ASSESSMENT OF THE EFFECT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) ON STUDENTS' ADMINISTRATION IN AHMADU BELLO UNIVERSITY, ZARIA

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ZARIA, NIGERIA

MARCH, 2021

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY, ZARIA

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF M. PHIL DEGREE IN PUBLIC ADMINISTRATION

DEPARTMENT OF PUBLIC ADMINISTRATION,
FACULTY OF ADMINISTRATION,
AHMADU BELLO UNIVERSITY,
ZARIA,NIGERIA

MARCH, 2021

DECLARATION

I declare that this Dissertation entitled "Assessment of the Effect of Information and Communication Technology (ICT) on Students' Administration in Ahmadu Bello University, Zaria" has been carried out by me in the Department of Public Administration. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this dissertation was previously presented for another degree or diploma at this or any other institution.

Halima IBRAHIM	_____	_____
P16ADPA9087	Signature	Date

CERTIFICATION

This Thesis entitled **"Assessment of the Effect of Information and Communication Technology (ICT) on Students' Administration in Ahmadu Bello University, Zaria"** by **Halima IBRAHIM** meets the regulations governing the award of the degree of M. Phil in Public Administration of the Ahmadu Bello University, and is approved for its contribution to knowledge and literary presentation.

Dr. M. Idris _____ _____ _____
Chairman, Supervisory Committee Signature Date

Prof. Bashir Jumare _____ _____ _____
Member, Supervisory Committee Signature Date

Dr. M. Idris _____ _____ _____
Head of Department Signature Date

Prof. S. A. Abdullahi _____ _____ _____
Dean, School of Postgraduate Studies Signature Date

DEDICATION

This work is dedicated to my beloved Dad, Alhaji Shu'aibu Ibrahim and my ever loving Mum, Hajiya Hauwa'u Dauda.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank Almighty Allah for spearing my life and enabling me to endure and persevere through and above all, ensuring this comes to pass.

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ABSTRACT

This study investigated the effect of Information and communication Technology (ICT) on Student Administrationin Ahmadu Bello University, Zaria. The major objective of the study was to assess the effect of ICT on student administration Affairs from the period of 2007 – 2018 with emphasis on student registration, student accommodation and library services. The survey research design was adopted in the study. The primary source of data was used as the instrument of data collection through the use of questionnaire and interview. A total number of 437 questionnaires were administered as the sampling size of the study. The data was presented and analysed using descriptive and inferential statistics through the use of Statistical Package for Social Sciences (SPSS). The findings of the study are as follows: First, there is a positive and significant relationship between ICT and Student Registration in A.B.U. Zaria. Second, there is a positive and significant relationship between ICT and student Accommodation in A.B.U. Zaria, and third there is positive and significant relationship between ICT and Library services in A.B.U. Zaria. The study concluded that A.B.U Zaria has succeeded in establishing ICT infrastructural facilities to ease student administration. Based on the above findings, ICT in ABU Zaria indicate the clear integration of student registration, accommodation and library services. All these service are now rendered to student using one virtual counter. It is crystal clears that the use of ICT on student administration is an antidote that has eliminated the bottle neck such as long queue and procedural complexity during registration and reservation of hostel accommodation bed space and so on. Notwithstanding, the study recommends that A.B.U. Zaria still need to do more to enhance its ICT infrastructural facilities. The management of A.B.U. Zaria should improve the existing ICT infrastructural facilities for viable, efficient and effective student administration in areas such as; course registration, reservation of hostel bed space accommodation, library services, etc.

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CHAPTER ONE
INTRODCTION

1.1 Background to the Study

Student administration is one of the most tasking responsibility because every administrative taskarea is needed to be effectively managed.It is an imperative aspect of university administration. This involves various activities commencing from the admission process to learning activities till processing of results and performance analysis.These services are also targeted at ensuring that students are assisted to be well informed about the learning processes and other activities they have to undergo in institution.

There is no doubt, that the rapid growth in educational institution has made Student Administration become more complex, due to the enormous rise in the number of students in the universities as well as the multiplicity of programmes have made university management to handle a very large quantity of data which must be accessed speedily to provide information for the university administration, National University Commission (NUC) and Ministry of Education for effective management. Hence, the use of ICT in the management of student administration in universities becomes imperative. (Ugomma, Ochai and Obasi, 2014).

The 21st century has witnessed a great transformation and advancement which led to the development in the administrative system of Nigerian Universities. The application of Information and Communication Technology (ICT) and their adoption in human endeavor has necessitated a change of procedures and methods that relates to what we do and how we manage our daily affairs in order to ensure efficiency and effectiveness in the management of organization and national affairs.ICTs are now vital to support the business of educational institutions, and support the full academic lifecycle. This include

managing of student's initial enquiry about courses, application, module selection, monitoring and support for the delivery of a course, assignment handling, examination, room booking, timetabling, library systems and learning management systems. These are usually done through a central IT system United Nations Educational, Scientific and Cultural Organization (UNESCO, 2012).

ICT facilitates efficient storing and retrieval of data, instantaneous transmission of information, processing information and data faster than the earlier manual systems, speeding up governmental processes, taking decisions expeditiously and judiciously, increasing transparency and enforcing accountability. It also helps in increasing the reach of government both geographically and demographically (Kolhe, 2016). Thus, the information and communication technology has brought a sweeping change that has eliminated the geographical barriers between nations and also improved global interconnections of countries as if countries were living next door.

The Federal Government of Nigeria has since 2001 taken noticeable step to put the country on track in the area of Information and Communication Technology (ICT) development and utilization in governance. In March 2001, the Nigeria government launched her National information technology Policy and thereafter, began the implementation with the establishment of National Information Technology Development Agency (NITDA). Before 2011, different agencies were responsible for various aspects of ICT development in Nigeria. In 2011 Nigeria created a new Ministry of Communications Technology at the Federal level. The ministry is charged with the responsibility of coordinating ICT development, and drive the nation's e-government agenda (Omeire & Omeire, 2014).The goal of the Framework and Guidelines for ICT adoption in Nigerian tertiary institutions is to provide a flexible and comprehensive general framework for the deployment of ICT tools in Nigerian tertiary institutions for

the effective and efficient support of the core business processes of teaching, learning, research and administration. (NITDA, 2019)

Technological revolution is what is changing our institutions of higher learning at a high speedy rate. The National Universities Commission (NUC) has brought changes into the administration of higher institutions that will enable Nigerian Universities to compete with others across the globe. In compliance with the directives, majority of the Nigerian Universities deployed the student's administrative software that would enable students carry out their registration processes through the electronic media (Aimufua and Fatokun, 2007).

The online service delivery found its way into the Nigerian education system over a decade ago, from early 2003. Prior to this time, library services, registration/accommodation of students, examinations and other student services were done manually involving the filling of several forms. However, almost all the educational institutions have moved into digital era, of menu-driven ultra-robust specialized online service delivery. The electronic internet has presented itself as a veritable source of information and channel of communication that has enabled student, staff and researchers access all sort of relevant data and information (Faiku, Awoleye, Oyebisi, 2020). It is crystal clear that the application of electronic internet services in all facets of life has become a subject of fundamental and concerns all operating within Nigeria.It is therefore certain that ICT has created a new window for the administration of university system in Nigeria.

The application of ICT on student administration is an antidote to student personnel problems that would have been difficult, if not impossible to solve through human effort (Ugomma, Godwin and Obasi ,2014). Commenting on the areas of educational

administration where ICT can be implemented for efficient working of institutions, Ahmad (2011) opined that ICT can be used to maintain the personal record information of the students. ICT according to him can also be useful in maintaining the record of enrolment and attendance/leave information, fees management and examination performance and analysis can be done efficiently through ICT.

Ahmadu Bello University Zaria took a bold step and established its ICT infrastructure in August 2002 with a fast set-up radio based on wireless local-loop technology. To meet the current challenges in the provision of Internet facility to the University Community, the university established the Information and Communication Technology Directorate (ICTD) which is a centrally organized, service oriented unit responsible for the day-to-day implementation and attainment of the university ICT objectives and policies such as delivering of services. The primary tasks of the directorate are management and maintenance of common ICT systems and end-user support (Gbaje, 2010).

Furthermore, Ahmadu Bello University, Zaria had a vision of establishing a cost-effective Information and Communication Technology (ICT) base that would support the emergence and sustenance of a competitive world-class teaching, learning and research environment that would break new grounds in dissemination of knowledge and information of the highest quality. In line with this vision,the university switched the student registration and accommodation to the electronic means during the 2006/2007 academic session and afterward an electronic library was also established (MTN University connect) to ease the student research and learning. The University deployed 37km optic-fibre network linking the major University campuses. (SAD, 2017)

During the ABU Governing Council, at its 150th meeting on 25th June 2013, approved the merger of Information and Communication Technology Directorate and Iya

Computer Centre into a single entity to be known and called “Institute of Computing & Information and Communication Technology” (ICICT) (Nuraddeen ,2015:Mustapha, 2015). The ICICT is saddled with the responsibility of providing timely and qualitative computing information and technology services. ICTs are applied in different areas in Ahmadu Bello University, such as Personnel administration, student administration, various resources administration, financial administration, general administration and library system.

However, Inspite of the bold steps taken by the institution, it is worthy of mention here that there are some challenges that undermine the effectiveness of student administration. Access to internet server is grossly inefficient, sometimes, making it impossible to download the required website for registration and others. Very often, the bank details are delayed in the process of transfer to the school portal to enable the student embark on registration and also have access to hostel bed space.

Olofin and Aniede (2015) stated that majority of the Nigerian Universities are facing huge challenges on the usageof information and communication technology. This is as a result of various factors which include but not limited to cost of internet data and electronic services, fear of change, computer illiteracy, fear of being made redundant, lack of facilities in the library, poor internet and electronic security, inconsistency in electricity supply and the need for continuous training of staff. It is against this background that this study seeks to examinetheeffect ofInformation and Communication Technology(ICT) on student administration in Ahmadu Bello University, Zaria with special focus onstudent registration, student accommodation and library Services. For this services to be rendered to student efficiently, effectively and timely, ABU Zaria converted these services from the manual method to the electronic means. Consequently,

students can register and reserve hostel accommodation bed space online and also have access to library resources using electronic means.

1.2 Statement of the Research Problem

Ahmadu Bello University Zaria provides a variety of services to the students throughout their academic studies to achieve full academic and personal potentials.With ICT, student administration inHigher Education Institutions (HEIs) have become much easier. ICT has brought transformation and efficiency in the way many administrative tasks are handled. It has changed how information is processed, stored and managed, document processing, and other activities less burdensome. It has also made information transfer easier and information about an institution can now be easily disseminated to the entire world. Currently, ABU Zaria operates electronically in areas such as; course registration, fee payment, reservation of hostel accommodation bed space,checking of results online and so on. It has also made access to the institution easy.Hence,applicants can now process admission, and other services online. All these activities are shouldered on Institute of Computing and Information and Communication Technology (ICICT).In order to strengthen the internet services in ABU, the deployed a robust optic fibre network, linking the major University campuses. Thus, the campus optic fibre network spreads up to 37km with all major buildings connected and a metropolitan stretch that covers all the campuses in A.B.U. Based on the above, it was anticipated that with a computerized system in place, it would result into effectiveness and efficiency in the student administration.

However, despitethe bold steps taken by Ahmadu Bello University in the application of ICT on student administration, there perceived some challenges encountered such as poor network service delivery. Both the staff and the student do complain of slow transaction, slow sever network,that is, poor internet connectivity, lack of accessibility to the school portal particularly during the school hours. In this circumstances, services delivery is likely to be undermined in the institution particularly during student registration,reservation of hostel accommodation bed space and e-library services due to the poor internet services.

Oboegbulum and Godwin (2013), conducted a study on Application of ICT in management of Universities in the North Central State of Nigeria, with special consideration on ICT tools like computer, internet satellite, and other telecommunication technologies that can aid for university management in the institutions such as teaching, learning, registration and accommodation processes. The study failed to include the application of ICT in the e- library, which constitute one of the most important aspects of student administration in the University. More so studying the whole universities in one geo- political zone is too enormous and as such, it would be difficult to make generalization. Faith and Imelda (2017) on their own part conducted a study on ICT and effective management of student academic records in Cross River University of Technology (CRUTECH). Ahmed (2009) conducted a study on the use of ICT in private universities in Bangladesh. It was discovered that ICT was used for managing the administrative processes by almost all the privateuniversities. According to the study, ICT were used in student enrolments, student recordkeeping, accounts, general administration, and library maintenance.The study assessed the infrastructural facilities utilized in administrative process in the institution such as student enrollment, student record keeping, account and general administration, without looking at other important

areas of student administration such as e- registration and e- accommodation. however, none of these studies assessed the effect of ICT on student administration in ABU Zaria.In light of the above, the study tends to fill this gap by assessing the effect of ICT on student administration with special focus on student registration, student accommodation and library services system in Ahmadu Bello University, Zaria.

1.3 Research Questions

Arising from the discussion of the research problem, the study is guided by the following research questions:

i. How has ICTaffect studentregistration in Ahmadu Bello University Zaria?

ii. What is the effect of ICT on student accommodation inAhmadu Bello University Zaria?

iii. To what extent does ICT affect Library services in Ahmadu Bello University Zaria?

1.4 Objectives of the Study

The major objective of the study is to assess the effect of ICT on student administrationin Ahmadu Bello University, Zaria. The specific objectives are to;

i. Examine the effect of ICT onstudent registration in Ahmadu Bello University Zaria.

ii. Ascertain the effect of ICT on student accommodationin Ahmadu Bello University Zaria.

iii. Determine the effect of ICT on Library services in Ahmadu Bello University Zaria.

1.5 Research Hypotheses

The hypotheses Postulated for this study are:

H_0^1; ICT has no significant effect on student registration in Ahmadu Bello University Zaria.

H_0^2; ICT has no significant effect on student accommodation in Ahmadu Bello University Zaria.

H_0^3; ICT has no significant effect on Library services inAhmadu Bello University Zaria.

1.6 Significance of the Study

The usefulness of any research is measured on how it has contributed to knowledge. However, studies have earlier been conducted by Nuraddeen (2015); Hassan, Ayobola, Ahmed and Yusuf (2016); Ifeoma, Patrick and Chizi (2016); Muhammad (2016) and Egoeze, Misra, Makeliunas and Damasevicius (2018). While Muhammad (2016) focused on e- governance on student management on student management in Ahmadu Bello University, Zaria. The study focused on ICT infrastructure, ICT utilization, ICICT staff. Hassan, Ayobola, Ahmedand Yusuf (2016) carried out a study on impact Assessment of ICT on postgraduate student's access to information in ABU Zaria. The study was only restricted to access to information on post graduate students alone. On his part, Nuraddeen (2015) conducted a study on evaluation of impact of information and communication technology (ICT) on the availability, accessibility and user-ability among students in Ahmadu Bello University, Zaria. the study was similar to that of Muhammad (2016). It also concentrated on availability of ICT resources, accessibility of ICT resources and user-ability of ICT resources. It iscrystal clear that the study was only

restricted to library services. The currentstudy stands to be unique as it intends to bridge this gap which none of these researches have provided. Our study focusedstudent registration,student accommodation and library service. The importance of the study cannot be overemphasized as it is relevant to policy makers by helping them to have understanding on the effect of ICT in Ahmadu Bello University and they would be more informed when formulating policies in higher educational institutions.

The study would also be of great importance to the management of ABU Zaria, helping them to appreciate the usefulness of ICT on student administration. this would improve the efficiency and effectiveness of ICT on service delivery, so as to further enhance and promote ICT in teaching,learning and research.The literature reviewed will no doubt provide useful information to future researchers. Also, the management of ABU Zaria will benefit from the study in that it will unravel the factors militatingICT on student administration with a view of proffering solution. Finally, the study is relevant because it would add to existing Knowledge as the findings and methodology of the study would be useful to future researchers with the interest in assessing the effect of ICT in tertiary institutions by identifying further areas to explore onICT. The study stands to be unique because it explores areas to include e- registration, e-accommodation and e-library Service which no previous researches have conducted at the same time.

1.7 Scope and Limitation of the Study

The study examined the effect of ICT on student administration in ABU, Zaria for the period 2007 to 2018. The rationale behind this is that the university switched from the paper based procedure of student administration to the electronic method within the period. The research's geographical scope is Ahmadu Bello University, Zaria. The institution is adjudged the largest university in Nigeria and second largest in sub-Saharan

Africa with large population of students. It is therefore desirable to have an effective ICT service within the University and also serve as a leading role for other universities to follow. In addition, ICT is considered to be one of the global revolutions on information technologies that covers wide spectrum of the institution for the purpose of improvingefficiency, effectiveness and economy. Therefore, it is important to study the online era in the university system because ICT is a platform on which the modern university is assessed and ranked essentially on the basis of visibility. Furthermore, the study would only restrict its self on ICT on student administration in terms of student registration, student accommodation and library services.

However, the study is not without its limitations. According to NITDA (2019), Tertiary institutions are advised to have policies that define and prescribe processes for the development and procurement of software in a manner that increases efficiency and guarantees desired product quality assurance metrics. Ahmadu Bello University Zaria has no any documented policy on ICT. Therefore, the national ICT policy was adopted in the study. Another limitation of the study concerns accessibility of some vital information particularly lack of well documented information by ICICT.

1.8 Operational Definition of Concepts

Information Communication Technology

Information and Communication Technology is an electronic platform that provide wide range of electronic services such as e – registration, e- accommodation and disseminate wide range of information to the students of Ahmadu Bello University, Zaria through the school portal (portal.abu.edu.ng).

Student Administration

Student administration involves all the activities and welfare services provided for the students in the institution for the purpose of achievement of educational goals and objectives. These services include course time –table, recreational facilities, Guidance and counselling, health service delivery, online registration, online accommodation and e- library services.

E-registration

In this study, e - registration also known as online registration is a system that easily manages large number of student and simplifies the registration process through the application of information and communication technology. Students can access ICT and carry out their registration in any part of the country through the use of internet connection via the school Portal (portal.abu.edu.ng).

E- accommodation

Accommodation entails a place where student live in the hostel within the school and retire after their daily activities. It is one of the welfare services provided by the school management at an affordable rate. E- accommodation is the use of internet connection to reserve and pay forbed space through the use of the school Portal (portal.abu.edu.ng).

E-library

E-library in this study is defined as electronic- library and a contemporary automated library in which documents are arranged and organized in an electronic format, where multiple students/users can have access to text books, Journals and articles and any relevant information via the net at a time. Retrieving of information and documents is easy without any direct connections with the traditional library.

CHAPTER TWO
LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter presents a review of scholarly literature relevant to the subject matter. The literature reviewed focuson student administration, e- registration, e-accommodation, e-library and concept of ICT. The evolution of ICT in the world, the application of ICT in tertiary institutions were discussed.More so, empirical studies relating to the study were also discussed. Theories related to the study were reviewed and lastly the Gartner's (2000)E- governance maturityModel wasadopted as the theoretical framework of the study.

2.2 Conceptual Review

2.2.1 Student Administration

Student administration is an important and integral part of information administration. As rightly observed by Pohekar (2018), Student administration involves various activities starting from the admission process to learning activities to the processing of results and performance analysis. Important aspects include the automation of admission process

through e-media including dealing with initial student enquiries, applying for admissions through electronic media, registration, electronic enrolment, course allocating, and information about timetable and attendance monitoring. They further stated that student administration includes the various communications relating to transport, hostel accommodation and other communication to guardians /parents. The integration also helps in the geographical boundaries for student intake, thus facilitating cross-border higher education.

Student administration Creates student profiles with unlimited custom categories and fields including demographic data, enrollment, attendance, schedule and more, and share academic records with faculties, and administrators (Subbiah et al, 2016). In addition, Student administration is a comprehensive solution aimed at managing various stages of the student life cycle. More so, it provides advanced self-service, quality of data, and reporting capabilities as well as offering students a personalized study plan which they can access. Thus student administration is used across the institution to manage the entire processes of the students such as Admissions assessment, enrolment and study plan management, curriculum management, exam management, automatic fee calculation and reversal, result upload, Certification and ratification; academic status, Automatic Government Reporting management and file generation. Student administration also involve application for courses and offer acceptance (e application), Student photos (incite), Examination and time tabling (syllabus Schedules).

Ashish Kumar and Arun Kumar (2005) cited in Pohekar, (2018) have mentioned about the positive perception towards the use of ICT in education. It is mentioned in the study that students of different universities reported the usage of ICT for communication and for on- line discussion forums. ICT facilitated contact and information exchange and also promoted access to higher education. ICTs included systems for student admission and

records, examination results and transcripts, finance database, human resources database, and management information. Various literature reviews reveal that Information administration is one part of overall administration of education institutions which mainly covers general and day to- day operational activities. Student administration in this dimension includes the following:

2.2.2 Student Registration (E- registration)

E-registration emerged because of the problems associated with manual handling of registration and student records. Such problems included mismanagement of students' academic records, mismanagement of courses registered for, among others (Olasina, 2011 cited in Odero and Oloko, 2013). Ukpai and Emuji (2016) stated that online-registration has found its way into the Nigerian education system about a decade ago, from early 2003. Before this time, registration of students and candidates for examinations were done manually involving the filling of several forms. Today, almost all the educational institutions have moved into digital era, of menu-driven ultra-robust specialized online registration applications.

According to Brakel & Chisenga (2003) cited in Adomi & Kanban (2010) e-registration is a system that could easily manage its student body while also providing added bonuses, with a main goal being to ease the transfer of information. According to him, the education system requires a tremendous amount of data and documentation, and this e-registration solution allows institutions to focus less on processing paperwork and more on what matters most -meeting the educational needs of their students by having a cost-efficient, secure registration process that allows for easy access to student files. Intranets and portals are used to provide an infrastructure through which end-users can gain

effective access to information sources needed to assist in daily tasks such as effective decision making, planning and research.

More so, Olasina (2011) cited in Odero and Oloko (2013) stated that the scope of e-registration includes programmes which will contain a detail information of the students since first date of enrolment and up to the graduation day including all student information and procedures required by the students during study semesters, and particularly the registration and following -up lecture schedules as well as checking up the absence among others. They further identified the benefit of e – registration to include; first, it enables candidates to register from any location without visiting the examination offices, it enhances the efficiency of data capture and shortens processing time as manual checking of entries and scanning of entry forms are dispensed with, it minimizes errors because it is self-validating in design and most of the data required are selected from a drop down menu. Fourthly, it allows longer periods of registration. Fifthly, it eliminates the cumbersome tasks of manual processing and physical transfer of entry data on tapes, and minimizes problems of storage space since entry forms, entry schedules. Besides, e-registration also dispenses with the problems of printing entry documents annually and disposing of unsold ones. Facilitation of the capture of continuous assessment scores of school candidates is also another important benefit of e-registration.

According Idris et al (2016), the major objective of e-registration is to provide anywhere anytime opportunity for students to make their registrations and to provide platform for administrators to manage the on-going registration process. They further stated that, E-registration system can be developed in various ways depending on the requirement of a particular institution. To them, some higher institutions are limited to only student's

online registration while others integrate e-learning system where all academic programs are delivered electronically as well as administrative activities.

Ukpai and Emuji (2016) further mentioned some challenges associated with the online registration or e -registration. He stated that access to internet server is grossly inefficient, sometimes, making it impossible to download the required website for registration. Very often, the bank details are delayed in the process of transfer to the school portal to enable the student embark on registration. There are cases of delay caused by management policy of opening and shutting down the portal at specified time daily. Also, there are instances of online registration fraud where registration pin or codes are fraudulently manipulated. More so, online registration has been associated with instances of misrepresentation of information on bio-data, courses and credit unit allocations.

E-registration in this study can be defined as the contemporary use of electronic to accelerate the registration processes of students. This includes the application process, identity transaction, course registration, add & drop of courses, etc. through the use of school portal (portal.abu.edu.ng).

According to Morris Wall (1990) cited in Chaka and Mungadzi (2013), online registration also known as e- registration systems are websites that allow users to sign up for memberships, events and training by completing a form. they added that e-registration systems are replacing manual processes, such as registering by telephone, mail or at events using paper forms. Many universities and educational institutions have a wide range of courses, students and faculty (Wells 2001) in (Chaka Mungadzi, 2013). Registering for classes on line reduces paperwork, personnel, cost and conserves resources.

2.2.3 E- Accommodation

According to Chiguvi and Ndoma (2018) hostel accommodation entails a place where students live; it is usually situated within school compound. The authors further commented that student accommodation can be seen as a place of abode for students; it is also a place where students live and it is usually situated within the College where students are accommodated in hostels or halls of residence. Apart from protecting students from sun, rain, heat and cold, also represent a learning environment which has tremendous impact on the comfort, safety, social interaction and academic performance of students.

The essence is to enable students settle down and have a place of rest. The reason could be to enable students to feel the impact of school environment on the learning activities. Student accommodation is referred to a place where students can stay when their residence is located far from the educational institution and which is considered essential to students' needs, which also called student hostel/housing. According to Wright (2005) cited Mushen (2011), online accommodation or reservation services has given a new application for managing and processing the information given through online services. He further stated that the ability of online services mainly focuses on reducing the effort and the time of the users, otherwise improves client services and improves the services validation efficiency. Web-based applications are becoming so traditional in our everyday life in the sense that it would not go a single day without using them. These applications range from simple to complex ones. In the context of this study, E-Accommodation is seen as online accommodation which involves the use of electronic platform by students for the reservation or clicking of their bed space as well as the also allocation of bed space by the school faculty management.

Students secured accommodation if certified with the qualification and the credentials, the Dean and the Admission Officer will sign the registration form. the student can only then proceed to the student Affairs Division for hostel accommodation bed space after payment of all necessary registration fees. Fully registered students can log on to the online registration portal in accommodation portal in the accommodation section and reserve a bed space in the hostel appropriately for his/ her course of study. This reservation of bed space last for the period of 24hrs within which the student must make payment of appropriate fess at the designated bank (undergraduate student handbook, 2017/2018). The payment shall generate a transaction ID log on the portal for the time. The student will then use the accommodation payment accommodation Transaction ID to complete the process of securing a bed space. And then he he/she will print the paid reservation and processed to the hall administrator who will check the student into the room. The students are therefore expected to know which hall they have been attached to right from the date of the registration. Any room assigned or allocated is for first and second semester only. A student cannot lay claim to rooms at the beginning of each session until an allocation is made and paid for (undergraduate student handbook, 2017/2018). the student has to pay for school registration fee online and print out the transaction details, before he/ she can reserve for a hostel accommodation online via the school portal. There is usually an accommodation officer who is responsible for student accommodation. In each hostel, there is a hall administrator and he/she have porters/portresses and cleaners who are responsible for issuing the keys to the rooms and keeping the hall clean (Ibid).

2.2.4 E- library

E-library and e-resources are becoming the order of the day in library and information practice. An electronic library facility is a library in which collections are stored in digital formats and accessible by the use of computers. The electronic content may be stored locally, or accessed remotely via computer networks. An electronic library is a type of library whose collection are stored in electronic formats and accessible through the use of computer network of information retrieval system. When computers were connected into large networks forming the Internet, the concept evolved again, and research turned to creating libraries of digital information that could be accessed by anyone from anywhere in the world. Phrases like "virtual library", "electronic library", "library without walls" and, most recently, "digital library", all have been used interchangeably to describe this broad concept. Materials in e-library are basically electronic materials; these materials are also referred to as digital materials (Oyeleye and Uche, 2015).

Electronic library also referred to as digital library is a means of easily and rapidly accessing books, archives and images of various types which are now widely recognized by commercial interests and public bodies alike. Digital library has the potential to store much more information, simply because digital information requires very little physical space to contain it. As such, the cost of maintaining a digital library can be, much lower than that of a traditional library. A physical library must spend large sums of money paying for staff, book maintenance, rent, and additional books. Digital library may reduce or, in some instances, do away with these fees. (Oyeleye and Uche, 2015). In the view of Trifonova and Chotova (2015), the electronic library can be seen as a kind of multimedia system for retrieving information (multimedia information retrieval system). In a similar direction, Nweke, Yakub and Omale (2012), opined that, E-library is a collection of documents in organized electronic form, available on the Internet.

According to them, through the e-library, depending on the specific library, a user may be able to access magazine articles, books, papers, images, sound files, and videos.

The use of electronic library has given rise to new modes of organizing the educational environment in tertiary institutions and introduced new concept in the teaching and learning process. According to Khalid and Taib (2017), E-library is very popular among university students, school supervisors and so on. E-library use data that has been formatted, created, or installed in the university library for all users and students. Jeong (2011) cited in Khalid and Taib (2017) stated that that e- library provides highly efficient and consistent means of the search and retrieval of data and the satisfaction of the users' demand.

According to Daniel (2012) cited in Baro, Eze and Nkanu (2013), An electronic library is a "collection of networked digital information resources and associated technical and managerial infrastructure". According to them, the electronic library is assumed to include data and metadata in various formats that are created or assembled in order to provide services to users. The e-library is a library in which collections are stored in digital formats as opposed to print, microforms or other media. It can be accessed only through computers.

Saleem et al (2013) stated that use of information and communication technology (ICT) in libraries enhances users' satisfaction. It provides numerous benefits to library users. He further identified some of the benefits associated to the electronic library such as; provision of speedy and easy access to information, provides remote access to users, round the clock access to users, access to unlimited information from different sources, information flexibility to be used by any individual according to his/her requirements, provides increased flexibility, Facilitates the reformatting and combining of data from

different sources. Libraries are also providing various ICT-based services to their user. This include; Provision of Web access to Online Public Access Catalogs (OPACs), electronic document delivery, networked information resources, delivery of information to user desktops, online instructions and online readers' advisory services (Saleem, et al, 2013).

In this study, electronic- library is seen as a contemporary automated library in which documents are arranged and organized in an electronic format, where students can have access to text books, Journals and articles and any relevant information via the net. Retrieving of information and documents can be easily be achieved without any direct contact with the traditional library.

2.3 Concept of Information and Communication Technology (ICT)

The Acronym ICT means Information and communication Technology. The concept of ICT has been conceptualized by different scholars from different perceptive and it has no unanimous definition. The concept ICT first appeared in mid-1980's and was defined as all kind of electronic system used for broadcasting telecommunications and mediated communication, with examples including personal computers, video games, cell phones, internet and electronic payment system and computer software (Ashikuzzaman, 2014)

According to UNESCO (2006) in Egoeze, Misra and Akman and Damasevicius (2018), ICT is a term used to describe a range of hardware equipment (personal computer, scanners, digital camera), computer software (database programs, multi-media programs) and the telecommunication infrastructure (phones, faxes, videoconferencing equipment and web cameras) that allows us to access, retrieve, store, organize, manipulate, present, send material and communicate locally and globally through digital media. A similar definition of ICT was given by Becta (2008) in Oboegbulum and Godwin (2013) as

technology that is used to process, store, transmit, communicate, create, or exchange information. In order words, ICT is the computing and communication facilities in education. In the context of this study, ICT refers to technical systems that receive, manipulate, process, and store data. It facilitates student data management.

In a similar direction, Mueen, Abdullah, Raed and Jamshed (2013) opine that, ICT includes electronic network–embodying complex hardware and software linked by a vast array of technical protocol. The electronic system can be used for broadcasting telecommunication and all forms of mediated communication. Thus, ICT can be viewed as a collection of technical devices and resources which are used to transmit, store and manage information. According to Mathew, Joro and Manesseh (2015) Information and Communication Technologies (ICT) are electronic technologies used for information storage and retrieval. Development is partly determined by the ability to establish a synergistic interaction between technological innovation and human values.

Ufuophu & Ayobami (2012) describes ICT to include internet, satellite, cable data transmission and computer assisted equipment. They further stated that ICTs are facilities, tools or resources that could be used to process, store, preserve, access, retrieve and disseminate information with ease. Hence, it is an engine for growth and tool for empowerment, with profound implications for education, change and socio-economic development. The definition by Ufuophu and Ayobami (2012) not encompassing, as ICT also involves exchange of information between different agencies of the government in a speedy, convenient, efficient and transparent manner.

In the above manner, Yusuf, Maina and Dare (2012), asserted that ICT covers any product that will store, retrieve, manipulate, transmit or receive information

electronically in a digital form, for example, personal computers, digital television, email, internet etc.

In the words of Rouse (2015) cited in Mavellas, Wellington and Samuel (2016), ICTs is an umbrella term that cover communication devices or applications that include computers, televisions, radios, networks, satellites, video conferencing and e-Learning. Similarly, Mohammed (2017) viewed ICT as the computer- based and other allied automated information and communication system and devices employed to acquire, generate process, store and transmit data. He further stated that ICTS generically considered as technologies used for collecting, storing, editing and passing on or communicating information indifferent forms within an environment, between and among the environment. In other words, he stated that ICTs can be conceived to include telecommunication technologies such as satellite system, radio and television, telephony and digital technologies such as information network, computer hardware and software, digital network and the internet. He furthermore stated that, ICT can be generally being conceived as automated and virtually products (including software applications) and services that facilitate information generation, identification, location, storage, retrieval, dissemination, access and utilization.

In a similar direction, Liverpool & Jacinta (2013) asserted that, Information and Communication technology is the modern electronic techniques of processing, storing, retrieving and circulating information within and outside an organization with speed and little or no stress. The definition of ICT by Mohammed (2017); Liverpool and Jacinta (2013) are almost synonymous in terms of content and processes. However, ICT can also be viewed as a wide spectrum of media and electronic platform for effective management processes.

In the view of Ofodu (2007) cited in Abubakar (2016), they described ICT as computerized gadgets, helped by man and intelligent materials that can be utilized for an extensive variety of educational activities and for individual use. Going by the above delineations, it can be concluded that ICT is the processing of data using all kinds of technologies for the manipulation of information in every aspect of life. In a similar direction Mohammed (2014) stated that ICT can be Tallied with that of technology which can simply be conceived as an instrument; equipment; device, infrastructure and Tool used to support, facilitate and sustain effective and efficient performance of a system, operation; a duty and a function as well as provision of varied services.

In the opinion of Saba, Ladan and Augustine (2017), information and communication technology can be viewed as technologies that are used in creating, accumulating storing, preserving editing and disseminating of information in various forms of format. In other word, ICT is the convergence of communication, media and technologies that are commonly based on digital technologies.

In the view of Hoque (2005), ICT include the whole range of technologies designed to access, process and transmit information in regard to text, sound, data and pictures. ICT encompass the full range from traditional widely used devices such as radios, telephones or televisions to more sophisticated tools like computers or the Internet. To him, ICT is considered both as an instrument of citizen empowerment and public sector reform. More so, ICT can be viewed as catalyst for change in all organizational process or operational system in an organization. In the opinion of Saba, Ladan and Augustine (2017), information and communication technology refers to the technologies that are used in creating, accumulating storing, preserving editing and disseminating of information in various forms of format. These definitions by Hoque (2005), and Augustine (2017) are

encompassing as they viewed ICT as a tool as paradigm shift that facilitate organizational processes.

In the view of Nwana, Ofoegbu & Egbe, (2017) ICT is a science of information which uses the computer and multi-electronic resources to collect, process, store, retrieve and transmit or disseminate information to any part of the world. In a similar direction, Ibenyenwa (2011) sees ICT as all the electronic devices, computer hardware and software and telecommunication gadgets that enable the processing, storage and immediate dissemination of huge amount of information through the computer networks. In addition, Information communications technologies have been described as the tools for changing the world values and making our society a knowledge base environment where everything is done electronically.

Qiang as cited by Onwubiko (2011) perceives ICT as the application of communication technologies consisting of ‘’hardware, software, networks and media for the collection, storage, processing, transmission and presentation of information, via voice, data, text or images’’. A more lucid definition is that given by Onwubiko (2011) thus ‘’any technology that is used in producing, organizing and for distributing information. It is a broad-based concept that encompasses the gathering (acquisition), organization (packaging), storage and retrieval for disseminating information that can be in textual or numeric (books and documents), pictorial and vocal forms (audio-visual) using the combination of all the above (multimedia) including computers and telecommunication facilities.

In a similar direction, Adewoyin, (2009) cited Achilike (2013) stated that Information communication technology is the new communication and computing technology used for creating, storing, selecting, changing, developing, receiving and displaying many

different kinds of information. In the words of Otubelu (2010) cited in Osuchukwu and Obuezie (2017), Information and communication technology (ICT) includes all internet-enabled infrastructures that are widely used today for all kinds of knowledge acquisition and networking. It includes all communication devices or applications like computer hardware and software, phones, television, projector, radio satellite systems and all services and applications associated with distance learning, video conferencing.

According to Asiyai (2010) cited in Asiyai (2014), Information and communication technology refers to as a computer based facilities used by organization personnel to record, transmit, generate, retrieve, impact knowledge and process information and communication needs. According to her, ICT is any technology that is use to organize, create, manipulate, solve, find, draw, design, synthesize, share, collaborate, modify, analyze, evaluate and disseminate information. Furthermore, ICTs include internet, computer, hyper net software and hardware, network, data projector and other devices that convert information into digital forms.

According Ozorji (2010) cited on Okwudile (2015), ICT can be described as a complex varied set of goods, applications and services used for producing, distributing, processing, transforming information, telecoms, television and radio broadcasting, hardware and software, computer services and electronic media. In the opinion of Yusuf, Afolabi and Loto (2013), Information and communication technology (ICT) is an indispensable part of the contemporary world. In fact, culture and society have to be adjusted to meet the challenges of the information age. They further stated that Information and communication technology (ICT) is a force that has changed many aspects of people's ways of life.

In a more specific sense, Jim (2012) cited in Usang et al (2018) stated that ICT is used to refer to the role "unified communications" in association with telecommunication computers as well as other software, storage and audiovisual appliances play in letting the user gain access or store and carryout sophisticated procedures on the net. Kharade (2014) on the other hand describes, Information and Communications Technology (ICT) in simple terms as the basket of technologies, which assist or support in storage, processing of Data/Information, or in dissemination/communication of Data /Information, or both. ICT thus includes technologies such as desktop and laptop computers, software, peripherals and connection to the Internet that are intended to fulfill information processing and communication functions.

In the words of Gokhe (2013) cited in Kasimu (2015) Information and Communication Technology (ICT) is a technology that supports activities involving information. Such activities include gathering, processing, storing and presenting data. Increasingly these activities also involve collaboration and communication". He further stated that ICT include any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form, such as personal computers, digital television, email, or robots. ICT involves the use of electronic communication between department and people within and outside the organization which connotes Electronic Administration (E-Administration). Furthermore, it involves the processing and transmitting of information from one department to another with quick and cheap method of communication. More so, Information and Communication Technology (ICT) also promotes more efficient and cost effective management, facilitate convenient services and allow greater public access to information, and also ensure accountability to citizens. To this end, we defined of information and communication technology (ICT) as a platform that is used to accelerate service delivery in an efficient and effective Manner.

2.3.1 Evolutionof Information and Technology (ICT) In the World

According to Lionne (2017). Information and communication technology began with the rise of human. That humans have always been quick to adapt technologies for better and faster communication. he further identified the four main periods in history that divided the ICT era as follows:

The first stage was the pre-mechanical period (3000 BCE -1450). Human started communicating with one another using words and pictograms curved in rocks. They started to write symbols as substitutes for pictures to depict ideas, objects and animals. Human realized that stone tablets are too heavy and bulky, this information to be stored was growing and was becoming enormous and writing these pieces of information in stones and tablets was impractical. When papers were finally produced from papyrus plants, storing information was revotionalised. They compiled records written on pieces of paper and bounded them together, eventually giving birth to book.

The second stage is the Mechanical period (1450-1840). The interest in the automating and speeding up numerical calculations grew. The machine driven by the mechanical means such as a steam and gears dominated information processing and calculation. the highlight of this period is the advent of mechanical calculators called pascaline, which was invented by the famous mathematician inventor Blaise Pascal along with Famous mathematician Wilhelm Schickard. Charles Babbage invented the analytical Engine, which is considered the first Programmable mechanical computer. This earned him the father of computers.

The third stage is the Electro - mechanical Period (1840-1940).in this stage, the use of electricity for information handling transfer bloomed. The need and the Urgency to share information with one another in faster a yet reliable manner over long distance

aroused.the information is coded in sounds of dots, spaces and dashes over wired (and eventually wireless) media. The telephone was later invented, enabling voice transmission over long distances. Human started control electricity using vacuum tubes in devices that eventually led to the development of today's electronic gadgets. The telegraph is considered the first electrical communication device. First invented by William Cooke and Sir Charles Wheatstone, the first working models used five magnetic needles that could be pointed around set of letters and numbers using electric current. Computing device also started to revolutionize information handling and processing. Machines were mechanical in nature but were run by electricity. The machines used in gears, levers, vacuum tubes, relays and wires for processing and calculations.

The final stage is the electronic period(Information and the internet age)(1940 till date). The first electronic and general purpose computer, marked a revolutionary period in computing. The transistor was invented in 1947. The electronic device with properties and functions similar to vacuum tubes, but it is light weight and faster. The first full transistor was developed in 1957 and was faster than the vacuum computers. The integrated circuit (IC) is a device that is composed of a group of transistors and circuit element compressed in a single package. The IC revolutionized the use of computers and electronic devices because circuits are integrated I chip or single package, limiting the distances between components, resulting in a faster operating speed. The fast paced development and innovation in personal computing paved the way for the birth of the different user applications that introduced ease and comfort for users.

According to the IT Computer technical support, (2016),The information age, made possible by the advent of electronic computers, is characterized by the shift from traditional industry to an economy based on information digitization. The onset of the Information Age is associated with the Digital Revolution, just as the Industrial

Revolution marked the onset of the Industrial Age. The Internet, synonymous with modern IT, was conceived of as a fail-proof network that could connect computers together and be resistant to any single point of failure. Because of decentralization, the Internet cannot be totallydestroyed in one event. If large areas are disabled, the information can be easily rerouted. Its initial software applications were e-mail and computer file transfer (IT Computer technical support, 2016).

2.3.2 Application of ICT in Tertiary Institutions

The 21st century has witnessed tremendous advancement in technology which has led to far reaching development in the administrative /management system. cost effective technology combined with the flexibility in learning and administrative activities is essential to enhance efficiency. (Srivastava, Raizada and Saxena, 2014). The application of ICT in education has affected teaching and learning in various dimensions.

Hassan, Ayobola, Ahmed and Yusuf (2016) state that, of different Information and Communication Technology has become inevitable for students in learning. By using modern information communication technologies, students can retrieve their required information within a short time. They can access and disseminate electronic information like e-books, e-journals and can improve their learning by using different modern ICTs in form of wireless networks, internet, search engines, databases, websites and web 2.0 technologies. The application of ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to improve the quality of learning. In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face

learners with special needs (Moore & Kearsley, 1996). Cited in (Nuroor-UL- Amin, 2013). One of the most vital contributions of ICT in the field of education is- Easy Access to Learning. With the help of ICT, students can now browse through e-books, sample examination papers, previous year papers etc. and can also have an easy access to resource persons, mentors, experts, researchers, professionals, and peers-all over the world. This flexibility has heightened the availability of just-in-time learning and provided learning opportunities for many more learners who previously were constrained by other commitments (Young, 2002) cited Nuroor-UL-Amin (2013). The transformation of ICT has allowed these to become educational tools that could further improve the educational quality of the student and revolutionize the way information is obtained, managed and interpreted (Aguilar ,2012) cited in (Hernandez, 2017).

ICT is said to have the potentials of being used to meet the learning needs of individual students, promote equality of educational opportunities; offer high quality learning materials, increase self-efficacy and independence of learning among students, and improve lecturers' professional development (Abolade and Yusuf, 2005) cited in (Mabayoje, Isah, Bajeh & Oyekunle, 2015). The application has brought changes in the administrative services management of students records in Nigeria universities.Krishnaveni and Meenakumari (2010) cited in Egoeze, Misra, Maskelinius and Pamasevicius (2018) identified the significant that areas ICT technology are applied in the management of higher tertiary institution to include student administration, staff administration and general administration. similarly, Ben Zion Barta et all (1995) cited in Srivastava, Raizada and Saxena (2014) stated that ICT can be used extensively foe educational administration. He outlined the areas where ICT facilities can be used for effective educational administration. These include general administration, Payroll and financial accounting, administration of student data, inventory management personnel,

record maintenance and Library system. Information and communication technology plays a vital role in supporting powerful efficient management and administration of educational institution. It is specified that technology can be used right from the student administration to various resource administration in an educational institution. (Christiana Maki, 2008) cited in (Shrivastava,Raizada and Saxena, 2014).

According to Obeng (2004) cited in Egoeze et al (2018) student administration involves various activities commencing from the admission process to learning activities till processing of results and performance analysis. The integration of ICT into this process enhances the overall activities of higher education institutions by making it more accessible to many. Furthermore, the internet as a component of ICT is capable of connecting places all over the world. the important items identified under this category includes admission enquiry by students, registration/enrolment using computers, course allotment, and availability of information like timetable/class schedule in electronic form and attendance monitoring/maintenance through e-media.

Pohekar (2018) stated that ICT is used inadministration to support the business strategies andprocesses of higher education institutions, and a “dynamicnew shift occurred in higher education” due to theapplication of ICT in University administration. Thisfacilitated creation of large and complex institutions thatcould function with increased efficiency and userfriendliness.It is also mentioned that usage of ICT in highereducation administration involves “harnessing technologyfor better planning, setting standards, effecting change andmonitoring results of the core functions of universities.

Lopez (2003) cited in Okeke, Oghenetega, & Umeji, (2014) has revealed the following advantage for students. Firstly, information and communication technologies offer a

constructivist approach to learning through the provision of interactive learning experiences when interactivity is provision of interactive learning experiences. When interactivity is prominent in learning it increases students' performance ICTs also increase interactivity with instructional programmers. Secondly, learning through ICTs is more effective as they provide opportunities for using multiple technologies (video, computer, telecommunication, etc) thereby providing visualization aids in the internalization and understanding of difficult concepts and processes. This gives opportunities for providing links between theory and practice.

Thirdly, ICTs provided opportunities for students to gain valuable computer skills which are germane in today; job market. That is, they can be used as a ready means of preparing today students for future works places. Student as future employees will be equipped with the requisite competence and knowledge to use ICTs within their, thereby increasing the preparation of students for must careers and vocations. Also, ICTs provide opportunities for flexible learning as course information are always available and accessible, thereby catering for students of different learning styles. These increases opportunities for students constructed learning, and individualization of instruction. Students are therefore encouraged to develop their problem solving skills and this promotes students' creativity.

Ahmed (2009) cited in Egoeze et al (2018) in a study on the use of ICT in the private universities in Bangladesh discoveredthat ICT was used for managing the administrative processes by almost all the private universities. According to the study, ICT were used in student enrolments, student record keeping, accounts, general administration, and library maintenance. It was mentioned that users of ICT for administrative purposes indicated that it was convenient, efficient and reliable. As such, Ahmadu Bello University, Zaria, is not left behind in utilization of ICT on student Administration.

ICT are also applied on student Administration in areas ranging from the enrollment, record keeping, registration processes, allocation and reservation of bed space, library and so on.In general, a good communication system should also be in place for the overall effectiveness of administration. ICT helps in providing a good communication system in higher education system (Magni 2009). ICT helps in providing timely information to all concerned. Communication could be for internal and external information acquisition and dissemination. It includes communication between the important stakeholders of the system such as sending e-circulars to students, faculty and staff.This study restricted itself to the effect of ICT on student administration since it only seeks to assess to assess the effect of ICT on student administration in Ahmadu Bello University, Zaria.The robust IT infrastructure of Ahmadu Bello University and its application facilitates delivery of high-speed internet and intranet access suitable for e-learning services, on-line applications, online registration, on- line reservation of bed spaces and e- library and other multimedia communication services.

The application of ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to improve the quality of learning. In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs (Moore & Kearsley, 1996). Cited in Nuroor-UL- Amin (n.d).

One of the most vital contributions of ICT in the field of education is- Easy Access to Learning. With the help of ICT, students can now browse through e-books, sample examination papers, previous year papers etc. and can also have an easy access to resource persons, mentors, experts, researchers, professionals, and peers-all over the

world. This flexibility has heightened the availability of just-in-time learning and provided learning opportunities for many more learners who previously were constrained by other commitments (Young, 2002) cited Nuroor-UL-Amin (n. d). The transformation of ICT has allowed these to become educational tools that could further improve the educational quality of the student and revolutionize the way information is obtained, managed and interpreted (Aguilar ,2012) cited in (Hernandez, 2017).

ICT has immensely contributed to the quality and quantity of teaching and learning and research in traditional and distance education institutions. ICT enhances teaching and learning through its dynamic interactive and engaging content and provides real opportunities for individualization of instruction. (Adeoye, Oluwole and Blessing, 2013). Information and communication technology has the potential to accelerate, enrich and deepen skills, motivate and engage students learning, helps to relate school experience to work practice, helps to create economic viability for tomorrow's workers; contributes to the total development of the institution; strengthens teaching and learning and provides opportunities for connection between the school and the world (Davis and Tearle, 1999) cited (Adeoye, Oluwole and Blessing, 2013).

The purpose of ICT in education is generally to familiarize students with the use and workings of computers, and related social and ethical issues. ICT has also enabled learning through multiple intelligence as it has introduced learning through simulation games; this enables active learning through all senses (Gateway 2010).

2.4 Review of Empirical Studies

Many studies were found to have been conducted in Nigerian universities with regards to the use of ICT for educational purposes. Perusing through the published papers that were reviewed, it can be seen that the main issue that attracted the attention of most of the

researchers is how ICT facilities is being utilized and its availability without emphasis on other services such as e-accommodation, e-registration.

In another study conducted by Yushau and Audu (2018) titled; ICT Facilities and their Utilization for Educational Purpose in Nigerian Universities: A Review of Literature from 2004 to 2018. The aim of their paper was to review studies conducted from 2004 to 2018 in Nigerian Universities that are related to the availability of ICT facilities, and how the facilities are being utilized for academic purpose. One observation from the review is the disproportionate distribution of the research in terms of the geopolitical zones that they were conducted. Out of 64 reviewed literatures, 41(64%) of the studies are from the Southern part of Nigeria while only 8(12.5%) are from the North. 15(23.4%) of the studies are comprehensive that cut across all the region of the country. Furthermore, of the 41(64%) studies which concentrated mainly in Southern Nigeria, 19 (29.7%) are from the South-West, 9(14.1%) from South-East and 12(18.7%) studies are from the South-South region. 7 (10.9%) of the studies are conducted in the North-Central region, while only one study was conducted in the North-East and none from the North-West. The study recommended that, there is a serious need for more research in some of the regions especially the North-Eastern and North-Western part of the country. This Study centered on effect of ICT on student Administration conducted in North-West (Ahmadu Bello University, Zaria) will immensely help to bridge this gap identified by Yushau and Audu (2018).

Egoeze, Misra, Akman and Palacious (2018) investigated on the evaluation of ICT infrastructure and application in Nigeria Universities. The study evaluated impact of ICT on the administrative services/management of students' records in Nigerian universities using a sample of 210 respondents randomly selected from ten universities. Questionnaire instrument was used to gather data from respondents. The data collected

were analyzed using mean score and ANOVA. The major findings of the study revealed that ICT is used to display information about the university on its websites making it easy to showcase the university; that computers are extensively used for accounts-related, clerical and general administrative duties in the university; and that application and admission are conducted online and applicants can check admission status anywhere.

Amesi & Yellowe (2018) examined the availability and utilization of information and communication technology gadgets in faculties of education in Rivers State universities using a sample of 469 respondents. Questionnaire technique of data collection was used to elicit responses from the respondents. The employed both descriptive statistics and Z-test analytical techniques. Finding of the study revealed that information and communication technology gadgets available are moderately and also not effectively utilized for teaching and learning in faculties of education in Rivers State Universities. The study further revealed that there was no significant difference in the responses of the respondents on availability and utilization of information and communication technology gadgets in Rivers State Universities.

Thomas & Oladejo, (2017) in their study titled; Teacher-Trainees' Perceptions of ICT (Information Communication Technology) Integration in Nigerian Teacher Education Programme in University of Lagos. This study, aims on the perceptions of teacher trainees (regular and sandwich students) regarding the integration of ICT in teacher education programme at the UNILAG (University of Lagos) in Akoka, Nigeria. It adopted the descriptive research design. Two hundred and fifty participants were involved. One research question and two hypotheses, based on the specific purposes, were raised and answered in the study. A self-constructed validated and reliable instrument was used to collect data. Results revealed that teacher trainees are favorably disposed to the integration of ICT into teacher education as indicated by the grand mean

and standard deviation (M = 3.22; SD = 12.22). Significant differences in the perceptions of teacher-trainees regarding the integration of ICT in teacher education programme based on type of the programme was also discovered (t-cal = -2.315; df = 98; P < .05). Teacher-trainees have to realize that ICT has come to stay in their programme. They need to develop more confidence in their individual ability at becoming computer literate teachers in order to remain relevant in the modern day information age.

Muhammad (2016)also conducted a study on Effect of E-governance on student administration on student administration in Ahmadu Bello University, Zaria. the objective of the study was to assess the effect of student administration in A.B.U from the period of 2004 -2015 with the emphasis on student administration and accommodation. Data for the study was generated through primary and secondary source. The study revealed that ICT infrastructure in the university was of low quality. Also, the level of student utilization and quality of ICICT were equally low. The study however concluded that the quality of ICT Infrastructure, low level of student utilization and low quality of ICICT staff have negative effect on student administration in ABU Zaria. the study recommended that the quality of ICT infrastructure should be improved in other to meet the minimum Standard. Looking at e-governance in a tertiary institution is too enormous. The research should have narrowed it down to information and communication technology (ICT).more so, the researcher failed to look at e-library which is one of the most important aspect of student administration in ABU.

In another study conducted by Bashir et al (2016) on the Perception of the administrators on the adoption of E-Registration system in selected tertiary institution in Northwest Nigeria. The study discussed e- registration system as one of the innovative technologies that has contributed so much in reducing student frustrations during registration, administrative delay in access to official records as well as student administration among

others. The study utilized both primary and secondary source of data. However, findings of the study revealed that ICT facilities especially e-registration is useful in carrying out administrative assignment. That there is a statistical significant relationship between the perception of administration in adoption of e- registration. The study concluded that tertiary institution in the northwest ae not left behind in the modern trend of change by information technology in managing student affairs efficiently and effectively. While the study by Bashir et al (2016) focused on e registration, our research study would go beyond e- registration to include e accommodation as well as e- library.

Hassan, Ayobola, Ahmad and Yusuf (2016) conducted a study on the post – graduate student's access to information in Ahmadu Bello University, Zaria Nigeria. The objective of the of the studywas to determine the impact of e – Library and wireless services on post – graduate student access to information in Ahmadu Bello University, Zaria, Nigeria. Data for the study was basically Sourced through primary and secondary source. The study found out that e- library and wireless services has impact on post – Graduate students access to information in Ahmadu Bello University, Zaria. the study concluded that e- library and wireless services have significantly impacted on lecturers /students on their access to information in ABU, Zaria. the study however recommended that e-library facilities need to be upgraded and equipped to meet up with modern demand of ICTresearch in Ahmadu Bello University, Zaria, Nigeria.The above study by Hassan et al (2016) fails to define the time period covered by the study. Moreso, the variables that was of interest should have included e- registration and e- accommodation which has great impact on student in tertiary institution.

Yahuza (2015) also conducted a study titled; Evaluation of Impact of Information and Communication Technology (ICT) on the Availability, Accessibility and User-Ability among Students in Ahmadu Bello University, Zaria. It sought to establish the relationship

between ICT and students‟ learning particularly looking at the availability, accessibility and user-ability of the ICT resources in Ahmadu Bello University, Zaria. The study was conducted through cross-sectional survey design; data was collected using questionnaires, interview techniques from a sample of 275 respondents out of the students' population. The researcher concluded that availability, accessibility and user-ability of ICT resources significantly affect students learning in Ahmadu Bello University, Zaria. However, the study established that the availability of ICT resources in the University is still very much wanting and very inadequate for the students to use. Because of the limited number of functional computers and the computer laboratory, accessibility is timetabled. Even though, this study by Yahuza (2015) studied variables such as accessibility, end-user ability and infrastructural development in Ahmadu Bello University, Zaria, which is similar to the area of our study, however, our study tends to move a step further to understand how ICT Infrastructural development, accessibility and end-users' awareness facilitates student administration in terms of registration, accommodation and accessing library resources.

Similarly, Egoeze, Misra, Akman, &Palacios (2014) conducted a study titled; "An Evaluation of ICT Infrastructure and Application in Nigeria Universities" the aim of their study was to evaluate the ICT infrastructure/facilities and applications in Nigeria universities. The study was carried out in the North Central, South East and South-South regions of Nigeria with a total number of fifteen (15) universities and a total of 480 respondents were randomly selected as the sample population using a descriptive survey approach. They concluded that there is indication that ICT infrastructure is lacking in Nigeria universities and the utilization is low. It was therefore, recommended that necessary actions be taken for adequate provision of other important ICT facilities identified to be lacking including the use of LAN and campus- wide network to

interconnect computers and other workstations within departments and the entire university for easy sharing of resources and information.

Ugomma, Ochai, Godwin and Obasi (2014) carried out a study on management of student personnel services in Nigerian Universities through the application of information and communication technology. The purpose is to find out the application of ICT in the management of student personnel service. Data for study was sourced from both primary and secondary data. however, the findings of the study revealed that the application of ICT can be improved through the training of student and personnel in the use of ICT facilities and funding of ICT projects in the university. Based on the findings, the study concluded that there is intermitted disruption of electricity and lack of adequate fund to procure ICT equipment, problems of electricity and lack of adequate funds to procure ICT equipment are major problems inhibiting the application of ICT in the Universities in the North Central Nigeria. This study by Ugomma et al (2014) was not clear whether they investigated student administration or Personnel services in the Nigeria universities through the application of ICT. the scope of the study was not clearly defined and their target was not in consonant with the research topic.

Obahiagbon and Osahon (2014) in the study; "Information and Communication Technology (ICT) Key Tool for Enhancing Teaching and Learning in Nigeria: A Study of Two Tertiary Institutions in Benin Metropolis" with the objective of investigating the awareness, accessibility, level of satisfaction and effectiveness in the utilization of ICTs in enhancing teaching and learning at the University of Benin and Benson Idahosa University, both situated in Benin City Edo state Nigeria while using the descriptive survey method of questionnaire found: "Computer systems and internet services are found to be available in the two universities, but there is unavailability of Online

Electronic library, Multimedia projector, Television and Video recorder. The study also revealed that ICT facilities are used for the purposes of teaching and learning in the universities. In this case the research finding contradicts what the research is set to investigate. Therefore, this study will carefully avoid such an apparent inconsistency.

Godwin and Oboegbulum (2013) conducted a study on the Management of Universities in the North-Central State of Nigeria. The study utilized both primary and secondary source of data. However, the findings their study showed that ICT can be applied in the areas of accessing of results online, filling of students' personal data and for communication. More so, they concluded that intermittent disruption of electricity and lack of adequate funds to procure ICT are major problems inhibiting the application of Information and communication technology (ICT) in the management of universities in the North –central. Studying eight universities in the same geopolitical zone is too enormous to make generalization. The researcher ought to have restricted itself to two or three institutions in the zone, because it is not necessary that they share peculiarities in terms of the challenges they encountered. Their finding necessitated us to embark on similar study to cover more areas which Godwin and Oboegbulum failed to consider in their study such as e-registration, e-accommodation and e-library.

Mimgba (2011) conducted a study on utilization of information and communication technology (ICT) in user services of Federal University Libraries in South East Nigeria. The main objective of the study is to examine the utilization of ICT in user services of federal university libraries in south eastern Nigeria, collected data from university of Nigeria, Nsukka, Enugu State; Nnamdi Azikiwe University, Awka, Anambra State; Federal University of Science and Technology, Owerri, Imo State; Michael Okpara University of Agriculture, Umudike, Umuahia, Abia state, that is to say the study adopted both primary and secondary sources of data. The study concluded that, the future of user

services provision in Federal University libraries is closely tied to the effective utilization of ICT facilities; this is so because these facilities are crucial to information processing and retrieval. Recommending among other things that, the university library and its parent institutions should provide more useful ICT facilities and infrastructure necessary for easy and effective user services provision. this study is too wide in terms of scope (i.e. four universities at the same time) limiting wider coverage which may make generalization difficult to come by. This research tends to abridge this gap by studying only Ahmadu Bello University, Zaria.

2.5Theoretical Review

Theories have been used to study the adoption of new technologies. Among the widely used theories in the domain are Technology Acceptance Model (TAM), Unified theory of Acceptance and Use of Technology (UTAUT) and the E- governance Maturity Model. These theories were briefly discussed and the E – Maturity was adopted as theoretical framework of the study.

2.5.1 Technology Acceptance Model

Technology Acceptance Model has been developed by Davis (1989) as one of the most popular research models to predict use and acceptance of information systems and technology by individual users. TAM has been widely studied and verified by different studies that examine the individual technology acceptance behavior in different information systems constructs. In TAM model, there are two factors; perceived usefulness and perceived ease of use which is relevant in computer use behaviors. Davis defines perceived usefulness as the prospective user's subjective probability that using a specific application system will enhance his or her job or life performance. Perceive ease of use (EOU) can be defined as the degree to which the prospective user expects the

target system to be free of effort. According to TAM, ease of use and perceived usefulness are the most important determinants of actual system use. These two factors are influenced by external variables. The main external factors that are usually manifested are social factors, cultural factors and political factors. Social factors include language, skills and facilitating conditions. Political factors are mainly the impact of using technology in politics and political crisis. The attitude to use is concerned with the user's evaluation of the desirability of employing a particular information system application.

2.5.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) is one of the most cited theory. Venkatesh, Morris, Davis, & Davis (2003) developed a Unified Theory of Acceptance and use of Technology (UTAUT) that incorporate more other important factors (variables) that predict user acceptance and use of technology. Venkatesh has extensively review and compared eight models of acceptance (Venkatesh et al., 2003) which includes theory of reasoned action (TRA), technology acceptance model (TAM), motivational model (MM), theory of planned behaviour (TPB), model of PC utilization (MPCU), innovation diffusion theory (IDT), combined TAM and TPB (TAM-TPB) and social cognitive theory (SCT). With a combined idea of an in-depth understanding of the above models, Venkatesh resulted a new model (UTAUT) which is basically characterized with all the features of technology acceptance models in IS research.

UTAUT has the capability to explain about 70% of variance, thus provides useful tool for managers to assess the likelihood of success for the new technology introduced. Venkatesh et al further encouraged others to continue validating and testing their model using different technology and context, also identifying new constructs that can add to

the prediction of IS intention (Venkatesh et al., 2003). UTAUT has four direct determinants of behaviour intention and use behaviour: performance expectancy, effort expectancy, social influence and facilitating conditions. UTAUT also has four moderators that are found to mediate the effects of the four key determinants on usage intention and behaviour this are: gender, age, experience, and voluntariness of use

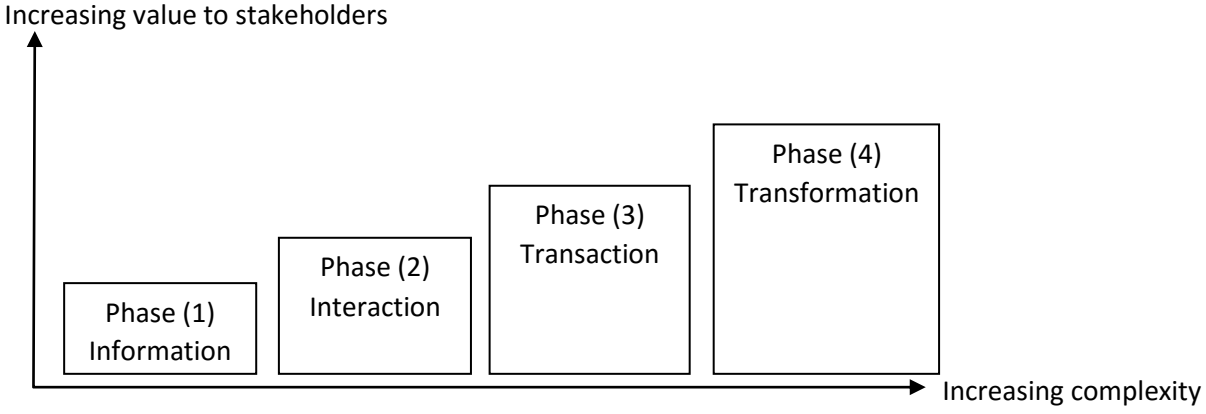
2.6 Theoretical Framework of the Study

E-governance Maturity Model

This model was developed by a well-known international consultancy firm, the Gartner Group in 2000. The four-phase e-governance model affords the government and other stakeholders to position where a project fits in the overall evolution and effectiveness of an e-governance strategy (Patil, 2011). According to Savic (2006) Muhammed (2016), governments start with the delivery of online information but, public demand and internal efficiency require more complex services. This informs the gradual and steady movement of e-governance projects in order to respond to such demands. According to Savic 2006, the of e- government maturity model grows in four phases as follows

- Early 90s: Information → Presence
- Mid 90s: Interaction → Intake process
- Present: Transaction → Complete transaction
- Future: Transformation → Integration and Organisational Changes

Figure 2.2: E-governance Maturity Model



Source: Savic, D. (2006) E-governance: Theoretical Foundations and Practical Implications

Phase 1: Information

During the *first phase* e-governance covers presence on the web, providing the generalpublic with relevant information. The format of the first government websites is similarto that of a brochure or leaflet. The value to the public is that government information is publicly accessible; processes are described and thus become more transparent, which improves democracy and service. Internally the government can also disseminateinformation with static electronic means, such as the Intranet (Savic, 2006). This phase is all aboutinformation. the presence of the web site is static format and used to provide basic information to the citizen. (Savic, 2006).

Phase 2: Interaction

During the *second phase* the interaction between government and the public increases. A number of applications is offered so that citizens can ask questions via e-mail, use search engines to locate information, and are able to download necessary forms and documents. These are time-saving functions since some applications can be done online which previously required a visit to the government counter during opening hours. Internally government organizations use Local Area Networks (LAN), intranets and e-mail to communicate and exchange data. The final result is higher efficiency and effectiveness achieved because of online availability of various applications. However, citizens still have to go to the government office to finalize the transaction, by paying a fee, handing over evidence, or signing papers. (Savic, 2006).

Phase 3: Transaction

Phase three increases the complexity of the technology. Complete transactions can bedone without visiting the government office. Examples of online services are filing income tax, filing property tax, extending/renewal of licenses, visa and passports and online voting. Phase three is mainly complex because of legal, security and personalization issues (e.g., electronic signatures). On the business side the government is starting with e-procurement applications. Internal processes have to be redesigned to provide good service. Government needs to create new laws and legislation that will enable paperless transactions with legal certification. The bottom line is that now the complete process is online, including payments, digital signatures etc. This saves time, paper and money. Savic (2006).

Phase 4: Transformation

The final, fourth phase is the transformation phase in which all information systems are integrated and the public can get all required services at one virtual counter. One single point of contact for all services is the ultimate goal. The complexity lies also on the internal side. This includes the necessity for major cultural change, re-engineering of processes, and redefinition of responsibilities within the government institution. Government employees in different departments have to work together in a smooth and seamless way. In this phase cost savings, efficiency and customer satisfaction are reaching highest possible levels.(Savic, 2006).

The relevance of Gartner's (2000) e-governance maturity model to our study lies in evolution gradual and steady movement of e-governance. E governance is the application of ICT as a tool to deliver government services to the citizens.The Model develops through the four phases. The *information phase* is the presence of the web. Services/ information were made available to studentsbut in static format. services were rendered

manually .it is a traditional method of service delivery. This involve manual payment of schools fees, manual allocation of bed space and the traditional library which is often referred to as library with walls.The *interaction phase*definesthe period that students can apply for application formsand course registration using the school website. however,they still have to print it out and take it to offices to finalize the transaction, by paying fees manually, signing and submission of various form department and faculty level.The*transaction phase*defines our variables in the study where all payments can be done via remita by the students, without visiting the banks or the institution. This include payment of school fees, accommodation fee, transcript, certificates etc. And finally is*transformationphase* as the name implies, implies the integration and organisational changes.It is a paradigm shiftfrom the traditional method of service delivery to electronic means. students get required services at one virtual counter.ICT platform, particularly the student portal, provides students with information regarding registration, accommodation, library services; it allows communication and exchange of data between students and technical staff; e-payments;hostel reservation; course registration among others. The integration of ICThas transformed the educational system which has brought a lot of innovations that is boasting administration of student in ABU Zaria. Effective administration of universities requires the processing of information using internet services and other ICT facilities. The use of these facilities enhances the day-to-day administration of universities in registration process,access to school accommodation, e-library services, result checking, timetabling, student admission and supervision, financial management, procurement and store management as well as data distribution and management.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines and discussthe process and procedures which will be used to conduct the research. Itincludes the research design, population and sample size and sampling technique. others are the sources and method of data collection (primary and secondary data), Administration of Instruments and method of data Analysis.

3.2 Research Design

This study made use of survey research design as the operational framework for data gathering. A research design is the plan according to which a researcher collects information from the respondents. It entails a description of what one intends to do with the participants, with a view to reach conclusions about the research problem. According to McMilan and Schumacher (1993), a research design refers to a plan for selecting research sites, subjects, and data collection procedures to answer the research questions into concrete details of a study by specifying the process for conducting a study that will show which individual will be studied, how they will be selected, and when, where and in which circumstances will they be studied (McDevitt and Ormrod, 2013; McMilan and Schumacher, 2001; Monette, Sullivan and De Jong, 2005; Pardikor; 2014)

The researchis designed to assess the effect of ICT on students' administration in ABU, Zaria. In doing this, variables relating to student administration such as e-registration, e-

accommodation and e- library services. These variables were measured using the five-point Likert scale of measurement alongside the independent variable (ICT).

3.3 Population of the Study.

The target population for this study consisted of four categories of respondents drawn from theuniversity. These include: the student enrollment of university's degree programmes and sub-degree programme, Staff of Iya Abubakar Institute of Information and Communication Technology(ICICT), Staff of student Affairs Division (SAD) andStaff of Kashim Ibrahim Library. The rationale behind this, is that these three categories of staff are shouldered with the responsibility of rendering ICT services in the University, particularly in the areas of e-registration, e-accommodation and e-library. The students are included because they are the beneficiaries of services rendered electronically.

The population of the study is presented in table 3.1.

Table 3.1: Population of the Study

S/N	Population Category	Total Number of staff
1.	Staff of ICTCT	128
2.	Staff of Student Affairs Division (SAD)	273
3.	Kashim Ibrahim Library Staff	535
4.	A.BU n Undergraduate student	45,396
5.	A.B.U Sub-degree	5,547
6.	A.B.U Post Graduate Student	10,422
	Total	**62301**

Source: MIS/ICICT, 2019

3.4 Sampling Size and Sampling Technique

In determining the sample size of the population for the study, Yamane's formula (1967:886) expressed by Israel (1992:1-10) was used. The formula for Yamane is:

$$n = \frac{N}{1+Ne^2}$$

Where n = sample size,

N = population size,

e = level of significance (0.05)

$$n = \frac{\mathbf{62301}}{1+\mathbf{61365}(0.05)^2}$$

$$n = \frac{\mathbf{62301}}{1+\mathbf{62301}X\ 0.0025}$$

$$n = \frac{\mathbf{62301}}{156.7525}$$

n = 397

The proportion of the sample for each segment is as follows:

Staff of ICICT = $\frac{128}{\mathbf{62301}}$ X 397 = 1

Staff of Student Affairs Division (SAD) = $\frac{273}{\mathbf{62301}}$ X 397 = 2

Kashim Ibrahim Library Staff = $\frac{535}{\mathbf{62301}}$ X 397 = 3

A.B.U Undergraduate Students = $\frac{45396}{\mathbf{62301}}$ X 397 = 289

A.B.U Sub- degree Students = $\frac{5547}{\mathbf{62301}}$ X 397 = 35

A.B.U Post- graduate = $\frac{10422}{\mathbf{62301}}$ X 397 = 67

In other to take care of error that may occur by the respondents,10% of the sample size was added to calculate the sample size. Therefore, the sample size of the study stood at 437.

Table 3.2: Sample Size of the Study

	Population Category	Population of the study	Sampled respondent	Percentage (%)
1.	Staff of ICICT	128	1	0.22
2.	Staff of SAD	273	2	0.45
3.	Staff of KIL	535	4	0.92

4.	ABU UG Students	45,396	318	72.7
5.	ABU Sub – degree Student	5,547	39	9
6.	ABU PG Students	10,422	73	16.7
	Grand Total	**62301**	**437**	**100**

Source: Researcher's computation, 2020

3.5 Sampling Technique

For the purpose of this research, these included the purposive and stratified samplingtechniques. The Purposive sampling was used for interviewing thestaff in the university based on the relevant information pertaining ICT on student administration. the purposive sampling techniques otherwise known as Judgmental belongs to a non – probability sampling The rationale behind this that these staff incorporate to deliver services to the students electronically. The proportionate stratified sampling techniques was also employed in order to seek relevant information from the student because their population under study is finite and is in strata. In addition, they are in good position to provide the researcher with information relating to use of ICT on student administration in the institution. The stratified sampling techniques was used due to nature of the of the population that comprises of three categories of programmes (Degree, Sub-degree and post- graduate students) and the staff of ICT, SAD and KIL. The stratified sampling is a probability sampling that paves way to classify the population into different strata.And finally the simple random method was used to select the element from each strata. Ahmadu Bello Zaria has thirteen (13) as at 2018. As such, some faculties and département were selected for the study. It was assumed that all student in the faculties/ departments has equal characteristic with other.

3.6 Sources of Data

Data for this study was basically sourced from both primary and secondary sources. These sources would be use as the main avenues through which information relevant to this research would be generated from.

3.6.1 Primary Data

This refers to sources where first-hand information was generated from. data would be gathered through the use of instruments which include: questionnaire, interview and observation. This will be explained as follows.

Questionnaire: - This was used because of its reliability in providing required information The questionnaire for this study made up of close-ended questions. The questions were designed in such a way that would suit the research hypotheses. Section 'A' relates to the personal data of the respondents such as Gender, Programmes and the level of the respondent. Section "B concerns the hypothesis on the relationship between ICT and its effectivenesson student Administration inABU. Section "C' contains questions relating to the hypothesis on effect of ICT on student registration in ABU, Section D relates to the hypothesis ofICT and its effectiveness on student accommodation on student administration in ABU Zariaand section "E" relates to the hypothesis on the effect of ICTon Library services on student administration inABU. The questionnaire was shared proportionately to the three categories of students in the institution.

Interview:The semi structured interview was adopted with well-design form as established in appendix C. The interview is meant to complement the responses obtained from the questionnaire.A semi structured interview was conducted to respondents from the three categories of staff from Information and communication Technology (ICICT), Student affair division (SAD) and ICTunit in Kashim Ibrahim Library (KIL).

3.7 Validity and Reliability

3.7.1 Validity

Validity here means the degree or extent of which the questionnaire specification was considered adequate to measure what they are sought to measure.After adapting and editing the questionnaires, they were given to experts in the related field. The validity was done through the assistance of the two supervisors/ expert in the related field of study,while the two supervisors /expert scrutinized the instrument to measure what it sought to measure in the questionnaire adapted from the work of Muhammad (2016), Egoeze, Misra, Makeliunas and Damasevicus (2018) and Hassan, Ayobola, Ahmed and Yusuf (2016). They also judged the adequacy and of theitems as well as he clarity of expression used in constructing the instruments.corrections and suggestions of these experts were taken and subsequently implemented.

3.7.2 Reliability

Reliability is a process of ensuring there is consistency in measuring a research variable by the research instrument employed in the study (6 & Bellamy, 2012) cited in (Ashinedu 2017). The reliability of an instrument refers to the degree of consistency and accuracy with which the instrument measures what it supposed to measure. The reliability of the instrument was obtained by using the Cronbach's Alpha Coefficient. The questionnaire has passed through reliability test by the researchers that the questionnaire was adapted from.

Table 3.3 Reliability test scores of variables

Variables	No of Items	Cronbach's Alpha
ICT	4	0.70
Students Registration	4	0.75
Students Accommodation	4	0.79
Library Services	4	0.81

Source: Field Survey, 2021

Table3.3 shows the reliability test result for the instruments that were used for the study. The Cronbach's Alpha value for all the variables is above 0.7 bench mark. This implies that the instrument of data collection is reliable.

3.8 Method of Data analysis

To analyse the data collected, the study employed both descriptive and inferential statistic. The descriptive statistics was used as part of preliminary analysis. This involved the use of measure of central tendency, measure of dispersion, and simple percentage.To achieve the objectives of the study, simple linear regression was employed using Ordinary Least Square (OLS) method specified in equations 3.1, 3.2, and 3.3 of regression analysis:

$$SR = \beta_1 + ICT\beta_2 + \mu \quad \text{.....3.1}$$

$$SA = \beta_1 + ICT\beta_2 + \mu \quad \text{..... 3.2}$$

$$LS = \beta_1 + ICT\beta_2 + \mu \quad \text{.....3.3}$$

Where SA represents Students registration, SA represents Students accommodation, LS represents Library Science, ICT represents information and communication technology,

$\beta_1$represents constant or intercept, β_2 represents parameter estimated, and μ represents error term.

3.9 Rule of Thumb

The research hypothesis would be test at 5% level of significance and n-K degree of freedom. If the P value is less than 0.05, we reject the null hypothesis at level of significance. However, if the P value is greater than 0.05, we accept the null hypothesis at 5% level of significance.

CHAPTER FOUR

AN OVERVEIW AND ORGANISATIONAL STRUCTURE OF AHMADU BELLO UNIVERSITY AND ITS INSTITUTE OF COMPUTING AND INFORMATION AND COMMUNICATION TECHNOLOGY (ICICT).

4.1 Introduction

Ahmadu Bello ABU University (ABU) is a federal government research university in Zaria, Kaduna State with a land area of about 7,000 hectares.The institution belongs to the first generation universities in Nigeria.ABU was founded on October 4, 1962, as the University of Northern Nigeria. belongs to the First Generation Universities. Other universities in this category are the University of Ibadan; University of Nigeria Nsukka; University of Lagos and Obafemi Awolowo University.

The University has its genesis from the visit by the United Kingdom Inter-University Council delegation when they were searching for a "University of Northern Nigeria" in the late 1950s. It is named after the Sardauna of Sokoto, Alhaji Sir Ahmadu Bello the first premier of Northern Nigeria. The university operates two campuses: The main campus of the university is located at Samaru Zaria. the main campus is a home of 10 faculties (Arts, Social Science, Engineering, Environmental Design, Science, Agriculture, Veterinary Medicine, Medicine, Pharmaceutical Science and Education).The second campus (Kongo) is located at Tudun wada, Zaria.The Kongo campus houses the institute of Administration, faculties of Law and Administration and the centre for Islamic Legal Studies (CILS). (Undergraduate student Handbook 2017/2018).

There are also Seven research institutes, six specialized centres, a division of four agricultural colleges, a school of Basic and Remedial studies affiliated to it, a Demonstration secondary school, and a primary school and extension and consultancy services. More so,the University runs a wide variety of undergraduate and postgraduate

programmes (and offers associate degrees and vocational and remedial programs). It has a large medical program with its own A.B.U. Teaching Hospital, one of the largest teaching hospitals in Nigeria and Africa (www.abu.edu.ng).

4.2 Vision, Mission and Values, of ABU

Vision: Ahmadu Bello University shall be a world-class University comparable to any other, engaged in imparting contemporary knowledge, using high quality facilities and multi-disciplinary approaches, to men and women of all races as well as generating new ideas and intellectual practices relevant to the needs of its immediate community, Nigeria and the world at large.

Mission: To advance the frontiers of learning and break new grounds, through teaching, research and dissemination of knowledge of the highest quality; to establish and foster national and international integration, development and promotion of African traditions and cultures; to produce high-level human power and enhance capacity-building through retraining, in order to meet the needs and challenges of the catchment area, Nigeria and the rest of the world.

According to ABU undergraduate student handbook (2016/2017), the Values, Vision and Mission of Ahmadu Bello University are as follows:

Values: ABU considers as fundamental the values of quality, excellence, diversity, equity, integrity, service, accountability entrepreneurialism; pluralism, sharing and partnering (USH, 2017/2018:18).

4.3 Philosophy, Objectives and Goals of ABU

The philosophy of ABU was clearly stated by the founding father and mentor of the University, Sir Ahmadu Bello, when he said at the first convocation ceremony in 1963,

"The first duty of every university is the search for and the spread of knowledge and the establishment of truth… But it must also serve the need of the nation" (USH, 2017/2018:17)

The philosophy of ABU is predicated upon the *"cardinal principles of imparting knowledge and learning to men and women of all races without any distinction on the grounds of race, religious or political beliefs''* (USH, 2017/2018:17).

The objectives of the Ahmadu Bello University as articulated in Article 4 of its 1962 and 1975 Laws (USH, 2017/2018:17) are to:

(a) provide regular and liberal courses of instruction in the humanities, sciences and other spheres of learning of a standard required and expected of university of the highest standing;

(b) promote research and the advancement of science and learning;

(c) secure the diffusion of knowledge throughout Nigeria.

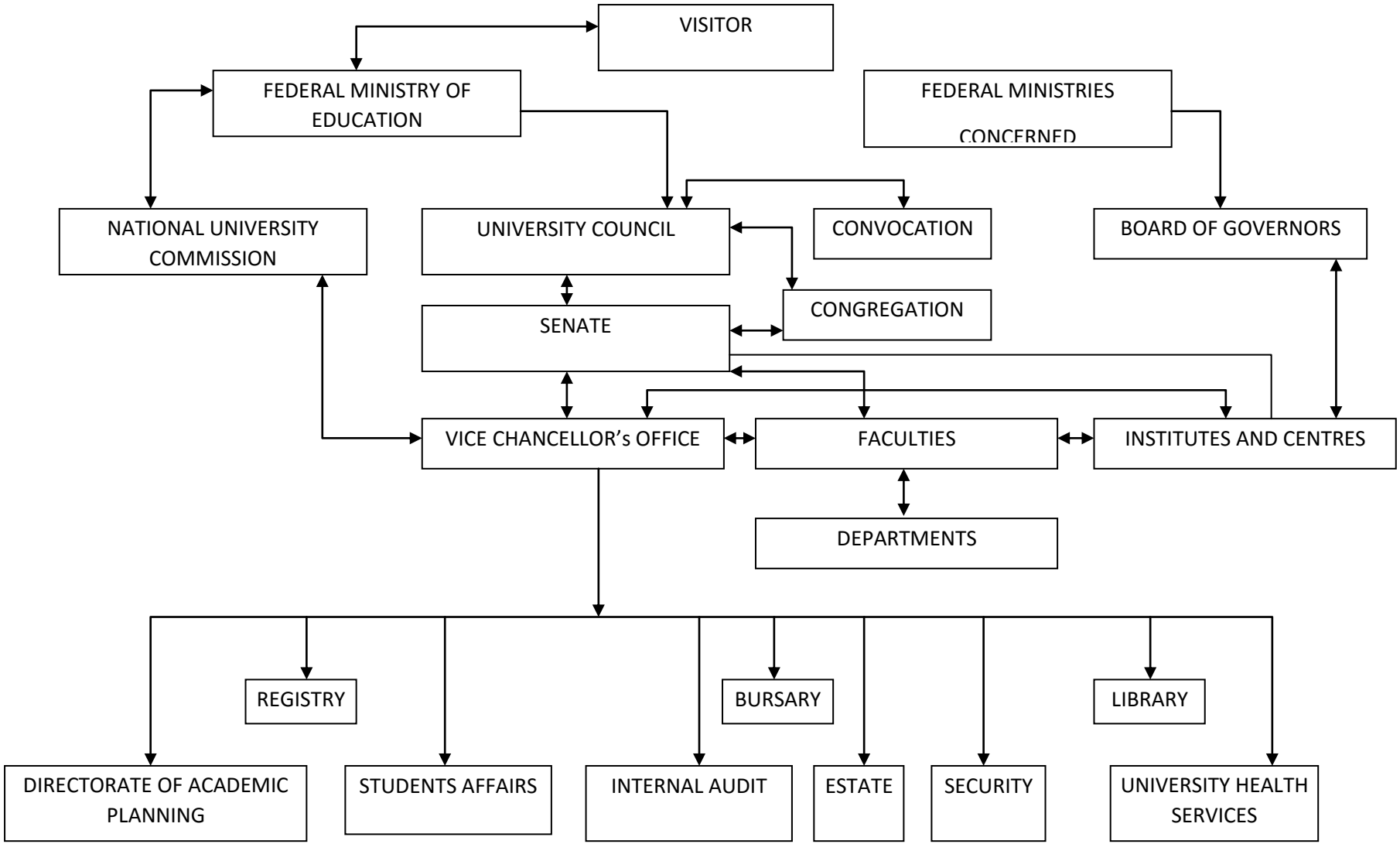
Furthermore, the goals of ABU are to; Be an academic Centre of excellence in teaching, learning and research through the provision of the high quality learning resources and relevant curriculum; Be a leader in cutting edge research through the provision of ultra-modern multi-user specialized laboratories and information resources; Be a renowned and celebrated academic institution through computerization, multi-media communication and linkage programmes.; Have the best learning and research environment for academic work through the rehabilitation, upgrading and expansion of infrastructural, municipal, sporting, health and welfare services, Build formidable resource base by enhancing the University's income generation through revenue sourcing and collection, alumni and advancement development. Be the best run academic institution through transparent, accountable and prudent management of resources.

4.4 Administration and Organisation Structure of ABU

The Federal government of Nigeria governs Ahmadu Bello University through the Federal Ministry of Education and through the National Universities Commission (NUC). The President of Nigeria serves as the visitor to the University. There is a Chancellor who is the ceremonial Head of the University. The governing structure has two major levels of strategic policy formulation and management: The Council and the Senate. The Principal Officers of the University Management team include: The Vice Chancellor; Deputy Vice Chancellor Administration; Deputy Vice Chancellor Academic; the Registrar; the Bursar and the University Librarian (ABU, 2018).

The Governing Council manages all matters of the University, not otherwise provided for or under the University Law. The Senate is empowered to manage the Academic Affairs of the University, under which there are Boards of Faculty, a Postgraduate School Board, Board of Governors as well as Professional Academic Boards of Institutes and Centres which administer their respective academic and administrative issues (SAD, 2018). Therefore, the strategic component units of ABU are the Twelve Academic Faculties, ninety-five Academic Departments, Postgraduate School, six Institutes, six specialized Centres and a Division of Agricultural Colleges. The University's Extension and Consultancy Services also form the component units. The organizational chart of the University is as follows:

Figure 4:1 Organogram of ABU



Source: Adapted from NUC (2014:4) Report of the Accreditation of Degree Programmes for B.Sc. Public Administration, Ahmadu Bello University, Zaria.

4.5 The Institute of Computing and Information and Communication Technology (ICICT)

The ICICT is as a result of a merger in 2013 by the ABU Governing Council of the defunct Iya Abubakar Computer Centre established since 1976, and the Information and Communication Technology Directorate of the University (www.abu.edu.ng). The Institute is "saddled with the responsibility of providing timely and qualitative computing and information technology services for the University" (ICICT, 2017). The ICICT works to enable ABU take position in the committee of best ICT-driven universities in Africa and the world at large.

4.6. Mission, Vision and Values of ICICT

The ICICT (2018) explicitly states its Mission, Vision and Values as follows:

Mission: To deploy state-of-the-art infrastructure and groom ICT-savvy personnel in various specialty areas to support teaching and learning, research and other services.

Vision: To be an ICT centre of excellence with modern computing facilities and manpower to support teaching, research and learning in the University and country at large.

Values: The ICICT has the following as its values:

1. Provision of robust, reliable and state-of-the-art ICT facilities.
2. Building a pool of highly qualified, trained, motivated and committed staff.
3. Creation of specialty groups and delineation of responsibilities among staff.
4. Creation of diverse linkages and global outreach.

4.6.1 Functions of the ICICT

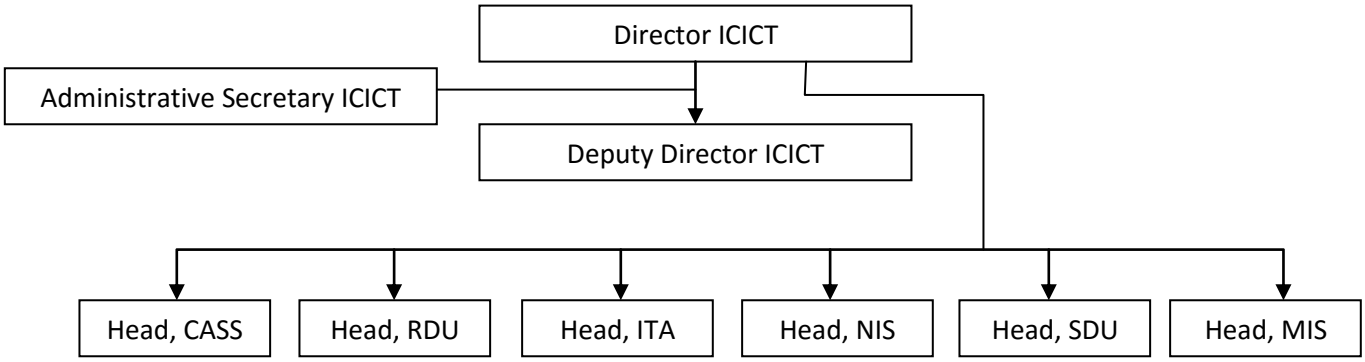
According to ABU strategic plan of 2014-2018, the functions ICICT of ABU are to ;Develop an expansive computing infrastructure that supports ICT services needs of the University; Develop ICT technical support for high quality teaching, learning, research and administrative activities; Develop adequate and competent manpower required to provide quality support services; Identify, develop and maintain software applications for efficient and effective execution of operational processes of the University; Coordinate the acquisition, installation, maintenance and decommissioning of computing facilities in the University; Establish and maintain rich web resources that ensure easy and wide access to the University; Establish linkages, partnerships and collaborations with IT organisations and industry; Improve the University's IGR through ICTAssist in the teaching functions of the University; Conduct applied research and promote commercialization of research results and to Provide training in ICT proficiency, professional certificate and other relevant courses at various levels.

4.6.2 Organisational Structure of ICICT and Functions of Units

Within the overall University hierarchy, the ICICT exists as one of the Institutes under the Senate and directly situated under the Vice Chancellor's Office. It is therefore one of the component units of University management. The ICICT has a Director as the Executive Head of the Institute and who is responsible to the Vice Chancellor. Apart from the Deputy Director of the Institute, there are Unit Heads who lead the six components of the Institute. These Units include: The Computing and Academic Support Services (CASS), Information Technology Academy (ITA), Management Information Services (MIS), Networking and

Infrastructural Services (NIS), Research and Development Unit (RDU), and Software Development Unit (SDU).

Figure 4.2 Organogram of ICICT



Source: Adapted from ICICT (2017)

4.6.2.1. Functions of Software Development Unit (SDU)

As one of the components of the Institute of Computing and Information and Communication Technology (ICICT), the SDU has the mandated to; Develop software applications and/or components for automation of processes and services in the University, including mobile applications;Source, deploy, promote and manage use of open sources software;Advice the University Management on acquisition of Commercial off-the-shelf (COTS) software;Provide technical supports for the use and management of software systems in the University;Provide system administration services for the computing facilities in the University; Develop policies and guidelines for use and maintenance of official and personal websites;Provide consultancy services in software development (ICICT, 2018).

4.6.2.2 Functions of Networking and Infrastructural Services (NIS)

The designated functions of this Unit according to ICICT (2018) are to; Design, implement and maintain network and communication infrastructure to provide effective services to the University Community;Maintaining ICT infrastructure/system uptime, ensure increased network utilization and optimal network performance as a matter of priority;Estimating costs of network system hardware changes including competitive analysis of future requirements;Providing operational support and management of networks; Integrating voice, video and desktop services within networks;Undertake installation and monitor basic maintenance of network equipmentProvide training and support for the internet/promoting awareness campaign;Assist in personnel development and training;Ensure reliable monitoring and reporting progress of network status;Ensure that degradation in network service or fault is resolved as efficiently as possible;Troubleshoot and resolve the problems existing in network equipment;Ensure proper and up-to-date documentation of all network equipment and active devices on the network including but not limited to switches, servers, routers, wireless devices, network printing and scanning devices etc; Maintain an inventory of all network devices;Maintain power solutions at all network nodes including the access levels;Provide data centre services as may be required;Provide adequate network security that will guarantee the integrity of network services on the University network.

4.6.2.3 Function of Computing and Academic Support Services (CASS)

The functions of CASS of the ICICT is to ;Provide the expertise and advice on the selection and the acquisition of learning and information resources, materials and technical equipment; Deliver, setup and collect ICT/audio visual equipment and resources for e-learning;Manage

and maintain learning and information resources, materials and technical equipment;Conduct workshops on use and management of teaching and learning resources;Manage University computer laboratories/digital centres;Provide user support for the above services (ICICT, 2018).

4.6.2.4 Functions of Information Technology Academy (ITA)

According to the ICICT (2018), the mandate of ITA is to *"provide teaching, training and capacity development, using a range of information and communication technology curricula/tools/resources and specially to help the youth in acquiring core skills for growth and self-sustenance"*

4.6.2.5. Functions of Management Information System (MIS)

The MIS Unit of the ICICT is saddled with the following responsibilities: Provide lead in planning and policy formulation for developing information systems that automate University operational processes;Ensure the various information systems of the University have complete and up-to-date data at all times;Ensure seamless data exchange among deployed information systems leading to creation of an enterprise data warehouse for the University;Promote use of deployed information systems by administrators and other stakeholders at all levels;Ensure data and report needs by University organs and other stakeholders are easily obtained from deployed information systems with minimum intervention from MIS staff;Define and document data processing business rules as stipulated by University rules and as may be amended;Design report formats as may be required by stakeholders;Prepare ad-hoc reports as may be needed from time to time using some reporting tools such as Crystal Reports, MS Excel, etc. (ICICT 2018).

4.7 The Students Affairs Division

The students' affairs division (SAD) was established in 1986 following a re-organization emanating from the provision of the white paper on the Abisoye panel's report. Consequent upon this re-organisation, SAD was located in the office of the Vice-Chancellor, exercising the power bestowed by Statue 9 of the ABU law to handle students' matters. The structure of SAD is as follows:

Figure 4.3: The structure of SAD

The Vice-Chancellor

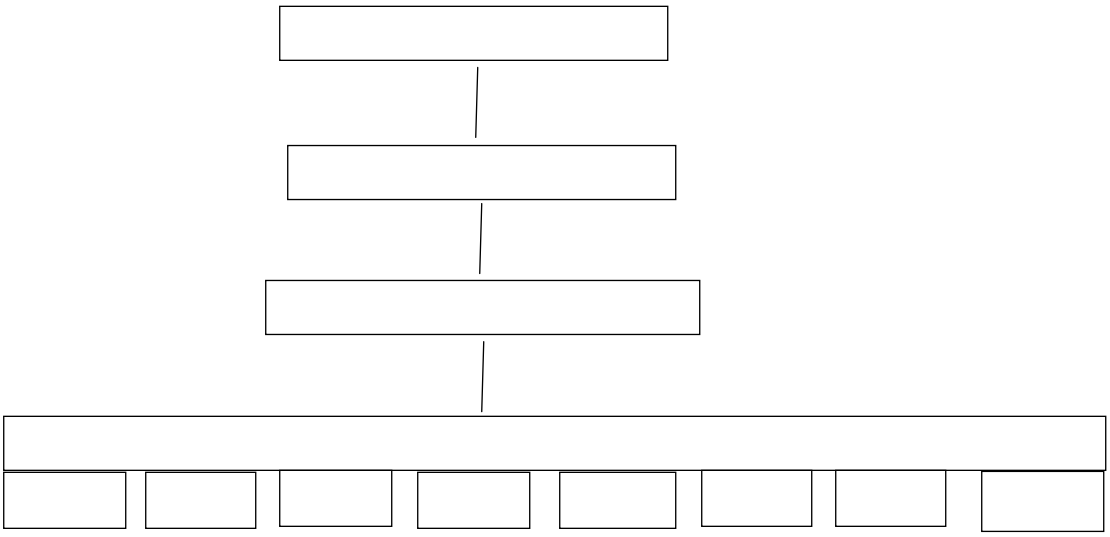
University Students Welfare Committee (USWC)

Dean of, Students Affairs

Six standing Committee of the USWC

Source: ABU Undergraduate Student Handbook, 2016/2017 edition.

Figure 4.4: Modified Students Affairs Division Committee-Based Structure



Source: ABU Undergraduate Student Handbook, 2016/2017 edition.

1. MSC= Management Standing Committee
2. ACSD= advisory Committee on student Discipline
3. HMC= Hall Management Committee
4. CAAC= Central Accommodation Allocation Committee.
5. CKAC= Catering Coordinating Committee
6. CCHM= Central Coordinating Committee
7. DDAC= Deans/Directors Advisory Committee
8. SC= Sports Committee.

4.7.1 Functions of the Students Affairs Division

The functions of the students' affairs division include; Advises to the Vice-Chancellor on policies, regulations and matter affecting students; Develops students' cultural and social activities; Develops students' recreations and sports programmes; Supervises award of financial aids, scholarship and bursaries to students; Provides careers information, and guidance and counselling; Administration of halls of residence and dining halls. Develops procedures for administration of students' discipline and provisions for appeals to the Vice-Chancellor; Assists with development and administration of student Union; Administers informational programs to keep students advised on university and community affairs, available scholarships, etc; Assist student organizations to publish student journals, magazines and information sheets for internal consumption; Caters for the welfare including medical assistance to the sick and death relief to the diseased; Mobilization of students for matriculation and general orientation, and to the N.Y.S.C programme at the end of their studies (USH, 2016/2017).

4.8 Nigerian ICT Policy and Regulatory Framework

Currently the Nigerian ICT sector is guided by the following policies and enabling laws:

1. The National Telecommunications Policy (NTP) 2000;
2. National Mass Communication Policy;
3. National Broadcasting Commission (NBC) Act 1992 (as amended)
4. Nigerian Communications Act, 2003;
5. Nigerian Postal Service Act 2004 Cap 127 Laws of the Federation of Nigeria;
6. National Information Technology Policy 2000;
7. NITDA Act 2007; and
8. The Wireless Telegraphy Act, Laws of the Federation 1990

4.8.1 ICT Nigerian Vision 20:2020

The long term strategic vision for the ICT sector was elaborated in the National Development Plan titled "Nigeria Vision 20:2020". According to the document:

The increasing globalization driven by ICT makes it imperative for Nigeria as an emerging market to irreversibly consider the application and promotion of ICT strategy to facilitate its rapid growth and development. This will involve the development of a vibrant ICT sector to drive and expand the national production frontiers in agriculture, manufacturing and service sectors. It would also require the application of the new knowledge to drive other soft sectors:governance, entertainments, public services, media sector tourism, et cetera.

The Vision 20:2020 document further acknowledges the following:

In respect of knowledge and digital divide the situation remains worrisome. This is, in terms of knowledge generation, penetration of ICT, access to and usage of internet and telephone penetration (fixed and mobile) and physical infrastructure. The knowledge and digital divide cuts across geographical, gender and cultural dimensions. It exists among the 36 states of the Federation plus the Federal Capital Territory, the 774 Local Governments, rural and urban areas, men and women, rich and poor, young and old, able bodied and disabled, illiterate and educated. This National ICT Policy has been developed in support of the development goals of Nigeria's Vision 20:2020.

4.8.2 Vision and Mission Statements

Vision

Nigeria as a knowledge-based, and globally competitive society

Mission

To fully integrate information and communications technologies into the socio-economic development and transformation of Nigeria into a knowledge based economy

POLICY OBJECTIVES

Policy Statements

The main objective of the National ICT Policy is to create a conducive environment for the rapid expansion of ICT networks and services that are accessible to all at reasonable costs, and for the transformation of Nigeria into a knowledge-based economy.

4.8.3 Policy Objectives

The objectives of this National ICT Policy are to: Reflect convergence by de-emphasizing the differences between the IT, broadcasting, telecommunication, and postal sectors;Bring all ICT related activities under a single Ministry so as to give policy guidance to the converged industry; Enact a new Information and Communication Technology (ICT) Act that ensures a competitive and converged industry as well as provide an appropriate legal framework; Promote universal access to high quality advanced Information and Communication technologies and services, in particular the Internet and related capabilities; Develop and enhance indigenous capacity in ICT technologies and software development; Ensure the country's effective participation in regional and international ICT fora in order to promote ICT development in Nigeria, meet the country's international obligations and derive maximum benefit from international cooperation in these areas; Establish an administrative and legal framework for the transition to digital broadcasting and ensure a smooth switchover in accordance with ITU guidelines; Establish the framework for the implementation of community radio in Nigeria; Divest NIPOST of its regulatory function and transform it into a commercial provider of postal and integrated data communications services; Eliminate multiple regulation and taxation in the ICT sector which serves as disincentives to investors; Encourage the development of Broadband services that will enable Nigerians enjoy the benefits of globalization and convergence; and Create the enabling environment for investment in ICT in Nigeria (National ICT Policy, 2012).

CHAPTER FIVE
PRESENTATION AND ANALYSES OF DATA

5.1 Introduction

This chapter presents the results of data analysis. The scores of respondents from the survey were analysed along the Likert measurement scale in the questionnaire. This is complemented by responses from interview as well as the data generated from secondary data (documentary source). The presentation was done using tables, simple percentages, and multiple linear regression with the aid of SPSS version 20. Also the data collected via interview was analysed qualitatively using thematic approach.

5.2 Response Rate

Out of the 437 questionnaire administered to the student and selected of staff of Ahmadu Bello University, 402 was completely filled and returned. Therefore, our analysis would be based on these 402 (92%) questionnaire which are considered reasonable enough for generalization.

Table 5.1: Response Rate

	No of Questionnaire	**Percentage Return**
Return	402	92
Not Return	35	8
Total	**437**	**100**

5.3 Descriptive Analysis

Table 5.2 Sex of Respondents

	Frequency	Percent
Male	260	64.7
Female	142	35.3
Total	402	100.0

Source: Field Survey, 2020

Table 5.2 above shows the gender of our respondents, 260 of them representing 64.7% are males, while some 142 standing at 35.3% respondents are female. This indicates that although the majority respondents in this category are male, a significant number of female respondents were involved.

Table 5.3: Programme in the University

	Frequency	Percent
Undergraduate	267	66.4
Sub – degree	55	13.7
Post – graduate	80	19.9
Total	402	100.0

Source: Field Survey, 2020

Table 5.3 above shows the programme of our respondents, 267 of them representing 66.4% are undergraduate student, 55 standing at 13.7% respondents are sub-degree student while 80 of the respondent representing 19.9% are post –graduate student. This indicates that majority respondents in this category are the undergraduate students.

Table 5.4: Level in the University

	Frequency	Percent
level I	74	18.4
Level II	45	11.2
Level III	86	21.4
Level IV	52	12.9
Others	145	36.1
Total	402	100.0

Source: Field Survey, 2020

The data in the table 5.4 above shows that 74 of the respondents representing (18.4%) are in their first, while 45 standing at (11.2 %) are in their second year. Also, 86 of the respondent representing (21.4%) are in their third year, while some 52 standing at (12.9 %) comprise the

level four students and 145 representing (36.1%) of our respondents are others which are the constitute postgraduate and the diploma students.

Table 5.5: There is High Level of Computerization in ABU Zaria

	Frequency	Percent
Strongly agree	54	13.4
Agree	234	58.2
Undecided	33	8.2
Disagree	58	14.4
Strongly disagree	23	5.7
Total	402	100.0

Source: Field Survey, 2020

From table 5.5 above, 54 representing (13.4%) of respondents agree that there is high level of computerization in ABU Zaria 234 standing at (58.2%) strongly agree. Also, 58 representing (14.4%) and 23 representing (5.7%) of respondents disagree and strongly disagree respectively. However, 33 representing (8.2%) are undecided on the issue. Base on the above, it could be said that there is high level of computerization in ABU Zaria.

Table 5.6: ABU Students Portal is Always Functional

	Frequency	Percent
Strongly agree	66	16.4
Agree	261	64.9
Undecided	28	7.0
Disagree	39	9.7
Strongly disagree	8	2.0
Total	402	100.0

Source: Field Survey, 2020

The result in table 5.6shows that out of the total number of respondents, 66 representing (16.4%) and 261 representing (64.9) of the respondents strongly agree and agree respectively that ABU student portal is always functional. In addition, 39 (9.7%) and 8 (2.0%) respondents disagree and strongly disagree respectively with the statement. However, some

28 of the respondent representing 7.0 are undecided on the matter. Considering this responses, it could be said that ABU student portal is always functional.

Table 5.7: There is 24hrs ICT services in Ahmadu Bello University, Zaria.

	Frequency	Percent
Strongly agree	93	23.1
Agree	285	70.9
Undecided	12	3.0
Disagree	10	2.5
Strongly disagree	2	0.5
Total	402	100.0

Source: Field Survey, 2020

As it is visible in table 5.7,93 of the respondents standing at 23.1% strongly agree, 285 respondents representing (70.9%) agree on the view There is 24hrs ICT services in Ahmadu Bello University, Zaria. 10 of the respondent representing (2.5%) and 2 standing at (0.5%) are those who disagree and strongly disagree respectively. On the other hand, 12 of respondents representing (3.0%) are undecided on the matter. Considering this, it implies that there is 24hrs ICT services in Ahmadu Bello University, Zaria.

Table 5.8: The application of ICT on student administration makes transaction easier.

	Frequency	Percent
Strongly agree	99	24.6
Agree	286	71.1
Undecided	8	2.0
Disagree	6	1.5
Strongly disagree	3	0.7
Total	402	100.0

Source: Field Survey, 2020

The result in table 5.8 above shows that 99 (24.6 %) respondents strongly agree the application of ICT on student administration makes transaction easier ,286 representing (71.1%) also agree. while 6 representing (1.5%) disagree and 3 standing at (0.7%) strongly disagree. Some 8 representing (2.0%) are however undecided on the matter. Thus, since

majority of respondents agree on this matter, it could be said that the application of ICT on student administration makes transaction easier.

Table 5.9: ABU Student Fill Personal Data Online Using the School Portal

	Frequency	Percent
Strongly agree	42	10.4
Agree	263	65.4
Undecided	26	6.5
Disagree	55	13.7
strongly disagree	16	4.0
Total	402	100.0

Source: Field Survey, 2020

The responses in table 5.9 above show that 42 which represent (10.4%) and 263 which represent 65.4% respondents strongly agree and agree respectively that, ABU Student fill their personal data online using the School Portal. Also, while 55 represent (13.7%) of respondents disagree, 16 with (4.0%) of the respondents strongly disagree. However, some 26 respondents standing at (6.5%) are undecided on the issue. Following the above, it could be said that that ABU students fill their personal data online using School Portal

Table 5.10: Payment of fees are Processed Online, Preventing Fraudulent loss of Revenue to Student who would Want to Evade Payment

	Frequency	Percent
Strongly agree	55	13.7
Agree	269	66.9
Undecided	24	6.0
Disagree	40	10.0
strongly disagree	14	3.5
Total	402	100.0

Source: Field Survey, 2020

The result in table 5.10 above we can see that 55 respondents representing (13.7%) strongly agree that Payment of fees are processed online, preventing loss of revenue to student who would want to payment in the university. Also, as high as 269 respondents representing

(66.9%) Agree, while some 40 representing (10.0%) and 14 representing (3.5 %) of the respondent disagree and strongly disagree respectively to this statement. However, 24 respondents standing at (6.0%) are undecided on this. This shows majority of the respondent opined that payment of fees done online, preventing fraudulent loss of revenue to student would want to evade payment in Ahmadu Bello University.

Table 5.11: ABU students access their result online

	Frequency	Percent
Strongly agree	47	11.7
Agree	246	61.2
Undecided	62	15.4
Disagree	36	9.0
Strongly disagree	11	2.7
Total	402	100.0

Source: Field Survey, 2020

The above table 5.11 shows that out of the total number of respondents, 47 representing (11.7%) and 246 representing (61.2%) of the respondents strongly agree and agree respectively that ABU students access their result online. In addition, 36 (9.0%) and 11 (2.7%) respondents disagree and strongly disagree with the statement. However, some 62 of the respondent representing (15.4%) are undecided on the issue. Considering this responses, it could be said that ABU students access their result online**.**

Table 5.12: registration in ABU Zaria are Done Online Eliminating the Hitherto Manual Method of Long Queue at the University Registration

	Frequency	Percent
Strongly agree	57	14.2
Agree	262	65.2
Undecided	35	8.7
Disagree	40	10.0
Strongly disagree	8	2.0
Total	402	100.0

Source: Field Survey, 2020

From table 5.12 above we can see that 57 respondents representing (14.2%) strongly agree that registration in Ahmadu Bello University Zaria are done Online eliminating the hitherto manual method of long ques at the university registry. Also, as high as 262 respondents representing (65.2%) Agree, while some 40 representing (10.0%) and 8 representing (2.0 %) of the respondent disagree and strongly disagree respectively to this statement. However, 35 respondents standing at (8.7%) are undecided on this. Since majority of the respondent agree on this, it could be said that registration is done online eliminating the hitherto manual method of long ques in Ahmadu Bello University.

Table 5.13: Hostel Accommodation Bed Space Are Reserved Online in ABU Zaria.

	Frequency	Percent
Strongly agree	73	18.2
Agree	253	62.9
Undecided	26	6.5
Disagree	39	9.7
Strongly disagree	11	2.7
Total	402	100.0

Source: Field Survey, 2020

Responses in table 5.13 above show that 73 standing with (18.2%) and 253 with (62.9%) respondents strongly agree and agree respectively that hostel accommodation bed space are reserved online in ABU Zaria. Also, while 39 which represent (9.7%) of respondents disagree and 11 representing (2.7 %) of the respondents strongly disagree. However, some 26 respondents standing at (6.5%) are undecided on the issue. Following the above, it could be said that hostel accommodation bed space is reserved online in ABU Zaria.

Table 5.14: Hostel Accommodation is Paid Online in Ahmadu Bello University, Zaria

	Frequency	Percent
Strongly agree	92	22.9
Agree	291	72.4
Undecided	13	3.2

Disagree	5	1.2
Strongly disagree	1	0.2
Total	402	100.0

Source: Field Survey, 2020

Responses in table 5.14 above show that 92 standing with (22.9%) and 291 with (72.4%) respondents strongly agree and agree respectively that hostel accommodation is paid online in Ahmadu Bello University, Zaria. While 5 which representing (1.2%) of respondents disagree and 1 representing (0.2 %) strongly disagree. However, some 13 respondents standing at (3.2%) are undecided on the issue. Following the above, it could be said that hostel accommodation is paid online in ABU Zaria.

Table 5.15: ABU Student do not Encounter Challenge using the School Portal for Assessing Accommodation

	Frequency	Percent
Strongly agree	73	18.2
Agree	281	69.9
Undecided	16	4.0
Disagree	24	6.0
Strongly disagree	8	2.0
Total	402	100.0

Source: Field Survey, 2020

The result in table 5.15 above show that 73 standing with (18.2%) and 281 with (69.9%) respondents strongly agree and agree respectively that ABU student do not encounter challenge using the school portal for assessing accommodation. Also, 24 which represent (6.0 %) of respondents disagree and 8 representing (2.0%) of the respondents strongly disagree. However, some 24 respondents standing at (6.0%) are undecided on the issue. Following the above, it could be said ABU student do not encounter challenge using the school portal for assessing accommodation

Table 5.16ABU student appreciate the use of ICT for their registration purposes

	Frequency	Percent
Strongly agree	105	26.1
Agree	279	69.4
Undecided	6	1.5
Disagree	9	2.2
Strongly disagree	3	0.7
Total	402	100.0

Source: Field Survey, 2020

Data from the table 5.16above shows that 105 (26.1%) respondents 279 representing (69.4%) strongly agreeABU student appreciate the use of ICT for their registration purposes. Also, while 9 representing (2.2%) disagree and 3 standing at (0.7 %) strongly disagree. Some 6 representing (1.5%) are however undecided on the matter. Thus, since majority of respondents strongly agree and agree on the matter, it could be said that ABU student appreciate the use of ICT in their registration.

Table 5.17: ABU's portal provides adequate and updated information to the student

	Frequency	Percent
Strongly agree	67	16.7
Agree	272	67.7
Undecided	28	7.0
Disagree	1 4	3.5
Strongly Disagree	21	5.2
Total	402	100.0

Source: Field Survey, 2020

The result in table 5.17 shows that 67 (16.7%) respondents strongly agree thatABU's portal provides adequate and updated information to the student, 272 representing (67.7%) also agree. while 14 representing (3.5%) disagree and 21 standing at (5.2%) strongly disagree.

Some 28 representing (7.0%) are however undecided on the matter. Thus, based on the following, agree on the matter that ABU's portal provides adequate and updated information to the student

Table 5.18: There is Adequate Provision of Computers for Students in the E–Library in ABU, Zaria

	Frequency	Percent
Strongly agree	53	13.2
Agree	296	73.6
Undecided	40	10.0
Disagree	10	2.5
Strongly disagree	3	0.7
Total	402	100.0

Source: Field Survey, 2020

Responses in table 5.18 above show that 53 standing with (13.2%) and 296 with (73.6%) respondents strongly agree and agree respectively that there is adequate provision of computers for students in the e – library in ABU, Zaria. Also, while 10 which represent (2.5 %) of respondents disagree and 3 representing 0.7% strongly disagree. However, some 40 of the respondents standing at 10% are undecided on the issue. In light of the above, it could be said that there is adequate provision of computers for students in the e – library in ABU

Table 5.19: Students have Access to E-Resources and Previous Project in the Electronic Library

	Frequency	Percent
Strongly agree	83	20.6
Agree	251	62.4
Undecided	24	6.0
Disagree	27	6.7
Strongly disagree	17	4.2
Total	402	100.0

Source: Field Survey, 2020

The result in table 5.19 shows that out of the total number of respondents, 83 representing (20.6%) of them agreed with the statement that ABU Students have access to e resources and

previous project in the electronic library also 251(62.4%) of them strongly agree with this statement. In addition, 27 (6.7%) and 17 (4.2%) of the respondents disagree and strongly disagree respectively. However, some 24 of the respondent representing (6.0) are undecided on the issue. This implies to a degree of satisfaction that Students have access to e- resources and previous project in the electronic library.

Table 5.20: ABU Electronic Library is Conducive for Learning

	Frequency	Percent
Strongly agree	93	23.1
Agree	281	69.9
Undecided	15	3.7
Disagree	12	3.0
Strongly disagree	1	.2
Total	402	100.0

Source: Field Survey, 2020

The above table 5.20 shows that out of the total number of respondents, 93 representing (23.1%) of them agreed with the statement ABU electronic library is conducive for learning also 281(69.9%) of them strongly agree with this statement. In addition, 12(3.0%) and 1 (0.2%) of the respondents disagree and strongly disagree respectively with the statement. However, some 15 of the respondent representing (3.7%) are undecided on the issue. Since a significant percentage of respondents agree on the issue, it could be said that ABU electronic library is conducive for learning.

Table 5.21: Access to ICT services in ABU Zaria has a wide coverage.

	Frequency	Percent
Strongly agree	66	16.4
Agree	281	69.9
Undecided	10	2.5
Disagree	25	6.2
Strongly disagree	20	5.0
Total	402	100.0

Source: Field Survey, 2020

The result in table 5.21 above shows that 66 (16.4%) respondents strongly agree that access to ICT services in ABU Zaria has a wide coverage. 281 representing (69.9%) agree also, while 25 representing (6.2%) disagree and 20 standing at (5.0 %) strongly disagree. Some 10 representing (2.5%) are however undecided on the issue. Thus, since majority of respondents agree on the matter, we can say that access to ICT services in ABU Zaria has a wide coverage.

5.4 Effect of ICT on Students Registration in Ahmadu Bello University Zaria

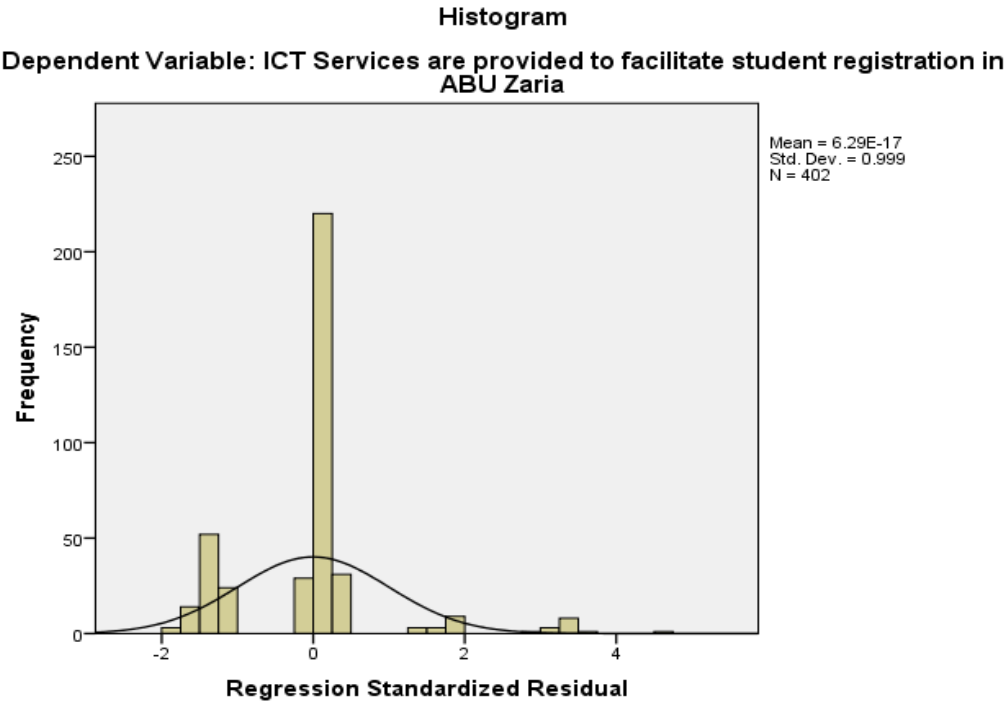
In this section, the study examined the effect of ICT on student registration in Ahmadu Bello University, Zaria using simple linear regression.

5.4.1 Preliminary Analysis

Before analyzing the result of simple linear regression, it is of paramount importance to check its assumptions to avoid spurious result. As such, the study conducts normality test, heteroscedasticity test, serial correlation test, and overall model fitness test.

5.4.2 Normality Test

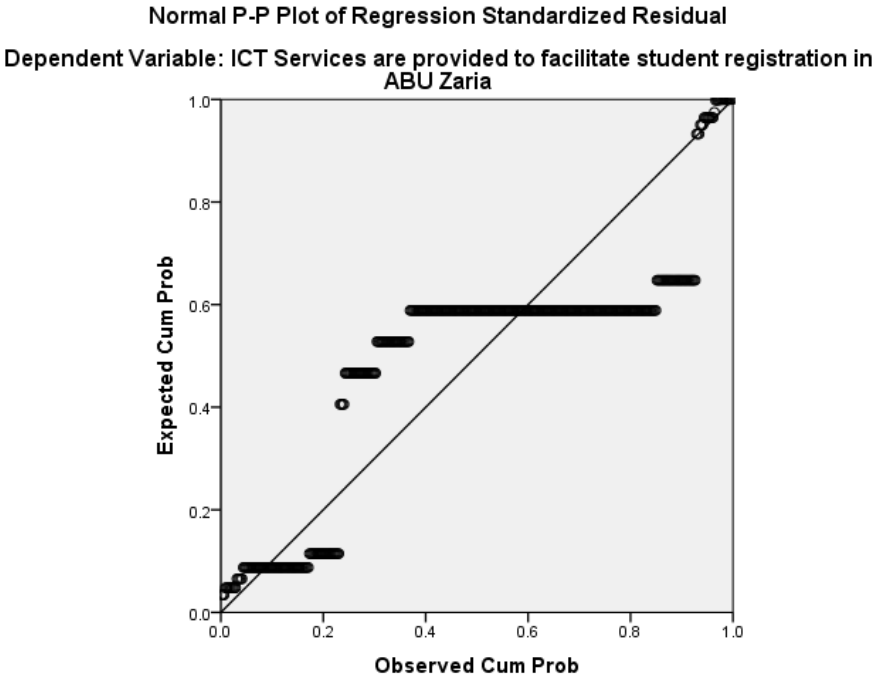
Figure 5.1: Normality Test



Before analyzing the regression result, it is important to check whether the residuals of the model are normality distributed. The result of the normality test presented in form of a histogram in figure 5.1 reflects bell-shaped. This implies that the residuals of the model are normally distributed.

5.4.3 Linearity Test

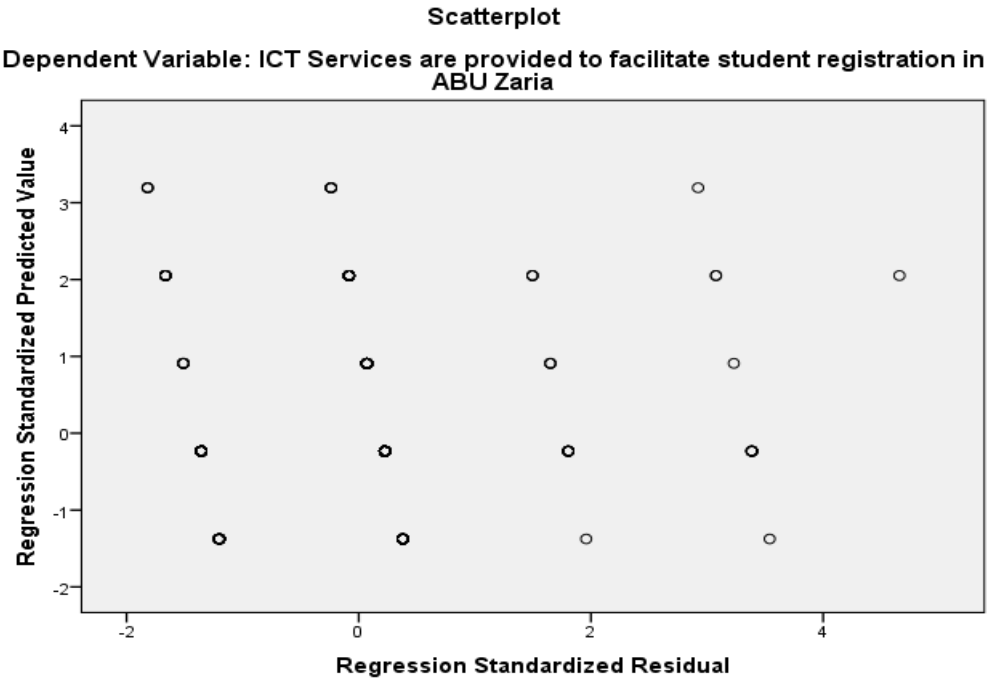
Figure 5.2: Linearity Test



To check the assumption of linearity of the regression model, we look at the normal probability plot of the regression standardized residuals in figure 5.2. The points are the observed residuals, while the straight line represents the normal distribution. If all the dots fall on the straight line, it implies that the regression equation is linearly specified. In this case, the plot seems to be close to normal, as no points extremely deviate from the straight line. Therefore, we conclude that the assumption of linearity holds.

5.4.4 Heteroscedasticity

Figure 5.3: Heteroscedasticity Test



Another important assumption of multiple regression model is that the residuals should have a constant variance (homoscedasticity). In order to check whether this assumption holds, a scatter plot of standardized residuals against standardized predicted values was used as shown in figure 5.3. The figure shows a random array of dots that are evenly dispersed around zero. If the graph funnels out, there are chances that there is heteroscedasticity in the sample. Also, if the graph plots any sort of curve, there are chances that the data have broken the assumption of linearity. The graph shows a random dispersion around zero which implies that the model has no problem of heteroscedasticity.

5.4.5 Model Summary

Table 5.22: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	0.134	0.018	0.016	0.633	1.956

Source: Researcher's Computation, 2020

In order to examine whether the model fit the data, we look at the model summary as presented in table 5.22. The result shows that the R^2 values of 0.018 implies that the independent variable accounted for only 1.8% of variation in the dependent variable while the remaining was captured by the residuals. Also, to check whether the model has the problem of autocorrelation, we look at Durbin-Watson statistics value in table 5.21. The result shows that the Durbin-Watson statistics value is 1.956 which indicates that the model has no problem of autocorrelation.

5.4.6 Overal Model Fitness

Table 5.23: ANOVA

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**P.Value**
Regression	2.928	1	2.928	7.315	0.007
Residual	160.099	400	0.400		
Total	163.027	401			

Source: researcher's computation, 2020

To examine the overall fitness of the models, Analysis of Variance was conducted. The result in table 5.23 shows that the independent variables are jointly significant at 1% level of significance, as the probability values of F-statistic is less than 0.01. Therefore, we conclude that the model fits the data.

Table 5.24: Coefficients

Dependent Variables: Students Registration in ABU Zaria are done online eliminating hitherto manual method of registration.					
	Unstandardized Coefficients		Standardized Coefficients		
Independent Variable	B	Std. Error	Beta	t	P.Value
Constant	1.663	0.086		19.433	0.000*
There is high level of ICT Services in ABU Zaria	0.098	0.036	0.134	2.705	0.007*

Source: Researchers Computation 2020

*Note: * represents 1% level of significance*

The result presented in table 5.24 shows that there is a positive and significant relationship between ICT infrastructure and online students registration in Ahmadu Bello University, Zaria at 1% level of significance. A unit increase in ICT infrastructure in Ahmadu Bello University Zaria cause online students registration to increase by 0.098. Therefore, the study rejects the null hypothesis that ICT infrastructure has no significant effect on student administration in Ahmadu Bello University Zaria. Thus, the study concludes that ICT infrastructure significantly affects students' registration in Ahmadu Bello University Zaria.

5.5 Effect of ICT on Students Accommodation in Ahmadu Bello University Zaria

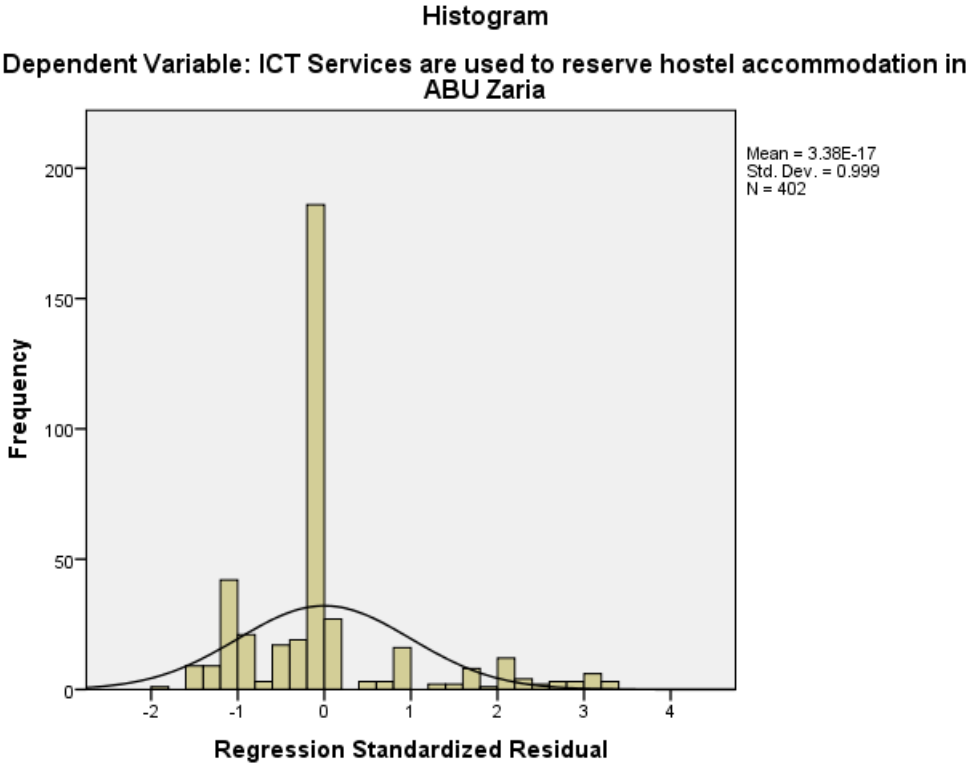
In this section, the study examined the effect of ICT on student accommodation in Ahmadu Bello University, Zaria using simple linear regression.

5.5.1 Preliminary Analysis

Before analyzing the result of simple linear regression result, it is of paramount importance to check its assumptions to avoid spurious result. As such, the study conducts normality test, heteroscedasticity test, serial correlation test, and overall model fitness test.

5.5.2 Normality Test

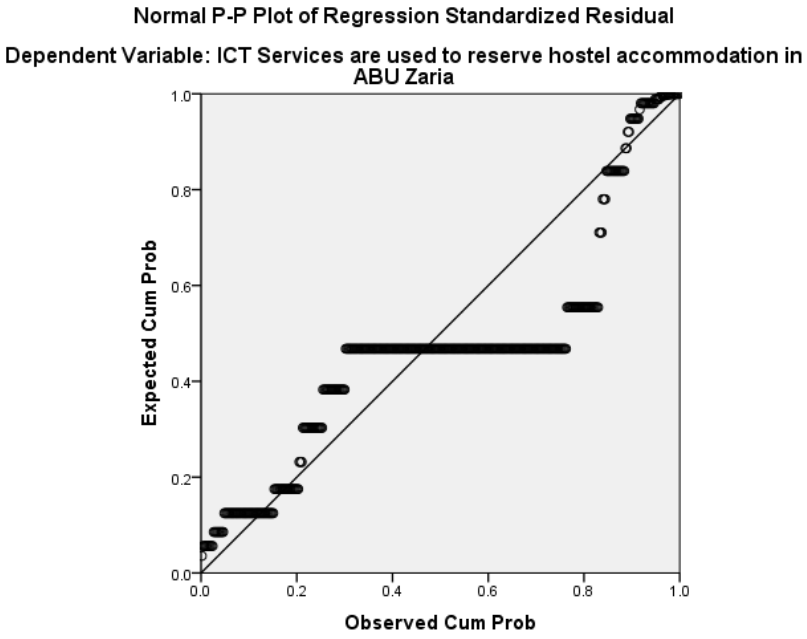
Figure 5.4: Normality Test



Before analyzing the regression result, it is important to check whether the residuals of the model are normality distributed. The result of the normality test presented in form of a histogram in figure 5.4 reflects bell-shaped which implies that the residuals of the model are normally distributed.

5.5.3 Linearity Test

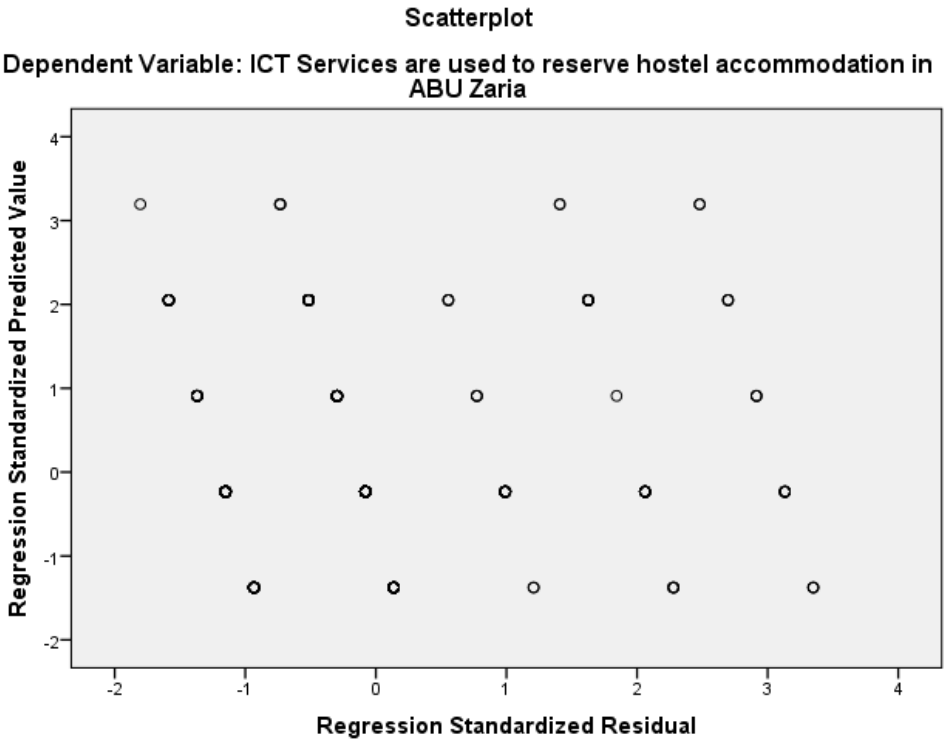
Figure 5.5: Linearity Test



To check the assumption of linearity of the regression model, we look at the normal probability plot of the regression standardized residuals in figure 5.5. The points are the observed residuals, while the straight line represents the normal distribution. If all the dots fall on the straight line, it implies that the regression equation is linearly specified. In this case, the plot seems to be close to normal, as no points extremely deviate from the straight line. Therefore, we conclude that the assumption of linearity holds true in the model.

5.5.4 Heteroscedasticity

Figure 5.6: Heteroscedasticity Test



Another important assumption of multiple regression model is that the residuals should have a constant variance (homoscedasticity). In order to check whether this assumption holds, a scatter plot of standardized residuals against standardized predicted values was used as shown in figure 5.6. The figure shows a random array of dots that are evenly dispersed around zero. If the graph funnels out, there are chances that there is heteroscedasticity in the sample. Also, if the graph plots any sort of curve, there are chances that the data have broken the assumption of linearity. The graph shows a random dispersion around zero which implies that the model has no problem of heteroscedasticity.

5.5.5 Model Summary

Table 5.25: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	0.187	0.035	0.033	0.934	1.784

Source: Researcher's Computation, 2020

In order to examine whether the model fits the data, we look at the model summary as presented in table 5.25. The result shows that the R^2 values of 0.035 implies that the independent variable accounted for only 3.5% of variation in the dependent variable while the remaining was captured by the residuals. Also, to check whether the model has the problem of autocorrelation, we look at Durbin-Watson statistics value in table 5.24. The result shows that the Durbin-Watson statistics value is 1.784 which indicates that the model has no problem of autocorrelation.

5.5.6 Overal Model Fitness

Table 5.26: ANOVA

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**P.Value**
Regression	12.677	1	12.677	14.537	0.000
ytResidual	348.828	400	0.872		
Total	361.505	401			

Source: researcher's computation, 2020

To examine the overall fitness of the models, Analysis of Variance was conducted. The result in table 5.26 shows that the independent variables are jointly significant at 1% level of significance, as the probability values of F-statistic is less than 0.01. Therefore, we conclude that the model fits the data.

Table 5.27: Coefficients

Dependent Variables: Hostel bed space accommodation are reserved online in ABU Zaria					
	Unstandardized Coefficients		Standardized Coefficients		
Independent Variable	B	Std. Error	Beta	t	P.Value
Constant	1.669	0.126		13.215	0.000*
There is high level of computerization in ABU Zaria	0.203	0.053	0.187	3.813	0.000*

Source: Researchers Computation
*Note: * represents 1% level of significance*

The result presented in table 5.27 shows that there is a positive and significant relationship between the level of computerizationand online hostel accommodation in Ahmadu Bello University, Zaria at 1% level of significance. A unit increase in the level of computerization in Ahmadu Bello University Zaria causes online hostel accommodation to increase by 0.2. Therefore, the study rejects the null hypothesis that the level of computerization has no significant effect on student administration in Ahmadu Bello University Zaria. Thus, the study concludes that the level of computerization significantly affects students' registration in Ahmadu Bello University Zaria.

5.6 Effect of ICT on Library Services in Ahmadu Bello University Zaria

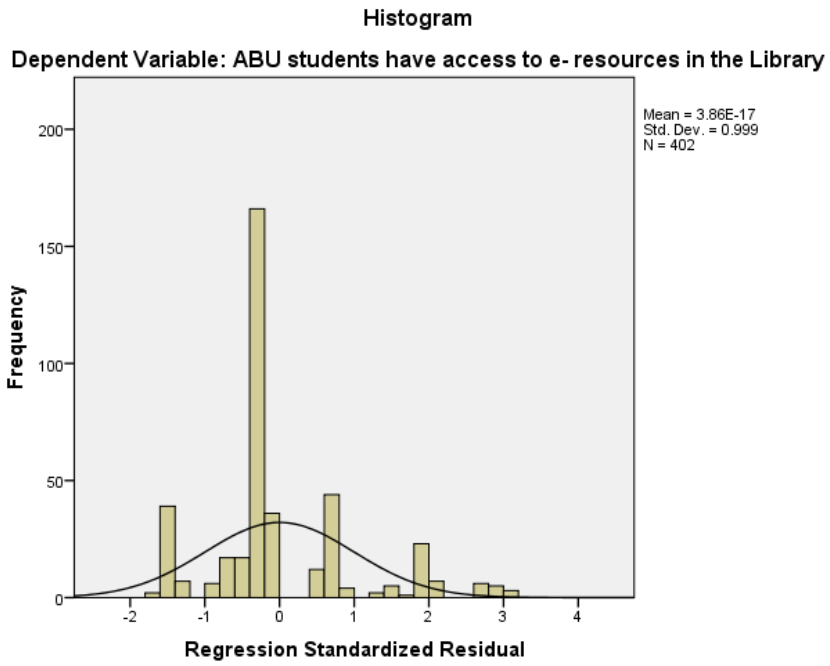
In this section, the study examined the effect of ICT on Library Services in Ahmadu Bello University, Zaria using simple linear regression.

5.6.1 Preliminary Analysis

Before analyzing the result of simple linear regression result, it is of paramount importance to check its assumptions to avoid spurious result. As such, the study conducts normality test, heteroscedasticity test, serial correlation test, and overall model fitness test.

5.6.2 Normality Test

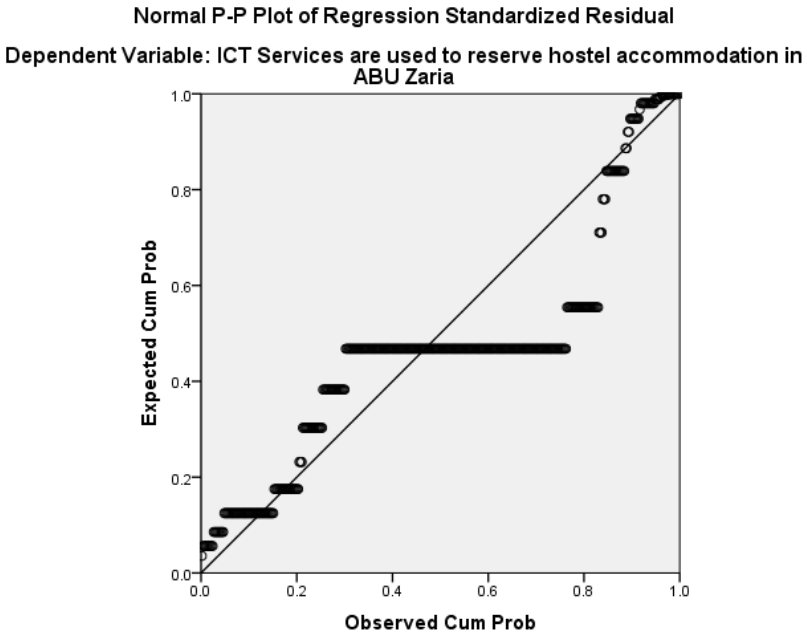
Figure 5.7: Normality Test



Before analyzing the regression result, it is important to check whether the residuals of the model are normality distributed. The result of the normality test presented in form of a histogram in figure 5.7 reflects bell-shaped which implies that the residuals of the model are normally distribute

5.6.3 Linearity Test

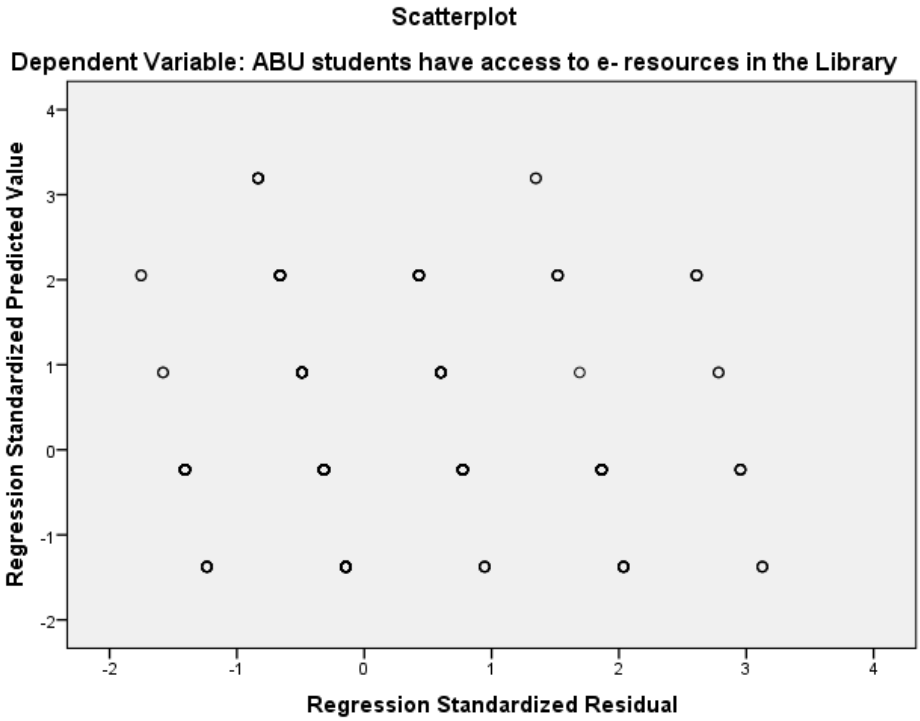
Figure 5.8: Linearity Test



To check the assumption of linearity of the regression model, we look at the normal probability plot of the regression standardized residuals in figure 5.9. The points are the observed residuals, while the straight line represents the normal distribution. If all the dots fall on the straight line, it implies that the regression equation is linearly specified. In this case, the plot seems to be close to normal, as no points extremely deviate from the straight line. Therefore, we conclude that the assumption of linearity holds true in the model.

5.6.4 Heteroscedasticity

Figure 5.9: Heteroscedasticity Test



Another important assumption of multiple regression model is that the residuals should have a constant variance (homoscedasticity). In order to check whether this assumption holds, a scatter plot of standardized residuals against standardized predicted values was used as shown in figure 5.9. The figure shows a random array of dots that are evenly dispersed around zero. If the graph funnels out, there are chances that there is heteroscedasticity in the sample. Also, if the graph plots any sort of curve, there are chances that the data have broken the assumption of linearity. The graph shows a random dispersion around zero which implies that the model has no problem of heteroscedasticity.

5.6.5 Model Summary

Table 5.28: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	0.149	0.022	0.020	0.917	1.832

Source: Researcher's Computation, 2020

In order to examine whether the model fits the data, we look at the model summary as presented in table 5.28. The result shows that the R^2 values of 0.022 implies that the independent variable accounted for only 2.2% of variation in the dependent variable while the remaining was captured by the residuals. Also, to check whether the model has the problem of autocorrelation, we look at Durbin-Watson statistics value in table 5.27. The result shows that the Durbin-Watson statistics value is 1.832 which indicates that the model has no problem of autocorrelation.

5.5.6 Overal Model Fitness

Table 5.29: ANOVA

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**P.Value**
Regression	7.650	1	7.650	9.098	0.003
Residual	336.310	400	0.841		
Total	343.960	401			

Source: researcher's computation, 2021

To examine the overall fitness of the models, Analysis of Variance was conducted. The result in table 5.29 shows that the independent variables are jointly significant at 1% level of significance, as the probability values of F-statistic is less than 0.003. Therefore, we conclude that the model fits the data.

Table 5.30: Coefficients

Dependent Variables: ABU Students have Access to e- resources and previous project in the library..					
	Unstandardized Coefficients		Standardized Coefficients		
Independent Variable	B	Std. Error	Beta	T	P.Value
Constant	1.976	0.124		15.929	0.000*
There is high level of computerization in ABU Zaria	0.158	0.052	0.149	3.016	0.003*

Source: Researchers Computation
*Note: * represents 1% level of significance*

The result presented in table 5.30 shows that there is a positive and significant relationship between the level of computerization and access to e- resources in Ahmadu Bello University Library at 1% level of significance. A unit increase in the level of computerization in Ahmadu Bello University Zaria causesaccess to e- resources in Ahmadu Bello University Library to increase by 0.15. Therefore, the study rejects the null hypothesis that the level of computerization has no significant effect on access to e- resources in Ahmadu Bello University Library. Thus, the study concludes that the level of computerization significantly affects access to e- resources in Ahmadu Bello University Library.

5.7 Synthesis of the interview report on the assessment of the effect of information and communication technology on student administration in Ahmadu Bello University Zaria.

Table 5.31 Research Interviewees

s/n	Interviewees
1	Head of Management and Information System, ICICT , ABU Zaria.
2	Head of Network Infrastructural Service, ICICT, ABU Zaria.
3	Deputy Dean Student Affairs Division ABU, Zaria.
4.	Head of ICT KIL(Digitization) ABU Zaria

Source: Field survey, 2020.

The above table presents the picture of the interviewees in order to support and validate the questionnaire that was administered in this research work. The integration of ICT into the university system has brought a tremendous administration of students and staff in Nigerian Universities in order make them compete with others across the globe. ICT are now vital to support the business of educational institutions, and support the full academic lifecycle, in terms of learning and teaching from initial student's enquiries through to accreditation and graduation and in terms of research from initial bid writing through to project delivery and dissemination. It includes six main areas: pay roll and financial accounting, administration of student data, inventory management, personnel records maintenance, library systems and learning management systems. The core IT services provide support for the following areas. Firstly, the student journey, from an initial enquiry through to graduation. This includes managing of a student's initial enquiry about courses, application, module selection,

monitoring and support for the delivery of a course, assignment handling, examinations and graduation. For on campus students' systems are in place for room booking and timetabling. (UNESCO ,2012).

In compliance with National University Commission (NUC) directives, almost all of the Nigerian Universities deployed the student administrative software that would enable the student carry out their registration processes and other academic activities through the electronic media. As such, the researcher explained to the interviewees of significance of ICT on student administration, specifically on areas such as Payment of school fees registration, course registration, reservation of bed space etc.

How the application of ICT on student administration has aided services delivery in A.B.U. Zaria?

In order to find out how the application of ICT on student administration has aided service delivery in. A.B.U, the researcher asked respondents to pose their own view. According to the Head of MIS Unit of ICICT A.B.U. Zaria,

> *ICT has aided student administration in the area of service delivery such as: course registration, school registration, and also payment of school fee via remita. He further added that students can do registration irrespective of their locations once they can have access to the school portal.*

In his own comment, the head of the NIS Unit maintained that;

> *ICThas aided student administration affairs in areas such as; examination, registration, accommodation, library services, learning and research. Students can connect to their wireless connectivity using the school hotspot and it has also aided service delivery to the university management in areas such as; e-registration, e-accommodation, payment of fees, CBT exams, etc.*

The Deputy Dean, Students Affairs stated that;

> *ICT facility in A.B.U. has aided service delivery to the students interms of accommodation issue. Students can now reserve and pay for hostel accommodation bed space online.*

The head of ICT Unit of Kashim Ibrahim Library viewed that;

> *ICT has assisted Libraries in the university in providing current information. The use of ICT on Library services has provided online resources for the student in other to enhance their learning and research. Student can now use their password provided by the school to log in and search for - books, articles, journals online, compared to the traditional library where there are multiple users on few available books in the Library.*

Adequacy of ICT Facilities for Effective Student Administration in A.B.U. Zaria

The researcher also asked the respondents about the adequacy of ICT facilities for student administration in A.B.U. Zaria. The Head of MIS Unit opined that;

> *The university has done well interms of some of the facilities. that there are adequate ICT facilities for effective service delivery on student administration. He identified the environment, computers, Networking, Student portal, wireless connectivity, cooling system (Fans and Air conditions), Inverter and generators. He added that more need to be done in terms obsolete facilities that need to upgraded*

The Head of NIS unit stated that;

> *Wireless connectivity and hotspot is available across all the faculties/department in ABU Zaria. He added that there is also the provision of WAN and LAN in most building in the campus in addition, they stated that more need to be done in some areas. They have the plan to extend the bandwidth to the place that there is no network connectivity*

The Deputy dean student affairs Division stated that;

> *They have the facilities in terms of computers, Accommodation portal LAN in their office that they connect to school internet in order to allocate beds space to the students.*

The Head of ICT Kashim Ibrahim Library Stated that;

> *There are adequate ICT facilities for the management of student in the library. The main library complex (KIL) has 360 computer work stations, president Kennedy library has 50 computer work stations and centre for Islamic Legal Studies also has 50 computer workstations. other Information and Communication Technology (ICT) facilities, include video conferencing facility, printer, digital scanner, digital projector severs, etc.There is also creation of Institutional Digital Depository (IDR) with more than 5,986 copies of full text and dissertation scanned and converted to pdf, about 3,332 items have been uploaded onto the Library, D-space server's resources for the physically challenged students. E-Resources are available in different format, Text, video and audio. There are also 45 open Access Databases, unlimited free e – book websites. etc. The A.B.U library complex has data base in different fields.*

Students benefiting from ICT platform.

The researcher investigated whether the students are benefiting from ICT platform.

The head MIS stated that;

> *The students are benefiting from the ICT platform. That the use of ICT has facilitated their registration processes, students can pay their school fees via remita without visiting the bank. he added that to some extent, examination is conducted online through computer based tested*

The head NIS unit mention that;

> *Student are benefiting from the ICT platform because currently they have over 30,000 students using the hotspots (Wi-Fi) provided by the University.*

The deputy dean SAD stated that;

> *Student are benefiting particularly in the areas of payment of fees, course registration and reservation of bed space. Students can pay their school fees via remita without visiting the bank. They can also connect to the school hotspot to reserve for accommodation without visiting the student affairs division.*

The head of ICT Kashim Ibrahim library stated;

> *The students are benefiting from the ICT platform the students have access to e – resources in the electronic library. Usually, the university management provide the e-library to enable the student download relevant document to ease their learning and research.*

Factors that are militating against ICT operation on student administration in A.B.U Zaria.

The researcher investigated the Factors that are militating against ICT operation on student administration in A.B.U Zaria.

The head of MIS Stated that;

> *Lack of staff development, obsolete ICT facilities affecting service delivery to the students, poor funding allocation to maintain the existing ones slow bureaucratic process.*

The head NIS unit mentioned*;*

> *Obsolete facilities, cutting off of optic fibre cables due to water works by state government poor inverter batteries, failure of Network from the main Data service provided such as MTN, Airtel and Glo*

The deputy dean SAD mention;

> *The issue of security bridge. i.e. hackers penetrating the network or the school portal, illegal reservation of bed spaces. Slow transaction (student will pay for accommodation and it will be showing transaction not paid).*

The Head of ICT Kashim stated that;

> *The available computers cannot withstand the student population.But what they did was that they programmed the system in such a way that each student can only use it for the period of two hours. But if users are not available, the time can be renewed. he repeated the issue of students putting password on the computers in the electronic library and also lack of utilization of the data base that will be wasted at the end of the month.*

How these challenges are addressed?

The researcher further asked how these challenges are addressed?

The head MIS unit replied that;

> *There is need for staff development through TETFUND on capacity building. And the obsolete facilities should be replaced with ones.*

The Head NIS stated that;

> *The obsolete ICT facilities should be upgraded and there is also need for staff development in order to ensure a viable ICT service delivery. The bandwidth should be extended to areas that students can have more access to network.*

The deputy dean SAD stated that;

> *There should be a devising means of ensuring security of the Network through the use of latest version software as technology is moving at a high speedy rate, in order to ensure effective and efficient service delivery.*

The head of ICT Kashim Ibrahim Library replied that;

> *More computer work stations should be provided so as to increase the hours for the students, the old facilities should be replaced with new ones, there should be staff development in order to have an effective and efficient service delivery.*

5.8 Discussion of Findings

The study assessed the effect of Information and Communication Technology on student's administration in Ahmadu Bello University, Zaria, on issues concerning student registration, accommodation and Library services. The first findings of the study revealed positive and significant relationship between ICT Facilities and Student registration in A.B.U. Zaria.This finding is supported by the interview result that ICT has aided student registration in A.B.U.

Zaria. Furthermore,this finding is inconsistence with Muhammad (2016) who found that ICT infrastructure in ABU Zaria are of low quality and that the level of student utilization and quality of ICICT staff were equally low and they all have negative effect on student administration in A.B.U. Zaria. It obvious that ABU has improved in provision of ICT facilities to facilitate student registration in the period under review. Secondly, the result also revealed positive and significant relationship between ICT facilities and Student Accommodation in A.B.U. Zaria. The result was supported by the interview result that ICT has significant influenced on hostel bed space accommodation reservation by students in A.B.U. Zaria.Finally, the result revealed positive and significant relationship between ICT and Library services in Ahmadu Bello University Zaria. This finding wassupported by the interview result and consistencewith Hassan*et. al.*(2016)who found that due to wireless services students have access toinformation and other e – resources in ABU, Zaria. This impliesthat, e-library has significant impact on the students' access to information in Ahmadu Bello University, Zaria, and hence facilitate learning and research.

CHAPTER SIX
SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 Summary of the Study

The study examined the effect of ICT on student Administration in Ahmadu Bello University, Zaria. The specific objectives of the study were; to examine the effect of ICT on student administration registration in A.B.U. Zaria, to ascertain the effect of ICT on student administration accommodation in A.B.U. Zaria, and to determine the effect of ICT on library services administration in A.B.U. Zaria. The study used a total sample of 437 respondents to collect both quantitative and qualitative data. The quantitative data were captured using structured questionnaire and the qualitative data were collected using semi structured interview. The study employed simple linear regression model to analyze the quantitative data while the interview was analyzed qualitatively. The major findings of the study are as follows: First, there is a positive and significant relationship between ICT and Student Registration in A.B.U. Zaria. Second, there is a positive and significant relationship between ICT and Student Accommodation in A.B.U. Zaria. Third, there is positive and significant relationship between ICT and Library services in A.B.U. Zaria.

6.2 Conclusion of the Study

The study examined the effect of ICT on student Administration in Ahmadu Bello University, Zaria. Therefore, a key conclusion that can be drawn from this study is that A.B.U Zaria has succeeded in establishing ICT infrastructural facilities to ease student administration.the study found out that ICT has positive and significant effect on student administration in Ahmadu Bello University, Zaria. Based on the above findings, it can be concluded that ICT in ABU Zaria indicate the clear integration of student registration,

accommodation and library services. All these service are now rendered to student using one virtual counter. It is crystal clears that the use of ICT on student administration is an antidote that has eliminated the bottle neck such as long queue and procedural complexity during registration and reservation of hostel accommodation bed space.Notwithstanding, A.B.U. Zaria still need to do more to enhance its ICT infrastructural facilities.

6.3 Recommendations for the Study

Based on the above conclusion, the study makes the following recommendations:

i. The management of A.B.U. Zaria should improve the existing ICT infrastructural facilities for viable, efficient and effective student administration in areas such as; course registration, reservation of hostel bed space accommodation, library services, etc.

ii. The management of A.B.U. Zaria should improve in the area of online hostel reservation to alleviate students suffering.

iii. The management of A.B.U. Zaria should also improve its library service to match with the global trend, thereby providing data base to ease students access to e-resources. This will enhance the visibility of the institution globally.

6.4 Suggestion for Further Study

This study is entitled assessment of the effect of Information and communication technology on student Administration in ABU Zaria which attempted to determine how ICT has enhanced student administration using some key variable such as student e-registration, online accommodation and dlibrary Services. Based on the limitation of the study, this research suggested the need for further study on Effect of information and communication technology staff Administration in tertiary institutions,Effect of ICT on e- examination in tertiary institution and Impact of ICTon student academic performance in tertiary institution.

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APPENDIX I

APPENDIX II

QUESTIONNAIRE FORM

Department of Public
Administration
Faculty of Administration,
Ahmadu Bello University, Zaria
Date:_____

Dear Sir,

I am an M.Phil student in the Department of Public Administration, Ahmadu Bello University, Zaria conducting a research entitled ***"Assessment of the Effect of Information and Communication Technology on Student administration in Ahmadu Bello University, Zaria."*** I therefore seek for your cooperation in giving me the necessary information so as to enable me complete my study.

I assure you that all data or information provided here – in would be used for academic purpose and would be treated with utmost confidentiality.

Thank you.

Yours Sincerely,

Halima Ibrahim
Researcher

SECTION
(Personal Data of Respondent)
Please tick (✓) as appropriate

1. Sex
   a. Male ( )
   b. Female ( )

2. program in the University
   a. Undergraduate ( )
   b. Postgraduate ( )
   c. Sub-degree ( )

3. Level in the University
   a. Level I ( )
   b. Level 11 ( )
   c. Level III ( )
   d. Level IV ( )

Effect of Information Communication Technology

4. There is high level of computerization in ABU Zaria
   a. Strongly agree ( )
   b. Agree ( )
   c. Undecided ( )
   d. Disagree ( )
   e. Strongly Disagree ( )

5. ABU Students portal is always functional
   a. Strongly agree ( )
   b. Agree ( )
   c. Undecided ( )
   d. Disagree ( )
   e. Strongly Disagree ( )

6. There is 24hrs ICT services in Ahmadu Bello University, Zaria
   a. Strongly agree ( )
   a. Agree ( )
   b. Undecided ( )
   c. Disagree ( )
   d. Strongly disagree ( )

7. The application of ICT on student administration make transaction easier.
   a. Strongly agree ( )
   b. Agree ( )
   c. Undecided ( )
   d. Disagree ( )
   e. Strongly Disagree ( )

Student Registration in ABU Zaria.

8. ABU student fill their personal data online.
   a. Strongly agree ( )
   b. Agree ( )
   c. Undecided ( )
   d. Disagree ( )
   e. Strongly Disagree ( )

9. Payment of fees is processed online, preventing fraudulent loss of revenue to student who would want to evade payment
   a. Strongly agree ( )
   b. Agree ( )
   c. Undecided ( )
   d. Disagree ( )
   e. Strongly Disagree ( )

10. ABU students access their result online
   a. Strongly agree ( )
   b. Agree ( )
   c. Undecided ( )
   d. Disagree ( )
   e. Strongly Disagree ( )

11. Registration in ABU Zaria are done online eliminating hitherto manual method of registration**.**
   a. Strongly agree ( )
   b. Agree ( )
   c. Undecided ( )
   d. Disagree ( )
   e. Strongly Disagree ( )

Student accommodation in ABU Zaria

12. Hostel bed space accommodation are reserved in ABU Zaria online
    a. Strongly agree ( )
    b. Agree ( )
    c. Undecided ( )
    d. Disagree ( )
    e. Strongly Disagree ( )

13. Hostel accommodation is paid online in Ahmadu Bello University, Zaria.
    a. Strongly agree ( )
    b. Agree ( )
    c. Undecided ( )
    d. Disagree ( )
    e. Strongly Disagree ( )

14. ABU student do not encounter challenge using the school portal for assessing accommodation
    a. Strongly agree ( )
    b. Agree ( )
    c. Undecided ( )
    d. Disagree ( )
    e. Strongly Disagree ( )

15. ABU student appreciate the use of in their registration purposes
    a. Strongly agree ( )
    b. Agree ( )
    c. Undecided ( )
    d. Disagree ( )
    e. Strongly Disagree ( )

16. ABU's portal provides adequate and updated information to the student
    a. Strongly agree ( )
    b. Agree ( )
    c. Undecided ( )
    d. Disagree ( )
    e. Strongly Disagree ( )

Library services in ABU Zaria.

17. There are adequate provision of computers for students in the e- library in ABU, Zaria
    a. Strongly agree ( )
    b. Agree ( )
    c. Undecided ( )
    d. Disagree ( )
    e. Strongly Disagree ( )

18. Students have access to e- resources and previous project in the electronic library
    a. Strongly agree ( )
    b. Agree ( )
    c. Undecided ( )
    d. Disagree ( )
    e. Strongly Disagree ( )

19. ABU electronic library is conducive for learning
    a. Strongly agree ( )
    b. Agree ( )
    c. Undecided ( )
    d. Disagree ( )
    e. Strongly Disagree ( )

20. Access to ICT services in ABU Zaria has a wide coverage.
    a. Strongly agree ( )
    b. Agree ( )
    c. Undecided ( )
    d. Disagree ( )
    e. Strongly Disagree ( )

Appendix III

RESPONDENTS' INTERVIEW FORMAT

STRUCTURED INTERVIEW TO STAFF OF INSTITUTE OF COMPUTING AND INFORMATION AND COMMUNICATION TECHNOLOGY (ICICT), STAFF OF STUDENT AFFAIRS DIVISION (SAD) AND LIBRARY STAFF.

INTERVIEW SCHEDULE FOR STAFF OF ICICT, SAD & KASHIM IBRAHIM LIBRARY

1. Has application of ICT on student administration aided service delivery in ABU Zaria?
2. Are there adequate ICT facilities for effective student administrationin Ahmadu Bello University, Zaria?
3. What is achievement of ABU on ICT towards student administration?
4. Do you think students are benefitting from your ICT platform?
5. What are the factors militating againsttheuse of ICT on student administration in Ahmadu Bello University, Zaria?
6. How do you address these challenges militating against the use of ICT on student administration in Ahmadu Bello University, Zaria?