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# CANADIAN CONTEMPORARY RESEARCH JOURNAL

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# Assessment of ICT Utilization in Accounting Education in Enugu and Anambra States Tertiary Institutions

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**Abstract:** The study assessed the extent of ICT utilization in accounting education in the tertiary institutions in Enugu and Anambra States. There are varieties of conclusions and the level of utilisation of ICT facilities for teaching accounting courses in tertiary institutions in Enugu and Anambra States seems not to be evidently known. Research questions and hypotheses were formulated. The study adopts descriptive survey research design. The whole populations of 229 lecturers were adopted for the study and questionnaire was used in collecting data from 224 respondents; data were analyzed using Univariate-ANOVA via Statistical Package for Social Sciences (SPSS) version 21. Results indicated that the availability and utilization of ICT in tertiary institutions in Enugu and Anambra States is low, there are no specific differences among challenges confronting ICT utilization in tertiary institutions in Enugu and Anambra States. The study recommends among others that government should make provision for electricity and ICT teaching accounting courses in Anambra and Enugu States' tertiary institutions.

**Key words:** Assessment, ICT Utilization, Accounting Education, Nigeria.

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## 1. Introduction

Information Communication Technology (ICT) has developed its dominion over all aspects of our life. Virtually every organization emphasizes on greater importance of computer science and skills. Organizations use ICT to enhance efficiency, effectiveness and improvement of quality in their

performance because they believe that the informational technology can provide organizations with valuable opportunities to enhance efficiency and performance (Awm & Quinet, 2002 as in Akbar, Farhad, & Morteza, 2012). It is necessary to state that organizations have not always equal benefit from technology application of ICT system in the same manner. They committed resources such as; money, time and human resources (Akbar, Farhad & Morteza, 2012: Nuan, 2001).

Information and communication technology facilities have been considered to be vital to teaching and learning. The technology assists the achievement of basic skills, expose students to practical workplace environment, and supplement and consolidate what is read in textbooks and journals. Consequently, the Federal Government of Nigeria came up with policies to have it integrated into the educational offerings of schools. These policies include those contained in the National Policy on Education 2004 and 2009, the Nigerian National Policy for Information Technology 2001, all of which emphasize the need to integrate ICT facilities into instruction.

ICT is very useful in the area of learning, business management practices and accounting especially. The accounting curriculum needs ICT not only as tools for communication but also tools for teaching and learning as well as in carrying out researches. Competence in ICT is one of the most crucial factors in the knowledge based economy, whereby newly emerging professional accountant must possess sufficient ICT knowledge and skills; due to the persistent use and indispensability of ICT in the business world. The effective utilization of ICT tools in the teaching and learning of accounting had remained the only challenges of ICT usage among

lecturers in Nigeria tertiary institutions. Observed that no meaningful progress will be made in educational sector without adjusting to technological innovations and discoveries, and noted that the universities should put in place effective ICT facilities to enable both the teachers and students have access to internet, e-mail, collaborative software etc. (Ekpenyong, Ogbeide & Omenvibiugie, 2012; IFAC, 2010; Okoli, 2012; Sanusi, 2011)

The Federal Republic of Nigeria in 2009 re-emphasized the need for the integration of ICT in the Nigerian education system. This is the acceptance of the need to go beyond computer to the level of ICT, and the need for infrastructure. Three major objectives among others were emphasized in the Nigerian National Policy for Information Technology. These include to empower youth with ICT skills, to prepare them for competitiveness in a global environment and to integrate ICT into the mainstream of education, and training and establishment of multifaceted ICT, Federal Republic of Nigeria (2004) as in Ikonmwan, (2015) outlined nine major strategies for the attainment of the stated ICT objectives. These are:

- i. Making ICT compulsory at all educational institutions.
- ii. Developing ICT curricular at all levels of education.
- iii. Using ICT in distance learning/education.
- iv. Training the trainer scheme for youth corps services on ICT.
- v. Giving study grants and scholarships on ICT.
- vi. ICT capacity building at the zonal, state and local government levels.
- vii. Establishing private and public dedicated ICT institutions.
- viii. Working with international and domestic initiative to transfer ICT knowledge.

Notwithstanding the strategies put in place to achieve the objectives of ICT in schools, there still exist inadequacies of ICT facilities utilisation in the school environment. Abdul-salaam (2011) asserted that most schools have either inadequate or no ICT facilities to cater for the ever increasing population of students in the schools. Ajayi and Ekundayo (2009), as in Ikonmwan, (2015) upheld that most schools are not adequately provided with ICT facilities for teaching-learning processes.

In the past years several researchers have studied the application of Information and Communication Technology in the accounting classroom (Apostolou

et al, 2001; Watson et al, 2003). Halibi et al (2002) surveyed introductory accounting trainees to determine trainee attitudes towards tele-teaching versus traditional in-class lectures. Most of the research was conducted in developed nations. No present evidence indicates that such research and results has been applied in Enugu and Anambra State, especially with the varying environments and the role of different cultures that affects the introduction, and use of information and communication technology.

A lot of effort had been made by Federal, State, Local government, Organizations and individuals on the provision of ICT in the educational system, still the performance of the accounting students towards exhibiting ICT skills are doubtful. The convergence of ICT concepts and knowledge that were not provided in the existing curriculum used in most accounting education programme in our tertiary institutions have necessitated a mismatch between what the accounting education students received and the technological activities they are expected to perform (Buba, 2011).

These indicate that there are varieties of conclusions towards the use of information and communication technologies in teaching accounting courses in particular. Therefore there is need to ascertain the extent tertiary institutions in Enugu and Anambra States have applied ICT skills in the teaching and learning of accounting in Enugu and Anambra State tertiary institutions. In this study we try to assess or examine the extent ICT utilization by accounting lecturers among tertiary institutions in Enugu and Anambra State. The problem of this study is that the level of utilisation of ICT facilities for teaching accounting courses in tertiary institutions in Enugu and Anambra States seems not to be evidently known. The study has the following research questions and hypotheses formulated for the purpose of achieving the stated objective:

- (i) To what extent are the ICT facilities available for teaching accounting courses in tertiary institutions in Enugu and Anambra State?
- (ii) To What extent do accounting lecturers utilize the ICT facilities for teaching accounting courses in tertiary institutions in Enugu and Anambra States?
- (iii) What are the major challenges in the utilization of ICT in teaching accounting

courses in tertiary institutions in Enugu and Anambra States?

The following hypotheses which are expressed in their null (HO) forms, and to be tested at 5% level of significance:

- (i) Respondents do not differ significantly in their assessment of ICT facilities available for teaching accounting courses in tertiary institutions in Enugu and Anambra States.
- (ii) There is no significant difference base on respondents' rank and experience in assessment of ICT facilities usage for teaching accounting courses in Enugu and Anambra States.
- (iii) Respondents' opinions do not differ significantly base on academic qualification in assessment of ICT utilization challenges in teaching accounting courses in Enugu and Anambra States.

This study is expected to provide a basis for comprehensive knowledge on Information and Communication Technology (ICT) utilization in accounting education in Enugu and Anambra State tertiary institutions. The study will establish the existing gaps between the accounting educators and application of ICT facilities to the teaching and learning of accounting. The output of this study will serve as a reference material for accounting educators, accountancy students, professionals in accountancy, and researchers in ICT. It will serve as a blue-print and guide to the policy maker in the formulation and implementation of tertiary educational policy and curriculum development.

This study will concentrate on determining the extent of utilization of ICT- computer, multimedia, internet facilities, telecommunication and accounting software for teaching of accounting courses in federal, state and private tertiary institutions in Enugu State. The assessment will focus on application of ICT to the teaching of accounting education related functions. The study will cover or involve lecturers in publicly and private owned tertiary institutions, that is, universities, polytechnics, colleges of education that are in Enugu state. The entire tertiary institutions' accounting departments will be the major focus and the entire population will be studied since the number is of a manageable size. This will give room for wider coverage and generalization within the tertiary educational system in Enugu State.

Owing to the fact that accounting courses at the tertiary level provides student with employment opportunities after school or opportunity for higher assignment, it is essential to make them to develop adequate skills and abilities to apply these technologies wherever they will find themselves after education. It has however been observed that most schools do not fully utilise ICT facilities for the teaching of business subjects (Hawking as in Akpanobong, Ukpong & Etim, 2014). This is probably why students are not stimulated to learn practical skills. Utilising ICT facilities in the teaching of business subjects will offer students a wide range of stimulating learning opportunities and build in them practical skills.

The effective utilization of ICT in the teaching and learning of the accounting courses is however beyond the acquisition of resources such as adequate curriculum, instructional strategies, teacher's competence and even the invitation of the experts from our industrial sectors to make the products of the programme achieve the relevant skills needed in the business market. Therefore, it is against this backdrop that the study will assess the ICT utilization performance in accounting education among tertiary institutions in Enugu and Anambra State of Nigeria.

## **2. Review of Related Literature**

### **2.1 Conceptual Review**

#### **2.1.1 Information and Communication Technology (ICT)**

This is an umbrella term that includes any communication devise or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as video conferencing and distance learning. (i.e. computer facilities, telecommunication, internet, multimedia and so on). Information and communication technology in the past was known as information technology (IT). However, the inclusion of communication to information technology emphasizes technological growth attributed to communication aspect of new learning technology (Anderson & Glen, 2003). In the view of Anderson and Glen (2003), ICT refers to those technologies that are used to access, gather, manipulate and present or communicate information. These technologies include hardwares

e.g. computer and other devices, software application, and connectivity (e.g access to the internet, local networking infrastructure, and video –conferencing).

ICT is the application of computers and telecommunication system in the collection and analysis, processing, manipulating, storage, retrieval, transmission and communication of data in different divergent ways which may include: audio, visual, audio and visual formats (Nwana, 2008). It involves the use of computer, online self-learning packages, chips, satellites, system and other related type of information technologies. ICT is an acronym for computers software, network, satellite link and related systems that allow people to access, create, analyze and exchange information and knowledge in ways that were almost imaginable (Association of African Universities, 2000). Omeje (2009) defined ICT as all kinds of electronic systems that are used in broadcasting, telecommunications and all forms of computer related communication.

The improvement and impact of ICT in education cannot be overstressed; Anao (2002) as in Ikononwan, (2015) stated that the following features make ICT exceptional, these are:

- i. Happening at tremendously swift pace.
- ii. Impacting all area of the world.
- iii. Impacts of the revolution are being witnessed by all segments of the world.
- iv. It seem to be no natural regulations or laws encumbering or governing the pace and direction of the revolution.
- v. The need for ICT products and services are unlimited.
- vi. The government that has grown up with information technology has developed initiative means of absorbing and exploiting the capabilities that technology offers, sometimes to the bewilderment of the older generation.

This implies that ICT is now introducing divergent needs on education in general and accounting courses. Therefore, a subsequent thought of how accounting courses curriculum are taught in Nigeria tertiary institutions become crucial if our educational practices are to be significant to serve the public needs in this present information era. This can be achieved by deploying ICT in teaching and learning situation to improve and enhance management science students learning, academic proficiency in

the work place.

## **2.1.2 Application of ICT for teaching accounting courses**

Computer facilities according to Wikipedia in Nweke (2013) comprised sets of hardware and software. Computer hardware is the physical aspect of the computer as well as peripherals like input, output and storage device that add to the host computer to enhance its abilities. The forms of hardwares and softwares as components of ICT computer facilities are the computer, word processor, Microsoft Excel, Microsoft PowerPoint, database management, CD-ROM, scanner, and printer (Hampton in Akubueze, 2012)

Computer software comprises of application programmes such as word processor, spreadsheet, desktop publisher access, that are used in teaching accounting courses. Effective use of these facilities in teaching enhances the quality of education in several ways, increasing learners' motivation and enjoyment by facilitating the acquisition of basic skills, and by enhancing teacher training. Learning with computer facilities helps in developing technological literacy in use of keyboard, mouse, and use of productivity tools such as word processor, spread sheet, database, and graphic program (Unwin, 2004).

Muir-Herzig as in Ukaoha and Doadu (2009) stressed that computer facilities in the classroom is widely believed to help teachers promote a constructive class environment, and it is viewed by many researcher to have an influential effect in the teaching and learning process. Muir-Herzig in Ukaoha and Doadu further stressed that computers facilities as well as the information produced would go a long way in lightening the burden of teaching in educational sectors.

The computer application such as the computer assisted instruction (CAI) can be used also for distance education, for problem-solving, tutorial drill and practice. Furthermore, the computer manager instruction (CMI) can also be used by lecturers for marking, scoring and for keeping of student records of quizzes, examination and continuous assessment. Wikieducator (2009) enumerated the following as the uses of computer in education:

- a. Inspiring students to express their imagination using paint brush, coral draw and other software packages.

- b. Helps in improving pronunciation of student by using microphone, headphone, and special dedication website.
- c. Encouraging the students to surf the web pages and gather information via web pages.
- d. Instructing the student using power point slides, word document using hyperlinks, creating video, using images albums for better power point slides.
- e. Save document as soft copy for future use.
- f. Collecting notes and video from the web for instructional purposes.

### **2.1.3. Application of Multimedia Facilities for teaching accounting courses**

Multimedia are those ICT facilities that combine basic types of media into learning environment e.g. video, sound graphic and animation, thus providing a powerful teaching and learning environment (Groot, 2002). Groot further stressed that multimedia in teaching provides students with technical steps needed to produce multimedia document, encourage deep reflective thinking and empower student to create and design rather than absorbing representations created. Ehrlich and Reynolds as in Florio (2005) opined that multimedia is appealing to students of all different learning styles because it creates a diverse educational environment.

Multimedia can change the look and feel of learning by providing an opportunity to reach people of different learning styles, different skill levels, and in different geographical areas, multimedia offers the potential to reduce the learning curve and accelerate the learning process (Ehrlich & Reynolds in Florio, 2005). Similarly, Brown and Green (2002) found that students are not only intrigued by how multimedia presents information, they want to use the multimedia facilities themselves.

Adekunmisi (2012) defined multimedia facility as the combination of various digital media types such as text, images, sound and video into an integrated multi-sensory interactive application or presentation to convey a message or information to an audience. Adekunmisi further stressed that the power of multimedia lies in the fact that it is multi-sensory, stimulating the many senses of the audience.

Multimedia facility adds new dimension to learning experiences because concept were easier to

present and comprehended with images and animations (Ogunbote & Adesoya, 2006). The forms of multimedia facilities among others are: multimedia projector, teleconferencing, video conferencing, interactive whiteboard, DVD, and slide.

### **2.1.4. Application of Internet Facilities for teaching accounting courses**

Internet is an acronym for international network for communication, and it is the newest and fastest growing part of the age of information and communication technology. Internet is a worldwide connection of computers that is interconnected, and utilizes IP to support communication (Mbaezue, 2010). Hames (n.d) noted that internet facilities are now a global computer network that allows millions of computer around the world to communicate through the telephone system and other communication lines. It is also referred to as the web and the digital information superhighway. Internet add new dimension to the curriculum and provide accounting students with the opportunities to engage in more challenging and life-like activities.

Madusiru (2006) saw internet as a network of networks of millions of computers in the world, communicating and sharing information with each other using the Transmission Control Protocol/Internet Protocol (TCP/IP). Madusiru further stressed that it is an information superhighway that provide unlimited access to a wealth of information on different topics contributed by people throughout the world.

Scholastic (2003) noted that internet facilities are useful for teaching and learning and research in academic setting. Scholastic further stressed that through the internet, exciting materials in forms of lesson materials, simulation, virtual, field trip, and tutorial and so on, relevant to the lesson can be gotten. Nwose (2013) pointed out that internet facilities provide an avenue for a person to sit at his or her computer and exchange information, ideas and interact with others online.

### **2.1.5. Application of Telecommunication Facilities in teaching accounting courses**

Telecommunication facilities enhance communication at a distance by technological means particularly through electrical signals or electromagnetic Waves (Wikipedia, 2014). Most telecommunication facilities offer access to



documents and data bases located on the internet. Florida Centre for Instructional Technology (FCIT) (2013) stressed that telecommunication facilities are usually current, providing access to information with very little turnaround time between collection and publication of the information. FCIT(2013) further stressed that through telecommunication facilities the typical classroom is no longer bound by four walls, but open to include interaction among students, teachers, and experts from around the world.

Berenfeld(2011) maintained that with telecommunication facilities mentoring becomes a rich and viable teaching option. Berenfeld further maintained that many sites on the internet, such as professional groups and bulletin boards are responsive to student inquiries. These facilities are: mobile phones, teleconferencing, telex, fax machine, and modem.

The theoretical framework of the study will be anchored on constructivism and behaviourism; constructivism is an approach to teaching and learning based on the premise that cognition (learning) is the result of mental construction. Knowledge is not received from outside, but by reflecting on our experiences, by fitting new information together with what people already know, people construct knowledge in their head. Constructive approach to learning was propounded by Seymour in 1980 (see Bruner, Vygotsky and Feuerstein (n.d) Ezeani & Akpotohwo, 2014; Gagnon & Collay, in Ikonomwan, 2015; Matusevich, 1995; Nwosu and Ogbomo, 2011; Tobias & Duffy, 2009; ). This theory holds that the learner's acts as an active participant who should be involved in the structuring of his own learning experiences based on his previously acquired knowledge. This theory also postulates that the learner should be able to relate new learning to the already acquired knowledge. This theory implied that accounting educators should enhance learning activities through careful manipulation of technologies with the learners as active participants; hence the role of an accounting educator is to organize learning experiences and allows learning to take place by providing adequate learning resources required in the world of business.

While behaviourism thought is that free will is illusory, and that all behavior is determined by the environment either through association or reinforcement. This theory was developed by skinner 1938. This theory states that an individual learn better

if the environment is controlled by a reinforcing stimulus that will strengthen behavior such as readiness to learn, teaching styles etc.

## 2.3 Review of Empirical Studies

Studies had being conducted on the subject matter as follows:

Ubulom, Enyekit, Onuekwa and Amaehule (2011) studied the extent of ICT facilities accessibility to business studies teachers in the teaching of business studies in secondary schools in Adoni local government area of River State. Findings from the study revealed that all the respondents disagreed on the ICT facilities accessibility in the teaching of business studies in secondary schools in Andoni local government Area of River state. The study also revealed that all respondents said there is no ICT utilization in the teaching of business studies in secondary school in Andoni Local Government Area of Rivers state. The study of Ubulom, Enyekit, Onuekwa and Amaehule (2011) is related to the present research in that they examined ICT facilities in teaching, and also used questionnaire as data collection instrument. They differ in that Ubulom et al focused on ICT accessibility and utilization for business studies in River State, while the present study focuses on utilization of ICT facilities for teaching of business subjects in accounting education in Enugu and Anambra States tertiary institutions.

Oluwadare (2012) investigated the availability and utilization of ICT facilities in the management of secondary schools in Kaduna. The study was designed to find out the state of ICT facilities availability for the management of schools in Kaduna state, Nigeria, and also to find out the level of ICT facilities utilization in the management of secondary schools in Kaduna state, Nigeria. The study adopted a descriptive survey design. Findings from the study revealed that all the respondents disagreed on the ICT facilities availability in the management of secondary schools in Kaduna state. The study also revealed that all the respondents disagreed on the ICT facilities utilization in the management of secondary schools in Kaduna state. The study of Oluwadare (2012) is related to the present research in that they both examined ICT facilities utilisation, and also they both used questionnaire as data collection instrument. They differ in the sense that Oluwadare's population were principals, while the population for the present study is business subject teachers.

Similarly, Egbri (2012) assessed the use of ICT in teaching and learning of business education in University of Benin. The purpose of the study was to find out the relevance of the use of ICT in business education as a course of study. The research adopted a descriptive survey design. The population of the study comprised 23 business education lecturers and student, and sample of 16 was used for the study. Stratified random sampling technique was used. Closed-ended questionnaire was used for the study. The study revealed that lecturers, instructors and students cannot do much without adequate knowledge of ICT. The study of Egbri (2012) is similar to the present study in that it considered ICT for teaching and learning of business education and they also used questionnaire as data collection instrument. It differs from the present study in that it focused on secondary schools, while the present study focuses on higher institutions.

Adeoluwa, Aboderin and Omodara(2013) appraised educational technology usage in secondary schools in Ondo state. The study was designed to find out the level of teachers application of educational technology in teaching. A total of 400 teachers and principals were randomly selected from 40 secondary schools in the state. The study adopted a descriptive survey design. Findings from the study revealed that teachers were not exposed to the use of educational technology in teaching and learning. They agreed that enough time was not made available to plan the use of educational technology. The study of Adeoluwa, Aboderin and Omodara (2013) is related to the present study in that they appraise educational technology in secondary schools, and they both used questionnaire as data collection instrument, and survey as a research method. They differ as the present study centers on the extent of ICT facilities utilization in Enugu State tertiary institutions.

### **3. Methodology**

#### **3.1 Research Design**

This study adopted a descriptive survey design since it intended to bring out the extent of ICT utilization in accounting education in tertiary institutions. The survey design is appropriate when gathering information on the very important issues of community, their opinions, attitudes, motivations and behavior (Olayiwola, 2007; Osuala, 2001 as in Akintonde, 2013). This study was carried out in Enugu and Anambra State. Enugu State is one of

the states in the eastern part of Nigeria. The state shares borders with Abia State and Imo State to the south, Ebonyi State to the east, Benue State to the northeast, Kogi State to the northwest and Anambra State to the west. The Enugu coordinates in Nigeria is: 6°30'N 7°30'E. Its capital is Enugu, from which the state – created in 1991 from the old Anambra State – derives its name. It has an estimated land area of about 7,161 km<sup>2</sup> (2,765 sq mi). In 2006 National Population Commission (NPC), the State had a population of about 3.28 million people. The administrative headquarters of the State is Enugu and there are 28 local government areas.

Anambra is a state in southeastern Nigeria. The state capital is Awka. Onitsha and Nnewi are the biggest commercial and industrial cities respectively. It is bordered by Delta State to the west, Imo State and Rivers State to the south, Enugu State to the east and Kogi State to the north. The origin of the name is derived from the Anambra River (Omambala) which is a tributary of the River Niger. The indigenous ethnic group in Anambra state are the Igbo (98% of population) and a small population of Igala (2% of the population) who live mainly in the north-western part of the state. Anambra coordinates in Nigeria is 6°20'N 7°00'E.

#### **3.2 Population of Study**

The population of this study consists of two hundred and twenty-nine (229) academic staff in sixteen (16) tertiary institutions of the Enugu and Anambra States. The population includes instructors and lecturers that lecture in federal government, state government and private owned tertiary institutions in Enugu State with diverse educational backgrounds and work experiences. As 229 respondents is a manageable size, the population was studied entirely without sampling. The distribution of the population according to tertiary institutions is presented in the Table3.1:

**Table3.1: Population distribution of Accounting Departments Lecturers in Tertiary Institutions in Enugu and Anambra States.**

S/N	Names of Tertiary Institutions	Ownership Type	No. of Lecturers
1	Caritas University	Private	7
2	Renaissance University	Private	12
3	Our Saviour Institute of Agric Technology (OSISATECH) (Poly)	Private	12
4	Godfrey Okoye University.	Private	13
5	Enugu State University of Science and Technology (ESUT)	State Government	17
6	University of Nigeria Enugu Campus (UNEC)	Federal Government	15
7	Institute Of Management And Technology (IMT) (Poly)	State Government	13
8	Federal College Of Education Eha-Amufu	Federal Government	11
9	Enugu State College of Education Technical	State Government	10
10	National Open University of Nigeria	Federal Government	14
11	Nnamdi Azikiwe University	Federal Government	26
12	Federal Polytechnic Oko	Federal Government	24
13	St. Paul University	Private	7
14	Anambra State University	State Government	16
15	Federal college of Education Umunze	Federal Government	25
16	Tansia University	Private	07
<b>TOTAL</b>			<b>229</b>

Source: Field Survey, 2016.

### 3.3 Instrument for data collection

A structured questionnaire was used to generate relevant data for this study. The instrument was designed by the researcher with insight from literature reviewed. The instrument is titled: ICT Utilisation Questionnaire (ICTUQ). The questionnaire was divided into two sections; A and B. Section

A contained six items on the biographical data of the respondents covering type of ownership, type of tertiary institution, rank, age, educational qualification and work experience. Section B contained 20 items in three clusters B1 to B3 covering the research questions with 8, 7, and 5 items respectively. The instrument is a modified 4-point Resin Likert Scale:

Codes	Interpretation	Codes	Interpretation	Rating point
VHE	Very-High Extent	SA	Strongly agree	4
HE	High Extent	A	Agree	3
LE	Low Extent	D	Disagree	2
VLE	Very Low Extent	SD	Strongly disagree	1

### 3.4 Validation and Reliability of the Instrument

The face and content validity of the questionnaire were determined by two experts, one from faculty of Education, NnamdiAzikiwe University, Awka, and one from the ICT firm in Enugu State. The researcher presented the research topic, purpose and research questions with the draft instrument to the experts and requested them to consider the structure of the instrument and freely amend it as they deem fit to ensure that the instrument serves its purpose

successfully. The experts amend the response options, restructured the instructions and some items as well as added and deleted some. All these were incorporated in the final copy of the instrument which was approved by the supervisor for the study.

The instrument was administered on 20 respondents made of lecturers from tertiary institutions in Anambra State who were not part of the study population. Their responses were subjected to reliability evaluation, using Cronbach Alpha to determine the reliability co-efficient. Cronbach Alpha is generally used for determining

the internal reliability of an instrument. According to Adeaga, (2015), Cronbach Alpha estimates correlation of (0.65) or (0.7) of an instrument is reliable. Reliability co-efficient of 0.74 was derived, therefore, the instrument was considered reliable for the study.

### 3.5 Method of Data Collection and Analysis

Two hundred and twenty-nine (229) copies of the questionnaire were administered directly to the respondents by the researcher. Copies of questionnaire that were completed on the spot were collected immediately, while copies from those who could not respond on the spot were

collected later on appointment within a space of two weeks. Repeated visits and phone calls were made to achieve as high response rate. Two hundred and twenty-four (224) questionnaires were retrieved from the respondents. Data from the study were collected, arranged and analyzed with Analysis of Variance-multilevel and factorial design (ANOVA) and arithmetic mean ( $\bar{x}$ ) statistic. The mean score was used to answer the research questions, while the ANOVA was used to test the null hypotheses at five percent (5%) level of significance. The boundary limits of number were used as shown below to facilitate decision making:

### 3.6 Decision Rule

	Response Options		Rating Point	Boundary Limits
<b>Strongly agree</b>	Very-High Extent	Always	4	3.50 – 4.00
<b>Agree</b>	High Extent	Often	3	2.50 - 3.49
<b>Disagree</b>	Low Extent	Rarely	2	1.50 – 2.49
<b>Strongly Disagree</b>	Very Low Extent	Never	1	1.00 – 1.49

The decision rule was based on the mean rating which was calculated as follows:

$(4+3+2+1)/4 = 10/4 = 2.50$ . Therefore, an item with a mean rating of 2.50 and above shows that the item is high, often, or agrees where the mean rating is below 2.50 it means the mean is low, rarely

or disagrees. A null hypothesis will be upheld or accepted if the P-value is equal to or greater than 5% significant level or otherwise reject.

## 4. Data Analysis

### 4.1 Respondents' Profile

**Table 4.1: The Administration and collection of questionnaire.**

S/N	Details	Number of Copies	Percentage (%)
1	Copies Administered	229	100
2	Copies Returned	224	97.82
3	Unreturned Copies/Wrongly Filed	5	2.18

Source: Field Survey, 2016.

The researcher distributed 229 questionnaires randomly to the lecturers in Enugu and Anambra State tertiary institutions out of which 224 copies were successfully retrieved representing 97.82%

of the number of questionnaires distributed. While the remaining 5 copies were not returned this portion represents the 2.18% of the unretrieved questionnaires. Table 4.1 gives more details.

**Table 4.2 Description of respondents' state.**

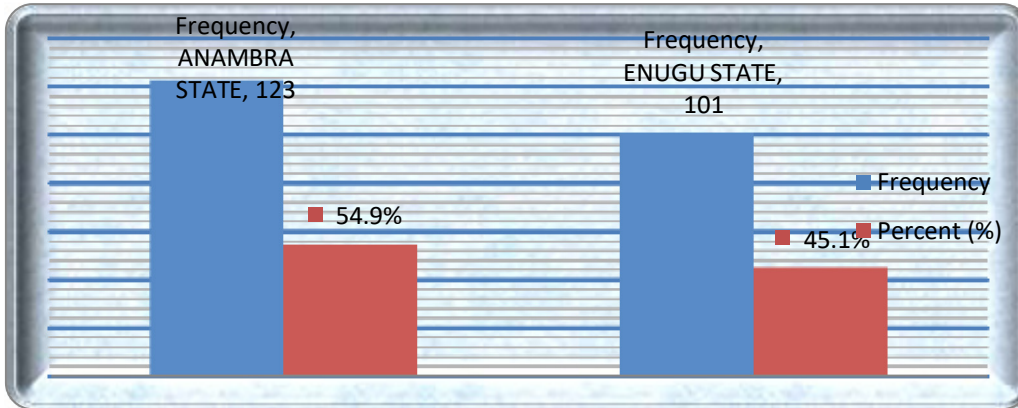
STATES	Frequency	Percent (%)
ANAMBRA STATE	123	54.9
ENUGU STATE	101	45.1
Total	224	100

Source: Researcher's computation using SPSS version-21

Table 4.2 and figure 4.2 show the description of respondents' states, out of 224 lecturers that participated in the study one hundred twenty-three (123) are from Anambra State representing fifty-four point nine percent (54.9%) while the one hundred

and one (101) with the corresponding percentage of forty-five point one (45.1%) are from Enugu state. This shows that Anambra State had the higher participants compare to Enugu respondents.

**Figure 4.2 Bar-chart description of respondents' state.**



Source: Researcher's computation using Excel 2007.

**Table 4.3 Description of respondents' institution ownership type.**

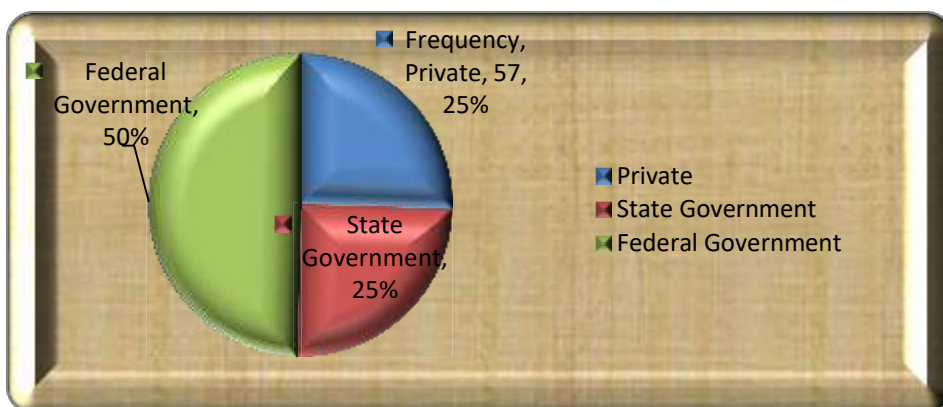
Ownership Type	Frequency	Percent (%)
Private	57	25.4
State Government	56	25.0
Federal Government	111	49.6
Total	224	100.0

Source: Researcher's computation using SPSS version-21

Table 4.3 and Figure 4.3 show the respondents' institutions ownership type of the two states, that is, Anambra and Enugu, the ownership type is structured into private, state government and federal government with their corresponding frequency. Private lecturers has 57 (25.4%), state government has 56 (25%) and federal government lecturers 111 (49.6%). This indicates that the federal

government had the highest number of institutions from the two states while the difference between the private and state government is marginal, the federal government has the highest sector of the pie-chart followed by private while state government had the least. By extension federal government had invested in tertiary institutions more than state government or private sectors.

**Figure 4.3 Pie-chart description of respondents' institution ownership type.**



Source: Researcher's computation using Excel 2007.

**Table 4.4 Description of respondents' types of tertiary institutions.**

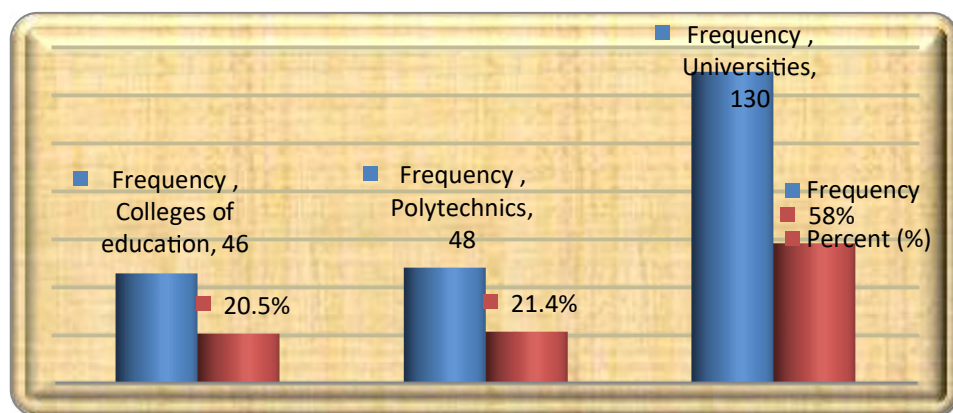
Types of Tertiary Institutions	Frequency	Percent (%)
Colleges of education	46	20.5
Polytechnics	48	21.4
Universities	130	58.0
Total	224	100.0

Source: Researcher's computation using SPSS version-21

Figure 4.4 and table 4.4 revealed that 20.5% (46) of the respondents (lecturers) are from Colleges of education; 21.4 % (48) are from polytechnics and universities had the highest level of respondents 130 (58%) across the two states. This shows that the highest numbers of participant are from federal, state and private universities of the two states, this implied that the federal government, state

government and private had invested more in universities compare to polytechnics or colleges of education. This is also supported with figure 4.4 which indicate that universities had the tallest cylindrical bar-chart followed by polytechnics and colleges of education had the cylindrical bar-chart least.

**Figure 4.4 Bar-chart description of respondents' institutions.**



Source: Researcher's computation using Excel 2007.

**Table 4.5 Description of respondents' academic qualification.**

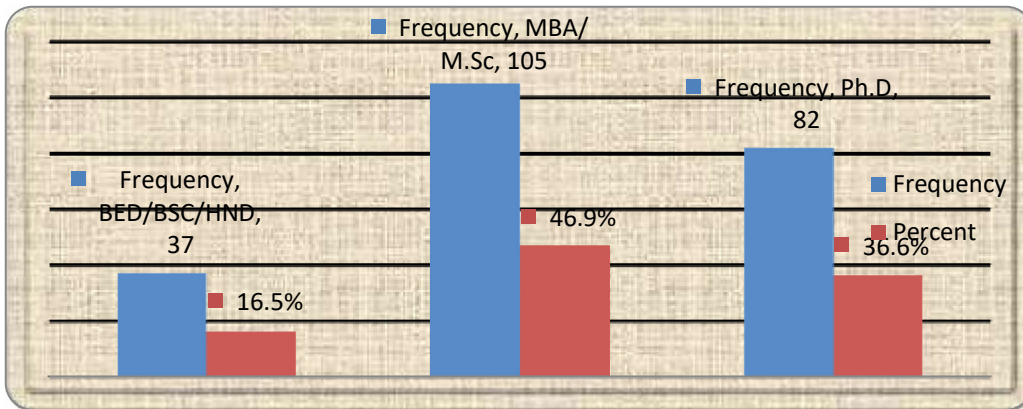
Academic Qualification	Frequency	Percent
BED/BSC/HND	37	16.5
MBA/ M.Sc	105	46.9
Ph.D	82	36.6
Total	224	100.0

Source: Researcher's computation using SPSS version-21

Table 4.5 and figure 4.5 give a picture of respondents' academic qualification from Anambra and Enugu states, that is, master of business administration or master of sciences (MBA/M. Sc.); higher national diploma (HND), Bachelor of education or sciences (BED/BSC/HND) and doctor of philosophy (Ph.D); MBA/M.Sc. had the highest rectangular bar-charts followed by Ph.D while BED/BSC/HND had the smallest rectangular bar-

charts; with their corresponding frequencies and percentages; that is, 105 (46.9%), 82 (36.6%) and 37 (16.5%). This symbolizes that the population is knowledgeable enough to understand the subject matter.

**Figure 4.5 Bar-chart description of respondents' academic qualification.**



Source: Researcher's computation using Excel 2007.

**Table 4.6 Description of respondents' years of working experience.**

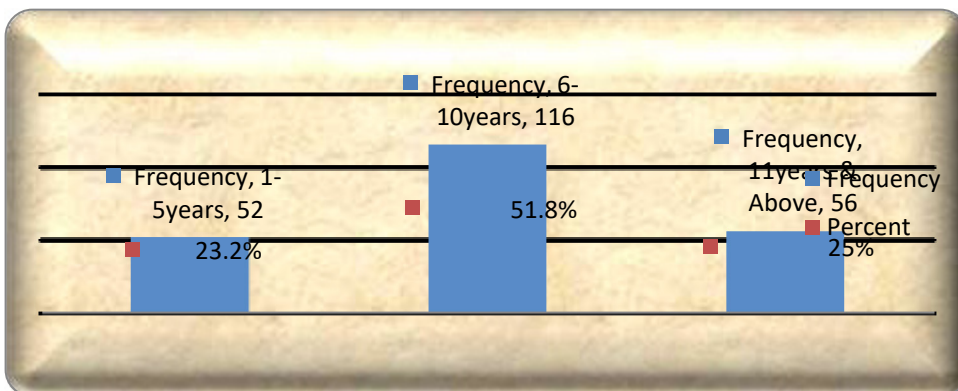
Years of working experience	Frequency	Percent
1-5years	52	23.2
6-10years	116	51.8
11years & Above	56	25.0
Total	224	100.0

Source: Researcher's computation using SPSS version-21

Table 4.6 and figure 4.6 show the description of years of working experience of the respondents; from the figure 4.6 (i.e. bar-chart) it was revealed that respondents that had six to ten years (6-10years) working experience had the highest bar-charts followed by eleven years and above (11years & Above) while one to five years (1-5years)

had the shortest bar-chart with their corresponding frequencies and percatages, that is, 116 (51.8%), 56 (25%), and 52 (23.2%). This implies that the oponions of the respondents can be relied upon to draw valid inferences, since six to ten years working experience respondents had the highest percentage.

**Figure 4.6 Bar-chart description of respondents' years of working experience.**



Source: Researcher's computation using Excel 2007.

**Table 4.7 Description of respondents' position or rank.**

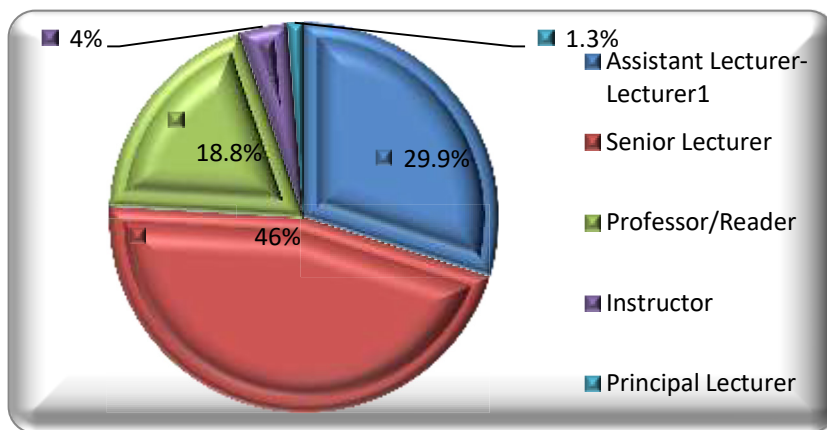
Position/Rank	Frequency	Percent
Assistant Lecturer-Lecturer1	67	29.9
Senior Lecturer	103	46.0
Professor/Reader	42	18.8
Instructor	9	4.0
Principal Lecturer	3	1.3
Total	224	100.0

Source: Researcher's computation using SPSS version-21

Table 4.7 and figure 4.7 illustrate the respondents' position or rank from table 4.7 we can see that the senior lecturer had the highest frequency (103) with the percentage of forty-six percentage (46%) followed by assistant lecturer /lecturer-1 67 (29.9%); while professor/reader had a frequency of 42 (18.8%); instructor had a frequency of 9 (4%) and principal lecturer had the least frequency of 3 (1.3%). Figure 4.7 contained the pie-chart

description of lecturers' rank or position, from simple inspection it shows that senior lecturers had the largest portion of the pie-chart followed by assistant lecturer/lecturer-1; professor/readers, instructors and principal had the smallest portion of the pie-chart. From the simple descriptive analysis above it is evident that the participants or respondents had the good knowledge of information communication technology and its relevant in accounting fields.

**Figure 4.7 Pie-chart description of respondents' position or rank.**



Source: Researcher's computation using Excel 2007.

## 4.2 Research Questions

i. **To what extent are the ICT facilities available for teaching accounting courses in tertiary institutions in Enugu and Anambra State?**

**Table 4.8 Lecturers' mean rating of cluster B1 presented in sub-groups and total group means.**

States	Ownership	Tertiary Institutions	$\bar{x}$ N=224	SD( $\sigma$ )	Remarks
Enugu	Private	polytechnics	1.79	.000	Low-extent (LE)
		Universities	1.92	.160	Low-extent (LE)
		Total private	1.89	.147	Low-extent (LE)
	State	Colleges of education	1.49	.027	Low-extent (LE)
		Polytechnics	2.06	.126	Low-extent (LE)



**Table 4.8 - Continued**

States	Ownership	Tertiary Institutions	$\bar{x}$ N=224	SD( $\sigma$ )	Remarks	
Anambra	Federal	Universities	1.78	.054	Low-extent (LE)	
		Total state	1.80	.231	Low-extent (LE)	
		Colleges of education	1.75	.052	Low-extent (LE)	
		Universities	2.79	.294	High-extent (HE)	
		Total federal	2.51	.532	High-extent (HE)	
	Private	Colleges of education	1.63	.135	Low-extent (LE)	
		Polytechnics	1.93	.163	Low-extent (LE)	
		Universities	2.23	.499	Low-extent (LE)	
		Total Enugu	2.07	.467	Low-extent (LE)	
		Universities	2.06	.093	Low-extent (LE)	
		Total private	2.06	.093	Low-extent (LE)	
		State	Universities	1.91	.111	Low-extent (LE)
			Total private	1.91	.111	Low-extent (LE)
		Federal	Colleges of education	1.72	.101	Low-extent (LE)
			Polytechnics	2.14	.077	Low-extent (LE)
	Total	Universities	2.39	.263	Low-extent (LE)	
		Total private	2.07	.323	Low-extent (LE)	
		Colleges of education	1.72	.101	Low-extent (LE)	
		Polytechnics	2.14	.077	Low-extent (LE)	
		Universities	2.15	.283	Low-extent (LE)	
Total Anambra		2.04	.281	Low-extent (LE)		
Total	Private	Polytechnics	1.79	.000	Low-extent (LE)	
		Universities	1.97	.157	Low-extent (LE)	
		Total Private	1.93	.157	Low-extent (LE)	
	State	Colleges of education	1.49	.027	Low-extent (LE)	
		Polytechnics	2.06	.126	Low-extent (LE)	
		Universities	1.85	.107	Low-extent (LE)	
	Federal	Total State	1.83	.207	Low-extent (LE)	
		Colleges of education	1.73	.089	Low-extent (LE)	
	Total	Polytechnics	2.14	.077	Low-extent (LE)	
		Universities	2.62	.342	High-extent (HE)	
		Total Federal	2.24	.463	Low-extent (LE)	
		Colleges of education	1.68	.126	Low-extent (LE)	
		Polytechnics	2.03	.167	Low-extent (LE)	
		Universities	2.19	.425	Low-extent (LE)	
	Grand Mean (X)	2.06	.393	Low-extent (LE)		

Source: Researcher's computation using SPSS version-21

Table 4.8 shown that the lecturers from private, state and federal tertiary institutions in Enugu state had rated the extent of ICT facility availability to be low; only lecturers in federal university in Enugu state had rated ICT facility availability to be high. Also the sub-groups mean rating of (1.63), (1.93) and (2.23) from lecturers in colleges of education, polytechnics and universities respectively indicated that ICT facilities availability to be low.

Enugu overall or grand mean of (2.07) shows that the extent of ICT facilities availability is low. Likewise the mean responses of (1.72), (2.14), and (2.15) from lecturers in private tertiary institutions, state tertiary institutions and federal tertiary institutions

respectively in Anambra state indicated that the extents of ICT facilities availability is low. Anambra overall or grand mean rating is (2.04) this signifies that the ICT facilities availability in Anambra tertiary institutions is low. From table 4.8 the grand mean (2.06) for Enugu and Anambra state connotes that ICT facilities availability is low. Can we conclude that there is no significant difference in their mean ratings across the two states? This led us to test of hypothesis.

**ii. To What extent do accounting lecturers utilize the ICT facilities for teaching accounting courses in tertiary institutions in Enugu and Anambra States?**

**Table 4.9 Lecturers' mean rating of cluster B2 presented in sub-groups and total group means.**

Position/Rank	Years of Working Experience	$\bar{x}$ N=224	SD( $\sigma$ )	Remarks
Assistant lecturer	1-5years	2.50	.155	Often
	6-10years	2.51	.183	Often
	11years & above	2.67	.358	Often
	<b>Total</b>	<b>2.54</b>	<b>.233</b>	<b>Often</b>
Senior lecturer	1-5years	2.45	.166	Rarely
	6-10years	2.54	.245	Often
	11years & above	2.61	.248	Often
	<b>Total</b>	<b>2.53</b>	<b>.235</b>	<b>Often</b>
Professor/Reader	1-5years	2.67	.372	Often
	6-10years	2.55	.306	Often
	11years & above	2.39	.140	Rarely
	<b>Total</b>	<b>2.52</b>	<b>.289</b>	<b>Often</b>
Instructor	1-5years	2.96	.163	Often
	6-10years	2.74	.214	Often
	11years & above	2.37	.057	Rarely
	<b>Total</b>	<b>2.62</b>	<b>.287</b>	<b>Often</b>
Principal Lecturer	11years & above	2.59	.252	Often
	<b>Total</b>	<b>2.60</b>	<b>.252</b>	<b>Often</b>
Total	1-5years	2.52	.230	Often
	6-10years	2.54	.240	Often
	11years & above	2.55	.275	Often
	<b>Grand Mean (X)</b>	<b>2.54</b>	<b>.247</b>	<b>Often</b>

Source: Researcher's computation using SPSS version-21

Table 4.9 shown that the assistant lecturers in different years of work experiences often utilize ICT in the teaching of accounting courses in tertiary institutions in both States. The senior lecturers that had 5years of working experience consented that they rarely utilize ICT in teaching accounting course whereas from six years and above agreed that they often utilize ICT in teaching accounting courses from both states. The lecturers that fall within the cadre of professor or reader and had one to ten years experience consented that they often use ICT in teaching of accounting courses while eleven years and above rarely utilize ICT in teaching accounting courses.

Instructors that have worked for 10 years agreed that they often utilize ICT while instructors that have worked for 11 years and above agreed that they rarely utilize ICT in teaching accounting courses. The principal lecturers agreed that they often utilize ICT in teaching accounting courses. The mean scores of lecturers with divergent years of experience shows that the lecturers often utilize ICT in teaching accounting across both States, the overall grand mean ( $\bar{x} = 2.54$ ) indicates that the lecturers utilize ICT in teaching accounting course in both states.

**iii. What are the major challenges in the utilization of ICT in teaching accounting courses in tertiary institutions in Enugu and Anambra States?**

**Table 4.10 Lecturers' mean rating of cluster B3 presented in sub-groups and total group means.**

STATES	Academic Qualification	$\bar{x}$ N=224	SD( $\sigma$ )	Remarks
Anambra State	BED/BSC/HND	2.99	.093	Agreed
	MBA/ M.Sc	3.07	.199	Agreed
	Ph.D	3.04	.182	Agreed
	Total	3.05	.181	Agreed
Enugu State	BED/BSC/HND	3.21	.212	Agreed
	MBA/ M.Sc	3.09	.173	Agreed
	Ph.D	3.03	.268	Agreed
	Total	3.08	.235	Agreed

**Table 4.10 Continued.**

STATES	Academic Qualification	$\bar{x}$ N=224	SD( $\sigma$ )	Remarks
Total	BED/BSC/HND	3.08	.186	Agreed
	MBA/ M.Sc	3.08	.190	Agreed
	Ph.D	3.03	.235	Agreed
	Total	3.06	.207	Agreed

Source: Researcher's computation using SPSS version-21

Table 4.10 shown that the lecturers from both states and with different academic background agreed with the challenges confronting the utilisation of ICT in teaching accounting courses are the same in both states. Lecturers from Anambra state with divergent academic background had the sub-group mean of ( $\bar{x} = 3.05$ ), while lecturers from Enugu state with different academic qualification had a mean rating of ( $\bar{x} = 3.08$ ) while the grand mean for lecturers from both states is ( $\bar{x} = 3.06$ ).

Can we conclude that there is no significance difference in their mean rating? This lead us to test of hypothesis.

### 4.3 Test of Hypotheses

**i. Respondents do not differ significantly in their assessment of ICT facilities available for teaching accounting courses in tertiary institutions in Enugu and Anambra States.**

**Table-4.11 F-Test (ANOVA) comparison of lecturers' mean ratings on ICT facilities available for teaching accounting courses in tertiary institutions in Anambra and Enugu State.**

MEAN * STATES	Sum of Squares	df	Mean Square	F	Sig.	Decision
Between Groups . (Combined)	030	1	.030	.192	.662	Accept Ho
Within Groups	34.489	222	.155			
Total	34.519	223				

Source: Researcher's computation using SPSS version-21

To test the hypothesis, ANOVA (factorial design-2x3x3) was used to test the difference between the means of the lecturers based on non-manipulative variables (i.e. states, ownership, tertiary institutions type ) was undertaken based on the responses of the lecturers. The F-test analysis as shown in Table 4.11 revealed that the calculated p-value of  $F(1, 223) = 0.192$  ( $p = .622$ ) is higher than the significant level of five percent (0.05). Consequently, the null hypothesis ( $H_0$ ) of no significant difference between the lecturers' mean ratings of ICT availability was upheld and the converse (i.e. alternate

hypothesis- $H_1$ ) was rejected. That is the lecturers' do not differ significantly in their assessment of ICT facilities available for teaching accounting courses in tertiary institutions in Enugu and Anambra States. By extension we made an inference that the availability of ICT facilities for teaching accounting courses in both states are of low extent.

**ii. There is no significant difference base on respondents' rank and experience in assessment of ICT facilities usage for teaching accounting courses in Enugu and Anambra States.**

**Tables 4.12 F-Test (ANOVA) comparison of lecturers' mean ratings on ICT facilities usage for teaching accounting courses in tertiary institutions in Anambra and Enugu State.**

MEAN * STATES	Sum of Squares	df	Mean Square	F	Sig.	Decision
Between Groups . (Combined)	.096	4	.024	.192	.393	Accept Ho
Within Groups	13.430	219	.061			
Total	13.527	223				

Source: Researcher's computation using SPSS version-21

To test the hypothesis, ANOVA (factorial design-2x3x3) was used to test the difference between the means of the lecturers based on non-manipulative variables (i.e. states, ownership, tertiary institutions type ) was undertaken based on the responses of the lecturers. The F-test analysis as shown in Table 4.11 revealed that the calculated p-value of  $F(1, 223) = 0.192$  ( $p = .622$ ) is higher than the significant level of five percent (0.05). Consequently, the null hypothesis (Ho) of no significant difference between the lecturers' mean ratings of ICT availability was upheld and the converse (i.e. alternate

hypothesis-H1) was rejected. That is the lecturers' do not differ significantly in their assessment of ICT facilities available for teaching accounting courses in tertiary institutions in Enugu and Anambra States. By extension we made an inference that the availability of ICT facilities for teaching accounting courses in both states are of low extent.

**iii. Respondents' opinions do not differ significantly base on academic qualification in assessment of ICT utilization challenges in teaching accounting courses in Enugu and Anambra States.**

**Table 4.13 F-Test (ANOVA) comparison of lecturers' mean ratings on ICT utilization challenges in teaching accounting courses in tertiary institutions in Anambra and Enugu State.**

MEAN * STATES	Sum of Squares	df	Mean Square	F	Sig.	Decision
Between Groups . (Combined)	.053	1	.053	1.232	.268	Accept Ho
Within Groups	9.532	222	.043			
Total	9.585	223				

Source: Researcher's computation using SPSS version-21

To test the hypothesis, ANOVA (factorial design-2x3x3) was used to test the difference between the means of the lecturers based on non-manipulative variables (i.e. states, ownership, tertiary institutions type ) was undertaken based on the responses of the lecturers. The F-test analysis as shown in Table 4.11 revealed that the calculated p-value of  $F(1, 223) = 0.192$  ( $p = .622$ ) is higher than the significant level of five percent (0.05). Consequently, the null hypothesis (Ho) of no significant difference between the lecturers' mean ratings of ICT availability was upheld and the converse (i.e. alternate hypothesis-H1) was rejected. That is the lecturers'

do not differ significantly in their assessment of ICT facilities available for teaching accounting courses in tertiary institutions in Enugu and Anambra States. By extension we made an inference that the availability of ICT facilities for teaching accounting courses in both states are of low extent.

## 5.1 Conclusions and Recommendations

The following conclusions and recommendations were made based on the findings:

- i. The availability of ICT in tertiary institutions in Enugu and Anambra States is low and respondents do not differ significantly in their assessment of ICT facilities availability for teaching accounting students.
- ii. There is no significant difference in the lecturers' mean rating of ICT utilization in teaching accounting courses in both states. That is, the utilization of ICT in teaching accounting courses in tertiary institutions in Enugu and Anambra states by lecturers is often or frequently. Few of the ICT facilities that are available in both states are: Examination scoring machine, internet connected laptop/desktops, Departmental computer labouratory, Peachtree accounting software, projector machine for presentation/teaching.
- iii. There is no significant difference in the lecturers' mean rating of challenges confronting ICT utilization in both states. That is, the challenges confronting ICT utilization in tertiary institutions in Enugu and Anambra states is the same. The major challenges confronting ICT utilization in tertiary institutions in Enugu and Anambra states are: acute shortage of man power for administrative and educational development, poor power supply, High cost of equipment, low percentage of accounting educators with ICT skill/ knowledge and lack of ICT technicians. Based on the findings from the study, the following recommendations are made:
  - i. Government should in this regard make provision for ICT teaching accounting courses in tertiary institutions.
  - ii. Government should do more in provision of steady power supply and adequate training and learning of ICT accounting courses.

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