation of software (51.3%). However, the table revealed low level of competence among faculty members in Ilorin metropolis for the usage of Boolean operators (53.8%) and database structure (53.9%).

Table 4: Correlation Analysis on ICT Competence and Use of E-Resources Based on the Purpose of Using E-Resources

Correlations			
		ICT Competence	**Use of E-Resources**
ICT Competence	Correlation Coefficient	1.000	.132*
	Sig. (2-tailed)	.	.022
	N	297	297
Use of E-Resources	Correlation Coefficient	.132*	1.000
	Sig. (2-tailed)	.022	.
	N	297	297

*. Correlation is significant at the 0.05 level (2-tailed).

(Sources: Field Survey, 2017)

As shown in table 4, a Spearman Rank-order Correlation was run to determine the relationship between ICT competence and use of e-resources (purpose of using e-resources) by faculty members in Ilorin metropolis. The correlation value of rho=0.132 indicate a weak positive correlation between ICT competence and use of e-resources by faculty members in Ilorin metropolis. Also, since p-value 0.022 is less than 0.05 (significant level), the null hypothesis is rejected. This implies that the use of e-resources (purpose of using e-resources) by faculty members in Ilorin metropolis is determined by the ICT competence of the faculty members.

Discussion of the Findings

The first objective of this study was to determine the frequency of use of the e-resources by faculty members. Finding shows that majority of the faculty members in Ilorin metropolis are daily users of e-resources. This finding corroborates the findings of Bhatt and Rana (2011) who reported that most users of engineering academic of Rajasthan state were either using them daily or several times a week. Similarly, the finding is supported by Olarongbe and Ibrahim (2013) who reported that majority of the academic staff at the University of Ibadan are daily users of e-resources.

The second objective of this study was to examine the purpose for using e-resources by faculty members. Findings revealed that writing articles for publication is the highest, followed by updating knowledge in area of specialization while assisting other colleagues in search of vital information is the least reason for the usage of e-resources by faculty members in Ilorin metropolis. It can be concluded that the primary purpose behind the usage of e-resources by faculty members in Ilorin metropolis is to ensure higher research productivity. These findings corroborate reviewed studies (Olarongbe & Ibrahim, 2013; Ivwighreghweta & Oyeniran, 2013) where research work was reported as the purpose of using e-resources among faculty members.

On the level of ICT competence among faculty members, finding from this study discovered that there is high ICT competence among faculty members in Ilorin metropolis. This finding corroborates earlier study by Ojeniyi and Adetimirin (2016) but contradict that of Egberongbe (2011), where low ICT competencies among faculty members were revealed.

Lastly, this study revealed that there is significant relationship between ICT competence and the use of electronic resources based on the purpose of using e-resources by faculty members in Ilorin metropolis. This finding is in consonance with Ojeniyi and Adetimirin (2016) where it was reported that there is a positive significant relationship between ICT literacy skills and e-resources use among lecturers.

Conclusion

The study investigated the information and communication technology competence and the use of electronic resources by faculty members in Ilorin metropolis. Three research objectives and one research hypothesis were formulated. This study concluded that faculty members in Ilorin metropolis are frequent users of e-resources and their purpose of using e-resources is for scholarly activities. High ICT competence was found among the faculty members in Ilorin metropolis. The hypothesized relationship between ICT competence and the use of e-resources is accepted because finding from the study shows that there is significant relationship between ICT competence and the use of electronic resources by faculty members.

Recommendations

Base on the finding this study recommends that:

1. University management should ensure that competence in ICT is a major requirement in the recruitment process, as this will allow recruitment of lecturers who are competent in ICT into the system.
2. Since ICT competence had be found to be a determinant in the usage of e-resources, university lecturers who are aware of their deficiency in ICT should enroll for computer training so as to improve their ICT competence and in turn enhance their usage of e-resources.

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