



EXTENT OF AWARENESS AND UTILIZATION OF INFORMATION AND COMMUNICATION TECHNOLOGY TOOLS FOR ACADEMIC RESEARCH BY LECTURERS OF ENUGU STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY, ENUGU, NIGERIA

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Abstract: *The purpose of this study was to establish the extent of awareness and utilization of Information and Communication Technology (ICT) tools for academic research by lecturers of Enugu State University of Science and Technology (ESUT), Enugu, Nigeria. The design adopted in this study was descriptive survey design. This design was preferred because it enabled the researchers to collect original data from a representative of the population and use the result of data analyses to describe the situation as it was found. Area of the study was Enugu State which hosts the two campuses (Enugu and Agbani) of Enugu State University of Science and Technology (ESUT) as at the time of the study. Population for the study consisted all the full time lecturers of ESUT numbering 834 as at the time of the study. The population was made up of 536 females and 298 males. Purposive, stratified and simple random sampling techniques were used to draw a sample 626 (402 female and 224 male) lecturers from the population. This sample represented 75% of the population. A structured questionnaire titled Questionnaire on Extent of Awareness and Utilization of Information and Communication Technology (ICT) tools for Academic Research by lecturers of Enugu State University of Science and Technology (QUALESUT) was used for data collection. The questionnaire was made up of 96 items scored on a four-point scale. The instrument had two sections, A and B. The instrument yielded a reliability coefficient of .88 obtained using Cronbach's Alpha method. Mean and standard were used to answer the research questions while z-test statistic was used to test the hypotheses. Major findings of the study revealed that ESUT lecturers had satisfactory awareness of ICT tools for academic research but they only utilized data sourcing and data analyses tools well. It was recommended among other things that ESUT lecturers should be sponsored through special funds to improve their utilization of ICT-powered journals for publication of academic research works.*

Keywords: Utilization of Information, Communication Technology Academic Research By Lecturers

Introduction

Variations of the phrase Information and Communication Technology (ICT) have spread worldwide, with the united nation's creating information and communication technologies task force and an internal

office of information and communications technology. Iguma (2011) held that Information and Communication Technology (ICT) is an extended term for information technology (ICT) which stresses the role of unified communications and the integration of



telecommunications (Telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information. According to Uji (2011), the term ICT also refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system. There are large economic incentives (huge cost savings due to elimination of the telephone network) to merge the telephone network with the computer network system using a single unified system of cabling, signal distribution and management. However, ICT has no universal definition as the concepts; methods and application involved in ICT are constantly evolving on an almost daily basis.

To Plum (2015), the broadness of ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form, eg. Personal computers, digital television, email, robots. Samuelson (2014) gave another definition of ICT as systems or technologies for processing information in text, data, image and voice form and extends to international telecommunication network. Adeleke (2011) described ICT as the use of scientific tools and techniques for developing, documenting and communicating information when needed especially as they concern solving problems or providing needed services in the various areas of human endeavor. Information and communication technology is also seen as a product of information revolution. Thus, ICT is the application of science to information handling. It consists of the hardware, software, processing, transmission and presentation of information (voice, data, texts, images) as well as related services.

In modern society, ICT is ever-present with over three billion people having access to the internet. With approximately 8 out of 10 internet users owning a smart phone, information and data are increasing by leaps and bounds, (Kuntu, 2013). This rapid growth, especially in developing countries, has led ICT to become a keystone of

everyday life, in which life without some facet of technology renders most of clerical work and routine task dysfunctional. ICT nearest editions into the modern electronic world include smart watches, smart wristbands, smart phones and smart TVS. With desktops soon becoming part of a bye gone era, and laptops becoming the preferred method of computing, ICT continues to insinuate and alter itself in the ever changing globe. Information communication technologists play a role in facilitating accelerated pluralism in new social movements today. Lee (2014) observed that the internet is accelerating the process of issue group formation and action and coined the term accelerated pluralism to explain these new phenomena. ICTs in the word of Lee, are tools for enabling social movement leaders and empowering even dictators in affecting promoting societal change.

Tertiary institutions especially universities are known for research. University lecturers are usually appraised mainly based on their research works. Research, simply put is the application of scientific methods to solving a problem (Adeleke, 2011). In present day technology driven society, university lecturers and indeed all academic researchers cannot make any meaningful progress without ICT. It is therefore worrisome that research evidences have reported doubts on the extent of awareness and utilization of Information and Communication Technology (ICT) tools for academic research by university lecturers especially in developing nations such as Nigeria. This study therefore, is a deliberate attempt to bridge this gap.

Purpose of the Study

The purpose of this study was to establish the extent of awareness and utilization of Information and Communication Technology (ICT) tools for academic research by lecturers of Enugu State University of Science and Technology (ESUT), Enugu, Nigeria. In specific terms, the researchers attempted to determine;

- i. extent of awareness of ICT data sourcing tools for academic research by lecturers of ESUT



- ii. extent of awareness of ICT data analyses tools for academic research by lecturers of ESUT
 - iii. extent of awareness of ICT-powered journals for publication of academic research works by lecturers of ESUT
 - iv. extent of utilization of ICT data sourcing tools for academic research by lecturers of ESUT
 - v. extent of utilization of ICT data analyses tools for academic research by lecturers of ESUT
 - vi. extent of utilization of ICT-powered journals for publication of academic research works by lecturers of ESUT
3. Extent of awareness of ICT-powered journals for publication of academic research works by male and female lecturers of ESUT do not differ significantly.
 4. Male and female lecturers of ESUT do not differ significantly in the extent to which they utilize ICT data sourcing tools for academic research.
 5. Male and female lecturers of ESUT do not differ significantly in the extent to which they utilize ICT data analyses tools for academic research.
 6. Male and female lecturers of ESUT do not differ significantly in the extent to which they utilize ICT-powered journals for publication of academic research.

Research Questions

The following research questions guided the study.

1. What is the extent of awareness of ICT data sourcing tools for academic research by lecturers of ESUT?
2. What is the extent of awareness of ICT data analyses tools for academic research by lecturers of ESUT?
3. What is the extent of awareness of ICT-powered journals for publication of academic research works by lecturers of ESUT?
4. To what extent do lecturers of ESUT utilize ICT data sourcing tools for academic research?
5. To what extent do lecturers of ESUT utilize ICT data analyses tools for academic research?
6. To what extent do lecturers of ESUT utilize ICT-powered journals for publication of academic research?

Hypotheses

The following hypotheses were tested at .05 level of significance.

1. Extent of awareness of ICT data sourcing tools for academic research by male and female lecturers of ESUT do not differ significantly.
2. Extent of awareness of ICT data analyses tools for academic research by male and female lecturers of ESUT do not differ significantly.

Methodology

The design adopted in this study was descriptive survey design. This design was preferred because it enabled the researchers to collect original data from a representative of the population and use the result of data analyses to describe the situation as it was found. Area of the study was Enugu State which hosts the two campuses (Enugu and Agbani) of Enugu State University of Science and Technology (ESUT) as at the time of the study. Population for the study consisted all the full time lecturers of ESUT numbering 834 as at the time of the study. The population was made up of 536 females and 298 males. Purposive, stratified and simple random sampling techniques were used to draw a sample 626 (402 female and 224 male) lecturers from the population. This sample represented 75% of the population. A structured questionnaire titled Questionnaire on Extent of Awareness and Utilization of Information and Communication Technology (ICT) tools for Academic Research by lecturers of Enugu State University of Science and Technology (QUALESUT) was used for data collection. The questionnaire was made up of 96 items scored on a four-point scale. The instrument had two sections, A and B. Section A addressed the Bio data of the respondents,



that is, gender of respondents while section B focused on the six research questions that guided the study.

Section B was divided into six parts. Part I had 20 items which addressed research question one. Part II had 24 items which focused on research question two. Part III addressed research question three with 4 items Part IV had 20 items which addressed research question four. Part V had 24 items which focused on research question five and Part VI addressed research question six with 4 items. The instrument was validated by three research experts. The instrument yielded a reliability coefficient of .88 obtained

using Cronbach’s Alpha method. The researchers administered the instrument directly, hand to hand to all the respondents and collected back, the completed instrument same way. Mean and standard were used to answer the research questions while z-test statistic was used to test the hypotheses.

Results

Research Question 1

What is the extent of awareness of ICT data sourcing tools for academic research by lecturers of ESUT?

Table 1: mean and standard deviation scores on research question 1 items

Item		Male			Female			Overall		
		Mean	SD	Remark	Mean	SD	Remark	Mean	SD	Remark
1	Web browsers	3.5	0.21	VGE	3.6	0.51	VGE	3.6	0.85	VGE
2	Social media	3.6	0.11	VGE	3.5	0.11	VGE	3.7	0.99	VGE
3	Fax messages	3.7	0.01	VGE	3.7	0.12	VGE	3.5	1.26	VGE
4	Wide Area Networks (WAN)	3.5	0.01	VGE	3.6	0.23	VGE	3.8	1.06	VGE
5	Local Area Networks (LAN)	3.5	0.09	VGE	3.5	0.11	VGE	3.7	1.14	VGE
6	Internet	3.9	0.09	VGE	3.5	0.51	VGE	3.6	1.04	VGE
7	Electronic mails (e-mails)	3.6	0.41	VGE	3.7	0.50	VGE	3.7	0.90	VGE
8	Short messages (SMS)	3.5	0.11	VGE	3.5	0.11	VGE	3.5	1.26	VGE
9	Bulk SMS	3.9	0.17	VGE	3.8	1.04	VGE	3.8	1.06	VGE
10	Data base management systems	3.6	0.04	VGE	3.5	0.03	VGE	3.5	1.14	VGE
11	Computer graphics	3.5	0.09	VGE	3.6	0.24	VGE	3.8	1.04	VGE
12	Info graphics	3.8	0.09	VGE	3.4	1.41	VGE	3.7	0.90	VGE
13	Virtual reality applications	3.6	0.41	VGE	3.9	0.43	VGE	3.6	0.91	VGE
14	Tele-conferencing tools	3.6	0.11	VGE	3.6	0.09	VGE	3.8	1.18	VGE
15	System security applications	3.8	0.21	VGE	3.8	0.11	VGE	3.5	0.12	VGE
16	System profilers	3.9	0.11	VGE	3.8	0.51	VGE	3.5	0.09	VGE
17	Scientific visualization application	3.5	0.01	VGE	3.6	0.12	VGE	3.8	0.09	VGE
18	Computer-aided instruction	3.7	0.09	VGE	3.6	0.23	VGE	3.9	0.41	VGE
19	Digital art softwares	3.7	0.09	VGE	3.9	0.11	VGE	3.7	0.11	VGE
20	Multi-Media search engines	3.9	0.21	VGE	3.7	0.33	VGE	3.7	0.31	VGE
GRAND		3.7	0.13	VGE	3.6	0.34	VGE	3.7	0.80	VGE



From table 1 the grand mean for male lecturers was 3.7 and that of female lecturers was 3.6 while the overall grand mean was 3.7. This result indicates that both male and female lecturers of ESUT were aware of ICT data sourcing tools for academic research to a very great extent.

Research Question 2

What is the extent of awareness of ICT data analyses tools for academic research by lecturers of ESUT?

Table 2: mean and standard deviation scores on research question 2 items

Item		Male			Female			Overall		
		Mean	SD	Remark	Mean	SD	Remark	Mean	SD	Remark
21	Word processors	3.5	0.21	VGE	3.9	0.33	VGE	3.6	0.21	VGE
22	Utility packages	3.6	0.11	VGE	3.9	0.21	VGE	3.8	0.11	VGE
23	Presentation packages	3.5	0.01	VGE	3.5	0.11	VGE	3.5	0.01	VGE
24	Offline computer spreadsheets	3.6	0.09	VGE	3.6	0.01	VGE	3.7	0.09	VGE
25	Online computer spreadsheets	3.8	0.09	VGE	3.6	0.09	VGE	3.5	0.09	VGE
26	Web-based spreadsheets	3.5	0.41	VGE	3.5	0.33	VGE	3.8	0.11	VGE
27	Open source spreadsheets	3.9	0.33	VGE	3.5	0.21	VGE	3.6	0.33	VGE
28	Inferential statistics softwares	3.7	0.85	VGE	3.5	0.11	VGE	3.5	0.50	VGE
29	Descriptive statistics softwares	3.5	0.99	VGE	3.5	0.01	VGE	3.6	0.09	VGE
30	Measures of central tendency softwares	3.6	0.26	VGE	3.7	0.12	VGE	3.5	0.17	VGE
31	Measures of dispersion softwares	3.6	0.06	VGE	3.7	0.13	VGE	3.5	0.04	VGE
32	Wide Area Networks (WAN)	3.5	0.14	VGE	3.5	0.16	VGE	3.6	0.51	VGE
33	Local Area Networks (LAN)	3.7	0.90	VGE	3.6	0.33	VGE	3.7	0.11	VGE
34	Backup softwares	3.7	0.26	VGE	3.6	0.45	VGE	3.5	0.12	VGE
35	File managers	3.5	0.06	VGE	3.9	0.12	VGE	3.7	0.01	VGE
36	Crypto graphics	3.6	0.14	VGE	3.5	0.13	VGE	3.5	0.09	VGE
37	Antivirus software's	3.9	0.04	VGE	3.5	0.16	VGE	3.8	0.15	VGE
38	Data base management systems	3.5	0.90	VGE	3.8	0.33	VGE	3.8	0.11	VGE
39	System security applications	3.6	0.54	VGE	3.8	0.16	VGE	3.5	0.09	VGE
40	Spreadsheet wizards	3.7	0.43	VGE	3.7	0.33	VGE	3.9	0.11	VGE
41	Info graphics	3.5	0.05	VGE	3.5	0.45	VGE	3.6	0.33	VGE
42	Memory testers	3.6	0.43	VGE	3.7	0.12	VGE	3.9	0.50	VGE
43	System profilers	3.6	0.06	VGE	3.4	0.13	VGE	3.5	0.09	VGE
44	Clipboard managers	3.5	0.04	VGE	3.5	0.16	VGE	3.6	0.17	VGE
GRAND		3.6	0.30	VGE	3.6	0.20	VGE	3.6	0.17	VGE

From table 2 the grand mean value was 3.6 for male and lecturers as well as the overall. This result indicates that both male and female lecturers of ESUT were aware of ICT data analyses tools for academic research to a very great extent.

Research Question 3



What is the extent of awareness of ICT-powered journals for publication of academic research works by lecturers of ESUT?

Table 3: mean and standard deviation scores on research question 3 items

Item		Male			Female			Overall		
		Mean	SD	Remark	Mean	SD	Remark	Mean	SD	Remark
45	ICT-powered open accessed academic journals	2.9	0.04	GE	3.4	0.12	GE	2.8	0.33	GE
46	ICT-powered paid academic journals	2.6	0.90	GE	2.5	0.88	GE	2.7	0.33	GE
47	ICT-powered institution based academic journals	2.5	0.26	GE	3.2	0.95	GE	2.9	0.35	GE
48	ICT-powered professional association academic journals	2.7	0.06	GE	2.9	0.06	GE	2.7	0.52	GE
GRAND		2.7	0.32	GE	3.0	0.50	GE	2.8	0.38	GE

From table 3 the grand mean for male lecturers was 2.7 and that of female lecturers was 3.0 while the overall grand mean was 2.8. This result indicates that both male and female lecturers of ESUT were aware of ICT-powered journals for publication of academic research works to a great extent.

Research Question 4

To what extent do lecturers of ESUT utilize ICT data sourcing tools for academic research?

Table 4: mean and standard deviation scores on research question 4 items

Item		Male			Female			Overall		
		Mean	SD	Remark	Mean	SD	Remark	Mean	SD	Remark
49	Web browsers	3.6	0.51	VGE	3.6	0.85	VGE	3.5	0.21	VGE
50	Social media	3.5	0.11	VGE	3.7	0.99	VGE	3.6	0.11	VGE
51	Fax messages	3.7	0.12	VGE	3.5	1.26	VGE	3.7	0.01	VGE
52	Wide Area Networks (WAN)	3.6	0.23	VGE	3.8	1.06	VGE	3.5	0.01	VGE
53	Local Area Networks (LAN)	3.5	0.11	VGE	3.7	1.14	VGE	3.5	0.09	VGE
54	Internet	3.5	0.51	VGE	3.6	1.04	VGE	3.9	0.09	VGE
55	Electronic mails (e-mails)	3.7	0.50	VGE	3.7	0.90	VGE	3.6	0.41	VGE
56	Short messages (SMS)	3.5	0.11	VGE	3.5	1.26	VGE	3.5	0.11	VGE
57	Bulk SMS	3.8	1.04	VGE	3.8	1.06	VGE	3.9	0.17	VGE
58	Data base management systems	3.5	0.03	VGE	3.5	1.14	VGE	3.6	0.04	VGE
59	Computer graphics	3.6	0.24	VGE	3.8	1.04	VGE	3.5	0.09	VGE
60	Info graphics	3.4	1.41	VGE	3.7	0.90	VGE	3.8	0.09	VGE
61	Virtual reality applications	3.9	0.43	VGE	3.6	0.91	VGE	3.6	0.41	VGE
62	Tele-conferencing tools	3.6	0.09	VGE	3.8	1.18	VGE	3.6	0.11	VGE



63	System security applications	3.8	0.11	VGE	3.5	0.12	VGE	3.8	0.21	VGE
64	System profilers	3.8	0.51	VGE	3.5	0.09	VGE	3.9	0.11	VGE
65	Scientific visualization application	3.6	0.12	VGE	3.8	0.09	VGE	3.5	0.01	VGE
66	Computer-aided instruction	3.6	0.23	VGE	3.9	0.41	VGE	3.7	0.09	VGE
67	Digital art softwares	3.9	0.11	VGE	3.7	0.11	VGE	3.7	0.09	VGE
68	Multi-Media search engines	3.7	0.33	VGE	3.7	0.31	VGE	3.9	0.21	VGE
GRAND		3.6	0.34	VGE	3.7	0.80	VGE	3.7	0.13	VGE

From table 4 the grand mean for male was 3.6 lecturers and that of female lecturers was 3.7 while the overall grand mean was 3.7. This result indicates that both male and female lecturers of ESUT utilized ICT data sourcing tools for academic research to a very great extent.

Research Question 5

To what extent do lecturers of ESUT utilize ICT data analyses tools for academic research?

Table 5: mean and standard deviation scores on research question 5 items

Item		Male			Female			Overall		
		Mean	SD	Remark	Mean	SD	Remark	Mean	SD	Remark
69	Word processors	3.6	0.21	VGE	3.5	0.21	VGE	3.9	0.33	VGE
70	Utility packages	3.8	0.11	VGE	3.6	0.11	VGE	3.9	0.21	VGE
71	Presentation packages	3.5	0.01	VGE	3.5	0.01	VGE	3.5	0.11	VGE
72	Offline computer spreadsheets	3.7	0.09	VGE	3.6	0.09	VGE	3.6	0.01	VGE
73	Online computer spreadsheets	3.5	0.09	VGE	3.8	0.09	VGE	3.6	0.09	VGE
74	Web-based spreadsheets	3.8	0.11	VGE	3.5	0.41	VGE	3.5	0.33	VGE
75	Open source spreadsheets	3.6	0.33	VGE	3.9	0.33	VGE	3.5	0.21	VGE
76	Inferential statistics softwares	3.5	0.50	VGE	3.7	0.85	VGE	3.5	0.11	VGE
77	Descriptive statistics softwares	3.6	0.09	VGE	3.5	0.99	VGE	3.5	0.01	VGE
78	Measures of central tendency softwares	3.5	0.17	VGE	3.6	0.26	VGE	3.7	0.12	VGE
79	Measures of dispersion softwares	3.5	0.04	VGE	3.6	0.06	VGE	3.7	0.13	VGE
80	Wide Area Networks (WAN)	3.6	0.51	VGE	3.5	0.14	VGE	3.5	0.16	VGE
81	Local Area Networks (LAN)	3.7	0.11	VGE	3.7	0.90	VGE	3.6	0.33	VGE
82	Backup softwares	3.5	0.12	VGE	3.7	0.26	VGE	3.6	0.45	VGE
83	File managers	3.7	0.01	VGE	3.5	0.06	VGE	3.9	0.12	VGE
84	Crypto graphics	3.5	0.09	VGE	3.6	0.14	VGE	3.5	0.13	VGE
85	Antivirus software's	3.8	0.15	VGE	3.9	0.04	VGE	3.5	0.16	VGE
86	Data base management systems	3.8	0.11	VGE	3.5	0.90	VGE	3.8	0.33	VGE
87	System security applications	3.5	0.09	VGE	3.6	0.54	VGE	3.8	0.16	VGE
88	Spreadsheet wizards	3.9	0.11	VGE	3.7	0.43	VGE	3.7	0.33	VGE



89	Info graphics	3.6	0.33	VGE	3.5	0.05	VGE	3.5	0.45	VGE
90	Memory testers	3.9	0.50	VGE	3.6	0.43	VGE	3.7	0.12	VGE
91	System profilers	3.5	0.09	VGE	3.6	0.06	VGE	3.4	0.13	VGE
92	Clipboard managers	3.6	0.17	VGE	3.5	0.04	VGE	3.5	0.16	VGE
GRAND		3.6	0.17	VGE	3.6	0.30	VGE	3.6	0.20	VGE

From table 5 the grand mean value was 3.6 for male and lecturers as well as the overall. This result indicates that both male and female lecturers of ESUT utilized ICT data analyses tools for academic research to a very great extent.

Research Question 6

To what extent do lecturers of ESUT utilize ICT-powered journals for publication of academic research?

Table 6: mean and standard deviation scores on research question 6 items

Item		Male			Female			Overall		
		Mean	SD	Remark	Mean	SD	Remark	Mean	SD	Remark
93	ICT-powered open accessed academic journals	2.0	0.12	LE	2.2	0.33	LE	2.1	0.04	LE
94	ICT-powered paid academic journals	2.1	0.88	LE	1.9	0.33	LE	2.2	0.90	LE
95	ICT-powered institution based academic journals	2.1	0.95	LE	2.0	0.35	LE	2.1	0.26	LE
96	ICT-powered professional association academic journals	2.0	0.06	LE	2.0	0.52	LE	2.0	0.06	LE
GRAND		2.1	0.50	LE	2.0	0.38	LE	2.1	0.32	LE

From table 6 the grand mean for male lecturers was 2.1 and that of female lecturers was 2.0 while the overall grand mean was 2.1. This result indicates that both male and female lecturers of ESUT utilized ICT-powered journals for publication of academic research works to a low extent.

Hypothesis 1

Extent of awareness of ICT data sourcing tools for academic research by male and female lecturers of ESUT do not differ significantly.

Table 7: z-test analyses for hypothesis 1

Group	n	\bar{x}	SD	z-calculated	z-critical	Remark
Male	224	3.7	0.13	0.88	1.96	Not significant (Do not reject hypothesis)
Female	402	3.6	0.34			

From table 7 z-calculated (0.88) is less than z-critical (1.96). Hence, at .05 significant level, the mean ratings of the two groups (male and female) do not differ significantly. Consequently, hypothesis one is not rejected as stated, implying that male and female lecturers of ESUT do not differ significantly on their extent of awareness of ICT data sourcing tools for academic research.

Hypothesis 2



Extent of awareness of ICT data analyses tools for academic research by male and female lecturers of ESUT do not differ significantly.

Table 8: z-test analyses for hypothesis 2

Group	n	\bar{x}	SD	z-calculated	z-critical	Remark
Male	224	3.6	0.30	0.30	1.96	Not significant
Female	402	3.6	0.20			(Do not reject hypothesis)

From table 8 z-calculated (0.30) is less than z-critical (1.96). Hence, at .05 significant level, the mean ratings of the two groups (male and female) do not differ significantly. Thus, hypothesis two is not rejected as stated, implying that male and female lecturers of ESUT do not differ significantly on their extent of awareness of ICT data analyses tools for academic research.

Hypothesis 3

Extent of awareness of ICT-powered journals for publication of academic research works by male and female lecturers of ESUT do not differ significantly.

Table 9: z-test analyses for hypothesis 3

Group	n	\bar{x}	SD	z-calculated	z-critical	Remark
Male	224	2.7	0.32	0.56	1.96	Not significant
Female	402	3.0	0.50			(Do not reject hypothesis)

From table 9 z-calculated (0.56) is less than z-critical (1.96). Hence, at .05 significant level, the mean ratings of the two groups (male and female) do not differ significantly. Therefore, hypothesis three is not rejected as stated, indicating that male and female lecturers of ESUT do not differ significantly on their extent of awareness of ICT-powered journals for publication of academic research.

Hypothesis 4

Male and female lecturers of ESUT do not differ significantly in the extent to which they utilize ICT data sourcing tools for academic research.

Table 10: z-test analyses for hypothesis 4

Group	n	\bar{x}	SD	z-calculated	z-critical	Remark
Male	224	3.6	0.34	0.72	1.96	Not significant
Female	402	3.7	0.80			(Do not reject hypothesis)

From table 10 z-calculated (0.72) is less than z-critical (1.96). Hence, at .05 significant level, the mean ratings of the two groups (male and female) do not differ significantly. Thus, hypothesis four is not rejected as stated, implying that male and female lecturers of ESUT do not differ significantly in the extent to which they utilize ICT data sourcing tools for academic research.

Hypothesis 5

Male and female lecturers of ESUT do not differ significantly in the extent to which they utilize ICT data analyses tools for academic research.

Table 11: z-test analyses for hypothesis 5

Group	n	\bar{x}	SD	z-calculated	z-critical	Remark
Male	224	3.6	0.17	0.62	1.96	Not significant
Female	402	3.6	0.30			(Do not reject hypothesis)

From table 11 z-calculated (0.62) is less than z-critical (1.96). Hence, at .05 significant level, the mean ratings of the two groups (male and female) do not differ significantly. Consequently, hypothesis five is not rejected as stated, implying that male and female lecturers of ESUT do not differ significantly in the extent to which they utilize ICT data analyses tools for academic research.

Hypothesis 6



Male and female lecturers of ESUT do not differ significantly in the extent to which they utilize ICT-powered journals for publication of academic research.

Table 12: z-test analyses for hypothesis 6

Group	n	\bar{x}	SD	z-calculated	z-critical	Remark
Male	224	2.1	0.50	0.13	1.96	Not significant
Female	402	2.0	0.38			(Do not reject hypothesis)

From table 12 z-calculated (0.13) is less than z-critical (1.96). Hence, at .05 significant level, the mean ratings of the two groups (male and female) do not differ significantly. thus, hypothesis six is not rejected as stated, indicating that male and female lecturers of ESUT do not differ significantly in the extent to which they utilize ICT-powered journals for publication of academic research.

Summary of Findings

Findings made in this study can be summarized thus;

1. Lecturers of ESUT were aware of ICT data sourcing tools for academic research to a very great extent.
2. Lecturers of ESUT were aware of ICT data analyses tools for academic research to a very great extent.
3. Lecturers of ESUT were aware of ICT-powered journals for publication of academic research works to a great extent.
4. Lecturers of ESUT utilized ICT data sourcing tools for academic research to a very great extent.
5. Lecturers of ESUT utilized ICT data analyses tools for academic research to a very great extent.
6. Lecturers of ESUT utilized ICT-powered journals for publication of academic research works to a low extent.
7. Male and female lecturers of ESUT do not differ significantly on their extent of awareness and

utilization of Information and Communication Technology (ICT) tools for academic research.

Implications

Education is the aggregate of all the processes by which a child or young adult develops the abilities, attitudes and other forms of behavior which are of positive value to the society in which he lives, in other words, it is a process for transmitting culture in terms of continuity and growth and for disseminating knowledge either to ensure social control or to guarantee rational direction of the society or both. One cannot talk of disseminating knowledge without first talking about generating knowledge. Perhaps, the most important function of universities is to generate knowledge and disseminate such. Hence, it is believed that research is the heartbeat of university education. If research in the university must make meaningful contributions to human development and enhancement of the society, then Information and Communication Technology must be put to use in this direction. However, one cannot talk of using ICT tools when the awareness is not there. It is therefore interesting and heartwarming that ESUT lecturers have sufficient awareness of ICT tools for academic research, including data sourcing tools, data analyses tools and ICT-powered journals. On the other hand, it is worrisome that despite the satisfactory extent of awareness of these tools by the lecturers, they (the lecturers) only utilize data sourcing tools and data analyzing tools sufficiently while they lag behind in utilization of ICT-powered journals for publication of academic research works. The implication is so devastating because, if nothing is done, the lecturers will end up generating knowledge but fail in disseminating that knowledge. Consequently, those who ought to apply the knowledge may never have access to them.

Recommendations

Consequent upon the findings of this study, the following recommendations are deemed necessary;



1. Management of ESUT should expose their lecturers to more awareness of ICT tools for academic research through sponsorship to local and international conferences.
2. ESUT lecturers should be sponsored through special funds to improve their utilization of ICT-powered journals for publication of academic research works.

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