Utilization of Information Communication Technology and Associated factors among Academic Staffs in Bahirdar University, North West Ethiopia, 2019

Sisay Ebabye Tsigie
Department of Information Science
University of Gondar

Gizealew Alazie Dagnaw
Department of Information Science
University of Gondar

ABSTRACT

Background: The realization of the benefits of ICT in the educational process to a large extent depends on the academic staffs that play crucial role in any innovation that takes place in the educational settings. The utilization of ICT in universities has been an issue that needs to be assessed in order to determine the extent to which ICT has utilized by the academic staff of the universities.

Objective: to assess utilization of Information Communication Technology (ICT) and associated factors in Bahirdar University academic staffs.

Methods: A quantitative cross-sectional study was conducted among 351 academic staffs that were selected using simple random sampling technique. It was conducted in all five campuses of Bahirdar University. The data was entered in to EPI INFO version 7.0 statistical software and then transferred to SPSS version 20.0 for further analysis.

Results and Discussion: 351 respondents, age from 24 to 60 years were participated in the study and included in the analysis. The constitute of male, ever marriage and urban residence of respondents were 82.3%, 74.4% and 39.9% respectively. 89.7% of study subjects had laptop computer. The extent of ICT utilization by academic staff reached 56.7%. Of respondents with first degree education level only 4.8% of had good ICT utilization habit [AOR=0.048, 95% CI (0.014, 0.164)]. This means individuals with first degree had 95.2% less likely ICT utilization habit compared with their counter parts. Among poor ICT knowledge only 0.4% of had good ICT utilization habit [AOR=0.004, 95% CI (0.001, 0.015)]. Out of no training received individuals 2.8% of had good ICT utilization habit [AOR=0.028, 95% CI (0.006, 0.132)].

Conclusion: ICT utilization habit of Academic staffs was found to be good. ICT knowledge, education level, laptop access, photocopier access, scanner access and ICT training were the prominent factor for ICT utilization among academic staffs.

Keywords

ICT, ICT Utilization, Academic Staffs, Bahirdar University

1. INTRODUCTION

Information Communication Technology (ICT) has become a powerful tool in the fight against world poverty, providing developing countries with an unprecedented opportunity to meet vital development goals, such as poverty reduction, basic health care, and education, far more effectively than before[1].With the swift advent of technology in previous decades, Information and Communication Technologies (ICT) have pervaded the workplace and fostered modern corporations along with providing governments with a proficient infrastructure[2].The ICT in Education Implementation Strategy and its corresponding Action Plan are components of a wider Ethiopian national e-education initiative. This initiative forms one of the pillars of the ICT for Development 2010 Plan[1]. One of the major application areas for ICT is education which is of vital importance in the knowledge society, as a source of basic skills, as a foundation for development of new knowledge and innovation, and as an engine for socio- economic development[3]. In the higher education institutions, the roles of academic staffs are geared towards achieving the University's national and international goals which include: Teaching learning, Research and Pursuit of services to the community and being a store house of knowledge. To accomplish these goals effectively and efficiently computer skill and its usage is becoming part of requirement[4]. Compared with developed countries, the use of ICT in education programs in developing nations is relatively limited. Some of the reasons mentioned for such gaps are because developing countries face shortages of financial resources, limited Internet access, a lack of trained teachers and the lack of proper policies[1].In today's competitive global information based economy, much pressure is on the university to produce graduates capable of running in the new world economic and societal environment brought by technological developments[5].The realization of the benefits of ICT in the educational process to a large extent depends on the academic staffs that play crucial role in any innovation that takes place in the educational settings[6]. The utilization of ICT in universities has been an issue that needs to be assessed in order to determine the extent to which ICT has utilized by the academic staff of the universities. But Bahirdar University is spending a huge amount of money on ICT related investments without knowing its utilization for the ICT's before. . The aim of this study therefore was to know the present utilization of ICT among academic staffs in Bahirdar University.

2. METHOD

An institution based quantitative cross-sectional study was conducted to assess utilization of Information and Communication Technology (ICT) and associated factors among academic staffs in Bahirdar University, North West Ethiopia 2017. The study was conducted in Bahirdar University which is found in Bahirdar city, North West Ethiopia. Bahirdar University was established by merging two former higher education institutions; namely the Bahir Dar Polytechnic and Bahirdar Teachers' College. The Bahirdar Polytechnic Institute, which has transformed itself into Technology and Textile institutes, was established in 1963 under the technical cooperation between the Government of USSR and the Imperial Government of Ethiopia. Bahirdar

University has Five colleges, four institutes, two faculties and one school. The academic units of the University include College of Science, College of Agriculture and Environmental Sciences, College of Medical and Health Sciences, College of Business and Economics, College of Education and Behavioral Sciences, Bahirdar Institute of Technology, Ethiopia Institute of Textile and Fashion Technology, Institute of Land Administration, Institute of Disaster Risk Management and Food Security Studies, Faculty of Humanities, Faculty of Social Sciences, School of Law, Sport academy and Maritime academy..

The Data collection was conducted using structured and pre-tested self-administered questionnaire. The questionnaire was developed in English. The data was entered and edited manually in to EPI INFO version 7.0 statistical software and then transferred to SPSS version 20.0 for further analysis.

3. RESULTS

3.1.Socio demographic characteristics

In the table below is Socio-demographic characteristics of the respondents and the age classification was taken from the previous study in the same topic[7].

Table 1 Socio-demographic characteristics of Respondents in Bahirdar University, Bahirdar, Ethiopia, 2017(n=351).

Variables		Frequency	Percentage
Age	≤25	53	15.1
	26-29	146	41.6
	≥30	152	43.3
Sex	Male	289	82.3
	Female	62	17.7
Marital status	Ever married	261	74.4
	Never married	90	25.6
Religious	Muslim	45	12.8
	Orthodox Christian	288	82.1
	Protestant	12	3.4
	Others	6	1.7
Previous residence	Rural	211	60.1
	Urban	140	39.1
Field of study	Agriculture	19	5.4
	Education	7	2.0
	Engineering	48	13.7
	Health related science	135	38.5
	Informatics	12	3.4
	Law	6	1.7
	Natural science	33	9.4
	Business & Economics related	24	6.8
	Social science	54	15.4
	Veterinary health	13	3.7
Work experience	<=5	93	26.5
(year)	6-10	187	53.3
	>=11	71	20.2
Level of Education	MSc & above	266	75.8
	First Degree	85	24.2
Have Position	Yes	71	20.2
	No	280	79.8
Receive ICT training	Yes	105	29.9
	No	246	70.1

A total of 351 respondents, age from 24 to 60 years were participated in the study and included in the analysis(100% response rate).Based on the demographic and other personal background information obtained, from the total respondents 289(82.3%) were males. The highest number of respondents was in the age group of greater than or equal to thirty years 152(43.3%) and the smallest number was in the age less than or equal to 25 years 53(15.1%).

Regarding to education level majority of the respondents 266(75.8%) were MSC and above and most of the respondents 187(53.3)were with working experience of 6-10 years. The ever marriage and never marriage of the respondents were 261(74.4%) and 90(25.6%) respectively.

3.2. ICT facilities Access and ICT knowledge

Table 2 ICT facilities access and ICT knowledge of Respondents in Bahirdar University, Bahirdar, Ethiopia, 2017(n=351).

Variables		Frequency	Percentage
Desktop	Yes	207	59.0
	No	144	41.0
Laptop	Yes	315	89.7
	No	36	10.3
Laptop sources	Private	25	7.9
	University's Laptop	290	92.1
Office LAN	Yes	192	54.7
	No	159	45.3
Office WIFI	Yes	253	72.1
	No	98	27.9
printer	Yes	71	20.2
	No	280	79.8
Scanner	Yes	18	5.1
	No	333	94.9
Photo copier	Yes	26	7.4
	No	325	92.6
Projector	Yes	261	74.4
	No	90	25.6
Class missed by	Yes	69	76.7
lack of Projector	No	21	23.3
Home WIFI	Yes	289	82.3
	No	62	17.7
Home WIFI	Private	5	1.7
sources	University's WIFI	284	98.3
Smart board	Yes	22	6.3
	No	329	93.7
IP-Telephone	Yes	33	9.4
	No	318	90.6
Fax machine	Yes	7	2.0
	No	344	98.0
ICT knowledge	Good	234	66.7
	Poor	117	33.3

As the table above showed owned and not owned desktop computers were 207(59.0%) and 144(41.0%) respectively and only 192(54.7%) of the total respondent have an access to LAN network in their Office and that of WIFI users were 253(72.1%). Two hundred sixthly one (74.4%) of respondents had projectors in and near their office but this machine is inaccessible to 90(25.6%) of them. Among those who had not access to projector 69(76.7%) were missed the class. On the same way majority of the study participants 315(89.7%) were owned laptops and among those who had laptops, 25(7.9%) were owned their private laptops and 290(92.1.4%) were university's Laptop. Regarding to ICT knowledge, 234(66.7%) were had Good ICT knowledge and 117(33.3%) were had Poor ICT knowledge. From the finding the extent of ICT utilization by academic staff reached 56.7%.

3.3. Factors associated with ICT utilization

Table 3: bivariate and multivariate analysis of ICT utilization and associated factors

		ICT utilization			
Variables		**Good**	**Poor**	**COR (CI=95%)**	**AOR (CI=95%)**
Position	Yes	52	19	1	1
	No	147	133	0.404(0.227,0.718)	0.454(0.104,1.990)
Education level	2nd degree &above	178	88	1	1
	1st degree	21	64	0.162(0.093,0.283)	**0.048(0.014,0.161)***
ICT knowledge	Good	193	41	1	1
	Poor	6	111	0.011(0.005,0.028)	**0.004(0.001,0.015) ***
Take training	Yes	97	8	1	1
	No	102	144	0.058(0.027,0.125)	**0.028(0.006,0.132) ***
generator	Yes	30	12	**1**	1
	No	169	140	0.483(0.238,0.978)	0.426(0.009,1.834)
Have laptop	Yes	196	119	1	1
	No	3	33	0.055(0.017,0.184)	**0.035(0.004,0.279) ***
LAN	Yes	116	76	1	1
	No	83	76	0.716(0.468,1.094)	1.328(0.498,3.539)
Printer	Yes	58	13	1	1
	No	141	139	0.227(0.119,0.434)	2.583(0.531,12.569)
photocopier	Yes	25	1	1	1
	No	174	151	0.046(006,0.344)	**0.021(0.001,0.657) ***
Scanner	Yes	17	1	1	1
	No	182	151	0.071(0.009,0.539)	**0.002(0,0.498) ***
IP-telephone	Yes	32	1	**1**	1
	No	167	150	0.035(0.005,0.258)	0.052(0.001,2.025)
Smart board	Yes	17	5	1	1
	No	182	147	0.364(0.131,1.010)	0.161(0.001,2.404)
Projector	Yes	63	27	1	1
	No	136	125	0.466(0.279,0.778)	0.280(0.071,1.108)

Based on the results of bivariate and multivariate analysis, the significant predictors of ICT utilization in Bahirdar university of academic staffs at 5% significant level were; education level ,ICT knowledge, ICT training, laptop computer, photocopier and scanner. Of respondents with first degree education level only 4.8% of had good ICT utilization habit [AOR=0.048, 95% CI (0.014, 0.164)]. This means individuals with first degree had 95.2% less likely good ICT utilization habit compared with their counter parts. Regarding with ICT knowledge, among poor ICT knowledge respondents only 0.4% of had good ICT utilization habit [AOR=0.004, 95% CI (0.001, 0.015)], which means they had 99.6% less likely good ICT utilization habit compared with their counter parts. Out of no training received individuals 2.8% of had good ICT utilization habit [AOR=0.028, 95% CI (0.006, 0.132)].It is mean that no training received academic staffs had 97.2% less

likely good ICT utilization habit compared with training received individuals.

4. DISCUSSION

The main purpose of this research was to investigate the Utilization of Information Communication Technology and associated factors among academic staffs in Bahirdar University, Northwest Ethiopia. This study revealed that the status of ICT utilization among academic staffs in Bahirdar Universitywas 56.7%.This result was greater than the findings done in Christian university Uganda which reported as 45% of academic staffs had good ICT utilization habit[8]. This may be due to ICT facility access difference between the two institutions. For example laptop access in my study area is 89.7% where as in Christian university of Uganda is 83.2%. This access difference is mainly because of that Bahirdar university sponsored laptops for academic staffs but not in Christian university of Uganda. On the other hand, ICT utilization habit of academic staffs in this study was less than the findings done in Nigeria which revealed that, over 65.0% of the academic staff utilized ICT effectively with 73% of ICT knowledge [9].The variation seemed due to ICT knowledge and training difference between the two institutions. For example ICT knowledge and ICT training of academic staffs in my study area and Nigerian study compared earlier was 66.7%, 29.9% and 73%, 82.35% respectively. This difference is accounted by the openness of the country for external support and institutional internationalization.

The study conducted in Malaysia with similar topic reported that, ICT utilization of lecturers was 68% [10] which was greater than the result of this study. This difference was may be the socio economic difference between the two studies subjects. In this study most of academic staffs had laptop computers and this is attributed positively for good ICT utilization habit of the study subjects. On the other hand ICT training of academic staffs were very low and this variable was one of the factors that hider ICT utilization habit of the study subjects.

However computer and internet access were very good, the respondents ICT access in most ICT facilities were limited for example, photocopier and scanners were the scarcest and they were factors in determining ICT utilization.

5. CONCLUSION

The study determined utilization of Information communication technologies (ICT) among academic staffs. It as discovered that however, associated factors were existing; ICT utilization habit of Academic staffs in Bahirdar University was found to be good. Education level, ICT knowledge, ICT training, laptop computer access, photocopier access and scanner access were the prominent factor for ICT utilization among academic staffs in Bahirdar University. This was evident from the study that individuals with first degree, Poor ICT knowledge and no training receive were highly loosed to good ICT utilization .similarly laptop access, photocopier access and scanner access were affect ICT utilization habit. Insufficient training could be the reason for why percentage of ICT utilization is not in line with laptop access. So to enhance ICT utilization habit of academic staffs in the university the identified associated factors should be addressed and appropriate ICT knowledge should be integrated with ICT access.

Abbreviations

AOR: Adjusted Odd Ratio;CI: Confidence Interval; ICT: Information communication technology

Competing interests

The authors declare that they have no competing interests.

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