AWARENESS, KNOWLEDGE AND UTILISATION OF ELECTRONIC DATABASES AS PREDICTORS OF RESEARCH PRODUCTIVITY OF ACADEMIC STAFF IN PRIVATE UNIVERSITIES IN SOUTHWESTERN NIGERIA

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ABSTRACT

Research productivity in universities is the totality of research done by academic staff within a given period. The quality of teaching, research and community service carried out by lecturers largely depends on access to quality electronic databases. Reports have shown that research productivity of academic staff in private universities in southwestern Nigeria is relatively low. Previous studies largely focused on interventions made to improve research productivity of academic staff with little consideration of the role of awareness, knowledge and utilisation of electronic databases, particularly in private universities. This study, therefore, was conducted to investigate awareness, knowledge and utilisation of electronic databases as predictors of research productivity in private universities in southwestern Nigeria.

Herzberg's Motivation Theory guided the study. The survey design of the correlational type was adopted. Twenty-one private universities out of the 27 approved between 1999 and 2012 were purposively selected based on availability of functional electronic databases. Proportional to size and stratified random sampling techniques were used to select 30% of academic staff across the various ranks in the selected universities, making a total of 657. The instruments used were Awareness of Electronic Databases (r=0.75), Knowledgeof Electronic Databases (r=0.87), Utilisation of Electronic Databases (r=0.85) and Research Productivity (r=0.74) scales. Data were subjected to descriptive statistics, Spearman's rank correlation and Multiple regression at 0.05 level of significance.

The study respondents were 56.0% male and 44.0% female, and ranked as: Lecturer I (31.0%), Lecturer II (22.0%), Senior Lecturer (17.0%), Assistant Lecturer (11.0%) and others (19.0%). They were drawn from Science (40%), Social/Management Sciences (28.8%), Library (8.4%), Arts/Humanities (7.5%), Engineering (5.3%), Environmental Studies (4.0%), Law (2.3%), Nursing Science (1.3%), Leadership Development Studies (0.9%), Basic Medical Science (0.8) and Agriculture (0.8%). Although awareness and knowledge of databases were high, their utilisation and academic productivity were low: awareness ($\bar{x}$ = 3.25) was high, as against the threshold of 2.50, knowledge ($\bar{x}$ = 2.81) was high as against the threshold of 2.50, while utilisation of electronic databases ($\bar{x}$ = 3.60) was low as against the threshold of 4.00, and consequently, academic staff research productivity ($\bar{x}$ = 2.02) was low as against the norm test of 3.00. Utilisation (r=0.46), knowledge (r=0.40) and awareness (r=0.36) of databases had positive significant correlations with research productivity. Jointly, awareness, knowledge and utilisation of electronic databases significantly predicted research productivity (F $_{(3,654)}$ = 117.67; Adjusted R^2 = 0.37), accounting for 37.0% of its variance. Awareness (β=0.06), knowledge (β=0.40) and utilisation of electronic databases (β=0.33) had relative significant contributions to research productivity of academic staff.

Awareness, knowledge and utilisation of electronic databases determined the research productivity of academic staff in private universities in the southwestern Nigeria. Low research productivity can be overcome if investment in ICT facilities at the private universities is increased and academic staff utilise them in line with the emerging digital trend in universities around the world.

Keywords: Research productivity in Nigeria, Academic staff in Nigerian private universities, Electronic databases

Word count: 470

DEDICATION

All the glory must be to God for He is worthy to be praised. This thesis is dedicated to the Almighty God, Source and Giver of wisdom. Also, it is dedicated to my worthy and loving late Father Mr Muriaina A. Adetomiwawho passionately laid the solid foundation for my educational development.

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CERTIFICATION

I certify that this thesis was carried out and completed under my supervision by **BASIRUADETOMIWA**, with matriculation number 116117 in the Department of Library, Archival and Information Studies, Faculty of education, University of Ibadan.

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CHAPTER ONE

INTRODUCTION

1.1   Background to the study

Research plays a critical role in promoting the prosperity of a nation and well-being of the citizens. In universities, recognition and advancement of individual academic staff members depend largely on the quantity and quality of their research productivity. Universities around the world have been agents of development of their immediate communities and the world at large through research that leads to advancement in knowledge in different areas of human endeavour. The significance of research in academia is that it enables academics to share insight, demonstrate academic scholarship and gain recognition for creative thinking (Lertputtarak, 2008).

Research is a systemic attempt, search or investigation to find solutions to problems or questions in order to increase the sum of knowledge (Bako, 2005). It is a careful and detailed study into a specific problem, concern or issue using the scientific method. It is a systematic enquiry to describe, explain, predict and control the observed phenomenon (Kowalczyk, 2015). Research provides greater opportunities for collaboration and networking among scholars spread throughout the world. National and international dimensions of research issues can, therefore, be studied as they can allow for communication with peers and experts around the world. Research is the process of creating new knowledge or new insights on knowledge, or unlocking knowledge (Ibidapo-Obe, 2010).

Through collaborative knowledge building, studies can spotlight transnational trend analysis through human and instrumentation collaboration. Dane (2011) viewed research as a critical process for making enquiry about the universe or society. Research has two broad components, namely, knowledge creation and knowledge distribution. According to Aina (2015), the society is dynamic; thus, there is a constant demand from the society to meet new challenges. As a society keeps on evolving, there is the need for changes and issues to be addressed, hence the concept of innovation. This has resulted in humans conducting research in order to extend the frontiers of knowledge.

Madu (2012) asserted that academic staff are evaluated for promotion every three and four years for both junior and senior levels based on their researchproductivity especially in the form of publications made in referred works and patents. Productivity results from writing, reading and publishing research reports in professional refereed journals, and displaying it on the Web or making it known to the public through any other means. One of the strategies for determining research productivity is to assess the quantity of publications which researchers communicated through primary or other sources. Academic staff conduct research and their productivity is measured in various ways. Academic institutions primarily measure research productivity based on published works, externally funded grants and the number of citations the published works received (Middaugh, 2001). The most common productivity measures look at publications that are

submitted, accepted (in press) or published. The published works could be journal articles (refereed and non-refereed), books (including edited books and textbooks), chapters in books, monographs, conference papers, and research proposals written to receive external and internal grants (Middaugh, 2001).

According to Lertputarak (2008), research productivity in any university is the totality of research performed by academic staff members within a given period of time in universities. Creswell (1986) stated that research productivity includes research publications in professional journals and conference proceedings, writing a book or chapter, gathering and analysing original evidence, working with postgraduate students on dissertations and class projects, obtaining research grants, carrying out editorial duties, obtaining patents and licences, writing of monographs, developing experimental designs, producing works of an artistic or creative nature, and engaging in public debates and commentaries.

According to Harman (2010), research productivity is the outcome of any research endeavorwhich determines academic staff efficiency and is measured by a number of factors such as the number of publications produced over a period of time, teaching quality as well as soundness of intellectual acumen. Popoola (2008) corroborated this position when he affirmed that research productivity is one crucial factor in the determination of academic efficiency of academic staff. These assertions aligned perfectly with the regulations of the Nigerian Universities Commission(NUC), which state that academic staff shall be evaluated for promotion every three and four years for both junior and senior levels as the case may be with their research publications in referred works being the dominant factor (Madu, 2012).

Okonedo, Popoola, Emmanuel and Bamigboye (2015) state that research productivity is expressed by the entirety of researches conducted by academic librarians in universities in their career over a specified time frame. Oloruntoba and Ajayi (2006) observed that research publication in the university is a major and most significant indicator of academic staff productivity, and that research attainment is determined by the number of published articles in refereed journals and conference proceedings of repute. Neil, Thomson and Gibson (2015) posited that a universal approach to measuring research productivity was to count the number of books, articles, technical reports, bulletins and book reviews published, as well as presentations given and grants received through reviewing curriculum vitae or other print materials.

Research productivity in academic institutions is reflected in the number and quality of articles published by the affiliated faculty. Often, departments evaluate their faculty on their "publication count" (Hadjinicola & Soteriou, 2005). Yusuf (2005) noted that the cliché "publish or perish" is quite popular in the university setting. According to him, this phrase underscores the importance attached to research in any university. It is the major index of an academic staff's quality and the determinant of advancement. Most of the research productivity of academics are disseminated via publications. Research publications enable academics to earn recognition in

academic circles locally and internationally. In higher education, research productivity often serves as a major role in attaining success in academic circles as it is related to promotion, tenure and salary (Bloedel, 2001; Kotrlik, Bartlett, Higgins & Williams, 2002; Bassey, Akuegwu, Udida & Udey, 2007).

Research publication is very significant to academic staff; hence, staff promotions are based entirely on it. It increases the social prestige of the academic staff status to the rank of a professor irrespective of gender. Research publication encourages hard work, fills in the gaps of previous researches and creates an avenue for future investigations. Quality research exposes academic staff to new information and sharing of socio-cultural ideas with others. During the process of research, an academic staff has the opportunity to travel outside their environment to seek information and collect relevant data. Quality research by academic staff contributes to genuine indigenous and sustainable development (Bassey, Akuegwu, Udida & Udey, 2006). Okebukola (2005) pointed out that the purpose of a research assessment exercise is to distribute public funds for research, competitively based on the quality of such research. This, therefore, implies that the need for quality research has been widely acknowledged not only in academic institutions but also in management organisations.

The universities and research organisations all over the world have begun to pay more attention to the production and usage of documents in digital form which includes texts, graphics, photographs, archival materials, websites, blogs and vlogs, video and audio materials, television and radio broadcasts, which is held and / or transmitted in electronic form. These institutions have been exploring ways and means to capture and reuse the intellectual output of teaching and research as more and more scholarly output are bypassing the traditional libraries and the publishers favour of the Internet. One of the approaches has been the Institutional Repository (IR), which is the collective intellectual output of an institution recorded in a form that can be preserved and exploited.

The quality of teaching, research and community service of lecturers coupled with their publication in any university system may depend on the quality of the electronic database they use. Electronic database awareness, knowledge and use are very important to the teaching, research and community service activities of lecturers in the Nigerian university system. One of the critical factors used in determining academic productivity is research output. Apart from competence in professional duties, research and publications are compulsory indices or indicators of assessment of academic productivity of lecturers (Joyce, 2006). Electronic database information plays a central role in achieving successful work performance of academic staff. More than any other institution, a university produces a vast amount of intellectual output in various formats on a regular basis.

These range from scholarly papers and books written by academic staff and published by other external agencies to dissertations and academic reports by students. Increasingly, these works are born digital, created in electronic formats. Many academic institutions are currently building

substantial collections of full-text journals and continue to increase access to various online database source. Many online journals and databases are available through open access. However, for those that are not available via open access, subscriptions to online journals and databases through the consortium(s) are much more economical for the libraries than individual purchase. The shift from printed forms of information resources to electronic information materials means that academic staff must utilise these resources for better quality, efficient and effective research more than ever.

Recently,academicinstitutionshavebeengrapplingwithhowto managethedigitalintellectualoutput theyproduceincludingjournalarticles,conferencepapers,reports,thesesanddissertations,teaching materials,artwork,researchnotesandresearchdata.Clearly,technologyhasmadeiteasytocreate, storeandaccessdigitalmaterials.Paradoxically,however,whilethereispotentialforinstantaneousaccess, alltoooften,manymaterialsarenotusuallymadeaccessibletomanyusersandtheyremain   marooned intheauthors'computers.About80-85%ofdigitalintellectualoutputofuniversitiesisnever madeaccessibletothepublic(TheOpenCitationProject,2004).

In academic institutions, the producers (lecturers) of intellectual property have an inspiration to communicate and deliver their ever-growing and diverse body of work to the society. Some of their works are known as intellectual output. IntellectualOutput(IO)ofauniversity isoftenneglectedby society whereasitactually possessesagreatcapacity ofuniversity'sknowledge producedbyresearchers.Intellectual output can be defined as sincere and systematic research done by researcher that have been observed and reviewed by professional supervisors and other experts (examiners, reviewers and journal editors), especially when reporting research results and so on. Intellectual Output consists of teaching, research, innovation and achievement of the Intellectual Output producer. It is essential for Intellectual Output to be properly recorded and made available to the nation and abroad as well; this is where Institutional Repository (IR) role takes place.

Electronic databases such as institutional repositories contain the research productivity of the university and these output are very diverse and may include the pre-prints of articles or research reports submitted for publication, the text of journal articles accepted for publication, revised texts of published work with comments from academic readers, conference papers, teaching materials, student projects, doctoral theses and dissertations, datasets resulting from research projects, committee papers, computer software, works of art and photographs and video recordings, etc. Institutional repository may contain work whose copyright is owned by the author or university, or for which permission has been obtained to include a copy of the work in the repository.Institutional repositories, by capturing, preserving and disseminating collective intellectual capital, serve as meaningful indicators of an institution's academic quality. It is obvious that much of intellectual output and value of an institution's intellectual property is defused through thousands of scholarly journals. An institutional repository concentrates on the institutional

product credited by an academic or other institution's researchers, making it easier to demonstrate its scientific, social and financial values.

The emergence of Information and Communications Technology (ICT) introduces opportunities like electronic databases (such as Dspace, e-prints and repositories).In recent times, as part of global shift from the hard copy information prints to electronic-based ones, university libraries now subscribe to a number of electronic databases consisting of journals and monograph reports. Some of these databases are JSTOR, AGORA, HINARI and OARE. This means they can be accessed by logging into the university's website while on campus but need passwords outside the campus (Bopp & Smith,2001; Fabunmi, 2010; Krubu & Osawaru, 2011).

University lecturers are today being asked to increase their research output and productivity, in order to meet the ever-changing demands for information products and services of the 21st Century. Governments expect universities to become more efficient in the area of research. Hence, academic staff awareness, knowledge and use patterns pose a serious challenge in the utilisation of electronic databases for greater research productivity.Teachers who succeed in making use of ICT in their work processes do not only contribute to improved learning outcomes in their students but also benefit personally from enhanced work productivity (Carlson & Gadio, 2000).

According to Edem (2015), ICT has added value to effective research productivity in Nigerian tertiary institutions. This development, as observed by Ani, Esin and Edem (2005), has created a shift from traditional information environment to an electronic environment such as computer use, Internet use, CD-ROM use, online services and online databases. In the digital age, Xie and Joo (2011) have opined that "the emergence of internet makes electronic information resources more accessible for end users" particularly in the academic environment. Both the students and faculty members find the resources very useful in meeting their research needs.

The information behaviour of academic staff in universities has now shifted in favour of usage of electronic resources than the traditional printed resources. This essentially could be attributed to a number of factors which include awareness, ease of access, efficiency, currency and cost-effectiveness among others in developing countries, with the inability of the management of the universities and librarians to meet up with the challenges of regular subscriptions to electronic journals and online databases due to general financial constraints. Utilisation of databases becomes a challenge to the academic staff in their quest for quality teaching and research in the globally competitive knowledge economy.

University lecturers have various tasks to accomplish and these range from teaching, research and publications, marking of tests and examinations scripts, supervising students' research activities, supporting students through advisory roles, attending conferences, providing community services and so on. The quality of teaching, research and community service of lecturers coupled with their publications in any university system depend on the quality of information sources and

services they use. Information availability, accessibility and use are very important to the teaching, research and community service activities of lecturers in the Nigerian university system. One of the critical factors used in determining academic productivity is research output. "Apart from competence in professional duties, research and publications are compulsory indices or indicators of assessment of academic productivity of lecturers" (Joyce, 2006). Information plays a central role in achieving successful work performance of academic staff.

A lecturer's role in his working environment and in the world of scholarly communication depends on the quality information he/she uses. He/she has multiple functions at his/her university. Firstly, he/she must be involved in teaching students and other researchers; and by this; he/she must have a high level of insight into his subject field. Many lecturers are also learners who are working towards higher qualifications. Secondly, the lecturer is an intellectual involved with creating, manipulating and using information. He/she is a central figure in the whole process of scholarly communication because he/she is the one that imparts knowledge to the students. The third is to conduct research. There are various sources of information that could be useful for academic staff use either for the purpose of lecturing or for personal reasons. Accessing these information sources may become a herculean task if the sources are electronic-based and the user does not have the knowledge of how to use it.

According to Kirk (2004), information use involves the development of documents in a variety of forms and formats. Information utilisation can be seen as the effective use of information that is available. Maximum utilisation of information could be affected by different kinds of factors that are related to the credibility of information sources and the validity of information packages. A major consideration in getting information is the quality of the information gathered from various sources. For instance, information from one source such as the Internet can be verified by information from other sources such as published literature and books. An academic staff's work performance would be based on the number of conference papers presented, patents, contributions to chapters in textbooks, number of graduates supervised, quality of teaching as measured by students, workshops and seminars conducted and the number of publications he has contributed to his field of knowledge.

Awareness is defined as the ability of people to realise or know that something exists. It can also be seen as one's understanding of a particular subject, situation or trend. Webster's Third New International Dictionary of the English Language (1994) defined awareness as understanding a lot about what is happening around someone and the person or persons paying attention to it either positively or negatively. Awareness is a situation where someone is informed of something. It is the act of knowing about the existence of something. Awareness can also be defined as the act of having perception or wide knowledge of the existence of something. According to Schmidt (2002), awareness is an attribute of action.

Awareness means doing one thing while taking heed of other relevant occurrences as two parallel lines of action, namely: heedfully, competently, mindfully and accountably.

Heath, Vom, Hindmarsh, Svensson, Sanchez and Luff (2002) defined awareness as a feature of practical action which is systematically accomplished within the developing course of everyday activities. According to Owolabi and Atama (2007), awareness is a prerequisite to subsequent usage of open access publications unless an individual uses it unknowingly. Obuh and Bozimo (2012) stated that awareness raises consciousness and knowledge about a certain technology and its personal and social benefits. This view supported their study which established awareness as the central determinant of user attitude and behaviour towards technology.

Dulle and Minishi-Majanja (2010) stated that in the open access environment, awareness has been acknowledged as an important factor that determines usage of mode of scholarly communication. According to Fullard (2007), awareness is the state or the ability to perceive, to feel, or to be conscious of events, objects or a new trend such as new technology or system. Broadly, Fullard further stated that awareness is the state or quality of being aware of something. According to Encyclopedia Britannica (2011), awareness is the state or ability to perceive, to feel, or to be conscious of events, objects or sensory patterns. It is the state or quality of being aware of something. Knowledge is a familiarity, awareness or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering or learning. In this study, the concept of awareness is the degree to which academic staff of privateUniversities in Nigeria have heard about electronic databases and how informed they are concerning electronic databases.

Knowledge refers to a theoretical or practical understanding of a subject. It can be implicit (as with practical skill or expertise) or explicit (as with the theoretical understanding of a subject); it can be more or less formal or systematic. The quality and depth of the knowledge contentof a society, therefore, determine its strength, its prospects and its future. Shapira, Youtie, Yogeesvaran and Jaafar(2005) have defined knowledge contentas the sum of human capacities, leadership assets, experience, technology and information capital, collaborative relationships, intellectual property, information stocks and capabilities for shared learning and utilisation that can be used to create wealth and foster economic competitiveness.

The ability to store, share, analyse and retrieve knowledge through networks and communities, especially using the information and communications technology, allows communities to exploit the unique properties of knowledge to gain, retain and expand their competitive edge. Perhaps, the most important property of knowledge is its ultimate economic renewability; in the sense that the stock of knowledge, unlike traditional factors of production, is not depleted by use; rather, the value and utility of knowledge to an economy come from sharing it with others.

However, for researchers to access information in cyberspace, they must have Internet knowledge and skills; they are also required to possess a corresponding electronic technology such as computer, good Internet services and stable and regular power supply, and also have access to current information materials (Arunachalam, 2003). Knowledge is originated from the intelligence of individuals and is visible in the tasks, systems, procedures, norm and customs and is really difficult to imitate.Mohd and Zawiyah (2015) defined knowledge as a combination of experience, values, information and understanding of the individual. Knowledge can be uttered, concluded, written, drawn and compiled to form the experience and new knowledge.Doğan and Ozlem (2006) showed that there is a relationship between level of knowledge of databases and use of databases. Walmiki (2010) found that lack of knowledge to use, insufficient Internet nodes, slow bandwidth and lack of relevant information sources are the major problems of the faculty members knowledge.

The ability to use e-databases efficiently depends on basic computer skills and knowledge of what is available and how to use it. The e-databases have provided many possibilities and opportunities for providing faster and quicker access to information. Ansari and Zuberi (2010) established that a majority (78.5 percent) know about electronic resources. Lack of knowledge and networking problems are the main reasons for not using electronic resources. Knowledge of modern ICT is a factor that influences lecturers' utilisation of electronic databases for research purpose. Information and communication technologies have resulted in a need for the learning of new skills, abilities and capabilities/competencies to effectively and efficiently handle job related tasks in electronic environment. Knowledge, skill and competence with computer technology are now vital assets for all employees in institutions and organisations (Zin, Zaman, Judi, Mukti, Amin, Sahran, Ahmad, Ayob, Abdulla & Abdullah, 2000).

According to Dinev and Goo (2005), awareness raises consciousness and knowledge about a certain technology and its personal and social benefits. This view was supported by their study which established awareness as the central determinant of user attitude and behaviour towards technology. In the open access environment, awareness has also been acknowledged as an important factor determining usage of this mode of scholarly communication (Warlick & Voughan, 2006; Fullard, 2007).Popoola (2001) carried out a study on academics' awareness of library information products and services in Nigerian universities. He reported that there was a significant difference in academic staff members' awareness of available library information products and services. In addition, it was revealed that faculty members did not have sufficient knowledge of information products and services pertinent to their teaching and research activities. This shows that library information products and services remain grossly underutilised by faculty members in Nigerian universities.

Awareness and knowledge may be factors that influence academic staff utilisation of electronic databases for research purpose.*Baro et al.* (2011) studied Delta State University and

found that electronic scholarly journal databases were underutilised. Users cited lack of awareness of the existing resources as the primary constraint they had.Okelo and Magara (2008) supported this notion of underutilisation and stated that the common obstacle in the use of electronic journals in higher education institutions was lack of awareness about the resources.Yusoff, Muhammad, Zahari, Pasah and Robert (2009) identified computer self-efficacy, knowledge of search domain, computer experience and demographic characteristics as constructs that constitute individual difference.

In a study conducted on professional development, Aina (2012) identified the negative attitude of lecturers and students in the use of electronic databases for effective research output and recommended an "aggressive training programme" for staff and students as well as "self development" in ICT skills to be able to compete in any academic community."Many lecturers in Nigerian universities lack computer knowledge, an investigation conducted by our correspondent has revealed," said Olugbile (2006). Olugbile went further stating that his investigation revealed that there was a high level of information and communications technology literacy among the new breed of lecturers than old professors teaching in various Nigerian universities. He had surveyed five universities in South-western Nigeria.

In private universities, online databases are electronic resources that academic staff should be aware of and be able to utilise them effectively for research productivity.However, from the findings of Foster, Heppensta, Lazarz and Broug (2008) and Frankor and Akussah (2012), it is likely that if academics in African universities have access to relevant electronic information resources, the quality of their research will improve and this will bring corresponding increase in their research productivity or publication output at the international scene.Vakkari (2008) also reported the existence of a positive relationship between electronic information resources and productivity of academic staff but with a degree of variation from discipline to discipline. He observed that there is a correlation between accessibility and utilisation of electronic information resources with publication output of researchers.

This proposition has, therefore, posed the need to investigate the awareness, knowledge and utilisation of electronic databases by academic staff in private universities and to determine their possible effect on productivity in the present study. The postulation of possible increase in publication output of academic staff in private universities due to awarenes and use of electronic databases is corroborated by Meadows (1989) who opined that there is reasonable statistical evidence to show that access and use of electronic information resources has a significant correlation with research productivity. Brittain (1990) argued that researchers were productive more than 40 years ago without access to computers and electronic information resources, but however observed that the advent of electronic information resources has had relative positive impact on research process and productivity.

Kwadzo (2015) observed that several studies have been conducted on electronic databases in the areas of awareness, usage, access, preference, orientations and training. According to Kwadzo (2015), it is established from various findings of the studies conducted in these areas that there is sometimes a gap between awareness and usage of digital resources. It is either the users are aware of the e-resources and make use of them, or the users are aware and do not use them. The views expressed by Kwadzo were buttressed by findings from the studies conducted by Nisha and Ali (2013), who reported that their library users were aware of the availability of e-resources in Delhi University and they used it. The finding from the study conducted by Okello-Obura (2010), on the other hand, found that respondents were not aware of the existence of e-resources in Makere University, Uganda and this affected their usage of available e-resources. Manda (2005) also reported that the e-resources provided in academic and research institutions in Tanzania were not used maximally because targeted users were not aware of them due to lack of enough publicity.

Utilisation is a critical issue in ICT programme.Utilisation means use and use is the act of putting into action or services something that can be beneficial to someone. According to the *Webster's New World Dictionary of American English* (1994), use indicates putting to service of anything usually for an intended or fit purpose. Ilo (2001) stated that use means to access, install, download, copy or otherwise benefits from using the functionality of any technology. According to Kaur (2006), use is ability to explore and evaluate or to put to service any given technology.

Omotayo (2010) defined use as the ability of academics or researchers to adopt and adapt technologies to achieve a purpose or set goals. The concept of use is the ability of someone or group of persons to learn to apply knowledge to service (Rahman & Ramzy, 2004). Use is the ability of one or group of persons to do something and achieve a set purpose(s). The purpose of using ICT for education is to enhance teaching and learning through the provision of a new powerful set of tools such as the Internet with an almost inexhaustible source of information that allows students and academics have ready access to current information from different areas for the benefit of their productivity. Utilisation and skill acquisition in ICTs are integrated duos that determine, to a great extent, the reach of any aspiring professional be it librarian or teaching academics.

Information and communications technology has resulted in a need for the learning of new skills, abilities and capabilities/competencies to effectively and efficiently handle job-related tasks in electronic environment. Knowledge, skill and competence with computer technology are now vital assets for all employees in institutions and organisations (Zin et al., 2000). For instance, a study of faculty's use of electronic resources found that use was influenced by such factors as computing skills of academic (Waldman, 2003). Hence, lecturers' computing skills may have considerable influence on utilisation of scholarly electronic publications. How academic staff attain the above skills and knowledge depends on many factors such as their disciplines, academic status and ranks, ages, access (hardware and location) to electronic databases, and training. Akande

(2011) found that information retrieval skills are strong individual characteristics that could determine the use of electronic information resources by information professionals in South-west, Nigeria. Factors motivating use can be, for example, what level of importance they allocate to e-databases, how useful they have found them, and for which purposes they use e-databases.

An electronic database is a collection of information resources arranged in a systematic way to make the search easy and fast. In other words, it is a computer-based collection or listing of information, usually organised with searchable elements or fields (Encyclopedia Britannica, 2012). The most common type of library database consists of records describing articles in journals or newspapers. Retrieval from this information store is basically accomplished through a matching process. The process of matching customer's query against information in databases is the essence of computerised information retrieval.The libraries of most Nigerian universities have acquired various electronic databases for different areas of study to make up for the paucity of current information in printed form. These electronic databases are CD or online-based, some of which include HINARI for medical sciences, EBSCO host for the social sciences, TEEAL and AGORA for agricultural and life sciences.

Electronic databases collect, store, preserve, index and share the research productivity of faculty and research staff, namely their scholarly publications and teaching materials. Electronic databases are major sources of information. Increasingly, information is being published in electronic formats, there is coverage in virtually all areas of knowledge: science, engineering, mathematics, medicine, agriculture, psychology, sociology, philosophy, law, business, economics, education and more. A single database may refer to a variety of sources, including periodical articles, books, government documents, industry reports, papers at meetings, newspaper items, films, video recordings and so on (Encyclopedia Britannica, 2012). With a terminal and Internet connection, one can be seconds away from receiving valuable information on any imaginable topic. These rich and voluminous databases are stored by the information companies or agencies known as retrieval services. Once connected to them, much of the world's knowledge literally will be at fingertips (Encyclopedia Britannica, 2012).

As an information source, a database may be shared by thousands of users simultaneously, and it is available whenever the retrieval service is in operation. There is no limit to the number of times a database can be searched or the number of times an item can be displayed. Unlike a library book, databases will not likely easily deteriorate physically, nor be misplaced, stolen or vandalised. Thesesanddissertationscontaintheresearch   outputofsincereandsystematicresearch carriedoutbyresearchers,andmonitoredaswellasreviewedbypeersincludingsupervisors andotherexpertssuchasexaminers,reviewersandeditorsofjournals,whenpapersare publishedreportingtheresearchresults,andsoon.Hence,itisessentialthatsuchresearch outputisproperlyrecordedandmadeavailabletoothersinthecountryandabroad.Several digitallibrarieshavebeenbuiltthroughouttheworldand   theyprovideaccesstoelectronictheses

anddissertations.Notableexamplesof digitallibrariesofthesesanddissertationsinclude: NDLTD(http://www.ndltd.org)andNCSTRL(http://cs-tr.cs.cornell.edu/) (Gobinda, 2001).

The most effective way to provide access to electronic books/journals in university libraries is through subscription to online databases which can be accessed through the Internet. Online databases are a collection of electronic information sources (e-journals/e-books) by publishers from various fields and disciplines (Afolabi, 2007). Some of these databases are provided free of charge to libraries in developing countries by their publishers or vendors. Some of these include HINARI, http://www.healthinnternetwork.org/scipub.phpAGORA:http://www.aginnternetwork.org/en/. Othesrequire subscription fee; some of these are emerald database, http:/www.emeraldinsight.com and Blackwell synergy: http://www.blackwell-synergy.com,EBSCOHost, ScienceDirect, Springer, Wiley Online, Proquest and Sage among others. Access to these databases provides researchers and students with thousands of scholarly articles in their fields of specialisation or research (Fatoki, 2004). The individual capacity and ability to utilise and optimise information is crucial to the level and quality of the individual productivity. Opeke (1984) identified "information capacity" as an important factor in effective information utilisation. The information capacity of an individual may depend on the information environment in which the person operates. As the world economy is increasingly becoming knowledge and information based, knowledge will inevitably serve as the driving force for enhanced productivity, economic growth and performance. Information is the basic resource that adds to individual and organisations' better performance and productivity, especially those who are operating in the knowledge economy.

In spite of the value of e-databases and ensuring that it is available for use by academic staff, studies have shown that usage is not up to the level expected or is simply underutilised. Reasons most often advanced for not using the databases include lack of awareness, preference for other sources like general search engines such as Google, lack of search skill, inadequate ICT infrastructure, slow downloading time and, at times, sheer attitude of users. The manifestation of these reasons may differ from place to place or from situation to situation. Dukic (2013) and Ahmed (2013) indicated that e-databases are used more in developed countries than in developing countries basically because of poor ICT infrastructure and huge cost of such resources.

Academics are lecturers ranging from graduate assistant cadre to professorial cadre in Nigerian universities context (Okebukola, 2002). Egwunyenga (2008) defined academic staff as individuals employed in academic institutions whose responsibilities are to teach and conduct research leading to improvement in the society. Academic staff refers to lecturers or faculty of a university, not precluding librarians. The Higher Education Statistics Agency (HESA) (2009) defined academic staff as academic professionalswho are responsible for planning, directing and undertaking teaching and research within thehigher institutions of learning. They also include vice-chancellors, medical practitioners, dentists,veterinarians and other health care professionals who undertake lecturing or research activities aswell as Librarians. They are most resourceful for the

realization of the teaching, learning, research, and community services responsibility of the university.

Academic staff are solely responsible for activities such as teaching and research, teaching and scholarship or research and innovation which represent their career pathways (Kulno, 2016).In his study, Popoola (2008) referred to them as lecturers and defined them as staff in academic institutions whose duties pertain to teaching, learning, research and community services. Irrespective of the fact that these authors have different terms for academic staff, they agreed on their functions. University lecturers are today being asked to increase their research output and productivity, in order to meet the ever-changing demands of the 21st century.

Governments expect universities to become more efficient in the area of research, and have set out various strategies. While quality research is highly esteemed within the academic world, day-to-day satisfaction in teaching and service may be perceived by new lecturers with substantial teaching workloads as their (short-term) career priority and, hence, more important than (long-term) research output. Arguably, what is needed is a model which helps to interpret these multiple dimensions and constraints in a meaningful way.In academia, according to Ocholla, Mostert and Rotich (2016), research visibility and quality research have largely been seen from the vantage point of research publications, particularly academic journal articles that appear in peer-refereed journals indexed by popular/reputable international databases such as Thompson Reuters Web of Science (WoS), SCOPUS and Google Scholar to some degree.

Atthecentresofintellectualandscholarlyresearchareacademicsthatareexpectedtoshowinterestinthecreation, disseminationandpreservationofknowledge.McCabeandMcCabe(2000)notedthat academicstaffmembersinanyhigherinstitution,especiallyuniversities, areprovidedtheopportunity tofocuson an area ofinquiry,developaresearchprogrammeandlater sharetheknowledgewith studentsand othersinthe drive todevelopprofessionalskillsandimpactonafieldandsociety,asawhole.Researchprovidesagoodplatform for academicstaffmemberstobecomesuccessfulacademics.Thisisbecauseresearchdevelopsacademicknowledge andreinforces theskillsneededforeffectiveknowledge transfer.Italsoinspiresacademicstowardshardwork,fills the gapsofpreviousresearchesandcreatesanopportunityforfutureresearch.Research is required for the improvement of general knowledge; research enables the academic staff to understand their own selves, to analyse their own abilities; research also enables the academic staff to fully understand their disciplines, which is imperative for effective teaching and learning.

Okwilagwe (2001) asserted that the Academic Staff Union of Nigerian Universities (ASUU) is one of the professional associations whose activities directly influence the book publishing industry in Nigeria. This implies that lecturers are involved in the creation of knowledge such as training, research, writing, development of manuscripts, manufacturing of books and the

utilisation of knowledge created and manufactured into books by way of distribution, dissemination of information and teaching. Despite gaining some intrinsic and extrinsic rewards by engaging in teaching and service activities, the greatest rewards (such as tenure, promotion and professional standing) as put by Watty, Bellamy and Morley (2008) flow to those faculty members who publish scholarly work. Oloruntoba and Ajayi (2006) asserted that evidence of scholarly publication is presented on a three-year basis as a criterion for promotion for lecturers in the Nigerian agricultural universities. To be able to carry out a meaningful research, the researcher must be able to have access to adequate information, especially from serials in the university library.

Private universities are universities owned and funded by an indidvidual, established primarily to support and cater for teaching, learning and research activities of parent institution. Private universities are set up primarily to deliver quality education. Quality, in turn, is a function of cost-effectiveness; the capacity to apply state-of-the-art technology; accountability and transparency in expenditure and governance; a strict adherence to the requirements set out in the academic brief, master plan and strategic plan; and an uncompromisingly strict adherence to the estimates contained in the annual budget (Osagie, 2009). In the words of Isibor (2011), the positive impact private universities had on the development of education in Nigeria cannot be overemphasised. According to him, private universities have impacted positively on the education sector. In 1993, the federal government provided the law for the establishment of private universities in Nigeria; and in 1999, three pioneer private universities were established: Babcock University, Ilishan-Remo; Igbinedion University, Okada; and Madonna University, Okija. Thus, universities in Nigeria are managed by the federal and state governments, as well as individuals/organisations depending on ownership.

The universities that are managed by the federal or state governments are referred to as public universities, while those owned by individuals or organisations are private universities. Many of the private universities in Nigeria are relatively new and operate with a limited number of academic and other staff. One of the unique qualities of private universities in Nigeria is that they have very few regular staff. The general trend is that of a large number of part-time academic staff or sabbatical staff and a very few number of full-time academic staff. This feature is not peculiar to Nigeria alone. In a study carried out by Varghese (2004), it was found out that reliance on part-time academic staff is a common feature of private universities irrespective of their locations and orientations. According to the National Universities Commission (NUC), Nigeria presently has 40 federal universities, 44 state universities and 69 private universities. Globally, the top-ranking league universities are, indeed, private. Of the top 50 universities in the world in 2012, 35 were in the USA, and only one of them, University of California, Berkeley is public while the rest are private.

A number of private universities, such as Afe Babalola university , Bowen university and Babcock university, now run very good medical programmes. Recently, surgeons from the Babcock University School of Medicine successfully carried out a heart surgery in their newly constructed Tristate Heart and Cardiovascular Centre (Daily Trust, Oct. 12, 2015, p. 14), while Landmark University is blazing a commendable trail in agriculture, in its attempt to be a world-class university with an agrarian focus. Redeemer's University Centre for the Genome of Infectious Diseases (ACEGID) came first of all the 19 ACEs in west and central Africa, and it is turning out to be a novel world-class centre of excellence, having been instrumental in the diagnosis of the first case of Ebola Virus Disease (EVD) in Nigeria. ACEGID scientists also successfully sequenced the Ebola virus from Sierra Leone and have, indeed, developed a rapid response diagnostic tool that could detect Ebola virus in 15 minutes. Publications from their work are finding space in top impact journals such as Science, Nature, New England Journal of Medicine and *Cell* (Faborode, 2015).

According to Fadokun (2015), research is central to a university because it promotes teaching; secondly, it provides specialised services to the immediate community and also contributes to the growth and development of a nation. It can be reasonably assumed that research is the life blood of universities. The role of universities at present is different from what it was in the 19th century; demands of the 21st century are very much higher. Universities are considered as producers of new knowledge. Role of university academicians is not limited to teaching only. Research is becoming a vital and necessary part of modern university education. Universities are considered as a modern entrepreneur engine and generator of knowledge through research. Research publications enable academicians to earn better salaries and get better tenure. University teachers consider that research and teaching are interlinked. University professors are many times considered as researchers. Involvement in research activities always supports teaching. Participation in research polishes their thinking and creative abilities.

Writing of research papers enables university teachers to quickly understand the originality and quality of the research work. According to Cresswell (1986), teaching and research are equally important for university teachers; they must give equal attention to research and teaching as a part of their duty, because participation in research directly improves the quality of teaching. Research is required for the improvement of general knowledge; research enables the academicians to understand their own selves and to analyse their own abilities; research also enables the academicians to fully understand their disciplines, which is imperative for effective teaching. Investigation of factors which bang the research productivity of the university faculty members is of greater interest to the academicians trying to preserve their academic status and to the university management to provide a smooth and progressive climate to the academicians (Iqbal & Mahmood, 2011).

The southwestern Nigeria is one of the six geo-political zones in Nigeria. Others include South-south, South-east, North-central, North-west and North-east. South-west of Nigeria comprises the following states: Lagos, Ogun, Oyo, Osun, Ondo and Ekiti. These states are homogeneous because they share similar culture, ethnic nationality and common history. It is densely populated and houses a large percentage of the universities in Nigeria (both private and public). Presently, there are 14 public universities and 31 private universities scattered all over the zone.

Awareness and knowledge of electronic databases are vital in teaching, learning,research and community service by academic staff. They are available in universities in Nigeria courtesy of government, universities, non-governmental organisations (NGOs), external agencies /donors, and private individuals' organisations. But there is low use of scholarly electronic publications by academic staff in Nigerian universities compared to their counterparts in Britain, United States, and even in Botswana and South Africa (Olalude, 2007). Ray and Day (1998) stated that in order to utilise the growing range of electronic resource, there is need to acquire and practise the skills necessary to exploit them. These skills, according to Dittion (1990), include a knowledge of the structure of the database and the instructions which must be input into the computer by the searcher, as well as an understanding of the ways in which the instructions are linked with one another. In the light of the foregoing analysis, this study will investigate why academic staff in private universities in southwestern Nigeria have not maximised the utilisation of electronic databases to enhance research productivity.

1.2   Statement of the problem

There has been a renewed interest in the debate about quality and quantity of research output and the factors which influence the output of university lecturers at the same time. An intensification of the work of lecturers has made the decision to balance research, teaching and service activities of lecturers more difficult.The university can hardly make any impact on the society without its research productivity being well accessed and utilised by the citizens and decision makers. It has also been established that lack of awareness and limited searching skills are the main factors militating against effective use of electronic databases.Such skills are knowledge of the structure of the database, use of search terms, Boolean operators and the instructions which must be inputted into the computer by the searcher, as well as an understanding of the ways in which the instructions are linked with one another. It is evident that usage is enhanced where awareness levels are high and training is provided.

The emergence of Information and Communication Technologies (ICT) introduces opportunities like electronic databases. University lecturers are today being asked to increase their research output and productivity in order to meet the ever-changing demands of the 21st Century. Furthermore, academic staff in private universities inNigeria are reportedly lagging behind their counterparts in Western countries in terms of research productivity. Thus, private universities in

Nigeria seem to be alienated in global research and publications in spite of digital revolution in research. Part of the problems has been attributed to lack of knowledge of modern ICT infrastructural facilities in Nigeria leading to low levels of awareness and utilisation of electronic databases by academic staff in Nigerian private universities.

Most studies in Nigeria are based on public universities. Moreover, not much is known in the literature about the situation of research productivity in private universities in Nigeria. Private universities in Nigeria have invested much in ICT for information management and services, and have much more sustainable use of ICT. In terms of number, private universities outnumber the government universities in Nigeria and so it is assumed that electronic databases are more likely to be available in these universities.

However, few empirical studies have been conducted to investigate the awareness, knowledge and use of these e-databases as the predictors ofresearch productivity; hence, academic staff low awareness and knowledge pose serious challenges to utilisation of electronic databases for greater productivity. These challenges call for an empirical study to analyse the situation for in-depth understanding and appropriate measures to be taken in accessing, manipulating and evaluating electronic databases by academic staff in private universities inNigeria. Therefore, this study was aimed at investigating the awareness, knowledge and utilisation of electronic databases as predictors of research productivity of academic staff in private universities in southwestern Nigeria.

1.3   Objectives of the study

The main objective of the study was to investigateawareness, knowledge and utilisation of electronic databases as predictors of research productivity of academic staff in private universities in southwestern Nigeria. The specific objectives were to:

i.   ascertain the level of awareness of the academic staff on electronic databases available in private universities insouthwestern Nigeria;

ii.   determine the academic staff knowledge level of electronic databases available inprivate universities in southwestern Nigeria;

iii.   determine the frequency of utilisation of electronic databases by the academic staff;

iv.   ascertain the level of research productivity of academic staff in private universities in southwestern Nigeria;

v.   find out how awareness of electronic databases by the academic staff predict research productivity ;

vi.   examine the relationship between academic staff knowledge of electronic databases and research productivity;

vii.   determine how academic staff level of utilisation of electronic databases predict research productivity inprivate universities in southwestern Nigeria;

viii.   find out the level of influence of awareness and knowledge of electronic databases onresearch productivity of academic staff; and

 ix.   ascertain the extent to which knowledge and utilisation of electronic databases of academic staff influence research productivity.

1.4   Research questions

The study sought answers to the following research questions:

1. What is the level of awareness of academic staff on electronic databases?
2. What is the knowledgelevel possessed by academic staff in the use of electronic databases inprivate universities insouthwestern Nigeria?
3. What is the frequency of utilisation of electronic databases in Nigerian private universities by academic staff for research productivity?
4. What is the level of research productivity of academic staff in private universities in southwestern Nigeria?
5. What are the relative contributions of awareness and knowledge of electronic databases of academic staff to research productivity in private universities in southwestern Nigeria?

1.5   Hypotheses

The following null hypotheses were tested in the study at 0.05 level of significance:

Ho_1:   There is no significant relationship between awareness of electronic databases and research productivity of academic staff in private universities insouthwestern Nigeria.

Ho_2:   There is no significant relationship between knowledge of electronic databases and research productivity of academic staff inprivate universities in southwestern Nigeria.

Ho_3:   There is no significant relationship between utilisation of electronic databases and research productivity of academic staff in private universities insouthwestern Nigeria.

Ho_4:   There is no significant relationship on the extent to which awareness and utilisation of electronic databases by academic staff influence research productivity

Ho_5:   Awareness, knowledge and utilisation of electronic databases will not jointly influence research productivity   of academic staff in private universities insouthwestern Nigeria.

1.6   Scope of the study

The study covered academic staffinprivateuniversities insouthwestern Nigeria from the rank of assistant lecturer to professor. The study concentrated on twenty-one (21) private universities established and approved between 1999 and 2012. The twenty-one private universities were selected based on the availability of Internet access to electronic databases in the university libraries and ICT centres.

The content scope of the study includesawareness, knowledgeand utilisation of electronic databases as predictors of research productivity of academic staff. Electronic databases included in the study are: Dspace, e-prints, repositories, e-bibliographies, e-abstracts and indexes, e-catalogues

(OPAC) and e-archives which are accessible through the Internet.Research productivity includes published textbooks, chapters in books, articles in learned journals, co-authored textbooks, papers published in conference proceedings and ongoing research.Twenty-one (21) out of the twenty-seven (27) private universities established and approved between 1999 and 2012 in southwestern Nigeria were purposively covered in the study.

1.7   Significance of the study

The study is expected to raise the level of awareness of academic staff in private universities in Nigeria on the need to utiliseelectronic databases and ICTs as modern tools for global research and integration. The findings of the study will provide the platform for the integration of academic staff in Nigerian private universities into international research community and the emerging knowledge economy. The result will also help academic staff to improve onresearch productivity in private universities. It will also encourage university library management to develop information literacy instruction programmes necessary to assist academic staff in the use of electronic databases.

The study has the significance of providing information on the state of the art in terms of ICT infrastructural facilities in Nigerian private universities, and the extent of knowledge and utilisation of electronic databases by academic staff for their research in relation to their productivity. The findings of the study would make a significant contribution towards proffering solutions to the ongoing debate in the field of information science on the need for accessing and using electronic databases to ameliorate the relative low level of research and publications output of academic staff in Nigerian private universities in international journals. The study will also provide vital information to library management and the intended beneficiaries of the electronic information resources. It will also help to identify solutions to the subscription and maintenance of electronic databases. The findings will assist the private universities to map out strategies that will contribute to the critical mass of the body of knowledge and information in the use of libraries. This could lead to a paradigm shift in the information literacy, access, acquisition and use of electronic databases in private universities insouthwestern Nigeria.

1.8   Operational definition of terms

For the purpose of this study, the following terms are operationally defined:

Academic Staff: The academic staff is a scholar, a researcher, a scientist, a philosopher who holds a teaching and research position in a private university with an abiding interest in ideas, their expression with the aim of producing and disseminating knowledge.

Awareness: A conscious alertness of an electronic database of a subject for academic staff to appreciate and accept the topic or phenomenon.

Electronic database: A computer-based collection or listing of scholarly materials, organised with searchable elements or fields.A database is an organised list of facts and information. Databases

usually contain the intellectual output of sincere and systematic research carried out by researchers and monitored as well as reviewed by peers including supervisors and other experts such as examiners, reviewers and editors of journals, and frequently they hold still images, sounds and video or film clips.

Knowledge: A theoretical or practical understanding and utilisation of electronic database. It can be implicit (as with practical skill or expertise) or explicit (as with the theoretical understanding of a subject); it can be more or less formal or systematic.

Research productivity: This refers to the number and quality of published works in books, chapters in books, conference proceedings and journals (local or international).It is also referred to as quantity and quality of finished research works and publications produced by academic staff.

Private Universities: Private universities are universities not operated by governments, established primarily to support and cater for teaching, learning and research activities of parent institutions.

Utilisation/Use: The act or action or practice of usingelectronic database for productivity in order to derive some benefits or gains in the process. Making use of electronic database for productivity.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter is devoted to the review of related literature on the problem of investigation. The relevant literature on awareness, knowledge and utilisation of electronic databases as predictor of research productivity of academic staff in Nigerian private universities were reviewed under the following sub-headings:

2.2   Research productivity in the academic environment

2.3   Research productivity and the academic staff in universities in developing countries

2.4   Awareness of electronic database by academic staff

2.5   Knowledge of electronic database by academic staff

2.6   Utilisation of electronic database by academic staff

2.7   Awareness and utilisation of electronic database and research productivity of academic staff

2.8   Knowledge of electronic database and research productivity of academic staff

2.9   Theoretical framework

2.10   Conceptual modelfor the study

2.11   Appraisal of literature reviewed

2.2 Research productivity in the academic environment

The importance of research in universities is underscored by the Times Higher Education (THE) World University Rankings. According to the 2015 Times Higher Education (THE) World University Rankings, five criteria are usually considered in accrediting universities. These are teaching, research, citations, international outlook and proportion of income from industry per faculty that the university is able to attract. Research is one of the pivotal points on which university education rests. Others include teaching and community service. Research consists of a study and investigation to discover facts, insights and other elements central to the matter at issue. It is so critical and crucial that it determines the quality of any higher institution. It constitutes a key criterion for the promotion of academic staff and, as such, it is highly regarded, sought after and requires high-level participation and quality work (Akuegwu, Udida & Bassey, 2006).Research is a continue process in which we search for truth or try to reach near the reality. Research highlights new problems, collects data or information about those problems, draws conclusions and makes recommendations. A researcher carefully investigates data, analyses data, explains data and verifies the facts. Research corrects the mistakes; research adds and advances the knowledge. Knowledge gained through research is always objective and scientific. Research-based knowledge is always logical, rational and based on experience (Iqbal & Mahmood, 2011).

Research involves collecting and analysing data. Productivity results from writing, reading and publishing research reports in professional refereed journals, and displaying them on the Web

or making them known to the public through any other means.Productivity study can be descriptive, predictive or a combination of both (Gupta, Kumar & Aggarwal, 1999). In descriptive study, productivity is measured in terms of the number of published papers by academic staff and its relationship with other variables such as discipline and gender. Thus, descriptive study deals with personal attributes or demographic variables of academic staff that influence academic productivity. In predictive study, productivity measure is considered in terms of several variables such as funding, ICT infrastructure or e-resources that contribute to publication output of the academic staff.

Fresko (1997) and Gray (1998) explained the importance of research productivity in the light of its role in academic staff teaching effectiveness. They observed that academic staff teaching effectiveness depends, to a large extent, on research productivity. This is because efforts to produce quality publication output require extensive and effective utilisation of the resources in the library. This in turn exposes the academic staff to valuable information and better method of teaching. In like manner, Babbar, Prassed and Tata (2000) observed that publication output constantly keeps academic staff in touch with the latest development in their fields of study. They claimed that lecturers who are striving for a high number of publication output are more likely to be at the forefront of their disciplines. Research output, no doubt, adds to both the quality and the level of classroom experiences. Accordingly, academic staff with higher publication output are assumed to be generally more effective at instilling a critical approach to understanding complex research findings rather than a passive acceptance of facts.

Research productivity has been defined as the relationship between the outputs generated by a system and the inputs provided to create those outputs. It may also include the term "efficiency" and more importantly "effectiveness" which measure the total output or results of performance (Turnage, 1990). Print and Hattie (1997) succinctly defined research productivity as the totality of research works performed by academics in universities and related contents within a given time period. Research productivity, therefore, is a means by which academics contribute their knowledge to the existing body of knowledge. This can be in the form of journal articles, technical reports, book(s), chapter(s) in a book, patent right, supervision and training of students. Research publications in any field of specialisation provide current information for growth, progress, development and an improved society. Staff promotions even to the rank of a professor are based significantly on it irrespective of gender. Research attainment is determined by the number of published articles in refereed journals and conference proceedings of repute (Oloruntoba and Ajayi, 2006). Research production in academia is reflected in the number and quality of articles in accredited journals, books, chapters in a book, conference proceedings published by academic staff members and so on (Obikiahu, 2005; Akuegwu, Udida & Bassey, 2006; Torchich, 2008).

Broadly defined, an academic is a scholar, a researcher, a lecturer, a librarian, a scientist and a philosopher (Calder, 2003). Academics perform multiple and overlapping roles which

include teaching, knowledge production, administration, enlightenment of the public and extramural activities (Kyvik, 2000). The result and the extent of the functions of Academics in creating new knowledge and innovation are forms of research productivity. Literature has shown that research productivity plays a major role in achieving success in academics, as it relates to promotion and tenure as well as salary of the academic staff members (Kotrlik, Bartlett, Higgins & Williams, 2002; Bassey, Akuegwu, Udida & Udey, 2007). Bassey et al. (2007) noted that research productivity increases social prestige of the academic staff status to the rank of a professor irrespective of his or her gender. In addition, research provides a good platform for academic staff members to become successful academics because research activity develops academic knowledge and as well reinforces the skills for effective knowledge transfer. It also inspires academics towards hard work, fills the gaps of previous researches and creates an opportunity for future research.

In other words, quality research exposes academics to current information and sharing of research results with others (Lertputtarak, 2008). Lertputarak (2008) stated further that research productivity in any university is the totality of research performed by academic staff members within a given period of time in universities. The significance of research in academia is that it enables academics to share insights, demonstrate academic scholarship and gain recognition for creative thinking.

Research is the engine that generates new knowledge and provides ideas for national development (Ntiamoah-Baidu, 2008). The outcome of research is usually published. Ogbomo (2010) maintained that publication is essential for problem-solving, leading to dynamism in library services as a response to changing times and environment. The rating of a lecturer is usually determined by the quantity and quality of his or her publications. Publication output of every lecturer, to a great extent, determines his or her promotion based on the policy of "publish or perish". Creamer (2002) emphasised that faculty publishing productivity is often used as an index of departmental and institutional prestige and strongly associated with an individual faculty member's reputation, visibility and advancement in career. For academic librarians and lecturers working in a university environment, publications output is seen as an important psychological factor in one's contribution to knowledge (Baro, Oni & Onyenania, 2009).

Research Productivity is the combination of two words "Research" and "Productivity. "Research" means very careful, observant and vigilant study or investigation of phenomena, particularly to search and find out new particulars, information and facts. While "Productivity" means production or output produced in duration of time. Both the words mean different things to different people. With reference to university, research productivity means publications of papers in professional journals, in the shape of books or presentation of research papers in conference proceedings. To work on projects, publication of monographs, development of experimental designs, production of artistic or creative works. Research productivity is the extent to which lecturers engage in their own research and publish scientific articles in refereed journals,

conference proceedings, writing a book or a chapter, gathering and analysing original evidence, working with postgraduate students on dissertations and class projects, obtaining research grants, carrying out editorial duties, obtaining patents and licences, writing monographs, developing experimental designs, producing works of an artistic or a creative nature, engaging in public debates and commentaries (Creswell, 1986).

Research productivity in Nigerian universities cannot be studied in isolation. One of the strategies for determining research productivity is to assess the quantity of publications which researchers communicated through primary or other sources. According to Creswell (1986), Research Productivity includes research publications in professional journals and in conference proceedings, writing a book or chapter, gathering and analysing original evidence, working with postgraduate students on dissertations and class projects, obtaining research grants, carrying out editorial duties, obtaining patents and licenses, writing of monographs, developing experimental designs, producing works of an artistic or creative nature, engaging in public debates and commentaries. Oloruntoba and Ajayi (2006) observed that research publication in the university is a major or most significant indicator of academic staff productivity, and that research attainment is determined by the number of published articles in refereed journals and conference proceedings of repute.

Research productivity in academic institutions is reflected in the number and quality of articles published by the affiliated faculty. Often, departments evaluate their faculty on their "publication count" (Hadjinicola & Soteriou, 2005).Obibuaku (2005) contended that research entails a lot of effort and demands a great deal of money. If a member of the academic staff is to carry out a research with the purpose of publishing it in reputable journals outside the country, there is need to have funds and laboratory equipment required to accomplish the work. If Nigeria is going to catch up with and get into the main stream of development, her universities must be alive to their research responsibilities, because research is essentially the cutting edge of scientific, technological and economic development. According to Obibuaku, the products of science and technology, which Nigerians consume with unbridled avidity, take their root from world-class universities and research institutions.

Krishna et al. (2001) noted that articles published in reputable journals providean avenue of recognition for many researchers, since a published journal article is the first formal presentation to the scientific community of an innovation or discovery. Further, Rotten (1990) stated that a universal approach to measuring research productivity was to count the number of books, articles, technical reports, bulletins and book reviews published, as well as presentations given and grants received through reviewing curriculum vitae or other print materials.

2.2.1 Publication output of Academic Staff

Publication output is very important not only to the academic staff but also to academic institutions in general. Holden, Rosenberg and Blaker (2005) observed that the peer-reviewed

publications are the primary unit by which academic faculties and educational programmes are judged while Popoola (2008) claimed that publication output is one of the major determinants of academic staff productivity. It enables academic staff members to share insights, demonstrate academic scholarship, gain recognition for creative thinking and finally to develop a reputation for expertise in a specialty area. Publication output partly determines both local and international recognition and respect for academic staff and academic institutions generally. In any field of specialisation, it provides current information for growth, progress and improved society. Similarly, Bassey, Akwegwu, Udida and Udey (2007) observed that publication output is very significant in the lives of academic staff; hence, their promotions are almost entirely dependent on it.

From the foregoing, it is obvious that publication output not only influences the career development of academic staff but also attracts both local and global attentions to academic institutions. Such attentions could be in the form of financial grants, partnership and research collaborations. Wise and Fisher (2004) believed that the benefit to institutions could be seen from the influence the publication output has on academic programmes accreditation by professional organisations and the level of funding universities and higher other educational institutions enjoy from the government. Accordingly, Adomi and Mordi (2003) stated that publishing in foreign journals helps to project the image of not only the author but also his or her institution in other parts of the world. It has been noted that faculty publishing productivity is often used as an index of departmental and institutional prestige and is associated strongly with an individual faculty member's reputation, visibility and advancement in academic reward structure.

 In the same direction, Sabo (2005) claimed that the main criterion for ranking world-class universities is not so much the volume of teaching, students' population or community services but publication output. According to him, knowledge discovery, accumulation and dissemination are what placed the advanced countries at the top, by their control of social and human capital information, economic development and improved conditions of living.Performance of African institutions and researchers at the global level, according to Ntiamoah-Baidu (2008), is low. The finding of the research on publications output of librarians in Nigeria by Babalola and Nwalo (2013) is worrisome. The finding revealed that 103(34.9%) respondents had not published any article in professional journals in the past three years, 45(15.3%) had published one, 77(26.1%) had published two, 59(20%) had published three while only 11(3.%) had published more than three within the same period. Factors impacting on low research output from African universities, according to Ntiamoah-Baidu (2008), are shortage of senior level faculty and researchers, inadequate research facilities and inadequate financial resources to invest in research among others.

The concept of publication output has been variously defined. Zainab (2001) defined publication output as an outcome of research which appears in print and are usually embodied in research communications in the formal sense. He provided a long list of publication output to

include reports, books, journal articles, sections of books, technical reports, transactions, edited works, patents, standards and preprints. Similarly, Edem (2004) defined publication output as the number of books, chapters in books, journal articles and other related research output such as bibliographies, abstracts and indexes that are published.

In another development, the Department of Education of South African University as cited by Madye (2007) defined publication output as any research publication accepted by any evaluation body for promotion and other evaluation exercises.

Publication output has remained one of the indices for measuring academic staff success or failure in academic institutions. Ashworth (1994) sees publication output as a clear and tangible evidence of research. According to him, researchers can only claim to have carried out any meaningful scholarly research when there is a publication output. In her own view, Lindauer (1998) defines publication output as the total number of publications in journals, books, presentations in conferences, chapters in edited works, grants secured and creative works.

Igbinosa and Idiodi (2004), in their study on publishing output of academic librarians in Edo State of Nigeria, revealed that there were a total number of 130 articles published by 22 academic librarians as at 2003. Of this number, Deputy University Librarians and University Librarians accounted for 121 articles. There was an appreciable close ratio of 7:6 between local and foreign journals. Out of the publications, there was only one article in a conference proceeding, four chapters in books and four published books in library science. There was no publication by any Assistant Librarian or Librarian II (these are equivalent to Graduate Assistant and Assistant Lecturer respectively). Productivity of early career academics, as reported by Debowski (2006), could be affected to such an extent that some do not produce publishable works following their initial appointment as a faculty member due to role overload, lacking research networks and having low credibility as well as being poorly informed about university structure and culture.

On the other hand, Whitmire (2003) defined publication output as the number of journals published in refereed or non-refereed journals; the number of books published; the number of book reviews, the number of conference presentations and the number of grants obtained during the last two years by an academic staff. A similar definition is that given by Moed, Glanzel and Schmoch (2005) referring to publication output as those publications in refereed journals and scholarly books through which academics' research outcomes and ideas are circulated among peers and subsequently contribute to debates in the relevant field. Such publications, according to them, should be worthy of provoking reactions and throwing up challenges to colleagues. From the foregoing, one may define publication output as the outcome of research which may be published or not published. Publication output is very important not only to the academic staff but also to academic institutions. It has remained an invaluable yardstick for measuring academic staff productivity. On the other hand, publication output has also become a measure of academic institutions' overall performance.

However, placing too much emphasis on publication output has been criticised as it may lead to less quality work being published. Effendi and Hamber (1999) observed that obsession with publication output can become a source of stress for individual researcher and can lead to proliferation and trivial works being published in journals and books. In the same vein, Le Grange (2003) also noted that trivial works might be the outcome of the pressure to produce adequate number of publications to meet the requirements for promotion and other benefits. In spite of these criticisms, publication output has remained an invaluable yardstick for measuring academic staff productivity and, to a large extent, academic institutions' overall performance.

Publication output, which Brindly (1991) saw as the gateway for both local and international recognition for academic staff, can also be a veritable instrument for influencing policy decisions in academic institutions. According to Martin as cited in Baro, Oni and Onyenania (2009), there are two basic avenues for building academic power, which is through research function and by providing knowledge for practical applications. The New Zealand Tertiary Education Committee as cited in Tower, Desai, Carson and Cheng (2005) also understands the importance of publication output in the same manner and observed that the purpose of conducting research in tertiary education institution is two fold; to advance knowledge and understanding across all fields of human endeavour; and to ensure that learning, and especially research training at the postgraduate level, occurs in an environment characterised by rigorous and high-quality research activity.

The concept of publication output will be better appreciated when explained in the context of its importance to academic institutions, researchers and even to students. Fresko (1997) and Gray (1998) explained the importance of publication output in the light of its role in academic staff teaching effectiveness. They observed that academic staff teaching effectiveness depends, to a large extent, on research productivity. This is because efforts to produce quality publication output require extensive and effective utilisation of the resources in the library. This, in turn, exposes the academic staff to valuable information and better method of teaching.

In like manner, Babbar, Prassed and Tata (2000) observed that publication output constantly keeps academic staff in touch with the latest development in their fields of study. They claimed that lecturers who are striving for a high number of publication output are more likely to be at the forefront of their disciplines. Publication output, no doubt, adds to both the quality and the level of classroom experiences. Accordingly, academic staff with higher publication output is assumed to be generally more effective at instilling a critical approach to understanding complex research findings rather than a passive acceptance of facts.

The media of communicating publication output is also important to scholars. In this regard, Ashworth (1994) believed that where a publication output is published goes a long way towards determining its acceptance. He enumerated such media as academic journals, professional journals, books, reports, edited works and proceedings as the appropriate media for communicating

publication output. Lindauer (1998) and Whitmire (2003) who also shared this view, however, added that paper presentation in conferences is an important means of communicating an outcome of research to the public. On the contrary, Van Raan (2005) believed that students' research projects, theses and dissertations are essential components of publication output.

The lack of consensus on what constitute academic staff publication output and the appropriate media may have arisen from individual scholar's background and institutional affiliations. However, while it may be improper to regard students' research reports, theses and dissertations as publication output, the exclusion of conference papers is unacceptable. In private universities, promotions of staff are carried out in line with the Scheme of Service and Conditions set out by each Appointments and Promotion Committee of each private university which accepts conference papers as academic staff publication output. Secondly, conference papers are also expressive of knowledge development which, in essence, is to find solutions to human problems.

In view of the importance of publication output in the lives of academic staff and institutional development, academic staff have continued to seek for the right quality and quantity of electronic databases that will enhance their publication output. Apparently, the level of academic activities, including research in any tertiary institution, is directly a function of the quality and quantity of electronic databases available in the private university, their accessibility and utilisation by both staff and students.

2.3   Research productivity and the academic staff in universities in developing countries

Academic staff members conduct research and their productivity is measured in various ways. Academic institutions primarily measure research productivity based on published works, externally funded grants, and the number of citations the published works received (Middaugh, 2001). The most common productivity measures look at publications that are submitted, accepted (in press) or published. The published works could be journal articles (refereed and non-refereed), books (including edited books and textbooks), book chapters, monographs, conference papers, and research proposals written to receive external and internal grants (Middaugh, 2001).   Most African countries spend a lot of resources on research, yet only a few individuals access the results, especially the grey materials (Aina, 1995). For instance, National Universities Commission (NUC) (2011) reported that Nigeria has 129 universities, more universities than any country in sub-Saharan Africa and these universities function as a focal point for academic research in the country. This makes the volume of research output originating from academic institutions and addressing local problems in Nigeria very high.

Many of the private universities in Nigeria are relatively new and operate with a limited number of academic and other staff. One of the unique qualities of private universities in Nigeria is that they have very few regular staff. The general trend is that of a large number of part-time academic staff or sabbatical staff and a very few number of full-time academic staff. This feature is

not peculiar to Nigeria alone; in a study carried out by Varghese (2004) it was found out that reliance on part-time academic staff is a common feature of private universities irrespective of their locations and orientations. He also found out that there are occasions where private universities operate without any regular staff. Several studies have been conducted to examine the relationship between research output and the factors that support researchers in their efforts to publish. Different variables were identified that correlate with research output. Earlier studies primarily focused on analysing association of productivity with variables such as institutional size, academic rank, age, gender and so on. More recent studies incorporate psychological and other latent variables in analysing productivity and visibility.

Academic staff are expert scholars thus very knowledgeable in their subject areas, has personality attributes that promote rapport with students, they are organized, deliver well prepared lectures,humane, give out handouts and extra reading materials, fair and actively engage students in thelearning process (Kamla, 2011). The quality and quantity of academic staff available in Nigeria are too short of the need of the public universities let alone having an adequate number of academic staff. Most of the senior academic staff used for accreditation purpose is either on sabbatical or on part-time appointment because they are fully employed by the public universities which have better conditions of service for them. Those on regular appointment with private universities are young graduates who are not Ph.D holders as prescribed by NUC to be the minimum appointment in the public university where they will equally enjoy better conditions of service.

There is most likely to be a dearth of academic staff in private universities in the future if their conditions of service remain unattractive. As usersofinformationcommunity,academicstaff membersarefaced withdiverse,abundantinformationchoicesin theirpursuitofknowledgebecauseofthecomplexityofinformationsourcesandformats.This posesnewchallenges toacademicstaffmembersinevaluating andunderstanding thecontent.Theuncertain qualityandexpanding quantity ofinformation posebigchallengestoanysociety.Itisevidentfromliteraturethataccesstoinformation resourcescanimmenselyimproveacademics'researchproductivity.One of the critical factors used in determining academic productivity is researchoutput. "Apart from competence in professional duties, research and publications are compulsory indices orindicators of assessment of academic productivity of lecturers" (Joyce 2006). Information plays a central role in achieving successful work performance of academic staff.

Universities serve as the platform to enable academics to speak of their ideas and insights (Martin & Marion, 2005). Besides, they add substantial value to the information-processing environment (Mphidi & Synman, 2004). One of the common functions of knowledge management used in universities is to serve as the knowledge repositories (Bhatt, 2001; Rowley, 2000). In fact, it has always been a practice in almost all higher educational institutions to store all relevant

documents contributed by in-house resources in the knowledge repository or the database. Storing information is not new in universities, but what is new is to share the available knowledge and to allow members to utilise the information generated within the community. In addition, knowledge repository is used as a diagnostic tool to allow universities to map the existing skills and experience with current needs in order to fill any gaps or deficiencies in the institution's knowledge base (Keramati & Azadeh, 2007).

Universities can hardly make any impact on the society without their intellectual output being well accessed and utilised by the citizens and decision makers. Universities, being the major producers of primary research findings, are therefore expected to facilitate the capturing, preservation and dissemination of the intellectual output of their faculty members, students and other staff. However, there is a huge glaring divide between the explosive output of literature in the universities and the users of information for education, research and manpower development. A survey conducted by Shulenburger (2007) on strategies for disseminating the intellectual products of researchers indicated that only a minute fraction provided any kind of affirmative response. The implication of the result is that the dissemination of scholarship is left up to the individual researcher.

Okafor and Dike (2010) undertook a study entitled, "Analysis of Research Output of Academics in Science and Engineering Faculties in Southern Nigeria." The study adopted a descriptive survey approach. A stratified random sampling method was used to select 6 universities out of 13 in the area of study. The sampled population was 291 academics. Questionnaire was used as instrument for data collection. Descriptive statistics and t-test were used to analyse the data collected. The study found that the mean of publication output varied in two faculties with the Faculty of Science publishing more articles with a grand mean score of 10.02 while the Faculty of Engineering published less with a grand mean score of 7.58. It equally found out that there was a significant difference in the publication output between the academic staff in the Faculty of Science from those in the Faculty of Engineering.

It further revealed that within the science faculty, academic staff in Zoology Department published more than those in Computer Science. It also revealed that within the Faculty of Engineering, academic staff in Petroleum/Chemical Engineering turned out more publication output than others. The followings were some of the recommendations of the study: provision of research equipment and materials in areas of sciences; provision of conducive research environment in order to enable academic staff in Science and Engineering increase their publications output, equipping the library with relevant books, journals, e-journals, Internet facilities and other necessary library resources to facilitate research output of academics in Nigerian universities.

In a related research, Bassey, Akuegwu, Udida and Udey (2007) studied academic staff research productivity in universities in South-South geopolitical zone of Nigeria. An ex-post facto

design was adopted for the study. The population was 3120 academic staff in the 11 universities in the zone. Stratified random sampling technique was employed in the selection of 480 respondents made up of 280 males and 200 females. The findings of the study revealed that male academic staff in Nigerian universities engage in more research activities that their female counterparts and that married academic staff turn out more publications than their unmarried colleagues with a mean score of 17.12 research productivity for married academics against 14.05 mean score for the single academics.

The study also revealed that academic staff's area of specialisation significantly influenced their publication output. The following recommendations were made by the study: provision of enabling environment in the universities for more research-oriented activities; equal opportunities for academic staff with regard to research work; and government making more funds available to universities for the purpose of fostering research activities. The recommendations of this study are important to the present research. Also relevant to the present study is the use of t-test for data analysis, the design and the scope.

Demographic factor has been seen as a frequent factor that has been associated with librarians' research productivity. Babalola (2014) identified ten personal characteristics affecting research productivity. These include personal motivation, research training, mentors, early scholarly habit, socialisation to academic values, and network of productive colleagues, resources and sustainable uninterrupted time. The demographic factors of concern to this study here are age, gender, marital status, years of experience and educational qualification. A number of studies have been carried out on age and research productivity but the outcomes of such studies produced contradictory correlations or conflicting results. Teodorescu (2000), in a study carried out in the United States, revealed that age significantly influences research productivity.

In another study conducted by Lertputtarak (2008), the respondents agreed that the most important of these demographic factors is the age of the staff member. Okenedo's (2015) findings on the research and publication productivity of librarians in public universities in South-west, Nigeria revealed that publication productivity of librarians was high within the period of 2009-2014. When ranking the publications by types, it was discovered that articles in learned journals ranked highest followed by conference proceedings and chapters in books. The reasons for this may be as a result of the fact that journal articles are easy, less time-consuming and cheaper to publish compared to textbooks, monographs and so on. The findings were also in agreement with the finding of Ogbomo (2010), who reported that librarians most often publish in refereed and non-refereed journals in the LIS field.

Agboola (2008) reported that majority of the librarians studied publish to get promotion. Supporting this finding also is the study carried out by Ogbomo (2010). According to analysis in her study, the highest percentage are those who publish for promotion, followed by those who publish for the sake of contributing to knowledge and the least were those who publish for

pleasure. Since promotion is tantamount to increase in remunerations, librarians do not want to perish in the high academic sea and, as a result, they embark on research activities that will virtually lead them to having more publications. Majority of the librarians publish to earn a better salary than their counterparts. Bassey (2007) reported that librarians are motivated by the prospect of the better salary they will earn if they publish. Other librarians in this study agreed that the reason they publish is that they want better jobs elsewhere. This may be as a result of a delay in promotion in their present institutions. The least of the reasons why librarians publish is availability of related research works.

However, a report by Foster, Heppensta, Lazarz and Broug (2008) has revealed a low level of research productivity by academic staff in African universities; which they attributed to the poor state of accessibility and utilisation of electronic information resources. Publication output of academic staff in African universities in international journals was used as the indicator of research productivity in the study. According to Foster et. al. (2008), the low publication output from African universities is essentially linked with lack of/inadequate accessibility and utilisation of electronic information resources by academic staff in research. Frankor and Akussah (2012) affirmed that academic staff in African universities "had little access to relevant and reliable information when making decisions" on their research activities.

In Nigeria, Uzun (2002) observes a sharp decline in the research productivity of academics in terms of the number of articles published in Nigeria from 1980-1989 and 1990-1999 in an analysis of 21 core Nigerian Library and Information Science (LIS) journals indexed in Social Science Citation Index database. The same was also reported by Aina and Mabawonku (1998) when they observed that Nigeria has the highest proportion of rejected papers in Africa out of the papers submitted to the African Journal of Library, Archives and Information Science (AJLAIS) for publication. In the same vein, while reporting on low research output in Nigerian universities, The World Education News and Review (2006) stated that Nigerian academics' research output is relatively low. The report shows that out of over 70 universities in the country as at the time of the study, only 20 were found to have performed creditably in terms of academic research production. This view has been corroborated by Agarin and Nwagwu (2006) to the effect that in 2005, Nigeria was ranked next to the least of the countries in the world with the evidence of scientific research.

Literatures reveal that a few studies have been conducted into the research productivity of academic staff members in Nigeria. Nwagwu (2006) carried out a bibliometric and documentation analysis of biomedical authors' literature in Nigeria between 1967 and 2002, using Lotka's law. Lotka predicates his analysis on the power of relation. The law is generally useful for understanding the productivity patterns of an author in a bibliography (Gupta, 1987). Using this method, Nwagwu (2006) reported that only the co-author category differs from the inverse power of the law, while the other categories do not.

This accounts for why African universities are reportedly lagging behind their counterparts in advanced and industrialised countries in research productivity, as they are not "information friendly"; that is, they do not value information and invest in it as a vital resource for research. Since African universities are unable to provide equitable access to modern research tools – the information and communication technologies (ICTs); particularly reliable Internet connectivity that enhances information handling and management, their publication output is said to be impeded and, of course, is apparently and significantly not quantified in international arena. The provision of timely information in the universities due to the modern ICT infrastructure has reportedly led to maximal benefit and increased research productivity in developed nations, even though this still poses a question as to whether given an equal opportunity of accessing and using electronic information resources can lead to a comparative increase in research productivity in African universities. However, from the findings of Foster, Heppensta, Lazarz and Broug (2008) and Frankor and Akussah (2012), it is likely that if academics in African universities have access to relevant electronic information resources, the quality of their research will improve and this will bring corresponding increase in their research productivity or publication output on the international scene.

2.3.1   Measurement of research productivity

The measures for the estimation of the value of research output in universities have proved to be a controversial topic. Not only is it necessary to capture the quantity of output, which can largely vary, and given weight, but also the quality of the work must be accounted for (Abbott &Doucoliagos, 2003). Research productivity, usually measured by the number of articles published in quality journals, is a primary criterion for evaluating academics at universities, particularly with respect to merit raises and promotion and tenure decisions (Hu & Gill, 2000, 2002; Mylonopoulos&Theoharakis, 2001; Larsen & Neely, 2000). Probyn (2002) suggested that one of the strongest misconceptions in academia is the belief that all academics are roughly equal in their pursuit of research.

The reality is that academics are diverse in their research abilities, opportunities, behaviours and, most importantly, their research outputs. According to Tangen (2002), productivity has been utilised as one of the basic economic variables governing the production process and is put into operation by calculating the ratio of output quantity (the produced goods) divided by input quantity (consumed resources). The quantity of publications output of lecturers, according to Popoola (2002), could be measured by counting the number of journal articles, technical reports, papers in conference proceedings, books or chapters in books published over a period.

Majority of the methods for measuring research productivity involve measuring the number of journal articles published. Research productivity has been mentioned in several literature relating to higher education. The most pervasive issue regarding the measurement of research productivity is the confusion of quantity of publications with quality of publications, either in the

publication itself or the publication outlet (Lawrence & Green 1980). Print and Hattie (1997) highlighted the value of publications as the most direct measures of research performance and these are ranked as follows: articles in refereed journals; commercially published peer-reviewed books; major refereed conference presentations; papers in refereed conference proceedings; articles weighed by journal citation impact; chapters in commercially published peer-refereed journals; competitive peer-reviewed grants; postgraduate research degrees supervised to completion; and editor/editorial board of recognised journals. In concluding their studies, they categorise research productivity into three major groups – research grants, research students and publications over the past three years.

According to McGuire, Richman, Daly and Jorjani (1988), the debate over the most appropriate measure of productivity revolves around quantity and quality of research output. The most frequently used measure of the quantity of research productivity is a numerical publication count or the journal article count over a certain time period. Rotten (1990) remarked that a common approach to measuring research productivity is to count the number of books, articles, technical reports, bulletins and book reviews published as well as presentations given, and grants received through reviewed curriculum vitae or other print materials.

Armstrong and Hubbard (1991) studied the publication process on whether a prolific research outcome will be useful to the scientific community. They believed that published papers are not useful unless they are read and applied. Due to numerous barriers to publication, they suggested that citations may be a better measure of scholarly productivity than publication counts. The most common approach is bibliometrics, a research method using quantitative analysis to measure research output and impact within or between a given subject or discipline (Macauley, Evans, Pearson &Tregenza, 2005). MoedGlänzel and Schmoch (2004) argued that bibliometrics had been used as far back as 1917, but only gained popularity after the introduction of the Science Citation Index in 1961.

The measurements of individual and departmental research accomplishments are often based, at least in part, on the number of publications produced over a specific time period. Measuring institutional research outcomes with the use of bibliometric indicators is also an activity with a long tradition. The most commonly used measure of individual and departmental research productivity is the number of faculty publications in selected outlets such as academic journals, counts of conference papers, accredited journal publications and books (Creamer, 1998; Perry, Clifton, Menec, Struthers &Menges, 2000; Porter &Umbach, 2001).

Weinberg (1989) identified the three external criteria for measuring research output efficacy, viz: technological merit, social merit and scientific merit. He explained that technological merit measures the degree at which research advances technology, while he viewed social merit as the degree at which the research helps to achieve various social goals such as better health, better schools, better international relations; and scientific merit as the degree at which the

research illuminates the neighbouring scientific fields on which the proposed research is embedded.

2.3.2 Academic productivity in private universities inNigeria

Academic productivity, according to Kaniki (2003), is "the efficiency with which lecturers perform their multiple responsibilities of learning (product of teaching), knowledge and scholarship (the product of research and other scholarly activities) institutional, community and professional well-being (the products of shared governance, community service and professional activities)". Ensuring academic productivity is critical for survival in today's highly competitive tertiary education environment. It has the major aim of bringing about lasting improvements in the performance of faculty members.

An institutional repository is the collective intellectual output of an institution recorded in a form that can be preserved and exploited. The use of relevant and timely information is likely to enhance academic output of lecturers. A few studies have been conducted on the research productivity of academic staff members in Nigeria. Nwagwu (2006) carried out a bibliometric and documentation analysis of biomedical articles by Nigerian authors published between 1967 and 2002, using Lotka's law. He averred that only the co-author category differs from the inverse power of the law while the other categories do not. In the same vein, Chiemeke, Longe, Longe, and Shaib (2009) conducted an empirical study on the research output from Nigerian tertiary institutions and found that publication remained a yardstick for promotion in academia in Nigeria.

In private universities, productivity cannot be overemphasised because the role of any academic institution is to create knowledge. In actualising this role, knowledge is acquired, stored and used to create new knowledge and then disseminated through papers, books, talks and lecturers, writing grants, teaching and administration as output. Therefore, productivity can be measured by the quality of the output. Articles, citations, funds received, teaching feedback (examination and marking) and promotion are some of the ways by which success of productivity is being measured. This will result in the prestige or high ranking of the academic institution.

Research productivity in academic institutions is measured mostly by teaching, research publications, conferences paper presentation and so on. In universities, however, research productivity is often assessed as scholarly publications and presentations, sometimes including grants. Scholarly publications are defined as peer-reviewed articles in recognised professional journals that often function as the primary productivity measure in the granting of promotion and tenure. Scientific and technological discoveries have become an index for measuring the social, political and economic well-being of a nation (Teferra, 2003). Sabo (as cited in Chiemeke et al., 2009) had observed that knowledge accumulation places the advanced countries at the top in terms of the control of social and human capital formation for economic development and for improving living conditions.

Research productivity has been mentioned in several studies relating to higher education.Most of the methods for measuring research productivity involve measuring the number of journal articles published. The most pervasive issue regarding the measurement of research productivity is the confusion of quantity of publications with quality of publications, either in the publications themselves or in the publication outlets (Lawrence & Green, 1980). Uzun (2002) observed a sharp decline in the research productivity of academics in terms of the number of articles published in Nigeria from 1980 to 1999 in an analysis of 21 cores Nigerian LIS journals indexed in the Social Science Citation Index database. No wonder, Aina and Mabawonku (1998) observed that Nigeria had the highest proportion of rejection in Africa out of the papers submitted to the African Journal of Library, Archives and Information Science (AJLAIS) for publication. Most of the methods for measuring research productivity involve measuring the number of journal articles published.

Print and Hattie (1997) highlighted the value of publications as the most direct measure of research performance. These include: articles in refereed journals; commercially published peer-reviewed books; major refereed conference presentations; papers in refereed conference proceedings; articles weighed by journal citation impact; competitive peer-reviewed grants; postgraduate research degrees supervised to completion; and editor/editorial board of recognized journals. According to Global Research Report Africa (2010), the figures for the dominant countries in Africa's research publication between 1999 and 2008 are abysmally low. Based on Africa's output of publications indexed on Thomson Reuters Web of Science databases between 1999 and 2008, the research output of South Africa was found to be 47, 000 papers, while Egypt had 30,000 papers but Nigeria's output during the period was only 10, 000 papers in spite of having over 100 universities during the period covered, compared with South Africa that had about 20 universities.

Braimoh (1999) reviewed the role of African universities in national and continental developments. He emphasised upon the significance of research and publication efforts among university lecturers in improving their teaching and demonstrating their abilities to create and disseminate knowledge to solve societal problems. According to Over (1982), research productivity of academics slightly decreased with age. Bland and Berquist (1997) also observed that the average productivity of academic members drops with age but many senior academics remain active and that there is no significant evidence that age determines a drop in productivity. While reporting on research productivity in developing countries, Arunachallam (1992), as cited by Nwagwu (2007), opined that South Africa and Nigeria were the only two African countries whose scholarly works had dominated the developing countries with a 13% contribution to the publishing of 140,000 periodical titles listed in Ulrich's Periodicals Directory. In developed countries like United States, Teodorescu (2000) investigated faculty publication across 10 countries and discovered that age significantly influences research productivity in the United States. In a study

using a random sampling of 228 colleges and universities in the United States, Kotrlik et al. (2001) found that age does not significantly affect research productivity.

Furthermore, Aregbesola and Oguntayo (2014) pointed out the influence of motivation and frequency of access of electronic resources among faculty members in Landmark University, Nigeria. The researchers noted that motivation, convenience and academic discipline were the major predictors of use of electronic resources among this group of users. Their findings further showed that faculty members use electronic resources for academic purpose due to their unlimited access to a wide range of e-books and journals, and increased access to current materials for their research. However, the consequence of prolonged e-book reading and the need to be computer-literate were identified as the constraints to the use of electronic resources among the faculty members.

Ayofe and Lawal (2010) assessed challenges, solution and implementationtowards a secured digitized library in Nigerian private university library. They remarked that implementation of digital library in the university examined is being prevented by quite a number of challenges. They noted that irregular electricity supply, lack of air conditioned rooms where digital resources are being kept, absence of technicians and repair facilities, cases of copyright law and lack of stable information technology infrastructure.

2.4   Awareness of electronic databases by academic staff

Awareness of the databases among academics in institutions of higher education is important because the ultimate use of the databases is for academics to be aware and utilise them effectively to contribute to academic achievement in academia. In this vein, Kwafoa, Osman and Afful-Arthur (2014) examined the awareness and use of electronic databases among faculty members in University of Cape Coast. The study revealed that 92% of the faculty members were aware of the existence of online databases. Furthermore, the findings of the study revealed that faculty members were familiar with the databases. The least known database was (BIONNE) database. Similarly, Chirra and Madhusudhan (2009) also undertook a survey on the use of electronic databases by doctoral research scholars of Goa University in India. The outcome of the study was that the entire scholars100% was aware, familiar and utilise the databases extensively.

The findings of Ibegwan, Ogunyade and Ajuwon (2013) about awareness of use of electronic information resources by academic staff of two medical colleges in Nigeria, namely University of Ibadan and University of Lagos, show that 80% of the respondents who are lecturers at different levels are aware of the availability of e-resources in the two colleges of medicine. While discussing their findings in the study carried out to find out the awareness, motivation and utilisation of the agricultural information resources in the library of Federal University of Technology, Akure in Nigeria, they reported that there was low awareness of the electronic resources, particularly TEEAL and AGORA which are the two agricultural databases in the library

collection. The implication of this, according to them, is that the library has not created sufficient awareness about the electronic resources.

Eke (2006) surveyed the extent of awareness and use of ICTs by academic staff in tertiary institutions in Imo State, Nigeria; one polytechnic, one college of education and two universities were used in the survey. The findings showed that while 50% of the respondents were using the computers and the Internet, it was found that access to ICTs was the major problem against use. Emojorho and Adomi (2006) surveyed the use of information technology facilities by all categories of staff (academic staff, senior non-academic staff and junior non-academic staff) of Delta State University, Nigeria for academic and research activities. It was found that academic staff were the major users of ICTs as 92.2% of them were using computers, 13.7% of the respondents used local area networks (LANs) and a vast majority used the Internet in their academic and research activities.

The findings of Kwadzo's (2015) study were quite interesting. From a study conducted on electronic databases at the University of Ghana, Legon, Kwando found that the awareness of the databases was lower than usage. The respondents claimed they were not aware of the databases but they utilised the databases. On the contrary, a survey by Dadzie (2005), however, turned out to be the opposite of this finding. Her study at the Ashesi University College also in Ghana revealed that users were not aware of the databases subscribed to by the library on behalf of the college, though the general computer usage was high because of the state-of-the-art ICT infrastructure. The study further revealed that patronage of the databases is very low. They attributed the low utilisation to lack of awareness about the databases.

It is common knowledge that virtually all scholarly and academic journals, electronic databases, online library catalogues, grey literature and other relevant scholarly materials in all fields of knowledge are now accessible on the Internet. Information explosion via Internet connectivity has greatly increased the amount of electronic information resources available on the Web. E-information resources have enhanced accessibility, increased usability and effectiveness, and established new ways for information users in using information for more productivity in their endeavours."Many lecturers in Nigerian universities lack computer knowledge, an investigation conducted by our correspondent has revealed," said Olugbile (2006). Olugbile went further stating that his investigation revealed that there was a high level of information and communications technology literacy among the new breed of lecturers than old professors teaching in various Nigerian universities. He had surveyed five universities in the South-western Nigeria.

The libraries of most Nigerian universities have acquired various electronic databases for different areas of study to make up for the paucity of current information in printed form. These electronic databases are CD or online-based, some of which include HINARI for medical sciences, EBSCO host for the social sciences TEEAL and AGORA for agricultural and life sciences. Subair and Kgankenna (2002) defined awareness as the state of having knowledge or cognizance of

something.   It is the knowledge gained through one's own perceptions or by means of information. Awareness also means having knowledge of, appreciation of, recognition of, attention of, perception of, consciousness of, acquaintance with, enlightenment with and familiar with new trends or issues (Arunachalam, 2011). Awareness is the state of being informed of something. According to Danis (2007), concept of awareness evolves around acceptance and knowledge of existence and relevance of any technology. Furthermore, Danis stated that awareness of any system or technology goes with the activities of others which play important role in enabling effective collaboration among distributed work group members that are involved in the system.

In a study of awareness, accessibility and use of electronic databases among academic staff of Babcock University Business School, Aina (2014) showed that the level of awareness of electronic resources among the academic staff of Babcock Business School is varied. Majority of respondents were aware ofacademic Journal (69.4%), followed by JSTOR (56.5%), as well as Theses and Dissertations and Ebscohost (54.1) and (50.6) respectively. The analysis revealed that majority of respondents were not aware of Bookboon, World Bank Open Knowledge Repository and National Virtual Library with (25.9%), (32.9%) and (29.4) respectively. Findings also showed that nine out of 13 databases under consideration were averagely aware of by respondents. The findings also depict that the following electronic databases were not utilised: SAGE (27.1%), World Bank Open Knowledge Repository (36.8%), and International Research Journal and National Virtual Library with (29.4%) each. Also, a survey by Nwokedi (2011), which evaluated University of Jos lecturers' knowledge of the existence of IR and willingness to submit research works, found that majority (79%) of the respondents did not have any idea of open access IR and only 21% of the respondents claimed to be aware of the existence of IR in their institution through a seminar on IR by the library. However, when the benefits of IR were explained to them during the research, 91.6% of them agreed that IR was very useful and only 8.3% were undecided.

Many studies have been undertaken on electronic databases in the areas of awareness, usage, relevance, access, preference, orientations and training, and evaluation among others. It is found in the literature that there are sometimes a gap between awareness and usage of electronic databases. Either users are aware of the resources and use them, users are aware and do not use them, or users are unaware of them and, therefore, do not use them. Studies by Nisha and Ali (2013), Chirra and Madhusudhan (2009) and Atakan, Atilgan, Bayran and Arslantekin (2008) found that clients were aware of and used the e-databases available to them. Chirra and Madhusudhan (2009), in a survey on the use of electronic journals by doctoral research scholars of Goa University, India, revealed that all (100%) the respondents were aware of the e-journals of the Consortium and accessed them. Wairrach and Tahira (2009) investigated the opportunities and challenges facing LIS professionals in Pakistan in the use of higher education commission (HEC) national digital library services. They reported that lack of ICT training,lack of awareness, user

orientation, bandwidth and infrastructure, technical support and security as well as new field of research are some of the impediments of digital library usage.

Studies by Okello-Obura (2010), Ercegovac (2009), Manda (2005) and Dadzie (2005), on the other hand, found that the respondents were not aware of most of the e-resources provided for them in their respective institutions and, therefore, affected their usage. Manda (2005), for example, reported that PERI resources provided in academic and research institutions in Tanzania were underutilised because potential users were not aware of the resources due to lack of publicity. Studies by Asemi and Riyahiniya (2007) and Baro et al. (2011) argued that though awareness may lead to usage of a database, this is not always the case. It could happen that users' awareness level may be higher than usage. They reported that awareness level of their respondents about online resources was more than usage. For example, Baro et al. found that while 23.2% were aware of Medline database, only 17% used it. Also, while 60.8% were aware of HINARI, only 38.8% used it. Swain (2010) pointed out that awareness could be influenced by the interest and exposure that a user has in the database.

Utulu and Bolarinwa (2009) reported results from a study on the level of awareness of open access initiatives and adoption by academics from the Universities of Ibadan and Lagos in Nigeria. The two universities were selected on sampling basis. Using the survey, 250 copies of questionnaire were distributed to the respondents selected from a population of 2,224 academic staff from the study areas. Categorising the two main research disciplines, 58.3% of the respondents belonged to sciences and 40% were from humanities disciplines while the remaining 1.7% of the respondents did not indicate their research disciplines. The key finding from this study is that the academics' awareness of open access initiatives with respect to open access e-resources did not tally with the actual usage of information resources from such open access outlets by these respondents as users and as well readers of scholarly publications. The research findings indicate that, on average, the awareness of open access by the academics was above 50% while the actual usage of different OA outlets to access and disseminate scholarly content by these respondents was less than 50%. Another pertinent finding from this study was that the respondents were found to prefer usage of open access journals to other open access outlets. This is considered as a sign for the increasing acceptance of open access journals as a formal media for the dissemination of scholarly content even in the developing world.

A study by Swan and Brown (2004), established that subject repositories or archives were the most known types to the respondents who claimed to be aware of open access repositories than open access journals. A similar study by Sanchez and Fernandez (2009) revealed different knowledge of open access-related initiatives among scholars from a group of health researchers in Cuba. According to this study, while 44.8 percent of the respondents (N = 160) were reported to be aware of open access journals, only 20.7 percent knew about open access repositories. Dulle (2008) found in his study that the most common known terms or initiatives by researchers were open

access journals (59.6 percent respondents) and open access repositories (22.8 percent respondents). Very few respondents knew about specific open access initiatives such as Budapest open access initiative (none), Open access movement, (8.6 percent) and the OAIster.org (2.9 percent) respectively.

On the contrary, Papin and Dawe (2006) in their study found that only 24 percent of their respondents were aware of open access. Pelizzari (2003) reported for the Social Sciences sector at Brescia University in Italy that 44 percent were aware of OA initiatives with 4 percent actually depositing a paper in an archive. However,Swan and Brown (2004), in the Joint Information Systems Committee/Open Society Institute (JISC/OSI) study of journal authors from mainly developed countries (U.S. and Europe), reported that about two-thirds (67 percent) of those who never published in an OA journal were aware of OA concepts. Bondaryk (1998) affirmed that awareness, willingness to use and ability to use are important basics for the adoption of any learning tool in higher education. Speaking in the same vein, Webb (1998) stated that the main and only mission for an academic library to exist is to make the necessary technology available and utilise them to provide an efficient service to the users.

Ani and Bassey (2009) reported that academic/research information was the basic information need by academic staff in a survey of three Nigerian universities, and that both the Internet (15.2%) and the university library (15.5%) were comparatively used by the academic staff in satisfying their information needs in research.Nwalo (2003) asserted that current awareness services are provided to ensure maximum exposure and utilisation of the library's information resources. Harle (2010) in his study on access to research in east and southern African universities reported that awareness of the materials available among staff and students was low to the extent that a large number of participants in the study seemed unaware of the range of resources provided to them, with many naming titles which they thought were unavailable but were in fact available via their libraries.

Azubogu and Madu (2007) undertook a survey that explored the use of ICTs among the teaching staff of Imo State University, Owerri, Nigeria; with the results indicating high usage of ICTs. In a survey by Nwokedi (2007) to assess the use of the Internet in research activities by academic staff in Medical Sciences in the University of Jos, Nigeria, it was revealed that majority of the respondents regularly used the Internet in their research. Conversely, a survey by Popoola (2008) has shown a low level of access and use of electronic information sources by social scientists in 13 Nigerian universities. It was found that the use of the Internet with a mean score of 1.96 was comparatively low than obtained with printed resources – journals (4.98) and textbooks (3.94) by the respondents. However, another study of the pattern of access of the Internet resources on teaching and research in Obafemi Awolowo University, Nigeria by Nwezeh (2010) revealed high level of accessibility and utilisation of ICTs, particularly the Internet by the academic staff, as 73.9% of them made regular use of the Internet in their research activities.

Kwafoa, Osman and Afful-Arthur (2014) investigated the faculty's awareness and usage of online academic databases in order to determine the benefits they associate with electronic resources and the challenges they encounter in accessing electronic resources. A questionnaire was used to collect the data among 100 surveyed respondents. The Statistical Package for the Social Sciences (SPSS) software was used to analyse the data collected. The descriptive statistics established that faculty members depended highly on online electronic resources not only for the purposes of research, but also to support their teaching. Their relative advantage has also been shown to be more helpful, especially to faculty and distance learners who may have limited access to library resources in traditional formats.

Kwadzo (2015) assessed the use of electronic databases by graduate students of Departments of Geography and Development Resource, and Information Studies, University of Ghana. The study found that students were very much aware of the databases available to them as indicated by 96.9% and 93.8% indicated to use them. More importantly, digital library has made progress in the direction of becoming universal knowledge repositories, making the wealth of materials contained in the libraries, museums and archives and any knowledge repositories worldwide available. The evolution of the system has made scientists to envision new ways on how information can be acquired, organised, communicated and exploited.

Ukonu,Wogu and Obayi (2012) surveyed the challenges confronting faculty at the University of Nigeria, Nsukka in the use of digital library of the institution. Three hundred and ninety (390) respondents and the entire seven members of staff of the digital library in UNN were interviewed. They reported that awareness of the meaning of multi-media is low among faculty members of the institution. The study also indicated that library is being run as an Internet café as against the real purpose of a digital/virtual library which should offer virtual access to other libraries and access to e-books among other crucial services. Among other issues raised by the study are slow networks, difficulty in reaching needed e-books due to no subscription and inability to access online books.

From the foregoing, it is interesting to note and observe that, on the average, there seems to be an increasing trend towards the awareness of electronic databases in African (Nigerian) universities by academic staff within the past one decade. However, the present study intends to further contribute to this debate in order to bridge the observed awareness gap of e-databases not only in Nigerian universities but also in Africa.

2.5 Knowledge of electronic database by academic staff

The knowledge of the technologies of information and communication is especially important because it refers to an area of the knowledge generated by users. The ability to use e-databases efficiently depends on basic computer skills, knowledge of what is available and how to use it, and ability to define a research problem.Electronic databases are vital in modern-day research in the universities. Electronic databases are usually collections of e-journals and e-books

in order to provide a cost-effective access to these e-resources to the end-users (academic staff). The contents of each database vary from discipline to discipline. Examples are MEDLINE, ScienceDirect, AGORA, HINARI, Lexis-Nexis and EBSCHO HOST among others. The e-databases have provided many possibilities and opportunities for providing faster and quicker access to information. Ansari and Zuberi (2010) established that a large majority (78.5 percent) know about electronic resources. Lack of knowledge and networking problems are the main reasons for not using electronic resources. Their findingsalso indicated that a majority of the academics have computer skills that facilitate the use of digital libraries, although a majority of them have little knowledge of these resources, which is not a positive aspect of the findings.

The significant amount of academics (90%) believe electronic resources are reliable. However, majority of the respondents consider only those electronic resources produced by authentic organisations or publishers as being reliable. Supporting the above view, Zin et al. (2000) observed that "knowledge, skill and competence with computer technology are now an asset for those entering the competitive employment market. Every aspect of life from education, leisure and work environment to social interaction is being influenced by computer technology". The advancement in science and technology such as information and communications technology (ICT) has generated a need for a new brand of literacy. ICT has resulted in a need for the learning of new human skills, abilities and capabilities/ competencies to handle effectively job-related tasks such as research.

Knowledge of modern ICT is a factor that influences lecturers' utilisation of electronic databases for research purpose. Information and communication technologies have resulted in a need for the learning of new skills, abilities and capabilities/competencies to effectively and efficiently handle job-related tasks in electronic environment. Knowledge, skill and competence with computer technology are now vital assets for all employees in institutions and organisations (Zin et al., 2000). For instance, a study of faculty's use of electronic resources found that use was influenced by such factors as computing skills of academics (Waldman, 2003). Hence, lecturers' computing skills may have considerable influence on utilisation of electronic databases. Ray and Day (1998) citing Dutton (1990) clarified that the skills required to maximise the potential of electronic information resources are much greater than those required for searching printed sources.

Such skills are knowledge of the structure of the database and the instructions which must be inputted into the computer by the searcher, as well as an understanding of the ways in which the instructions are linked with one another.Nwokedi (2011) evaluated the University of Jos lecturers' knowledge of the existence of IR and willingness to submit research works, and found that majority (79%) of the respondents did not have any idea of Open Access IR and only 21% of the respondents claimed to be aware of the existence of IR in their institution. The study by Fayemi (2013) at five federal universities combined interviews and survey to assess the knowledge of lecturers and librarians about basic matters of copyright related with common academic practices.

Again, the findings reflected numerous errors and misconceptions, although the librarians were found to be a step ahead of the lecturers.

Users have accepted the new electronic environment, but need better information literacy support (Harle, 2010). It is evident that usage is enhanced where awareness levels are high and training is provided. A survey by Gathoni (2011), on monitoring and evaluation of electronic resources in academic and research institutions in Kenya, highlighted that the majority of the respondents, who were trained, indicated that training had enhanced their access and retrieval skills, and they were thus able to use the electronic resources with much ease. According to Brown, Lund and Walton (2007), on the use of electronic journals by academic staff and researchers at Loughborough University, there was modest need for training in managing electronic journal references and locating full text from references. However, a study of online searching of scientific information in science and technology libraries of Delhi revealed that a sizeable number of users (almost 60%) are facing numerous problems while browsing electronic information, such as lack of knowledge about the resources, lack of trained staff and inadequate terminals (Ali, 2005).

The study by Fayemi (2013) at five federal universities combined interviews and survey to assess the knowledge of lecturers and librarians about basic matters of copyright related with common academic practices. The findings reflected numerous errors and misconceptions, although the librarians were found to be a step ahead of the lecturers.A similarly poor level of knowledge was demonstrated by academic librarians in universities in the United States of America (U.S.A). In a study by Smith (2001) among librarians in the health science faculties of two U.S. universities (University of Alabama at Birmingham and the University of Texas Health Science Centre at San Antonio), he used a web survey to determine the librarians' level of knowledge regarding copyright law and fair use. The results made manifest a lack of familiarity with these matters on the part of the professors, along with a noteworthy degree of agreement among respondents from both universities to almost all of the questions.

A study in UniversitiTeknologi Mara (UITM) Terengganu, Malaysia by Iqbal, Rasli and Heng (2011) investigated factors influencing academic staff's knowledge-sharing intentions towards innovation and university's capabilities development. Theories of planned behaviour, social cognitive theory and theory of reasoned action among others were employed to determine academic staff's knowledge-sharing behaviour. Structural equation model (SEM) was also used to test data collected through a semi structured questionnaire.

The results obtained from the analysis of the data confirmed that the intensity of knowledge sharing behaviours has a positive influence on the innovative capabilities of the university. Ali and Satyanarayana (2002), in their study, pointed out that Boolean operators followed by Truncation and Wild cards are the most popular search service techniques used among science and technology users in Delhi. They suggested that user training is essential for the better use of online resources, and so libraries should take necessary steps in this regard. A study conducted at NDRC, India

revealed that end-users prefer to search information by subject and key words. Natural language search is preferred more than controlled vocabulary. The scholars suggested that end-users should be taught about the varied search strategies and the use of controlled vocabulary to make the online process easier (Devi, 1996).

Another survey conducted by Jansen (2000) revealed that people felt hesitant in using advanced search techniques and, indeed, that failure rates are high when they are used. Ming (2000) argued that keyword searching on the Internet needs to be supplemented by other search options, including word stemming, wild card, proximity search, Boolean logic and term expression. A smaller number of users from Patras University, Greece accessed electronic journals on a daily or weekly basis and they adopted a relatively unsophisticated, simplistic approach to searching and limited use of Boolean operators or other commands (Monopoli et al., 2002).Rhoe, Oboh and Shelton (2010) also indicated that among faculty and staff of some Nigerian universities, only a few accessed AGORA database while none used HINARI, INASP, OARE JSTOR or EBSCOHOST to access agricultural information due to difficulties accessing journal articles. Furthermore, Shabi, Shabi, Akewukereke and Udofia, (2011) investigated Internet medical databases (PubMed and HINARI) utilisation and found that ease of finding the needed information is a major determinant of their usage.

A number of studies have identified barriers encountered by academics when using electronic resources. A lack of computers (Siddique & Ali, 2010; Gathoni et al., 2011), limitations of connectivity, searching skills, unfriendly interfaces, lack of time and limited publicity (Gathoni, et al., 2011; Borrego, et al., 2007; Chirra & Madhusudhan, 2009; Raza & Upahyay, 2006; Agaba, 2005). A study by Sangowusi (2003) on problems of accessing scholarly publications by Nigerian scientists revealed that only 32.8 percent of the respondents owned personal computers. Search and discovery skills were often under-developed. Many researchers were unable to find and download what they need and many were not aware of the resources available to them. On the problems affecting the utilisation of electronic resources, Ibrahim (2004) identified lack of user skills, lack of technical support and insufficient spare parts as some of the major constraints to effective utilisation of electronic resources in many libraries in the developing countries including Nigeria. As a result, many of the e-resources in these libraries are under-utilised or not utilised at all. Again, due to poor technical support and insufficient spare parts, some of the ICT equipment easily break down and are hardly replaced.

The study by Tabassum, Roknuzzaman and Islam (2015) examined factors influencing digital library system usage at East West University in Bangladesh. Questionnaire-based survey and observational methods were used to gather information from 129 users of the institution's digital library system. The findings suggested that factors such as user's knowledge of search domain, quality of digital library content, system characteristics and service quality are the facilitating conditions influencing usage of digital library. The study, however, recommended that

technical, physical and intellectual infrastructure needed to be developed upon in order to facilitate the use of digital library in the university library. More user-friendly interface was further recommended to keep users familiar with the terminology, consistent interface style and clear navigation flow.

Knowledge of electronic databases with the Internet requires a further set of skills that motivates the users (academic staff). These include establishing and maintaining a stable Internet connection, learning how to navigate on the Internet, and persistently searching it for relevant information. Neelamegham (1981) opined that accessibility to information is one of the prerequisites of information utilisation. Thus, the purpose of use, users' characteristics, and the environment in which information is being used; medium of communication, infrastructural facilities and equipment, cost of acquisition and time determines utilisation of information (Neelamegham 1981; Ughegbu, 2002). It is believed that availability and accessibility of information would encourage utilisation irrespective of the medium in which it is presented, although Popoola (2001) believed that information availability does not mean accessibility and utilisation.

However, availability of information could be a motivating factor for users to change their perception in seeking for information once such information can adequately satisfy their needs. Compeau and Higgins (1995) distinguished between component skills such as formatting disks and booting up the computer and behaviours individuals can accomplish with such skills, such as using software to analyse data. Thus, Internet knowledge focuses on what a person believes he or she can accomplish online now or in the future. Nahl (1996, 1997) stated that this does not refer to a person's skill at performing specific Internet-related tasks, such as writing Hypertext Marked up Language (HTML), using a browser or transferring files. Instead, it assesses a person's judgement of his or her ability to apply Internet skills in a more encompassing mode, such as finding information or troubleshooting search problems and end up with tangible result.

Aruleba, Akomolafe and Afeni (2016) evaluated information retrieval methods used in a digital library environment. Associated problems such as presence of irrelevant information as well as difficulty in retrieving the relevant ones were investigated. The study reported that searching full text is more likely to provide users with relevant articles than searching only abstracts. In a similar vein, Ahmad and Panda (2013) conducted a survey on the use of digital resources by the faculty members of Indian institutes in Dubai International Academic City (DIAC). Thirty (30) faculty members representing ten from each of the institutes studied were selected. The overall result of the study indicated that the use of digital library resources in the institutes studied was reasonably high. The study confirmed that lack of knowledge and use of digital libraries specific resources and concluded that the resources could still be better put into use among the faculty members.

Ansari and Zuberi (2010) explored the University of Karachi's faculty's use of digital library resources and reported that electronic resources were used for research and for preparation

of lesson notes among lecturers. Their findingsalso indicated that a majority of the academics have computer skills that facilitate the use of digital libraries, although a majority of them have little knowledge of these resources, which is not a positive aspect of the findings. Lack of knowledge and absence of facilities were also reported as the main reasons for not using electronic resources.

Henderson and MacEwan (1997) opined that electronic information resources have exploded in popularity and use. They can and do enable innovation in teaching, and they increase timeliness in research as well as increase discovery and creation of new fields of enquiry. Users often prefer increased access to databases of online-refereed journals and to the Web which provides information that is up to date, international in scope, and sometimes not available elsewhere and these resources are easier to access and search. Availability of e-resources has changed what users actually read and use. They now tend to use only what is easily accessible. Access to e-resources has decreased the time spent searching for information. Access is only as good as the resources that can be afforded (e.g., the number of computers and existence of network systems), the ability to work with the tools, and the network infrastructure that supports rapid and convenient connections.

The ability to use e-databases efficiently depends on basic computer skills, knowledge of what is available and how to use it, and ability to define a research problem (Forsman, 1998). Neelemaghan (1981) agreed that access to information is not equal to all classes, and the capacity for effective use of it differs markedly among individuals, classes and nations. According to Harris (1992), access to information carries with it the implication that access can be widened or restricted. This implies action either on the part of the person seeking access or on the part of a person authorised to allow access. Jenkins (1997) and Brockman, Neumann, Palmer, Tidlilne and Tonyia (2001) noted that remote access to library catalogues, finding aids and use of technology makes the research process easier, faster and more up-to-date, and thus increased research productivity.Subair and Kgankenna (2002) undertook a study that explored the level of use of information technology and electronic information resources among researchers in Botswana College of Agriculture (BCA) and Department of Agricultural Research (DAR) in Botswana. It was found that the researchers placed a high value on information technology and electronic resources in agricultural research, but they have insufficient knowledge and skills to appreciably access and use these resources.

Abdullahi and Haruna (2008) found that lack of basic knowledge of ICT is the second major constraint after the problem of erratic power supply with the use of ICT in the university libraries in Adamawa State, Nigeria. This was corroborated by Saka and Abdulrahman (2008), although the percentage that represents the hypothesis is low as compared to other constraints such as erratic power supply, networking, availability of equipment and so on.The Internet is an instrument or vehicle used for searching, retrieving and disseminating information across the globe (Adeogun, 2003). The changing phases of the world order is characterised by an abundance of

information found through global computer networks which can be accessed at any time, and at any particular location no matter the distance as long as the necessary infrastructure, devices and the skills to retrieve information are in place and functioning. In other words, for effective use of technologies, the users require positive attitudes to grasp the new technology.

Information and communications technology skills, as postulated by Ahmad (2008), are basic computer operation skills such as database creation and management; file management; the Internet operations; and knowledge and use of electronic resources. There are factors that may influence ICT skills development. These, according to Majid and Abazova (2008), are discipline, academic status and rank, age, access (hardware and location) to electronic resources, training, motivating factors such as level of importance allocated to e-resources, how useful they are, and the purpose for which e-resources are used. Specific ICT skills propounded by ATC 215 are word processing using Microsoft Word, Excel and PowerPoint, E-mail, Internet search, social media, texting using mobile technology and data knowledge of computer hardware. Other ICT skills are cross operating software understanding and protection against viruses. Similarly, ATC 215 further categorised the 21st century information technology skills into four broad categories. These are ways of thinking (creativity, critical thinking, problem solving, decision making and collaboration); ways of working (communication and collaboration); tools for working (information and communication technology, and information literacy); and skills for living in the world (citizenship, life and career, and personal and social responsibility). These skills become necessary in the effective use of electronic databases.

Therefore, knowledge can powerfully influence the level of utilisation of electronic databases by academic staff for research. The Internet constitutes a source of information and literature of academic work in all fields of knowledge that enables users to effectively identify valuable materials for research advancement. Obviously, it is an engine room of knowledge that constitutes current literature in different fields of interest. Moreover, it broadens users' knowledge, supports baseline data searching and produces results that make research interesting. The ability to use the electronic databases by academics is likely to be influenced by their knowledge. That is, academics' perception about their capacity to work effectively using the databases will stand as a factor in determining their patterns of information usage. As a result of these influences, knowledge of electronic databases is a strong determinant or predictor of the level of utilisation of electronic databases for research productivity.

2.6   Utilisation of electronic databases by academic staff

On the utilisation of the databases, early studies in the developed world indicated that the majority of the faculty members were not very interested in using the e-resources (Budd & Connway, 1997; Bancroft, Croft, Speth & Phillips, 1998). Later studies nevertheless revealed that faculty members were gradually shifting their interests to the e-resources and are moving away from the print-based access. Smith (2003) examined the use of electronic journals in the University

of Georgia, US. She found that faculty members were more active users of electronic format. In the same way, Bar-IIan, Peritz and Wolman (2003), in a study they conducted in Israeli universities, found that academic staff were heavy users of both electronic databases and electronic journals. In the same vein, Ahmed and Amjed (2014) found from a survey they conducted in two Pakistani universities that the online databases were frequently used by research scholars. Other studies conducted by Gray (2011) and Bar-IIan and Fink (2005) found that faculty members were making fullest possible use of the databases and preferred the electronic format to the print. However, In Ghana, Kwafoa, Imoro and Afful-Arthur concluded from their study that patronage of the databases was low in spite of their awareness and familiarity with the databases. Thus, utilisation was lower than awareness. The study revealed low patronage. However, they found that the most frequently used databases were Emerald, Ebsco, JSTOR, Hinari, Sage Journals and AJOL. The least used databases were Taylor & Francis and BIOONE respectively. A study on databases conducted over a period of two years by Atakan (2007) showed that a greater number of faculty members utilise the databases frequently. In addition, the databases that were mostly used were ScienceDirect and Emerald.

The usefulness of databases to the academic staff is very important. This is because the ultimate goal of the databases is to meet the research needs of academic staff and enhance their scholarly endeavours. Kwafoa et al. (2014) found that an overwhelming percentage 87% of faculty members admitted that the databases were highly beneficial. In the same vein, Kwadzo (2015) also reported in his study that 53.1% indicated that the databases were suitable to their information needs. Other investigations byHamza, Ahmad, Aliyu, Yunusa, Maryam and Abbas (2015) also brought to light that faculty members of Faculty of Sciences at Umaru Musa Yar'adua University in Nigeria found the databases useful for the information they provide except few of them who had different views.

Various reasons could be assigned to users' unwillingness to patronise electronic databases, though some users would continue to use them despite the challenges they may experience. The prevalence of these challenges has been reported by researchers in several studies. Hamza et al. (2015), Chirra and Madhusudhan (2009), Gupta (2011), Raza and Upadhay (2006) and Ahmed (2013) reported that lack of training, slow download speed and slow Internet connectivity were the problems inhibiting users use of the electronic databases. A survey conducted by Naushad (2005) also found that faculty members experienced difficulties like slow downloading of articles and lack of knowledge of the online databases. Touching on the same issue, Kwadzo (2015) identified online access problems and difficulty in searching as some of the challenges they encounter on the use of the databases. On the same issue, Ahmed (2013) also noted that online databases are widely used by faculty members; however, they were not satisfied with the resources due to challenges such as slow downloading speed, limited access to back issues and inability to access the resources

from their homes. The fact is that electronic databases have become a valuable resource of information to teaching and research, and faculty cannot ignore it.

Hamza et al. (2015) investigated the use of electronic databases by the academics of Umaru Musa Yar'adua University, Katsina. African Journals Online (AJOL) and Directory of Open Access Journal (DOAJ) and Bio Med Central were the most commonly used databases among the academics of Umaru Musa Yar'adua University. Lack of information literacy skill and slow Internet connectivity in the institution were major difficulties faced by them while using online databases. Another study conducted by Khan and Sudhrama (2015) found that majority of the Faculty of Arts in Aligarh Muslim University (AMU) and University of Delhi (DU) access the online databases for retrieving information mainly for teaching and research purposes and Annual Review and JSTOR are the most widely used databases by them. It is also found that user groups of DU are more aware and use online databases more than users of AMU. In a study, Uma (2014) indicated that faculty and research scholars of University of Hyderabad and Osmania University Hyderabad, India are familiar with the use of online databases and ScienceDirect was most commonly used online database in both universities.

Ani and Edem (2012) reported a survey conducted to explore the extent of access and use of online databases by academic staff in the University of Calabar, Nigeria. The findings of the study indicated that although a vast majority (96.3%) of the academic staff are accessing and using relevant online databases in teaching / research, the frequency of usage is rather low, as most (48.1%) respondents used these databases "occasionally." From the findings, their major factors that impede access and use of online databases by academics in the university include non-subscription to relevant online databases by the university library, cost of access and usage, lack of access to relevant databases and inadequate Internet skills for proper access in the university library. Analysing and evaluating the use of electronic resources, a study conducted by Bhatt and Rana (2011) revealed that the utilisation of electronic resources by academics improved their professional competencies.

Vahidabeegam and Mahjabeenaydeed (2013) found that research scholars are frequently using online data for their research purpose, even though they are not fully satisfied with online database. A case study conducted by Navin and Hirak (2008) showed that usage of online databases is very poor when compared to online journals and it pointed out that they need training to use online journals and databases. A case study at Institute of Technology - University of Moratuwa (TTUM) conducted by Punchihewa and Sumana Jayasuriya (2008) showed that online journals have relatively low use when compared to print journals. This study identified that lack of computer and Internet facilities, lack of awareness to electronic resources, ineffective communication channels, and irrelevancy of articles in the databases and inefficient support of the library are problems faced while using online databases.

Isah (2010) examined electronic library use by academic staff at the University of Ilorin, Nigeria. One hundred (100) respondents were randomly selected out of the total population of 812 academic staff of the institution. The study established that though quite a number of academic staffs are fully aware of the electronic library resources. Majority of the respondents (70%) still claimed not to be visiting e-library to access e- resources, while, only 36.6% indicated that they access the e-library resources from their offices. Slow internet access, power outage and non availability of e-resources relevant to their information needs were indicated as hindrances to the use of e-library.Amin, Kaliyadan and Al Wadani (2011) revealed that eighty six percent oflecturers and 71% of students at King Faisal University use online databases in the previous year. Frequency of use for literature searching among faculty was 6 -10 times/year (23.1%), and 10 times /year (53.8%). For students, 38.9% had used online databases 1-5 times in the last year and 18.6% used it 5-10 times

In a study that aimed to explore the impact of the Internet use on research by academic staff in Ladoke Akintola University of Technology in Nigeria, Ajala et al. (2010) found that a vast majority of the respondents were using the Internet regularly in research. According to Egberongbe (2011), the emergence of ICT has tremendously affected how information is accessed and used by academic staff in Nigerian universities. In her study, she surveyed the use of electronic resources by academic staff at the University of Lagos, Nigeria. It was found that 90.6% of the respondents accessed and used electronic journals, WWW (53.6%), e-books (28.6%) and online databases (17.86%) among other resources. Of the available online databases in the university library, ScienceDirect was popularly used by the respondents (53.57%), EBSCOHOST (28.6%) and AGORA (21.43%). User training was recommended as a major tool to facilitate and optimise the use of electronic resources.

Awogbami (1992) and Mosuro (1996) reported that CD-ROM has been used in many academic libraries in Nigeria to enable libraries that do not have access to the Internet search in-house CD-ROM versions of international online databases. The value and use of information resources, particularly e-resources, have increased with the time. Therefore, the use of e-resources by users, especially by the academic staff members of academic institutions, generally depends on the skills of each user to locate discrete knowledge elements. Bayugo and Agbeko (2007) reported on a survey of convenient access to, and use of, electronic databases (CDROM and online) with full-text journals and their effects on information-seeking behaviour of health sciences academics at the College of Health Sciences of the University of Ghana.

The survey documented academics' preferences of print and electronic resources, and the specific databases and full-text journals. The results showed that academics were unaware of the two full-text journal databases (HINARI and PERI) available at the library.Hence, they resorted to PUBMED as their source of access to full-text articles. They concluded that most academics now prefer using electronic access to information (CD-ROM/online) to traditional print indexes and abstracts. Herring (2002) studied the use of electronic information resources in 12 scholarly peer-

reviewed electronic journals. The journals represented areas of active interdisciplinary research available through the Web without subscription or registration. A total of 175 articles published from 1999 to 2000 were examined. The 175 articles had a total of 4289 unique references. Over 55% of the articles (97) cited electronic resources. In addition, 658 citations, or 16% of the total, were to electronic resources. The 97 articles that referenced electronic information resources had a total of 2584 unique citations, 26.5% of which were to electronic information resources.

Ehikhamenor (2003) conducted a study to investigate the use and non-use of the Internet facilities by academic scientists in ten Nigerian universities. The findings of the study indicated that, "the scientists are still heavily dependent on printed sources", although about 50.4 per cent of them "have access to, and are using, the internet" in their teaching/research. The study attributed non-use of the internet "to the problems of accessibility, process and productivity of the scientists in Nigerian Universities. He observed that very few of the scientists agreed that the use of the Internet had greatly facilitated their research work. Isah (2010) revealed that in the past, numerous efforts have been made to launch African universities into the digital society with different initiatives by both national and international bodies. These initiatives provide the required networked infrastructure that enable African universities to have access to free or heavily discounted journals and databases through programmes like AGORA, elFL, HINARI and PERI.

Thereareevidenceswhichindicatethatacademicsarereadilyusingonlinedatabasesmadeavailabl ebytheir librariesinNigerianuniversities(Ehikhamenor,2003;Aduwa-Ogiegbaen&Stella,2005;Adogbeji&Toyo,2006; Ureigho,Oroke&Ekruyota,2006;Osunade,Phillips&Ojo2007;Popoola,2008). Also,thereis anempirical factthatfrequentInternetuseforinformationretrievalandcommunicationis associatedwiththeincreasein publicationproductionbyacademicswithrespecttobothqualityandquantity(Ergart,2002;Kyrillidon,20 01;Lin, 2001;Zhang,2001;Nawe,2005;Barjak,2006; Brown,Found&McConnell,2007;Rowlands&Olivieri,2006; ResearchInformationNetwork,2011;2009).

Sinh and Nhung (2012) argued that users' behaviour will influence the usage of e-databases, and that factors that influence usage of databases are the purpose of usage, preferred types of materials, ways to learn the search, search techniques, and difficulties and expectations in using the databases. Thus, in their survey on searching behaviour of users of six online databases subscribed to by the Central Vietnam National University in 2011, it was reported that 87.5% requested for full-text articles as compared with 12.5% who requested for abstracts. Similar finding was reported by Coombs (2005) that full-text databases were preferred to other databases. Even among the full-text databases, some are preferred to others because of the information architecture of the sites.

Egberongbe (2011) found out in a study of use and impact of electronic resources that the majority of scholars were not trained in the use of e-resources. The study revealed that the level of IT skills among lecturers, scholars and library staff was low. Informal methods of training, one on one consultations, were used to inform users. However, a report by Forster, Heppensta, Lazarz and Baroug (2008) has revealed a low level of access and use of electronic resources by academic staff in Nigerian universities which is affecting their research and teaching. Bashorunh, Tunji and Adisa (2011) noted that the reasons for low frequency in utilising electronic resources by academics include lack of time, lack of electronic resources awareness, power outage, ineffective communication channels, slow network and inadequate information and communications technology (ICT), lack of training, and lack of adequate power supply.

Madukoma, Onuoha and Ikonne (2014) investigated the electronic resources information use behaviour of faculty of law members at Babcock University in Ogun State. The study established, among others, that faculty members use electronic resources available in the library. They were, however, faced with difficulties such as power fluctuations, inadequateorientation/training, and lack of awareness of electronic resources in the library. They recommended that the library administration should provide modern technologies; create adequate awareness of electronic resources acquired in the library; provide orientation/training of faculty members; and create easiness in navigating and searching databases.

2.6.1 Conceptual meaning of electronic database

An electronic database is a collection of data arranged in a systematic way to make the search easy and fast. It is a computer-based collection or listing of information, usually organised with searchable elements or fields. The most common type of library database consists of records describing articles in journals or newspapers. Electronic database is a regularly updated file of digitised information (bibliographic records, abstracts, full-text documents, directory entries, images, statistics, etc.) related to a specific subject or field, consisting of records of uniform format organised for ease and speed of search and retrieval and managed with the aid of database management system software.

Electronic databases include products such as periodical indexes and abstracts, directories, encyclopaedias, dictionaries and other reference work. Electronic databases provide search facilities to users by subject, type, and title or key word with Boolean logic. An online database search is simply bibliographic research which is performed by an individual scholar or librarian using a computer and the Internet. By connecting with a database research service, millions of records from thousands of publications in hundreds of databases can be searched for material on a topic. An online database is a database accessible from a network, including from the Internet. It differs from a local database held in an individual computer or its attached storage, such as a CD. Content is created by the database producer (i.e., Thomson Reuters), which usually publishes a print version (Biological Abstracts) and leases the content to one or more database vendors

(EBSCO, OVID, etc.) that provide electronic access to the data after it has been converted to machine-readable form, usually online via the Internet or on CD-ROM, using preferably proprietary search software.

Most journal databases are updated on a regular basis as new issues are published and indexed. Most databases used in universities are catalogues, periodical indexes, abstracting services, and full-text reference resources leased annually under licensing agreements that limit access to registered borrowers and university staff. There are many types of electronic databases in the world today, including statistical databases, image databases and others. These databases are becoming very significant these days as they are more up-to-date, and can be accessed anywhere, crossing all geographical boundaries. Electronic databases are very valuable and useful for time-saving while conducting Research and Development, and teaching and extension activities.

Researchers and scholars in the academic sector in Nigeria had had their turn of difficult times in accessing published research information in the form of journals, mainly because of budgetary constraints. But through the benevolent initiatives from institutions such as International Network for the Availability of Scientific Publications (INASP) and Programme for the Enhancement of Research Information (PERI) in the 1990s and early 2000s, Nigerian researchers and scholars in academia have had access to or benefited from CD-ROM facilities and e-databases. In addition to the INASP and PERI initiatives, Nigerian universities, both public and private, and research institutions have implemented a consortia purchasing of electronic databases in order to reduce the unit cost for these resources. This has offered access to a wide range of resources for a number of university libraries in Nigeria. Users need not visit the library to benefit from the usage of these resources since they can access the resources from anywhere home, office and so on.

In spite of the value of e-databases and ensuring that it is available for use by academic staff, studies have shown that usage is not up to the level expected or is simply underutilised. Reasons most often advanced for not using the databases include lack of awareness, preference for other sources like general search engines such as Google, lack of search skill, lack of adequate ICT infrastructure, bad downloading time and, at times, sheer attitude of users. The manifestation of these reasons may differ from place to place or from situation to situation. Dukic (2013) and Ahmed (2013), for example, indicated that usage of e-databases is more pronounced in developed countries than in developing countries basically because of poor ICT infrastructure and huge cost of such resources. Anaraki and Babalhavaeji (2013) also pointed out that where students are not aware of the existence of e-databases, they tend to use general search engines to meet their information needs.

Universities provide e-databases to their users to support teaching, learning, research and development. The literature shows that e-databases with their retrieval from network capabilities have been gradually replacing some of their printed counterparts. In order to utilise the growing range of e-databases, academic staff must acquire and practise the skills necessary to exploit them.

Even though a majority of the academic community uses electronic information sources for their academic-related work, a large number of social scientists are aware of the e-resources (such as e-books, e-journals, e-encyclopaedias, e-theses, CD-ROM databases, e-mail, Internet and the OPAC) and they use these e-resources for their research work (Kumar & Kumar, 2010). Singh and Gautam (2004) focused on access to information through online or CD-ROM media that has remained a challenging effort for both the user and the intermediary. It further revealed that many of the electronic databases are being created and made available today in India for use both within the country and outside. Swain (2010) in his study reveals that the majority of students are aware of EBSCO and Emerald Management Xtra.

Calvert (2000) has evaluated the impact of electronic journals and aggregate databases on interlibrary loan activities. His findings revealed that results are not significant enough to justify searching, borrowing requests in aggregate databases and changing current interlibrary loan procedure for searching request before ordering. Mercado (1999) has suggested in his study that the library users know how to search and learn critical thinking skills for databases and keyword selection. Bates' (1996) study found that most humanities scholars made little use of online databases. Scholars appreciated that the databases covered many topics, but complained about the difficulty of their search language and the lack of availability of desired resources. It is interesting to note that scholars regarded themselves as experts in their subjects and did not expect to learn anything new from the databases. Oladele (2006) conducted a study on information seeking and utilisation among agricultural researchers in Nigeria. The study demonstrates the level of awareness and the use of agricultural information sources including e-databases among researchers in Nigeria.

The empirical findings have described the researchers' scenario as that of being informational deprived, when researchers do not have enough information to take a wise decision as against the researcher's being as information overloaded, which implies a situation where researchers have too much information and are unable to pick out the right bits from e-databases. Specific training needs of the researchers to seek for appropriate information from different sources should also be identified as a skill-gap. Singh and Satija (2007) in their survey on information-seeking behaviour of agricultural scientists with particular reference to their information-seeking strategies indicates that agricultural scientists seek diverse information from varied sources including e-databases for different purposes, thus making it difficult to maintain support for the idea of a single mode of formal information channel.

Bar-Ilan, Peritz and Wolman (2003) conducted an extensive survey of the senior academic staff of the Israeli universities on their use of electronic journals and databases. The major findings were that the use of electronic sources is already widespread among the respondents and more than 50 percent found the electronic services indispensable. Disparities were found between the usage patterns in the different disciplines. Coombs (2005) conducted a case study under the title lesson

learnt from analysing library database usage data, and found that library through examining the usage data discovered that users were utilising particular types of resources, from specific physical location and accessing these resources from websites. Falk (2005) reviewed library online databases of the United States Library and described the availability of online databases for library patrons in the USA. His major findings were: online databases are now widely available to library patrons in the United States, and many patrons can tap into these databases from their own computers; larger libraries and library systems can afford to offer their own choice of databases to their patrons through their Internet web sites. This study provides valuable information to the information professionals.

2.7   Awareness and utilisation of electronic database and research productivity

A recent study by Mahmood, Hartley and Rowley (2011) affirmed the importance of access to information to facilitate and support efficient and productive research. Grace, Kenny and Qiang (2004) explained that as the society is witnessing the digital age, information has become a vital resource for socio-economic development and research is a panacea for effective socio-economic development in the society. Velmurugan and Velmurugan (2014) submitted that awareness is a key determinant to consumers' adoption behaviour. The level of awareness, to a great extent, might determine the level of usage. According to Dinev and Hu (2005), awareness raises consciousness and knowledge about a certain technology, its personal and social benefits. This is corroborated by their study in Florida that ascertained awareness as the central determinant of user attitude and behaviour towards technology.

Obuh and Bozimo (2012) examined awareness and use of open access scholarly publications by Library and Information Science (LIS) lecturers in Southern universities in Nigeria and found that LIS lecturers had a high level of awareness which led to high tendency of use of open access scholarly publications. The high level of awareness about institutional repositories by LIS lecturers suggests that their discipline had influenced them and it also shows that awareness is a vital determinant of use. Arbizah's (2010) survey, explored faculty awareness, attitude and opinion of open access IR with 131 academics from 14 faculties, institutes and centres at the University of Malaysia, 47 (35.9%), one-third of the participants, were aware that the university was initiating IR; the rest 84 (64.1%), two-thirds were not aware. The participants that were aware viewed IR as a platform where anyone can access materials without paying any subscription. In addition, a greater number of academics have limited knowledge of IR and consequently this limits its use.

Olasore and Adekunmisi (2015) examined the use of library electronic information resources by academic staff in OlabisiOnabanjo University, Nigeria. They selected a total of 150 lecturers randomly from four faculties in the university. The findings revealed that majority of the sampled lecturers made use of library electronic information resources. The findings also revealed that the electronic information resources were available at the library and used them majorly for

research and lecture purposes. It was also found that the lecturers preferred the electronic resources for research because they are less expensive, more informative, more useful and time saving. However, factors such as power outage, slowness in downloading, low bandwidth and lack of computer systems were reported to be hindering effective use of the library electronic information resources.

ICTs and electronic resources are sources of information in modern electronic information environment. Notably and relatively, ICTs and electronic resources provide quick access to information than the conventional print resources. According to Grace, Kenny and Qiang (2004), academic staff (or universities) without access to information and communications technologies/electronic resources will find themselves unable to compete in the international research arena or for the journal space for their publications. They counselled by saying that there is need for meaningful investments in ICTs towards efficiency and improved quality of research in the society, especially in African countries. Adeniji (2014) analysed the availability and utilisation of digital resources by lecturers of Ibogun campus of the Olabisi Onabanjo University Ogun State, Nigeria. He selected 30 lecturers in the nominal roll from seven departments of the institution. The study reported that majority of the respondents for the study claimed that constraints preventing them from the use of digital information resources are recurrent power outages, limited bandwidth, insufficient funds, inability to download information, and facilities and network challenges.

Besides access to information, information use is postulated to be a correlate of academic productivity. In their study, King and Griffiths (1989) used "reading" as a measure of information use among academic staff. Reading is the ability to extract information from a variety of information sources/resources, particularly the books/journals to primarily accomplish a research activity by academic staff in the university. King and Griffiths (1989) found that readings of books/journals have had perceived positive effects on productivity of academic staff. They proposed that academics who read a great deal are likely to also have high academic productivity. Since reading is an indicator of information use, they upheld the proposition that information use is a correlate of productivity; that is, a high level of information use among academic staff is likely to have positive effects on productivity.

With the emergence of digital age, and the ICTs, information now exists in electronic format (referred to as electronic resource); access to information is thus relatively enhanced as information is efficiently make available to academic staff through computers, the Internet and related electronic networks and is readily used in research activity. Thus, in the electronic information environment, ICTs and electronic resources now provide the platforms for access and use of information in research process. Also, ICTs and electronic resources are perceived to have a positive effect on academic productivity. Hence, within the past two decades, scholars have been conducting users' studies to determine the relationship between accessibility and utilisation of electronic information resources and academic productivity. Observably, most of these studies only

dealt with perceived effects of ICTs/electronic resources on productivity, and only a few actually explored quantitatively relationship between access and use of electronic resources and productivity. Apparently, the present study is aimed at filling this knowledge gap in Nigerian setting, in both perspectives, especially with the apparent digital divide on the continent.

A review by Costa and Meadows (2000) showed that there is a positive association between the use of the Internet by scholars and their productivity. They carried out a survey to investigate the relationship between access and use of IT and productivity among the social scientists in Brazil. It was found that the responses regarding the impact of IT on productivity confirmed the existence of a positive link (Costa & Meadows, 2000). Furthermore, the study revealed that productivity of social scientists increases with access and use of IT, as the respondents (economists and sociologists) in the survey agreed that there is a positive impact of IT use on productivity.

Dulle et al. (2002) corroborated the postulation that improved access and use of ICT infrastructures and electronic resources will enhance academic productivity. And the World Bank (2002) affirmed that high investment in IT enhances productivity, which implies that any Nigerian university that invests in ICTs/electronic resources and encourages their access and use by the academic staff will derive increase in research productivity for its investment. Heterick (2002), in a survey to explore the extent of access and use of electronic resources among academic staff in American universities, also sought to determine the perceived effects of electronic resources on research productivity.

The findings of the study revealed that there was high perception of the impact of electronic resources on productivity among the academic staff. In view of this, Heterick (2002) concluded that electronic resources have become an invaluable tool for research in the U.S. A survey of professors in the University of Idaho (UI), Moscow, Russia by Jankowska (2004) in Russia on the impact of the use of ICTs on research showed that "85% of the respondents were of the view that the use of ICTs has increased their productivity in research and teaching". This is in line with a research survey by Ellis and Oldman (2005) who found that the use of the Internet resources is making a positive impact on academic research in the universities around the world including the UK.

In Africa, Mgobozi and Ocholla (2002) embarked on a comparative study to investigate the relationship between the use of electronic journals by academic staff at the University of Natal and the University of Zululand in South Africa and their research publications. According to the study, when asked to respond if there is a correlation between the use of electronic journals and research publications, 29% of the respondents indicated a correlation whereas 13% indicated no correlation and others were undecided (Mgobozi & Ocholla, 2002). The authors, however, noted that it was difficult to measure the effects of access and use of electronic journals on publication outputs quantitatively, as the respondents were only asked to give their perceptions on the survey.

Badu and Markwei (2005) opined that the Internet is a worthwhile tool for scholarly research, and it is, therefore, expected to have a significant impact on research among academic staff in African universities. Their survey indicated that 64.2% of the academics at the University of Ghana affirmed that the Internet use has a positive effect on productivity. When asked to rank the usefulness of the Internet in research, it was reported that 69.4% of the respondents said it was "useful". Ojedokun and Owolabi (2003) conducted a study to assess the effects of the use of the Internet in research by academic staff at the University of Botswana. The results showed that the respondents perceived that the Internet is a very useful tool in research and positively impacts on productivity.

In Nigeria, Fatoki (2004) observed that with the emergence of the digital age, Nigerian academic staff are relying on electronic resources to support their research in the universities. According to Fatoki (2004), the Internet was first connected in Nigeria in the 1990s, and since then, many organisations and educational institutions have been connecting to the global network just to improve their corporate or academic productivity. In a study by Ani and Biao (2005), using academic scientists in four Nigerian universities as respondents, it was found that 30.4% of the respondents answered in affirmative manner that increase in productivity is one of the effects of access and usage of modern ICT facilities and electronic resources on scientific research in Nigeria. Popoola (2008) in a survey of social scientists in 13 Nigerian universities similarly opined that the access and use of electronic information sources by academic staff could lead to increase in productivity. In a survey of 1,061 researchers in Africa by Foster et al. (2008), a low level of access and use of electronic resources by the respondents was reported. The paper concluded and postulated that increase in access and use of electronic resources would have a positive effect on productivity of Africa in international journals.

A study by Nwezeh (2010) to assess the impact and usefulness of the Internet on research by academic staff at the Obafemi Awolowo University, Nigeria indicated that almost all the respondents perceived that the Internet is a useful tool for their research activities. A similar finding was obtained by Ajala et al. (2010) where most academics at the Ladoke Akintola University of Technology in Nigeria perceived the Internet as impacting positively on their research work. Ehikhamenor (2003) investigated the use of the Internet resources in Nigeria with the aim of determining if it has "any positive influence" on the productivity of academic scientists in ten Nigerian universities. His review of literature had shown that the use of electronic journals has been positively associated with scientific productivity. But the findings of the study revealed that very few of the scientists agreed that the use of the Internet had greatly facilitated their research work or that the Internet facilitated higher productivity (Ehikhamenor, 2003).

In specific terms, 89.3% of the respondents strongly disagreed that the use of the Internet resources facilitates higher productivity. The study concluded that the extent to which access and use of electronic resources on the Internet meets the research needs of scientists in Nigerian

universities is minimal, and its contribution to increase in productivity is, therefore, not significant. Ehikhamenor's (2003b) survey findings also revealed that the use of electronic information resources contributed little in improving the research productivity of academic scientists in Nigerian universities.

Apparently, with possible positive effects of electronic information resources on the research process in developed countries (Brittain, 1990; Foster et al., 2010; Heterick, 2002; Jankowska, 2004; Mahmood, Hartley & Rowley, 2011; Meadows, 1989; Vakkari, 2008) and a few contradicting research findings in Nigeria – Africa (Ehikhamenor, 2003a, 2003b; Jimba & Atinmo, 2000; Tiamiyu, 2000), Duque et al. (2010) raised a poser if the research process – that is "process of knowledge production is similar in the developed and developing worlds?" In other words, if it is substantiated that there is a positive effect due to accessibility and utilisation of electronic information resources on research productivity in the developed countries, would the recent postulation by Foster et al. (2008) hold for African researchers/academic staff, and Nigeria in particular that access to electronic information resources will increase the level of their publications in international journals and, therefore, increase their productivity?

Hence, in the light of the research reports by Kirlidog and Bayir (2007) and Foster et al. (2008) on the tendency for a positive correlation of accessibility and utilisation of electronic information resources by African researchers with productivity and in relation with other contradicting research reports in Nigeria (Ehikhamenor, 2003a, 2003b; Jimba & Atinmo, 2000; Tiamiyu, 2000), there is need for further investigation in this pulsating subject matter in the context of Information Science. And this will help in elucidating the enigma that characterises diverse postulations/theories on the possible relationship between access and use of electronic information resources and research productivity in the field.

However, in view of the limited use of perception of the likely effect of electronic resources on productivity measure, Mgobozi and Ocholla (2002) suggested the need for researchers to embark on quantitative study of the effects of e-resources on productivity where direct data on the two variables (accessibility and utilisation of e-resources and productivity) are captured and analysed or correlated, in order to find out if quantitative relationship exists or not. Al-Shanbari and Meadows (1995) studied computer usage by academic scientists and engineers in universities in Saudi Arabia that aimed to determine its impact on productivity. It was found that computers were often used in research in the Saudis and that there was a correlation between publications and computer usage among the academic scientists in the survey.

In other words, most productive scientists and engineers were more involved in the use of computers than the less productive ones. It was also reported that ease of access to information via electronic networks would accelerate research process of academic scientists and engineers in Saudi Arabia. From the results of the study, the authors argued that the use of ICTs – computing facilities, CD-ROMs, the Internet and electronic networks – improves access to information which

corresponding increases academic productivity. Thus, productive academic scientists and engineers are reportedly more likely to use ICT facilities and electronic resources than the less productive ones.

A study by Kirlidog and Bayir (2007) linked academic productivity with access and use of electronic resources. They attributed the low level of scientific publications in developing countries in relation to that of developed and industrialised nations essentially to inadequate access to scientific literature as typified by modern electronic resources. According to their study of the productivity of Turkish universities between 1998 and 2003 using the Web of Science, the results showed comparative annual increase in quantity of publications originating from all Turkish institutions, but the increase was remarkable after 2000. Kirlidog and Bayir (2007) concluded that "the sharp increase after 2000 is clearly related to access to scientific journals through ANKOS"; they argued that many academics in Turkish universities are benefiting extensively from electronic databases provided by ANKOS (Anatolian University Libraries Consortium).

ANKOS is responsible for the massive provision of electronic databases to all universities in Turkey; its mission is to provide researchers and students in all Turkish universities with access to electronic resources and global network in a cost-effective manner. The observed correlation of academic productivity of academic staff with accessibility and utilisation of electronic resources, according to Kirlidog and Bayir (2007), is responsible for the connection of all universities in Turkey to the Internet with free access by Ulakbim (Turkish National Academic Network and Information Centre). The aim is to promote increase in research productivity of the academic staff in the Turkish universities.

Tenopir et al. (2008) in a survey of access and use of electronic resources in three countries (Finland, the U.S. and Australia) found that productivity was correlated with the use of e-resources in Finland and the U.S., but no correlation between the use of e-resources and productivity was found in Australia. In specific terms, "in Finland, the total number of scholarly items published was significantly associated with the number of electronic article readings" by the academic staff (Tenopir et al., 2008:); and similar result was found in the U.S. The paper concluded that the correlation between use of electronic resources and academic productivity may vary from country to country. In view of this, the puzzle that concerns the present study is, will the situation in Nigerian universities be similar or different as reported in the review of literature above?

From the above, although literatures on quantitative studies employed to determine the influence of accessibility and utilisation of electronic database on research productivity are sparse, contribution in Nigerian setting on the subject matter seems to be relatively insignificant. Hence, the present study is aimed at filling this knowledge gap in Nigerian setting with special reference to private universities.

2.8 Knowledge of electronic database and research productivity of academic staff

The ability to use electronic databases (e-databases) efficiently forresearch productivity depends on basic computer skills and knowledge of what is available and how to use it. The e-databases have provided many possibilities and opportunities for providing faster and quicker access to information. Ansari and Zuberi (2010) established that a large majority (78.5 percent) know about electronic resources. Lack of knowledge and networking problems are the main reasons for not using electronic resources. Knowledge of modern ICT is a factor that influences lecturers' utilisation of electronic databases for research purpose. Information and communication technologies have resulted in a need for the learning of new skills, abilities and capabilities/competencies to effectively and efficiently handle job related tasks in electronic environment. Knowledge, skill and competence with computer technology are now vital assets for all employees in institutions and organisations (Zin, Zaman, Judi, Mukti, Amin, Sahran, Ahmad, Ayob, Abdulla & Abdullah, 2000).

Bouten (2008) opines that lecturers may not use an information system if there is absence of infrastructure like computer and internet facilities, technical know-how (literacy) as well as skills needed for information resources retrieval. In the same view Lakan (2008) analysed the availability and utilisation of digital information resources by agricultural staff of Ahmadu Bello University, Zaria. A survey method of 209 respondents was used for the study. The study found that all the libraries and information centres subscribe to various CD-ROMs and online databases. The study reported that a high percentage of the respondents could be said to be using digital library resources frequently. They noted that up to date knowledge in their field of interest and current awareness are some of the reasons for utilisation of digital library resources.

Renwick (2005) investigated the Faculty of Medical Sciences' (FMS) knowledge and use of electronic resources provided by the Medical Sciences Library (MSL) at the University of the West Indies and the need for training in the use of these resources. The researcher found that academic staff were quite knowledgeable about the electronic resources available at MSL in general, averaging 80%. However, they were not as well informed about MSL specific resources. In addition, reasons for using electronic resources were for communication (86%), professional (79%), personal research (77%), supporting teaching activities (74%) and administrative purposes (41%), and the reason given the least often was recreation (38%). Furthermore, the researcher found that resources available on the Internet were used more by respondents: Internet/Web (79%), email (67%), search engines (59%), online databases (67%), PubMed (65%) and online journals (45%). Overall, the study showed that the electronic resources were used to support academic staff's research (83%), teaching (65%) and clinical practice (37%).

. In Nigeria, a study by Oduwole and Akpati (2003) which investigated the accessibility and retrieval of electronic information at the University of Agriculture, Abeokuta, discovered that the

usage of electronic information cut across large number of the academics in the university community and to a great extent, the respondents indicated they were satisfied with their search output and its enhancement of their productivity.

In respect of this, Tyagi (2011), Ahmed (2004), and Ranganadham (2012) explained that accessibility and use of e-resources are only good as the quality of e-resources that can be afforded and the existence of facilities to aid its use, which was explained to include, the number of computers and existence of network system. Also the possession of necessary basic computer skills, knowledge of how to use it and ability to define research problem which will facilitate the use of correct search terms to access desired information. The acquisition of necessary computer and information searching skills is confirmed as one of the ways the use of e- resources can be facilitated.

Akpoghome and Idiegbeyan (2010) discussed the role of digital libraries in law research. The authors conducted an on- the- spot assessment of the digital facilities present at some Nigerian universities (Benson Idahosa University, University of Jos, NnamdiAzikwe University and University of Benin) offering law as a course. The findings revealed that the referenced university law libraries subscribed to various law databases such as Lexis Nexis, Legalpedia, Compulaw and Ebscohost among others. The authors further reported that users of these libraries which include the law lecturers, students and practitioners attested to the fact that the availability of the databases have made their research work easier and more interesting.Iwehabura (2009) remarked that electronic information resources are used for academic and research activities in higher educational institutions. He further noted that internet resources such as online databases, e-books, and e-journals were among the EIRs used for academic purposes. Other resources reported to be used were CD-ROMs, databases and online public access catalogue (OPAC) which offer students, staff and other researchers opportunities to retrieve information from diverse sources.

In Malaysian UniversitiTeknologi, Iqbal, Rasli, Heng, et. al. (2011) investigated factors influencing academic staff's knowledge sharing intentions towards innovation and university's capabilities development. Theories of planned behaviour, social cognitive theory as well as theory of reasoned action among others were employed to determine academic staff knowledge sharing behaviour .Structural equation model (SEM) was also used to test data collected through a semi structured questionnaire. The results obtained from the analysis of the data confirmed that the intensity of knowledge sharing behaviours has a positive influence on the innovative capabilities of the university. Thanuskodi (2011), in his work titled, "User awareness and use of online journals among education faculty members in Coimbatore District", established that presently we are living in knowledge society where information as the key item and progress in this age depends largely on frontline knowledge which have improved the academic career of the faculty and the problems that are faced in using electronic resources.

Madhusadhan (2008) carried out a study on the use of electronic resources by different users including research scholars from research organisations, he reported that seventy eight percent (78%) UGC-Internet-e-journals have created high dependency value on their research work. In Nigeria Oduwole and Akpati (2003) were reported to have investigated the accessibility and retrieval for use of electronic information at the University of Agricultural Library, Abeokuta. According to their findings, the use of electronic resources cut across all members of the university community and they were satisfied with their search outputs.

Madhusdhan (2010) conducted a study to find out how electronic resources were utilised by researchers of Kurukshetra University in India. From his findings he reported that electronic resources have become an integral part of the information needs of research scholars of the university. Further still, he also discovered that e-resources has become a good substitute for conventional resources and google was reported as the most widely used search engine by researchers.

2.8.1 Usability of research productivity and electronic databases

In order to produce high-quality research, researchers must have access to research data including large specialised data and to the products of research including scholarly publications. In the United Kingdom, the Science and Innovation Investment Framework 2004 - 2014 argued that access to research knowledge is an important component of the innovation system. The research community "must have ready and efficient access to information of all kinds such as experimental data sets, journals, theses, conference proceedings and patents" all of which are considered "the life blood of research and innovation." Furthermore, it noted that much information is now available in digital form and, therefore, asserted, among other things, that the research community needs a system that is easily navigable (CAPL, 2005).

Usability of an information system refers to its capabilities that enable the user to use it easily and effectively to perform a set of specified tasks within a specified environment. In other words, the usability of information system/services means how easily it can be used to get access to the required information. Some issues are involved in the usability of information systems and such issues include interface, design, retrieval mechanism and interoperability where multiple channels and/or databases are involved (Chowdhury, 2005). Several studies Abels Liebscher & Denmen(1996); Liew Foo & Chennupati(2000); Rusch-Feja & Siebeky(1999); Diaz(2003); Davis & Price(2006) and Woodward et al (1998) conducted on usability of information system found, among other things, that accessibility is contingent on usability. Palfrey (2010) pointed out that many faculty members and students report that the vast majority of their needs are met by online databases such as LexiNexis, Westlaw and Heinonline. He therefore proposed that the law library of the 21st century will not be entirely digital but a hybrid of yesterday print-based world and tomorrow's digital world. New works will continue to be created and stored in digital formats as a default.

Research productivity includes research publications in professional journals and in conference proceedings, writing a book or chapter, gathering and analysing original evidence, working with postgraduate students on dissertations and class projects, obtaining research grants, carrying out editorial duties, obtaining patents and licences, writing monographs, developing experimental designs, producing works of an artistic or creative nature, and engaging in public debates and commentaries. Thus, one of the strategies for determining research productivity is to assess the quantity of publications which researchers communicate through primary or other sources. Reporting on research productivity in developing countries, Arunachallam (1999), cited by Nwagwu (2007), opined that South Africa and Nigeria are the only two African countries whose works dominate developing countries.

Electronic databases have become a major element of library collections around the globe. They are regarded as essential for learning, teaching and research activities. Samaravickrama and Samaradiwakara (2014) opine that their impact on academic libraries and scholars is noteworthy and unprecedented. Electronic databases are organised digital collections of references to publish literature such as journal articles, conference proceedings, reports, legal publications, newspaper articles, theses and e-books among others. Electronic databases are in different types such as bibliographic, full-text, directory and multimedia. The advantages of electronic databases as compared to print are many; they include among others: less storage space, large information capacity, strong sharing ability and great potential for collection expansion (Liyi & Zhang, 2011). In addition, one does not need to go to the library as they can be made available to users anywhere and at any time. It is, therefore, accessible and convenient to use. Accordingly, Hamza, Ahmad, Yunusa and Hamisu (2015) are of the view that electronic databases are becoming more popular than traditional print resources due to their many advantagesand as such, have great significance in the research and learning process.

Anyaogu and Mabawonku (2014) investigated the impact of resources availability and utilisation on the productivity of law lecturers in Nigerian universities. Using descriptive survey research design, the study reported that legal information resources such as law textbooks, periodicals, reference materials, law reports, legislations and statutes, newspapers, indexes and abstracts, digests and so on are readily available to the lecturers; electronic resources and online legal databases are less available; law reports, periodicals, legislations and statutes, indexes and abstracts, law textbooks, e-resources and so on are used by law lecturers in the course of research activities. The study concluded that the research productivity of the law lecturers was higher in the publication of journal articles, chapters in books, conference proceedings and foreign journals but low in co-authored books, textbooks and occasional papers.

In another study, Aforo and Lamptey (2012) investigated the information needs and information-seeking behaviour of law lecturers in the Kwame Nkrumah University of Science and technology, Kumasi, Ghana. The study found out that the law lecturers' purposes for seeking

information were: to obtain useful materials for research work; background reading; and to keep updated with knowledge in their field of specialisation. Law reports, law journals and textbooks are the most useful sources of information consulted by the law lecturers, and their preference for information access is normally electronic resources. The law lecturers seek information daily, and there is a connection between adequacy of library materials and their frequency of library visits. The study also reported that the information needs of the law lecturers are diverse, and they rely greatly on legal electronic information resources, law reports, law journals and textbooks.

Okiki (2013) studied the availability of information resources for research output among lecturers and researchers in Nigerian federal universities. His finding revealed that in all the universities studied, the level of availability and use of the e-resources was high. In particular, the study established that there is influence of availability of information resources on research productivity of the academic staff. More importantly, the study confirmed that there was positive and significant influence of books, journals, Internet references, search engines, websites, online public access catalogue, photocopy and newspapers/magazines on academic research productivity in Nigerian universities. Conversely, the findings from the study conducted by Okiki (2012) revealed that influence of e-books on academic research productivity is negative, while CD-ROM and electronic databases have a positive influence on research output, but not significant. In furtherance to the findings from the highlighted studies, Okiki (2012) also noted that a large number of different categories of users have started using electronic resources. He also revealed from the studies that e-resources have impacted highly on the research productivity of users so much that libraries have decreased their subscriptions to print information resources and they are now investing more in e-resources.

Korobili, Tilikidou and Delistavrou (2005) examined the use of library resources, focusing on e-sources, by the members of the faculty of a higher educational institute. The study revealed that majority of academics use printed sources more than e-sources, but they also use e-sources quite frequently. However, it is discovered that what they use mostly are books, websites and printed journals. It has also been found that there is greater use of e-sources among younger members of the academic staff members. Also, the results indicate that the use of e-sources is positively influenced by the respondents' perceived usefulness of resources to their research productivity and as well as the convenience of access to the sources. Kumar and Reddy (2014) examined the use of e-journals by research scholars in university libraries in Andhra Pradesh. Using survey research method to elicits responses from selected 888 researcher scholars in three universities (Andhra University, S.V. University and University of Hyderabad). They found out that 28.5% of the research scholars surveyed were not satisfied with the physical facilities provided by their digital libraries. The study further shows that slow Internet connectivity, irrelevant e-journals and absence of user training programmes were some of the challenges facing the users in the libraries reviewed.

Okiy (2000) submitted that students and academics in the Delta State University, Abraka, Nigeria make use of book materials such as journals, newspapers, textbooks magazines, dictionaries, projects, encyclopaedias and government publications. In the same vein, Kenoni (2002) carried out a study on the utilisation of archival information by researchers in the University of Nairobi, Kenya and reported that academics make use of maps and atlases, gazettes, theses and dissertations, newspapers, statistical abstracts, video films, political records, journals and conference papers, and books for their research activities. Lazinger, Bar-Ilan and Peritz (1997) examined the use of the Internet among groups of academics and found that science researchers use information resources more than researchers in the humanities and social sciences. They also reported an inverse association between the rank of the faculty members and use of electronic resources in both the sciences and humanities groups. Academic staff members in all disciplines perceive the primary relevance of the Internet use as improved access to databases and updates in research.

Studies have demonstrated varying effects of Internet applications on the research productivity of scientists. Bonzi (1992) discovered that in scholars' opinions, access to databases and computer support are facilitators to research productivity. A study by oceanographers shows a positive relationship between productivity and application of computer-based technologies (Hesse, Sproull, Kiesler & Walsh, 1993). Ehikhamenor (2003) postulated further the use and non-use of the Internet facilities by Nigerian academic scientists. He stated that the scientists are still heavily dependent on printed information sources, especially journals, indexes and abstracts. The study reveals that 64.4 per cent of academic scientists have computers at their disposal, while 50 per cent have access to and are using the Internet facilities.

Abolarinwa, Adewoyin and Aderanti (2015) discovered poor Internet signal/slow server and inadequate provision of full Internet connectivity as the leading problem encountered when using library electronic resources. The study concluded that high bandwidth results in fast Internet speed and download, thus making the usage of the database very easy.Agber and Agwu (2013) assessed the agricultural science lecturers' use of digital library resources in selected tertiary institutions in Benue State, Nigeria. One hundred and ninety-three (193) lecturers were randomly selected from six tertiary institutions and the study revealed that electronic journals, electronic books, search engines, abstracts, video/picture or graphic files and encyclopaedias are some of the online resources frequently used by the respondents. The study concluded that relevance of the resources to the needs of the lecturers is the main driving force to the use of digital library.

Tsakonas & Paratheodorou (2006) noted that, among the many problems found by usability studies of libraries-related information services, the three most commonly met are terminology, layout and navigation. According to the scholars, terminology problems in information websites alienate users and place them in a hostile information environment. Aesthetic appearance and visual layout have been found to influence system performance in download time and to discontent users through inappropriateness. Navigation aids are supposed to improve user interaction by

means of recognising current states and to support regularity during a session but sometimes for several reasons fail to do so. Jeng in Tsakonas and Paratheodorou (2006) found that "the need for learnable systems is underlined in order to minimise the time required to learn the use directives and upgrade the efficiency level. Tsakonas and Papaptheodorous (2006) adopted ease of use, aesthetic appearance, navigation, terminology and learnability as criteria for evaluating usability of electronic information services. Also Abels, Liebscher & Denman (1996) found that "majority of users of electronic information services do not consider them to be very easy to use." Furthermore, they noted that perceived ease of use does correlate significantly with information network (channel) used and number of information services used." This may be interpreted to mean that accessibility of electronic system is predicted of usability, that is, ease of use. Consequently, Abels, Liebscher and Denman (1996:156) noted:

> In order to use the network, faculty must perceive the network to be accessible. To achieve this, they need access to a primary workstation with a network connection as close as possible to their work area and shared with as few colleagues as possible. However, use of individual network services relates to perceived utility, perceived ease of use and task.

In developing countries and Nigeria in particular, few researches have been done on usability. Ehikhamenor (2003) conducted an empirical study on the Internet facilities: use and non-use by Nigerian university scientists and found ease of use as one of the problems militating against the scientists' use of the Internet resources. Furthermore, Ehikhamenor (2003) noted that the problem could discourage them from even trying to learn about the Internet. It takes a lot of patience and determination to keep trying unsuccessfully to make a dial-up connection with a telecommunication system that is performing below expectations. Even with a successful connection, disruption often occurs while navigation is in progress. Consider the problem of getting stranded in a labyrinth of imperfect links, poor interfaces and screens of irrelevant information. If information is difficult or time-consuming to get them, it is not really accessible.

Rosenberg in Ehikamenor (2003) noted that "ease of use is a dimension of accessibility and any source of information that is difficult to use cannot be said to be accessible." Access to scholarly electronic publications for research by lecturers is contingent on access channels and usability. Availability of access channels alone without good features such as ease of use and easy navigation may discourage researchers from using the information system for research.

The goal of implementing IRs is mainly to have the intellectual output of an institution in a central source. Some IRs will extend content beyond published materials to include others that may not necessarily be published, such as conference presentations, working papers, technical reports and similar material. IRs also provides access to others who may have an interest in the output and they promote the visibility of an organisation on the Internet (Moahi, 2009).

The potential of IRs to help foster change within the organisation is significant. As noted by Lynch (2003), the most important potential payoff of IRs is opening up entirely new forms of scholarly communication that will need to be legitimised and nurtured with guarantees of both short and long-term accessibility. IRs are the visible manifestation of the emerging importance of knowledge management within an institution. The long-term impact of IRs is likely to change many of the basic assumptions about how intellectual output is managed by individuals, their colleagues and the institution; and how research itself is conducted.

Ntiamoah-Baidu (2008) emphasised further that the quality of research output defines the credibility of any research institution or university. In line with current Australian governmental guidelines, as confirmed by Hemmings and Kay (2010), each publication received a point with peer-reviewed books being allocated a weighting of five points and that one book is equal to five journal articles/ conference papers/ book chapters. Academics place emphasis on research and publication not only because it is presumed that research enriches teaching and learning process, contributing to the body of knowledge, but also because it is a major determinant of institutional prestige (Okafor, 2011). A study by Ottong, Lawal and Ntui (2010) on lecturers' access to and use of the University of Calabar Library and its resources, revealed that majority of the lecturers use the library and its resources while some do not. They stated that most lecturers lack the skills to utilise information on funding of research grants, ability to use the library catalogue, locate, evaluate and literacy skills to access needed information. They also revealed that the lecturers see the stock of books and journals in the university library as outdated and unattractive resources.

In addition to the influence the use of electronic databases has on publications output of academic staff, Hemmings and Kay (2010) and Sulo, Kendagor, Kosgei, Tuitoek and Chelangat (2012) pointed out that research self-efficacy, qualifications held, academic level/rank, time devoted to research and gender as well as funding for research and research environment also appear to have some influence on publication output. As pointed out by Okafor (2011), the number of Ph.D students supervised influences the research output of the academics. Joshi (2000) emphasised that the research work published from most universities in India is based primarily on the Ph.D theses of research students with their university lecturers. It is evident from the literature that academic staff use electronic databases, conduct researches and publish. The influence of electronic databases use on publications output of academic staff, therefore, cannot be overemphasised in the sense that electronic databases are used even more than other resources in research. In conducting meaningful research and having adequate publications, the lecturers must have access to and use electronic databases.

2.8.2   Research productivity and intellectual output of academic staff

The key to the survival of any nation's economy is research output because of its importance for planning, management and distribution of scarce resources. It is used to measure the academics' prowess in any university world over. According to Popoola (2008), research output is

one of the critical factors used in determining productivity; both local and international recognition and respect are partly determined by published works. Academic institutions all over the world expect her academic staff to be aggressive in research to meet minimum requirements by accrediting bodies. Cetto (1998) stated that one of the indexes for measuring research output is the number and quality of published works. Okafor and Dike (2010) citing Ochai and Nedosa (1998) observed that in universities the world over, recognition and advancement of academic staff rest largely on the quantity and quality of their research outputs.

According to Chiemeke, Longe and Shaib (2009), a gradual decline in research output in higher education became noticeable in the late 1980s. Chiemeke et al. (2009) citing Karani (1997) observed that the National Universities Commission (NUC) declared that in terms of quality and quantity, the research output of tertiary institutions in Nigeria was about the best in sub-Saharan Africa up to the late 1980s. They upheld good research training and motivation, availability of equipment, and good library facilities as foundations for good research outputs. Staff and students of the University expand the body of general knowledge and enrich the educational programme of the University through research papers, articles, books, computer programs, audio-visual materials and inventions, in which intellectual property inheres. Traditionally, much of the intellectual output of the University has been disseminated by publication and by placing it in the public domain.

Research productivity in Nigerian universities cannot be studied in isolation. One of the strategies for determining research productivity is to assess the quantity of publications which researchers communicated through primary or other sources. Research productivity and research activity are interrelated. Research involves collecting and analysing data. Productivity results from writing, reading and publishing research reports in professional refereed journals, and displaying it on the Web, or to making it known to the public through any other means.

According to Creswell (1986), research productivity includes research publications in professional journals and in conference proceedings, writing a book or chapter, gathering and analysing original evidence, working with postgraduate students on dissertations and class projects, obtaining research grants, carrying out editorial duties, obtaining patents and licences, writing of monographs, developing experimental designs, producing works of an artistic or creative nature, and engaging in public debates and commentaries. Oloruntoba and Ajayi (2006) observed that research publication in the university is a major or most significant indicator of academic staff productivity, and that research attainment is determined by the number of published articles in refereed journals and conference proceedings of repute. Research productivity in academic institutions is reflected in the number and quality of articles published by the affiliated faculty. Often, departments evaluate their faculty on their "publication count" (Hadjinicola & Soteriou, 2005).

Anyaogu and Mabawonku (2014) investigated impact of resources availability and utilisation on the productivity of law lecturers in Nigerian universities. Using descriptive survey

research design, the study reported that legal information resources such as law textbooks, periodicals, reference materials, law reports, legislations and statutes, newspapers, indexes and abstracts, digests and so on are readily available to the lecturers; electronic resources and online legal databases are less available; law reports, periodicals, legislature and statutes, indexes and abstracts, law textbooks, e-resources and so on are used by law lecturers in the course of research activities. The study concluded that "the research productivity of the law lecturers was higher in publication of journal articles, chapters in books, conference proceedings, and foreign journals but low in co-authored books, textbooks and occasional papers. Rotten (1990) stated that a universal approach to measuring research productivity was to count the number of books, articles, technical reports, bulletins, and book reviews published, as well as presentations given and grants received through reviewing curriculum vitae or other print materials.

2.8.3 Research output, information skill and access by academic staff

Providing access to the research output generated by the institution increases awareness of research contributions. In order to utilise the vast information on the Internet and the growing amount of electronic information resources, teachers and students alike need to practise the skills necessary to exploit them. Ray and Day (1998) citing Dutton (1990) clarified that the skills required to maximise the potential of electronic information resources are much greater than those required for searching printed sources. Such skills are knowledge of the structure of the database and the instructions which must be inputted into the computer by the searcher, as well as an understanding of the ways in which the instructions are linked with one another. Also, it is important for researchers to learn how to use search terms and Boolean operators to enhance their search results.

The tremendouschange inthenatureofinformationenvironmentin theuniversities,occasioned by theinformationrevolution,inwhichinformationhasnowmigratedfromprinttoelectronic form,hasmadeinformationeasilyaccessibleinuniversities.Informationisnowaccessible onthecomputers,theCD-ROMs,theInternetorotherdigitalnetworks.Duetotherelativeease ofaccessibility ofelectronicinformationresources,therehavebeencorrespondinginnovations anda shiftinparadigmininformation-seekingbehaviourof academic staff intheuniversities towards electronicresources fromthe print.Theadvancingdigitalage is,therefore,characterised byapplications,accessanduse ofICTsandelectronic resourcesintheacademic environments forteaching,learningand research.In the universities, the academicstaff essentially areinvolved inresearchandtheyneedaccesstomodernICTsandelectronicresourcestosupporttheir research activities.Notably,Arunachalam(2002)argued"thatonedoesnothave touse technologybecause itisthere, but one uses itif thereis a genuine advantage". Information that is available but not accessible to users is of no value.

According to Okoye and Ejikeme (2011), removing access barriers will accelerate research, enrich education and share learning; since there is a critical need to make research

results available to as many academics and elite class as possible free of charge. Wikipedia (2011) opines that the objective of the various research efforts in information access is to simplify information for human users to access and further process large and unwieldy amounts of data and information. Inadequacy of current and relevant information for teaching, learning and research has been the bane of university education in Nigeria (Anyira, 2011). The clarion call by some well-meaning individuals and organisations to make electronic information resources accessible through open access is, indeed, a welcome development. Haliso (2009) reported that the use of information sources could help lecturers to carry out innovative studies, which in turn make them (lecturers) support their communities through research and development.

Inuniversities,recognitionandadvancementofindividual academicstaffmembersdependlargely onthequantity andquality oftheirresearchproductivity. Existingstudies havedealtwithacademics'researchproductivitywithvariablessuchasinstitutionalsize,academicstatus ,age, genderandotherlatentvariablessuchasself-knowledge,self-efficacy andinformationutilisationskillsbutthese studieshavenotsufficientlyrevealedtheinfluenceofinformationliteracyskillsonacademics'researchp roductivity. Popoola(2008)inasurveyofsocialscientistsin13Nigerianuniversitiesopinedthat accessanduseofelectronicinformationsourcesby academicstaffcouldleadtoincreasein productivity.

Inasurvey of1,061researchersinAfricaby Fosteretal.(2008),alowlevelof accessanduseofelectronicresourcesby therespondentswasreported. Thepaperconcludedand postulatedthatincrease inaccessanduse of electronic resourceswouldhave a positive effecton productivityofAfricain international journals. AstudybyNwezeh(2010)toassesstheimpactandusefulnessoftheInternetonresearchby academic staff in theObafemi Awolowo University, Nigeriaindicated that almost all the respondentsperceivedthattheInternetisa usefultoolfor theirresearchactivities.Asimilar finding was obtained by Ajala et al. (2010) where most academics in Ladoke Akintola UniversityofTechnology inNigeriaperceivedtheInternetasimpactingpositivelyontheir research work.

According to a study conducted by Popoola (2002) on the effects of information sources utilisation on research output of social scientists, the quantity of research could be measured by counting the number of books published or journal articles produced over a period. However, measurements of research productivity have nearly been the exclusive preserve of developed countries. The criteria for determining world-class universities are not so much the sizes of students' population or the quality of community services, but the scientific research outputs (Chiemeke et al., 2009).

Atakan (2008) assessed the effectiveness of the digital library and the value of multidisciplinary databases in terms of user preferences and frequency of use by lecturers ranking

at Ankara University. Results of the two surveys carried out in 2002 and 2005 were employed to examine the level of frequency of use and evaluate preferences of faculty for specific databases. The findings of the study showed that most of the academics preferred the databases such as Web of Science, ScienceDirect, IEEE Xplore and Ebsco. The findings further revealed consistence with positive results that have been observed in two studies conducted in the years 2002 and 2005 respectively on the digital library use among academics.

Lakan (2008) analysed the availability and utilisation of digital information resources by agricultural staff of the Ahmadu Bello University, Zaria. A survey method of 209 respondents was used for the study. The study found that all the libraries and information centres subscribe to various CD-ROMs and online databases. The study reported that a high percentage of the respondents could be said to be using digital library resources frequently. They noted that up-to-date knowledge in their field of interest and current awareness are some of the reasons for the utilisation of digital library resources.

Tiamiyu(2000)didasurveytoassesstheperceptionsofpersonnelofNigerianfederalpublic agenciesoftheimpactofinformationtechnology(IT)useontheirworkincludingresearch.It wasfoundthatonly0.8%oftherespondentsinthesurveyagreedthatthereisapositiveimpact ofITuseontheirwork. HeattributedthelowlevelofperceptionoftheimpactofITusein Nigeriaonproductivity onlowlevelofinvestmentonITwhichledtopoorunderstandingofthe potentialofITby thestaff.Similarresultwasobtained by JimbaandAtinmo(2000),whohad foundintheirstudy thatthereisnosignificantassociationbetweenaccessanduseofelectronic information resources and publication outputof researchers in Nigeria.

Ehikhamenor (2003b) investigated the use of Internet resources in Nigeria with the aim of determining if it has "any positive influence" on the productivity of academic scientists in ten Nigerian universities. His review of literature had shown that the use of electronic journals has been positively associated with scientific productivity. But the findings of the study revealed that very few of the scientists agreed that the use of the Internet had greatly facilitated their research work or that the Internet facilitated higher productivity (Ehikhamenor, 2003a). In specific terms, 89.3% of the respondents strongly disagreed that the use of Internet resources facilitates higher productivity. The study concluded that the extent to which access and use of electronic resources on the Internet meets the research needs of scientists in Nigerian universities is minimal, and its contribution to increase in productivity is, therefore, not significant. Ehikhamenor's (2003b) survey findings also revealed that the use of electronic information resources contributed little in improving the research productivity of academic scientists in Nigerian universities.

2.9   Theoretical framework

Thetheoreticalframeworksthatwould beselectedtoguidethestudy arediscussed andtheseincludeMaslow'sHierarchy ofNeedsTheory,McClelland'sAchievement Theory, Campbell Theory of Performance, the Hawthorne Studies and Herzberg's Motivation-Hygiene Theory.

These are referred to as motivation theories. Others are: Unified Theory of Acceptance and Use of Information Technology (UTAUT) – otherwise known as User Acceptance of Information Technology Theories.

2.9.1 Motivation Theories

Motivation has been identified by scholars as a key factor that has a significant influence on human behaviour and action (Saade, Nebede & Mak, 2009). Motivation theories are used in the study to explain possible variation in extent of awareness, knowledge and utilisation of electronic databases as well as productivity among academic staff in private universities in Nigeria. There are varieties of motivation theories, but those that would guide the theoretical framework of the study include Maslow's Hierarchy of Needs Theory, McClelland's Achievement Theory and Herzberg's Motivation-Hygiene Theory

2.9.2 Maslow's Hierarchy of Needs Theory

Maslow has theorised that there is a hierarchy of human needs in ascending order which include physiological needs, security or safety needs, social needs, esteem needs, and need for self-actualisation (Cole, 2004; Goldstein, 1994; Weihrich, Cannice & Koontz, 2008). Physiological needs are basic needs such as food and shelter, while need for self-actualisation is regarded as the highest need in the hierarchy. It is also known as the need for self-fulfilment. It has been generally observed that a "group of needs" in Maslow's theory are satisfied in a

progression from the basic (physiological) needs before the higher needs in the hierarchy are satisfied (Weithrich, Cannice & Koontz, 2008).

Maslow's theory explains the observed differences in productivity of academic staff in the universities. According to Maslow's theory, some academic staff would readily satisfy their basic needs and move to need for self-actualization. The need for self-actualisation or self-fulfillment encourages individual academic staff to work towards high productivity in order to be visible in his/her professional discipline/field of specialisation. The need for self-fulfilment provides the drive for excellence in research which enhances career advancement of the academic staff. Whatever infrastructural facilities or resources such as electronic databases that will bring quality and excellence into his/her research, the need for self-actualisation will push the academic staff to make use of such facilities or resources.

Every academic staff who is aspiring to be self-fulfilled by progressing to the top of his/her professional career or being internationally renowned will definitely extricate himself/herself from those things that will dwindle his/her productivity. He/she would acquire relevant information literacy to be aware, knowledgeable and use e-databases, if this will have a positive effect on his/her research.

2.9.3 McClelland's Achievement Theory

McClelland's theory states that in an organisation/institution (university), different employees (academic staff) have different levels of need for achievement (or academic achievement in the

university   environment).Hepostulatedthatemployees/academicstaffwithhighneedsfor achievementwillstrivetoincreasetheiracademicproductivity inuniversities(Coon,2003). Passer and Smith(2001)explainedthattheneedforacademicachievementleadstothe desire to initiate and accomplish quality research in order to attain academic excellence in one's professionaldiscipline,nationally   andinternationally.AccordingtoMcClelland'stheory,an employee/academicstaffwithhigh   needforacademicachievementinresearchandpublication willpossessthe   followingcharacteristics:responsibility,riskandfeedback.Weihrich,Cannice andKoontz(2008)observedthatsuchanemployee/academicstaffwithaprofoundneedfor achievementhasintensedesireforquality research. Hence, he/shewillcertainly getinvolvedin active research in order to increasehis/her productivity.

Thus, an academicstaffwithhighneedforachievementinhis/herprofessionalcareerhasahigh tendency tobeaware, knowledgeable andutilise electronicdatabasesthatmay enhancehis/her determinationtoincreasehis/her   publicationoutputintheuniversity. Career advancementinthe university systemrequires a highlevelofcommitmenttoresearch,whichwilleventually leadto increaseinproductivity.So,McClelland'sAchievementTheoryisusedinthestudy   toexplain   why someacademicstaffarerelatively   productive–astheyareguidedby   theneedforacademic achievement.Thisneedsconsequently   drivethemtowardsmeetingtheirtargetsofnotonly attainingthehighestprofessionalrank,but also becomingdistinguished scholarsintheirrespective disciplines/fields of specialisation. Notably,this category ofacademic staffis essentially involvedinreputable nationalandinternationalresearchprojects.Professionalprizes'/awards' winners belong to this group ofproductiveacademicstaff in theuniversities aroundthe world.

2.9.4 Campbell Theory of Performance

Theories of job performance have been proposed by many researchers such as Campbell (1990) and Campbell, McCloy, Oppler and Sager (1993). This proposed theory was anchored on individual performance. Campbell proposed an eight-factor model of performance using analytic research. He tried to emphasise that performance differs across jobs.

Campbell (1990) described performance as a function of three direct determinants such as declarative knowledge, procedural knowledge and motivation. Declarative knowledge, which consists of facts, principles and goals, is further predicted by indirect determinants: 'abilities, personality, interest, training, experience and aptitude interaction'. Procedural knowledge involves the acquisition of skills such as 'psychomotor skill, physical skill, self-management skill and interpersonal skill'. The acquisition of ICT literacy skills is expected to have a positive impact on task performance of academic staff. The degree of effort an individual puts on task execution equally affects his or her performances. Availability of resources motivates individuals to perform. Motivation can be intrinsic as well as extrinsic. The relevance of motivation to research productivity of academic staff is that motivation prompts the exertion of effort to achieve university goals (research,teaching, learning and community service). Awareness, knowledge and

utilisation of electronic databases in carrying out research activities can be viewed as motivating factors that can influence research productivity positively or negatively. Electronic database awareness, knowledge and utilisation will become more pleasant and less laborious. Academic staff are expected to possess knowledge about e-databases, procedural skills and motivation to actually use ICT in executing tasks.

2.9.5 User Acceptance of Information Technology Theory

DillonandMorris(1996)defineduseracceptanceofinformationtechnologyasthewillingness ofapersonorgroupofpersonsinanorganisation/institutiontouseinformationtechnology for thetaskitisdesignedtosupport.Intheuniversity system,thisimpliestheacceptanceof ICTs/electronic resourcesastoolstosupportresearchprocess.Hence,inthe fieldofInformation Science,researchershave shownconcerninstudying,investigating,predictingandexplaining users' behaviours inrespectof acceptance ofICTs/electronic resourcesastoolstoenhance academicproductivity intheuniversities.Thisisbecauseanumberofscholarsperceive informationandcommunicationstechnology ashavingthecapability toincreasenotonly the productivityofindividualacademicstaffbutthatoftheuniversityinitsentirety(Davis,1989, 1993;Davis,Bagozzi&Warsar,1992;Saade,Nebebe&Mak,2009;Venkatesh,Morris& Ackerman, 2000).

For example,inanorganisationalsetting,Davis,Bagozziand Warsaw (1992) observedthat individualemployeesinonedepartmentthat were usingcomputerswere foundtobemore productivethantheircounterpartsinanotherdepartmentthatwere notusingcomputers.This explainswhymodernorganisations/institutions(universities)areembarkingonICTadoption and use. This viewpoint is aptlycaptured byVenkatesh, Morris and Ackerman (2000)thus:

> Organisationalinvestmentsininformation technologies(IT)haveincreasedsignificantlyin thepastdecade.Theseinvestmentsspecifically aimtoincreaseindividualproductivity and thuscontributetoorganisationalproductivity.Whileadvancesintechnolo gycontinueat astronomicalpace,theuseoftheseemerginginformationtechnologieshasf allenwell below expectation and has been identified as plausibleexplanations forproductivity gains fromIT investments being less than expected.

FollowingVenkatesh, MorrisandAckerman's(2000)argumentandobservation thatlackof use ofICTmay lowerproductivity,researchershavebeenshowing a keeninterestinexploringextent ofuseornon-useofinformationandcommunicationstechnologybypotentialusers(academic staff).Theinformationtechnologyacceptancetheories/modelsareusedtoexplainandpredict use and non-useofICT infrastructural facilities in an organisation/institution (university)(Anderson &Schwager, 2004; Dulle&Minishi-Majanja, 2011). User acceptance, accordingtoDavis (1993), is often thepivotthat determines thesuccess or failureof information andcommunication

technologyadoptionin an organisation/institution.Inotherwords,useracceptancewoulddetermine thedegreeofuseandnon-useofICTfacilities/electronicresources by academicstaffinAfrican universitiesinresearch activities.Thus, the applicationof useracceptance of informationtechnology theories/modelsis found byscholars to bevital in the studyofICT usageinthe universities.

2.9.6 Herzberg's Motivation-HygieneTheory

Herzberg'sMotivation-HygieneTheoryalsoknownastheTwo-FactorTheory ofmotivation postulatesthatthere aretwogroupsof needsin an organisation/institution (university)thathave influence onjobsatisfaction(performanceor productivity)of employees/workers/academic staff. One groupcauses jobsatisfaction,the othercausesdissatisfaction.The firstgroupconsistsof factorsknownasthemotivators,andthesecondgroupismade upofthehygiene factors.The motivators(alsoknownassatisfiersorjob-contentfactors),ifthey existinan organisation/institution, tendto lead employees to extreme job satisfaction. The motivators includeachievement,recognition,responsibility,advancementandgrowthinthejob(Cole, 2004;Weihrich,Cannice& Koontz,2008).The hygienefactorsotherwisecalledthe "dissatisfiers" or"job-contextfactors" includeinstitutionalpolicy,supervision,workcondition, salary,interpersonal relations(relationshipwithsupervisoror subordinates/colleagues),status, andjobsecurity.Thetheory presupposesthattheexistenceofhygienefactorsinaninstitution (university)doesnotgiverisetomotivation byprovidingsatisfaction. However,lack ofhygiene factorswouldresultindissatisfactionbytheemployees(Weihrich,Cannice&Koontz,2008). In otherwords, although hygienefactorsdonotmotivate,theyarenecessaryinaninstitutionto avoid dissatisfaction among employees.

FromHerzberg'stheory,thedegreeofavailability ofthemotivatorsandhygienefactorsin privateuniversities in Nigeriawillbeamajordeterminantoftheextentofknowledge, awareness and utilisationofe-databases,andlevelofproductivityamongtheacademicstaff.Inmost private universities inNigeria,thehygienefactorsarenotreadilyavailableasexpected,andthesemay bring dissatisfactionamongthe academic staffwithcorrespondingeffectonproductivity.For instance, lackofrelevantICTpolicyintheuniversity, limited searching skills and low level of awareness by academic staff maydiscourageutilisationofelectronic databases.Thismay haveaprofoundeffectonproductivity oftheacademicstaffinprivate universities in Nigeria. On this premise, Herzberg'sMotivation-HygieneTheory was adopted as the theoretical base on which the study is anchored.

2.10 Conceptual model for the study

The research model adopted for this study is based on the Herzberg'sMotivation-HygieneTheory. The proposed model is shown in Fig. 2.1. The research model proposes that there exist some relationships and interactions between some variables and utilisation of electronic databases by lecturers in private universities in Nigeria. First, it is proposed that awareness,

knowledge and utilisation of electronic databases correlate with research productivity of academic staff in private universities in Nigeria.

Second, it is proposed that there is a joint relationship among awareness, knowledge and utilisation of electronic databases as predictor ofresearch productivity of academic staff in private universities in Nigeria.

The model as shown in Fig. 2.1 provides linkages and interactions between the independent and the dependent variables in the study. These are awareness, knowledge and utilisation of electronic databases as the independent variables, and research productivity as the dependent variable. Awareness of electronic databases (including but not limited to having perception, level of user education and consciousness about a certain technology) and information literacy programmes and knowledge of electronic databases (including information searching skills, location of information sources, ease of use, practical skill or expertise, theoretical understanding, experience and intellectual property) to academic staff could possibly influence research productivity which are thearticles in learned journals, textbooks, chapters in books, co-authored textbooks, curriculum development, editorial duties, patent and certified invention, obtaining research grants, obtaining patents andlicences, development of experimental design, producing works of an artistic or creative nature, engaging in public debates and commentaries, supervision of postgraduate students on dissertations and class projects, teaching, community service, data set, development of computer programs, and proceedings and models that enable them to sustain higher productivity at the highest level for self and national development.

Independent Variables **Dependent Variable**

Awarenessof Electronic Databases

- Level
- Method of Awareness
- User education
- Consciousness about a certain technology
- Information literacy programmes

Knowledgeof Electronic Databases
- Searching and retrieval skills
- Location of information sources
- Ease of use
- Practical skill or expertise
- Theoretical understanding
- Experience
- Intellectual property

Utilisation of Electronic Databases

- Location
- Frequency
- Types

Research Productivity of academic staff

- Articles in learned journals
- Textbooks
- Chapters in books
-Co-authored textbooks
- Curriculum development
- Editorial duties
- Patent & certified invention
- Obtaining research grants
- Engaging in public debates and commentaries
- Supervision of PG students on dissertations and class projects
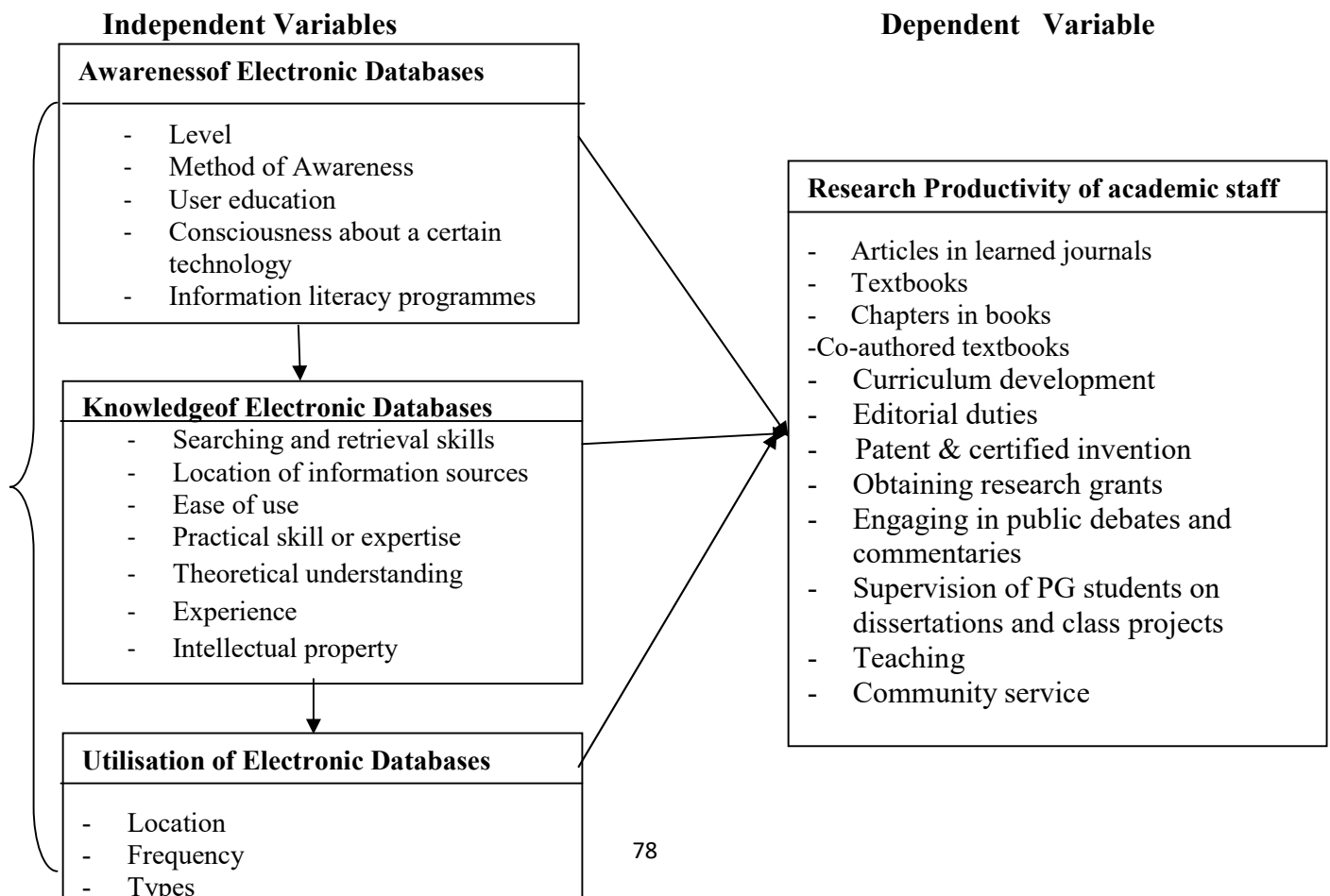- Teaching
- Community service

Fig. 2.1: Conceptual model for awareness, knowledge and utilisation of electronic databases and research productivity of academic staff (self-constructed)

2.11 Appraisal of the literature reviewed

The review of literature had shown that awareness and knowledge influence the extent to which lecturers utilise electronic databases forresearch productivity. It is imperative to note that majority of the studies reviewed were conducted in developing countries,and zeroes it down to the Nigerian Universities contexts. Most studies reviewed have shown that, there is a discerned positive impact of electronic databases on research productivity, although a few studies especially in Nigeria opposed this postulation.Literature has also shown that the rating of every academic staff in universities is usually determined by the quality and quantity of his or her research productivity in form of books, journal articles, technical reports and so on for promotion.

There have been few empirical studies on how academic staff in private universitiesin Nigeria are utilising electronic databases forresearch productivity. Most of the few empirical studies were conducted prior to widespread electronic information resources and development of scholarly electronic publications and Internet connectivity in universities in Nigeria.

Furthermore, few empirical studies have attempted to explain the relationship among awareness, knowledge and utilisation of electronic databases as predictors of research productivity of academic staff in private universities in Nigeria. There is a knowledge gap on the present situation of academics' utilisation of electronic databases in private universities in Nigeria.

Therefore, the understanding of the relationship will allow university managers, university librarians, database owners, vendors and other stakeholders to design more effective electronic database access interventions for academic staff utilisation in private universities in southwestern Nigeria. These are the gaps that this study filled.

CHAPTER THREE
METHODOLOGY

3.1   Introduction

This chapter presents details of how the study was carried out under the following sub-headings: research design, population of the study, sample and sampling technique and sample size, data collection instrument, validity and reliability of instrument, data collection procedure and method of data analysis.

3.2   Research design

The descriptive research design of correlational type was adopted for the study, due to the nature of the subject of investigation. The study is correlational because it aims at discovering the relationship between the variables in the study. Correlation research design, according to Adeyemo (2006), investigates relationship among variables and also expresses the strength and the direction of the relationship. This research design is considered adequate for the study because the purpose of the study is to (identify and establish) the relationship that exists between the independent variables (awareness, knowledge and utilisation of electronic databases) and the dependent variable (research productivity of academic staff).

3.3   Population of the study

The target population for this study were lecturers in the 27 out of 28 private universities in Southwestern Nigeria (Table 3.1.).CETEP City University, Lagos was excluded from the study. Because it was not in operation as at the time of data collection. Private universities were chosen for the study because they are fast expanding the segment of Nigerian university educational system. According to the National Universities Commission (NUC) statistics, there are 27 private universities in South-west, Nigeria while 3,247 academic staff were employed in all the private universities in southwestern Nigeria as at July 2015 (Table 3.1).

Table 3.1: Private universities and academic staff populationin southwestern Nigeria.

	Names of universities	Year approved	No. of academic staff
1.	Achievers University, Owo	2007	61
2.	Adeleke University,Ede	2011	126
3.	Afe Babalola University, Ado-Ekiti - Ekiti State	2009	451
4.	Ajayi Crowther University, Oyo	2005	113
5.	Augustine University, Ilara-Epe	2015	30
6.	Babcock University, Ilishan-Remo	1999	360
7.	Bells University of Technology, Ota	2005	191
8.	Bowen University, Iwo	2001	164
9.	Caleb University, Lagos	2007	79
10.	Chrisland University	2015	18
11.	Christopher University, Mowe	2015	15
12.	Covenant University, Ota	2002	559
13.	Crawford University, Igbesa	2005	72
14.	Crescent University, Abeokuta	2005	89
15.	Elizade University, Ilara-Mokin	2012	54
16.	Fountain University, Osogbo	2007	103
17.	Hallmark University,Ijebu-Itele	2015	19
18.	Joseph Ayo Babalola University, Ikeji-Arakeji	2006	98
19.	Kings University, Ode-Omu	2015	22
20.	Lead City University, Ibadan	2005	127
21.	McPherson University, Seriki Sotayo, Ajebo, Ogun State	2012	39
22.	Mountain Top University, Prayer-City	2015	27
23.	Oduduwa University, Ipetumodu - Osun State	2009	69
24.	Pan-Atlantic University, Lagos	2002	128
25.	Redeemer's University, Ede, Osun State	2005	143
26.	South-western University, Ijebu Ode	2012	41
27.	Wesley University of Science & Technology ,Ondo	2007	49
	Total		**3,247**

Source: NUC Weekly Bulletin July, 2015; Preliminary investigation from the field in July/August 2015.

3.4   Sampling technique and sample size

The research adopted multi-stage sampling technique. The first stage was purposive sampling technique to select 21 out of the 27 private universities established and approved between 1999 and 2012 in southwestern Nigeria from the population of the study (Table: 3.2). The remaining six (6) got approval to operate from NUC late in 2015. As such, the researcher was unable to get list of academic staff available. Some of the remaining six (6) private universities recruited academic staff in 2016 during preliminary investigation and the time of collating data for the population of the study.

The second stage of sampling used stratified sampling technique to select 935 (30%) academic staff across the ranks to ensure proportionality in all faculties/colleges in each of the selected private universities, totalling 935 academics from the population size of 3116 in the 21 private universities established and approved between 1999 and 2012 in southwestern Nigeria.The reason for the 30% sample is that only a sample is needed which can be generalized for the whole population. Apart from this, it is not always easy administer questionnaire on lecturers. However, Aina (2004) suggested 30% for a population that is less than 1,000 while, the choice of less than 30% could be appropriate for the population that is more than 1,000. For other types of population, according to Backar(1999), the following sample ratio is recommended: 10,000 and above (10%); 150,000 and above (1%); 10 million and above (0.025%).

In each of the selected private universities, 30% of the total estimated population of academic staff were selected for the study. Consequently, a sample size of 935 were selected for the study. See Table 3.2

Table 3.2 Selected private universities and their population

	Names of universities	Year approved	No. of Academic staff	Sample Size 30%
1.	Achievers University, Owo	2007	61	18
2.	Adeleke University, Ede	2011	126	38
3.	Afe Babalola University, Ado-Ekiti - Ekiti State	2009	451	135
4.	Ajayi Crowther University, Oyo	2005	113	34
5.	Babcock University, Ilishan-Remo	1999	360	108
6.	Bells University of Technology, Ota	2005	191	57
7.	Bowen University, Iwo	2001	164	49
8.	Caleb University, Lagos	2007	79	24
9.	Covenant University, Ota	2002	559	168
10.	Crawford University, Igbesa	2005	72	22
11.	Crescent University, Abeokuta	2005	89	27
12.	Elizade University, Ilara-Mokin	2012	54	16
13.	Fountain University, Osogbo	2007	103	31
14.	Joseph Ayo Babalola University, Ikeji-Arakeji	2006	98	29
15.	Lead City University, Ibadan	2005	127	38
16.	McPherson University, Seriki Sotayo, Ajebo	2012	39	12
17.	Oduduwa University, Ipetumodu - Osun State	2009	69	21
18.	Pan-Atlantic University, Lagos	2002	128	38
19.	Redeemer's University, Ede	2005	143	43
20.	South-western University, Ijebu Ode	2012	41	12
21.	Wesley University of Science & Technolohy,Ondo	2007	49	15
	Total		**3116**	**935**

3.5   Data collection instrument

The main research instruments used to collect data for the study was the questionnaire.
The questionnaire was tagged Awareness, Knowledge, Utilisation of Electronic Databases and Research Productivity Scale (AKUEDRPS) and was personally structured by the researcher. It was divided into seven sections A to G.

Section A: Demographic Information:Thissection collects the respondent's personal information such as name of university, faculty, academic status and gender.

Section B: Awareness of Academic Staff about the Utilisation of Electronic Databases: This section contains items on awareness (Level, method of awreness, user education, information literacy and consciouness about certain technology) of academic staff in utilising electronic databases like Repositories, e-resources, e-prints, OPAC, e-bibliographies, e-archives, e-abstracts and indexes among the respondents. The items were measured on a 4-point Likert scale SA (4) Strongly Agree, A (3) Agree, D (2) Disagree, and SD (1) Strongly Disagree. However, this is followed by theawarenessof electronic databases by academic staff, using these ratings: Fully Aware 4 (FA), Averagely Aware 3 (AA), Scarcely Aware 2 (SA), Not Aware 1 (NA).The items were measured on a 4-point Likert scale. This section has 34 items adapted from Aina (2014) and Kwadzo(2015).

Section C: Knowledge Level by Academic Staff in the Use of Electronic Databases Available: Thissectionof the questionnaire measured knowledge possessed by academic staff in the use of electronic databases available such as information searching skills, navigation, location of information sources, theoretical understanding and computer skills of the respondents such as ability to word process and browse the Internet and database. The scale is Likert 4-point VH (4) Very High, H (3) High, VL (2) Very Low, and L (1) Low.

Section D: Level of utilisation of electronic databases by the academic staff: This Section contains statements on the frequency andlevel of utilisation for each of the electronic databases available. For the frequency, The scale is Likert 7-point: Daily (7), Once a week (6), Twice a week (5), Twice a month(4), Once a month (3), Quarterly (2) and Never (1). However, this was followed by how academic staff access the Internet, mode of connection, reliability of the Internet and barriers to effective use of electronic databases. This section has 32 items.The questionnaire on knowledge in the use of electronic databases as developed by Subair and Kgankenna (2002) was adapted with minor modifications to fit the context of academic staff. Researchers such as Akande (2011),Ansari and Zuberi (2010), as well as Abdullahi and Haruna (2008) in Nigeria had made modifications to the questionnaire. The section has 27 items. The questionnaire was adapted from Singh & Gautam (2004) and Aina (2014).

Section E: Level of research productivity by the academic staff: This section contains questions set out to determine the level of research productivity, number of publications and academic activities on the job within the last 10 years. The ratio is on a 5-point scale, 15 and above (5), 10 to 14 (4), 5 to 9 (3), 1 to 5 (2), none (1). However, this is follow by the questions set out to determine the extent to which the use of electronic databases has improved research productivity. The responses are based on a Likert-type 4-point scales of Greatly Improved (4), Averagely Improved (3), Improved (2) and Not Improved (1).The questionnaire on research productivity as developed by Cresswell (1986) was adapted with minor modifications to fit the context of academic staff. Researchers such asBassey,Akuegwu, Udida&Udey (2007),Okonedo, Popoola, Emmanuel

&Bamigboye (2015), as well as Okiki and Mabawonku (2013) in Nigeria had made modifications to the questionnaire.

3.6 Validity and reliability of data collection instrument

To ensure the content validity and reliability of the instrument, the developed questionnaire was given to the researcher's supervisor and some lecturers within and outside theDepartment of Library, Archival and Information Studies for their judgment to establish face validity. Thereafter, the questionnaire was corrected and pre-tested by administraiting 30 copies to academic staffoutside the main population of the study in the colleges of Business & Social Sciences (CBS) and Science & Engineering in Landmark University located in Omu-Aran, Kwara State, North Central zone of the country since the study focused on universities in South-west, Nigeria. The Cronbach-Alpha method was used to determine reliability coefficients of the instrument.

The measurement scale established the psychometric properties of the following using Cronbach Alpha: Section B: Awareness of Academic Staff in the Utilisation of Electronic Databases (0.75), Section C: Knowledge Possessed by Academic Staff in the Use of Electronic Databases Available (0.87), Section D:Level of utilisation of electronic databases by the academic staff (0.85) and Section E: Level of research productivity by the academic staff (0.74).The overall reliability of the instrument is 0.80, making the research instrument reliable to elicit the needed data for the study.

3.7 Data collection procedure

The researcher and seven (7) trained research assistants administered the questionnaire to the respondentsin order to hastened data collection.The researcher personally visited some private universities to administer the copies of the questionnaire with the assistance of the librarians. The help of some colleagues in each of the private universities was also sought to supervise and complement the efforts of both the researcher and the assistants. Data collection was carried out within a 19-week period.

3.8 Method of data analysis

Data generated were analysed using descriptive and inferential statistics. Descriptive staticstics of frequency counts, standard deviation, mean and simple percentages were employed to analyse the demographic information and research questions 1 to 4, while regression analysis was used to analyse research question 5. Spearman's rank was used to test hypotheses 1 to 4, and multiple regression analysis was used to test hypothesis 5, all at 0.05 level of significance.

3.9 Ethical Considerations

Given the importance of ethics in conducting research and the challenges around conducting research, universities go to great lengths to protect the dignity and safety of research

participants (Silverman, 2009).The following ethical considerations were taken into account to ensure that the study was conducted in an appropriate manner (Babbie& Mouton, 2001).

(a) **Plagiarism:** Plagiarismisobviously aseriousethicalissuethattheresearchergaveseriousattention. The study was subjected to turnitin software to check the percentage (%) of plagiarism. The report of plagiarism revealed 20% similarity index.The report can be found at Appendix 3. However, the result was high simply because four (4) academic papers had already been published in high impact factor journals from the work. All works usedinthestudywere dullyacknowledged as spelt out by University of Ibadan manual of style.

(b) **Confidentiality**: Another related ethical issue in relation to the participant (respondent) was protection of privacy in responding to the questionnaire.Each respondent (academic staff) was informed in the questionnaire that the data collected would be kept in confidence, and would be used for the research purpose only. For confidentiality of the respondent, ideally, the questionnaire should be coded by removal of identifying information about the respondent. In compliance with these requirements, the questionnaire for the study had no provision for the name of the respondent. All personal information of the participants was treated as confidential, remained confidential throughout the study and, after the study has been completed, will be destroyed.

(c) **Informed consent:** Participants were briefed fully on the purpose and conduct of the research. It was made very clear to them that participation was voluntary and they could withdraw from the research work at any stage. The rationale behind this study was explained. Data collection and analysis were described clearly to them so that they knew what they were doing. When all participants agreed that they understood everything clearly, they were asked to give their consent to participate in this study.Frankfort-Nachmias and Nachmias (1996: 81) adduced that "research involving human participants should be performed with the informed consent of the participants" and argued that participants (respondents) should always be made to know that their involvement or participation in a research is voluntary. This is affirmed by Taylor (2000a:7) that, "subjects (respondents) must be given a choice to determine whether to participate in the study" or not. Thus, the academic staff used as respondents, were informed that their participation in the survey was voluntary. This was spelt out in the questionnaire that the respondent has the option of completing or not completing the questionnaire; that is, his/her completion of the questionnaire was voluntary. As mentioned earlier, this study has dealt with information about the state of the art in terms of ICT infrastructural facilities in Nigerian private

universities, and the extent of knowledge and utilisation of electronic databases by academic staff for their research in relation to their productivity, therefore all effort was made to ensure that no identification of who produced what information was to be revealed to the public. As mentioned by Creswell (1998; 2005), the researcher should consciously consider the ethical issues which involve issues of maintaining confidentiality, protecting the anonymity of individuals and seeking consent, all of which the participants were informed of.

(d) **Falsification and Fabrication of data:** Theresearcher ensuredthatonlythefindingsemanatedfromthestudywerereported,andnomanipulations were donetothecollecteddatainordertoachievepredeterminedresults.

(e) Risk concern: This study deals with a number of policy makers, university managers, university librarians, database owners, vendors and other stakeholders to design more effective electronic database access interventions for academic staff utilisation in private universities in Southwestern, Nigeria, they worked with the researcher individually. Furthermore, the information obtained from the questionnaire did not include sensitive information which could cause any distraction to the participants. Basically, according to the methods of this study, there should be no risks involved. Thus, the possible benefits of this study apparently outweigh the risks.

(f) **Beneficence:** The observable benefits of the study were immediate as the participants stated that they liked the variables of the study and enjoyed the statements in the questionnaire. The respondents all appeared to engage freely in the conversations and this indicates that that the questionnaire allowed the participants to share their stories in a safe environment and without being judged. As outlined in Chapter 2, the researcher hopes that this study will add to the sparse literature on a discerned positive impact of electronic databases on research productivity in both Nigerian and international literature. It is also hoped that the findings, although they cannot be generalised, will add value to society in general by providing insights on the challenges faced by academic staff in Nigeria in research productivity.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1   Introduction

This chapter presents and discusses the results of the study. The study investigated how the independent variables of awareness, knowledge and utilisation of electronic database predict the research productivity of academic staff in private universities in southwestern Nigeria. In all, five research questions were answered and five null hypotheses that were generated were testedat 0.05 level of significance in this research work. Statistical tools used for the testing of the instrument included: descriptive statistics such as percentages, mean and standard deviation; and inferential statistics in the form of Spearman's rank and multiple regression. The presentation is in five parts as listed:

4.2   Questionnaire administration and response rate;

4.3   Demographic information of respondents;

4.4   Presentation of research questions;

4.5   Presentation of hypotheses; and

4.6   Discussion of findings.

4.2   Questionnaire administration and response rate

The population size for the study consisted of 935 academic staff in the 21 private universities in southwestern Nigeria selected for the study. Out of 935 copies of the questionnaire administered, 717 copies were returned and only 657 (70.2%) copies were found usable and valid for analysis as shown in Table 4.1. The response rate is considered adequate for this study because Malaney (2002) reported that the standard and acceptable response rate is 60% while Nulty (2008) reported a 56% response rate for paper based survey.

Table 4.1: Questionnaire distribution and response rate

S/N	Names of universities	Number Distributed	Questionnaire returned	No of usable questionnaire	Percentage (%) response rate
1.	Achievers University, Owo	18	15	15	83.3
2.	Adeleke University, Ede	38	29	29	76.3
3.	Afe Babalola University, Ado-Ekiti - Ekiti State	135	111	101	74.8
4.	Ajayi Crowther University, Oyo	34	32	32	94.1
5.	Babcock University, Ilishan-Remo	108	86	77	71.2
6.	Bells University of Technology, Ota	57	36	31	54.3
7.	Bowen University, Iwo	49	47	45	91.8
8.	Caleb University, Lagos	24	19	15	62.5
9.	Covenant University Ota	168	86	76	45.2
10.	Crawford University Igbesa	22	19	14	63.6
11.	Crescent University, Abeokuta	27	23	22	81.4
12.	Elizade University, Ilara-Mokin	16	13	13	81.2
13.	Fountain University, Osogbo	31	31	28	90.3
14.	Joseph Ayo Babalola University, Ikeji-Arakeji	29	22	21	72.4
15.	Lead City University, Ibadan	38	32	26	68.4
16.	McPherson University, Seriki Sotayo, Ajebo	12	6	6	50.0
17.	Oduduwa University, Ipetumodu - Osun State	21	18	18	85.7
18.	Pan-Atlantic University, Lagos	38	23	21	55.2
19.	Redeemer's University, Ede	43	43	43	100.0
20.	South-western University, Ijebu Ode	12	11	11	91.6
21.	Wesley University of Science & Technology,Ondo	15	15	13	86.6
	Total	**935**	**717**	**657**	**70.2**

It could be observed from Table 4.1 that Redeemer's University, Ede,Osun State which had 43 of the respondents had the highest return rate of 100% while Pan-Atlantic University, Lagos and McPherson University, Seriki Sotayo, Ajebo had the least return rate of 55.2% and 50.0% respectively. The low response rate from McPherson University, Seriki Sotayo, Ajebo was accounted for by the fire outbreak in the office of the college officer in the campus as at the time of administering the instrument. This response is justified by Bartlett, Kotrlik and Higgins (2001) who recommended a sample size of 399 for a population of 1,000 (39.9%) and 461 for a population of 1,500 (30.7%). Also, Baro, Endouware and Ubogu (2011) used and recommended a sample size of 350 for a population of 1,050 (33.3%). In addition, the overall return rate of 70.2% used for the

study is far higher than the submission of Peterson and Demark-Wahnefried (2004) that 60% is acceptable standard for most research.

4.3   Demographic information of the respondents

Table 4.2 shows the distribution of the respondents by faculty. The result shows that out of the 657 respondents that were part of this study, 256(39.9%) were from Science, Social/Management Sciences (28.8%), Library (8.4%), Arts/Humanities (7.5%), Engineering (5.3%), Environmental Studies (4.0%), Law (2.3%), Nursing Science (1.3%), Leadership Development Studies (0.9%), Basic Medical Science (0.8) and Agriculture (0.8%). The result implies that majority of the respondents were from the Faculty of Science.

Table 4.2: Distribution of respondents by faculty

Faculty	Frequency	Percentage
Science	256	39.9
Social/Management Science	189	28.8
Arts/Humanities	49	7.5
Engineering	35	5.3
Agriculture	5	0.8
Law	15	2.3
Basic Medical Science	5	0.8
Nursing Science	10	1.3
Environmental Studies	26	4.0
Library	55	8.4
Leadership Development Studies	12	0.9
Total	**657**	**100.0**

The distribution of the respondents by academic status as shown in Fig. 4.1 indicates that 69(10.5%) were assistant lecturers, 143(21.8%) were lecturer II, 201(30.6%) were Lecturer I, 109(16.6%) were senior lecturers, 38(5.8%) were associate professors/readers, 31(4.7%) were professors, 11(1.7%) were assistant librarians, 15(2.3%) were librarian II, 10(1.5%) were librarian I, 5(0.8%) were senior librarians, 15(2.3%) were principal librarians, 5(0.8%) were deputy university librarians and 5(0.8%) were university librarians. This implies that most respondents are Lecturer I, II and Senior lecturer.

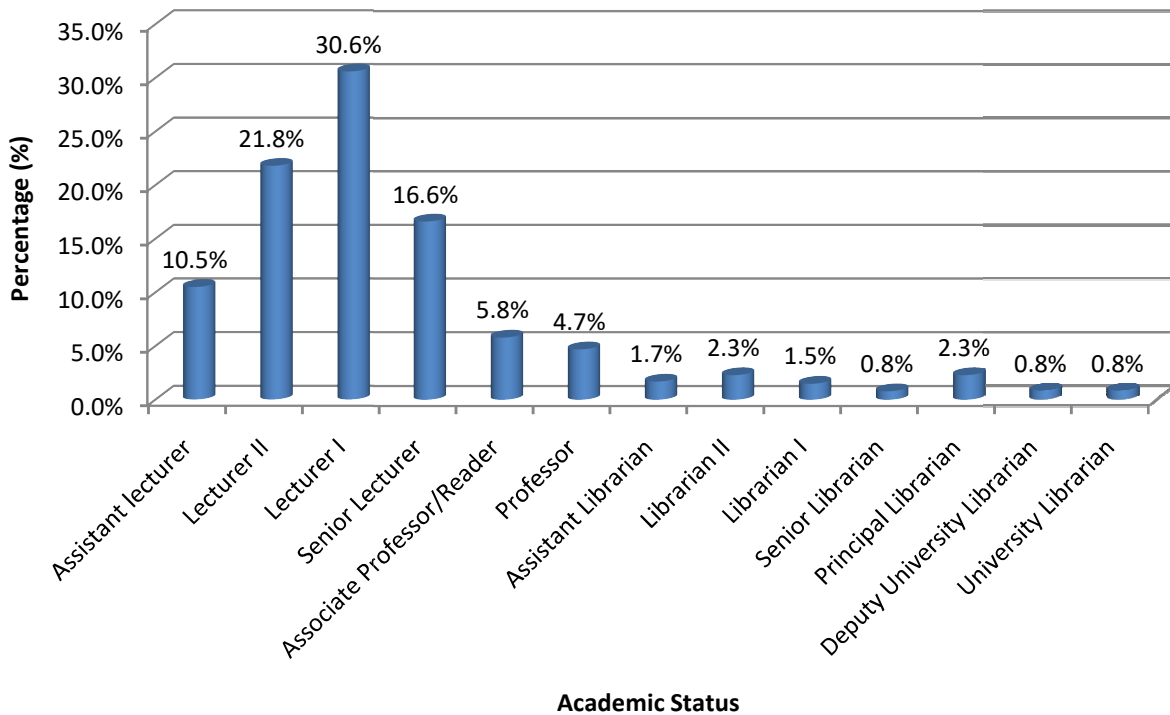**Fig. 4.1:** **Bar chart showing distribution of respondents by academic status**

Figure 4.2 shows the gender distribution of the respondents. The result shows that out of the 657 respondents who were part of this study, 365(55.6%) were males while 292(44.4%) were females. This is an indication that majority of the respondents were males.
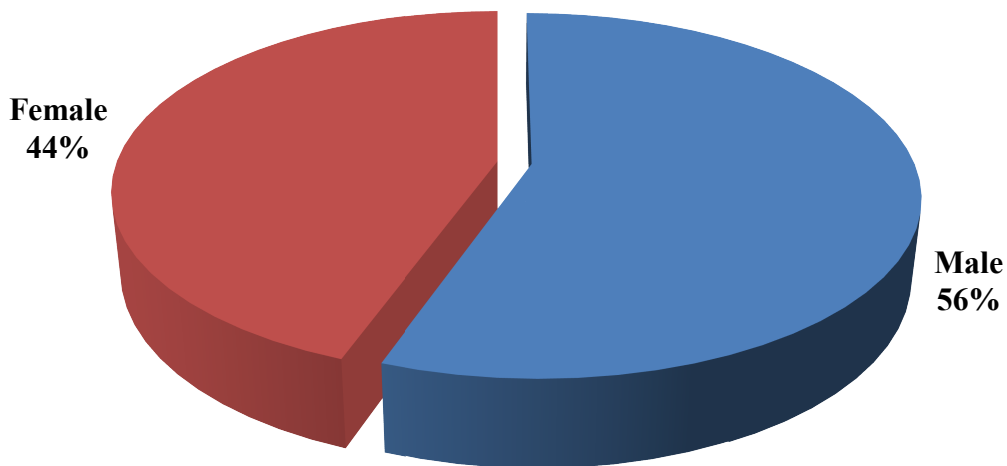

Fig. 4.2: Pie chart showing distribution of respondents by gender

4.4 Research Questions

Research Question 1:What is the level of awareness of academic staff on electronic databases?

In order to ascertain academic staff level of awareness of electronic databases as indicated in research question one, respondents were asked to indicate their level of awareness with items having to do with electronic databases available. The result is presented in Table 4.3

Table 4.3: Level of awareness of online databases by academic staff in private universities in southwestern Nigeria (N=657)

S/No.	Electronic databases	Fully aware (4) N (%)	Partially Aware (3) N (%)	Scarcely Aware (2) N (%)	Not aware (1) N (%)	Mean ($\bar{x}$)	Std.D
1	E-resources (e-books and e-journals)	476 (72.5%)	135 (20.5%)	-	46 (7.0%)	3.58	0.81
2	Online Public Access Catalogue (OPAC)	440 (67.0%)	171 (26.0%)	-	46 (7.0%)	3.53	0.82
3	E-abstracts and indexes	366 (55.7%)	172 (26.2%)	37 (5.6%)	82 (12.5%)	3.25	1.03
4	Repositories	253 (38.5%)	327 (49.8%)	-	77 (11.7%)	3.15	0.91
5	E-archives	304 (46.3%)	240 (36.5%)	-	113 (17.2%)	3.12	1.07
6	E-bibliographies	275 (41.9%)	269 (40.9%)	-	113 (17.2%)	3.07	1.05
7	E-prints	232 (35.3%)	311 (47.3%)	37 (5.6%)	77 (11.7%)	3.06	0.94

Table 4.3 shows the level of awareness of online databases by academic staff. It reveals that the respondents were fully aware of e-resources ($\bar{x}$=3.58), followed by online public access catalogue (OPAC) ($\bar{x}$=3.54), e-abstracts and indexes ($\bar{x}$=3.25), repositories ($\bar{x}$=3.15), e-archives ($\bar{x}$=3.12), e-bibliographies ($\bar{x}$=3.07) and e-prints (3.06).

In order to know the method of awareness of academic staff on electronic database, Table 4.4 presents the respondents' user education and consciousness about a certain technology of online databases.

Furthermore, test norm (see Appendix for details) was carried out on awareness of online databases by academic staff and the result indicated that 1-6 represents not aware, 7- 13 represents scarcely aware, 14-21representspartially aware and 22-28 represents fully aware.Awareness ($\bar{x}$ = 3.25) was high, as against the threshold of 2.50, the result further showed that the overall mean score is 22.76 which fell within the range of fully aware. It could therefore be concluded that there was high awareness of academic staff in the use electronic databasesin private universities in Southwestern Nigeria.

Table 4.4: **Method of Awareness of electronic databasesto academic staff in private universities in southwestern Nigeria (N=657)**

S/No.	Items	Strongly Agree N (%)	Agree N (%)	Disagree N (%)	Strongly Disagree N (%)	Mean (x̄)	Std.D
	User education						
1.	I am aware of adequate computers, printers and other facilities to use e-databases	129 (19.6%)	446 (67.9%)	36 (5.5%)	46 (7.0%)	3.00	0.73
2.	I always remember my password to access e-journals in the library	144 (21.9%)	363 (55.3%)	73 (11.1%)	77 (11.7%)	2.87	0.89
3.	I am aware of Berlin Declaration on Open Access to Knowledge (BDOAK)	135 (20.5%)	347 (52.8%)	98 (14.9%)	77 (11.7%)	2.82	.89
4.	I am aware of the Directory of Open Access Repositories (DOAR)	181 (27.5%)	244 (37.1%)	119 (18.1%)	113 (17.2%)	2.75	1.04
5.	I am aware of e-databases in my field of expertise	83 (12.6%)	337 (51.3%)	175 (26.6%)	62 (9.4%)	2.67	0.81
	Consciousness about a certain technology						
6.	High Internet bandwidth encourages articles download	346 (52.7%)	275 (41.9%)	36 (5.5%)	-	3.47	0.60
7.	Fast internet access enhances the use of e-databases	206 (31.4%)	384 (58.4%)	67 (10.2%)	-	3.21	0.61
8.	I always find it difficult accessing online databases via wireless network	253 (38.5%)	322 (49.0%)	36 (5.5%)	46 (7.0%)	3.19	0.83
9.	Certain browsers such as internet explorer, google chrome , mozilafirefox are very good in accessing e-databases	68 (10.4%)	490 (74.6%)	99 (15.1%)	-	2.95	0.50
	Information Literacy Programmes received						
10.	My information literacy level helps to narrow my search in using e-databases	83 (12.6%)	470 (71.6%)	67 (10.2%)	37 (5.6%)	2.91	0.67
11.	The interface to access articles is easy to follow	83 (12.6%)	466 (70.9%)	62 (9.4%)	46 (7.0%)	2.89	0.70
12.	Links to articles in the e-databases are easy to use	119 (18.1%)	394 (60.0%)	67 (10.2%)	77 (11.7%)	2.84	0.85
13.	I have increased my research output in referred journals as a result of my information literacy skills	46 (7.0%)	476 (72.5%)	104 (15.8%)	31 (4.7%)	2.82	0.62
14.	Through information literacy, I can search e-databases with ease	15 (2.3%)	565 (86.0%)	-	77 (11.7%)	2.79	0.67
15.	Through information literacy, I can use truncation marks, phrasal search and other such features offered by e-databases	68 (10.4%)	445 (67.7%)	67 (10.2%)	77 (11.7%)	2.77	0.79
16.	As a result of information literacy, It is quick accessing articles in the e-databases	129 (19.6%)	281 (42.8%)	201 (30.6%)	46 (7.0%)	2.75	0.85
17.	I do key word searching e.g. Economic development, as a result of my information literacy skills	36 (5.5%)	446 (67.6%)	98 (14.9%)	77 (11.7%)	2.67	0.75
18.	Information literacy skill helps me to get quality articles in the e-databases	68 (10.4%)	296 (45.1%)	185 (28.2%)	108 (16.4%)	2.49	0.89

Result of (method) awareness of electronic databases by academic staff of private universities in South-west, Nigeria is presented in Table 4.4. In knowing the level of user education, the result shows that the respondents are adequately aware of computers, printers and other facilities to use e-databases (87.5%, $\bar{x}$ =3.00), remember their passwords to access e-journals

(77.2%, $\bar{x}$=2.87), and also aware of BDOAK (73.3%, $\bar{x}$=2.82), DOAR (64.6%, $\bar{x}$=2.75) and e-databases (63.9%, $\bar{x}$=2.67).

The result further revealed the consciousness of respondents about certain technology, and more than 80% of the respondents were of the opinion that high Internet bandwidth encourages articles download ($\bar{x}$=3.47, SD=0.60), fast Internet access enhance the use of e-databases ($\bar{x}$=3.21, SD=0.61) and quick accessing of articles in the databases ($\bar{x}$=2.95, SD=0.50). The result also shows that 575 (87.5%) of the respondents are aware of lots of relevant online databases, and this makes it easy for more than 70% of the respondents to access articles in databases, link to articles in portals and enable them to understand, navigate and download full-text articles in the databases.

Research Question 2:What is the knowledge level possessed by academic staff in the use of electronic databases in private universities in southwestern Nigeria?

In order to know the level of knowledge possessed by academic staff in the use of electronic database, Table 4.5 presents the respondents' opinions on information searching skills, location of information sources, ease of use, practical skills or expertise, theoretical understanding and their experience on the use of electronic databases along with intellectual property. Figures 4.3, 4.4 and 4.5 below further presents the knowledge of academic staff on Internet connection used within their institutions, reliability and where they use the electronic database. Finally, Table 4.6 presents the opinions of the respondents on the barriers to effective use of electronic databases.

Table 4.5: Knowledge level of the academic staff on use of electronic databases in (N=657)

S/N	Items	Very High (4) N (%)	High (3) N (%)	Low (2) N (%)	Very Low (1) N (%)	Mean ($\bar{x}$)	Std. D
	Searching and retrieval skills						
1	I can use input devices like mouse/arrow key to navigate and locate files in e-databases	198 (30.1%)	361 (54.9%)	21 (3.2%)	77 (11.7%)	2.96	0.89
2	As an academic staff, I understand the need to use appropriate search tools within e-databases	203 (30.9%)	263 (40.0%)	78 (11.9%)	113 (17.2%)	2.76	1.03
3	I can limit e-databases search by fields	115 (17.5%)	361 (54.9%)	73 (11.1%)	108 (16.4%)	2.64	0.90
4	I have good searching skills to use e-databases	94 (14.3%)	398 (60.6%)	57 (8.7%)	108 (16.4%)	2.63	0.86
5	Boolean operators, AND, OR, NOT are the best strategies for searching e-databases	104 (15.8%)	274 (41.7%)	171 (26.0%)	108 (16.4%)	2.57	0.94
	Location of Information Sources						
6	As an academic staff , I can retrieve scholarly contents from both basic and advance search within e-databases	218 (33.2%)	305 (46.4%)	57 (8.7%)	77 (11.7%)	2.93	0.94
7	I can navigate within the e-databases from basic search to advance search	144 (21.9%)	331 (50.4%)	105 (16.0%)	77 (11.7%)	2.89	0.91
8	As an academic staff, I understand everyday online search tools	118 (18.0%)	275 (41.9%)	185 (28.2%)	79 (13.0%)	2.77	0.81

#	Statement						
9	As an academic staff, I can use truncation search techniques within e-databases	141 (22.5%)	114 (17.4%)	263 (40.0%)	139 (21.2%)	2.26	0.98
	Ease of Use						
10	I often use e-databases in my research and teachings	129 (19.6%)	392 (59.7%)	57 (8.7%)	79 (12.0%)	3.02	0.71
11	Operations of modern e-databases facilities are so easy	144 (21.9%)	326 (49.6%)	139 (21.2%)	48 (7.3%)	3.01	0.68
12	There is no restriction to the number of articles downloaded	77 (11.7%)	361 (54.9%)	171 (26.0%)	48 (7.3%)	2.85	0.62
13	I always find it easy downloading files from online databases	113 (17.2%)	264 (40.2%)	186 (28.3%)	94 (14.3%)	2.73	0.85
14	E-databases are usually my first priority when sourcing for materials for my work.	46 (7.0%)	320 (48.7%)	243 (37.0%)	48 (7.3%)	2.68	.61
15	I can save my search results within e.databases for later use	94 (14.3%)	316 (48.1%)	139 (21.2%)	108 (16.4%)	2.49	0.87
	Practical skills or Expertise						
16	I do phrase searching e.g. 'Information Explosion', Environmental disaster'	165 (25.1%)	341 (51.9%)	48 (7.3%)	103 (15.7%)	3.10	0.66
17	I usually peruse contents from open access journals, repositories, electronic theses and dissertations	160 (24.4%)	305 (46.4%)	144 (21.9%)	48 (7.3%)	3.03	0.71
18	I am skillful in downloading articles in e-databases	160 (24.4%)	269 (40.9%)	180 (27.4%)	48 (7.3%)	2.97	0.75
	Theoretical Understanding						
19	I find e-databases easy in accessing journal articles	77 (11.7%)	434 (66.1%)	98 (14.9%)	48 (7.3%)	2.97	0.54
20	Databases are user-friendly and flexible to navigate	77 (11.7%)	434 (66.1%)	67 (10.2%)	79 (12.0%)	2.91	0.66
21	Databases require serious mental efforts to use	98 (14.9%)	244 (37.1%)	267 (40.6%)	48 (7.3%)	2.72	0.72
	Experience						
22	I have ability to compare and evaluate information obtained from different e-databases	109 (16.6%)	341 (51.9%)	159 (24.2%)	48 (7.3%)	2.92	0.66
23	I have search techniques to retrieve information effectively from e-databases	79 (12.0%)	465 (70.8%)	67 (10.2%)	46 (7.0%)	2.79	0.65
	Intellectual Property						
24	I have knowledge of copyright protection arising upon the creation of an original work or authorship	201 (30.6%)	273 (41.6%)	104 (15.8%)	79 (12.0%)	3.06	0.84
25	I fully understand when I need a licence agreement to use somebody else's contents	139 (21.2%)	289 (44.0%)	150 (22.8%)	79 (12.0%)	2.88	0.82
26	My institution has licence agreements in place with the owners of rights to use the e-databases contents	134 (20.4%)	201 (30.6%)	197 (30.0%)	125 (19.0%)	2.64	0.96

Table 4.5 reveals the knowledge of academic staff on the use of electronic databases. In searching and retrieval skills, the finding revealed that 559 (85.0%) respondents can effectively use input devices like mouse, arrow keys and can locate files in e-databases. Also, a significant number (71.5%) of the respondents agreed that operations of modern e-database facilities are so easy ($\bar{x}$ =3.01) and majority (72.4%) of the respondents can limit e-database search by fields ($\bar{x}$ =2.64) and

usually peruse contents from open access journals, repositories, electronic theses and dissertations ($\bar{x}$=3.03).

The result also shows that 79.6% of the respondents can retrieve scholarly contents from e-databases can use truncation search techniques.(and the navigation of the Internet through the use of functional keys like back, forward, reload, stop, refresh, go, home and so on). It is also revealed that most (79.3%) of the respondents used e-databases in their research and teachings ($\bar{x}$=3.02). This is because majority of the respondents (70.9%) understand the need to use appropriate search tools. Also, 438 respondents representing 66.6 per cent claimed that there is no restriction to the number of articles to be downloaded.It also clear from Table 4.5 that, a significant number of respondents represented by 57.4% find it easy downloading files from online databases.

The result further shows the practical skills of the respondents; and 65% ($\bar{x} = 2.97$) of the respondents are skillful in downloading articles from e-databases. Also, about 73.0% of the respondents concurred that the Internet needs to be available before a person can use e-databases ($\bar{x}$=3.10, SD=0.66). Besides, the finding also reveals the theoretical understanding of the respondents, and most respondents find e-databases easy in accessing journal articles ($\bar{x}$=2.97, SD=0.54), followed by those that support that databases are user-friendly and flexible to navigate ($\bar{x}$=2.91, SD=0.66).

On the other hand, the result of the respondents' experience on the use of electronic databases shows that 544 (82.8%) and 450 (68.5%) of the respondents have search techniques and ability to retrieve information and to compare or evaluate information obtained from different e-database (sources) respectively. Finally, the result of intellectual property of the respondents on the use of electronic databases exemplifies that copyright protection arises upon the creation of an original work or authorship ($\bar{x}$=3.06, SD=0.84). Therefore, 428(65.2%) respondents well understood that licence agreement is needed to use somebody else's content and 335 (51.0%) respondents consented that their institutions have license agreements in place with the owners of right to use the contents.

Test norm was also carried out on the knowledge of academic staff in the use of electronic databases (see Appendix for norm table). The range indicated that 1-26 represents very low, 27- 53 represents low, 54-79 represents highand 80-104 represents very high. The findings indicated that the overall mean score for the knowledge of electronic databases was 73.18 which fell within the high range.Knowledge ($\bar{x} = 2.81$) was high as against the threshold of 2.50, this implies that high knowledge would encourage respondents to make use of electronic databases. The implication of these findings is that knowledge of academic staff (searching and retrieval skills, location of information sources, ease of use,practical skills or expertise,theoretical understanding,experience

and intellectual property) had significant influence on the use of electronic databases amongacademic staff.

Table 4.6: Frequency of mode of Internet connection within private Universities in southwestern Nigeria(N=657)

Private University	Mode of Internet Connection(N=657)					Total
	Dail-up (mode) n(%)	Broadband (using network cable) n(%)	Wireless n(%)	Local area network (LAN) n(%)	Others n(%)	
Achievers University, Owo	0(0.0)	2(14.3)	9(64.3)	3(21.4)	0(0.0)	14
Adeleke University, Ede	1(4.2)	4(16.7)	12(50.0)	5(20.8)	2(8.3)	24
AfeBabalola, Ado-Ekiti	5(5.8)	13(15.1)	45(52.3)	17(19.8)	6(7.0)	86
AjayiCrowther University, Oyo	2(7.4)	3(11.1)	14(51.9)	6(22.2)	2(7.4)	27
Babcock University, Ilishan-Remo	4(5.9)	10(14.7)	36(52.9)	14(20.6)	4(5.9)	68
Bells University, Ota	1(3.8)	4(15.4)	14(53.8)	5(19.2)	2(7.7)	26
Bowen University, Iwo	3(7.3)	6(14.6)	21(51.2)	8(19.5)	3(7.3)	41
Caleb University, Lagos	1(7.1)	1(7.1)	9(64.3)	2(14.3)	1(7.1)	14
Covenant University,Ota	5(6.8)	10(13.5)	40(54.1)	14(18.9)	5(6.8)	74
Crawford University,Igbesa	0(0.0)	1(14.3)	4(57.1)	2(28.6)	0(0.0)	7
Crescent University, Abeokuta	1(6.3)	3(18.8)	8(50.0)	4(25.0)	0(0.0)	16
Elizade University, Ilara-Mokin	1(8.3)	1(8.3)	8(66.7)	1(8.1)	1(8.1)	12
Fountain University, Osogbo	2(8.0)	3(12.0)	13(52.0)	5(20.0)	2(8.0)	25
Joseph Ayo Babalola University, Ikeji-Arakeji	1(5.9)	2(11.8)	10(58.8)	3(17.6)	1(5.9)	17
Lead City University, Ibadan	1(4.5)	4(18.2)	11(50.0)	5(22.7)	1(4.5)	22
McPherson University, SerikiSotayo, Ajebo	1(14.3)	1(14.3)	3(42.9)	1(14.3)	1(14.3)	7
Oduduwa University,Ipetumodu	1(5.6)	3(16.7)	9(50.0)	4(22.2)	1(5.6)	18
Pan-Atlantic University, Lagos	1(6.7)	2(13.3)	8(53.3)	4(26.7)	0(0.0)	15
Redeemer's University, Ede	3(8.3)	6(16.7)	18(50.0)	6(16.7)	3(8.3)	36
Southwestern University, Ijebu-ode	1(10.0)	1(10.0)	6(60.0)	1(10.0)	1(10.0)	10
Wesley University of Science & Technology,Ondo	1(7.7)	2(15.4)	7(53.8)	3(23.1)	0(0.0)	13

The results in Table 4.6 show mode of Internet connection used within private universities in South-west Nigeria. The results show that Elizade University (66.7%) exhibited higher use of wireless network, followed by other universities such as: Achiever University (64.3%), Caleb University (64.3%), Southwestern University (60.0%), Joseph Ayo Babalola University (58.8%), Crawford University(57.1%), Bells University (53.8%), Wesley University (53.8%), and Redeemer University (50.0%).

The result further shows that McPherson University (42.9%) exhibited low use of wireless network. Furthermore, the result shows that among the four Internet connections identified in this study, wireless network was the major Internet connection used in 99% of most private universities in South-west, Nigeria while other connections such as dial-up (modem), broadband (using network cable), local area network and other sources such as hotspot and phones were less used in

most private universities. This is anticipated due to the cost associated with the setting up of dial-up (modem), broadband (using network cable) and local area network.
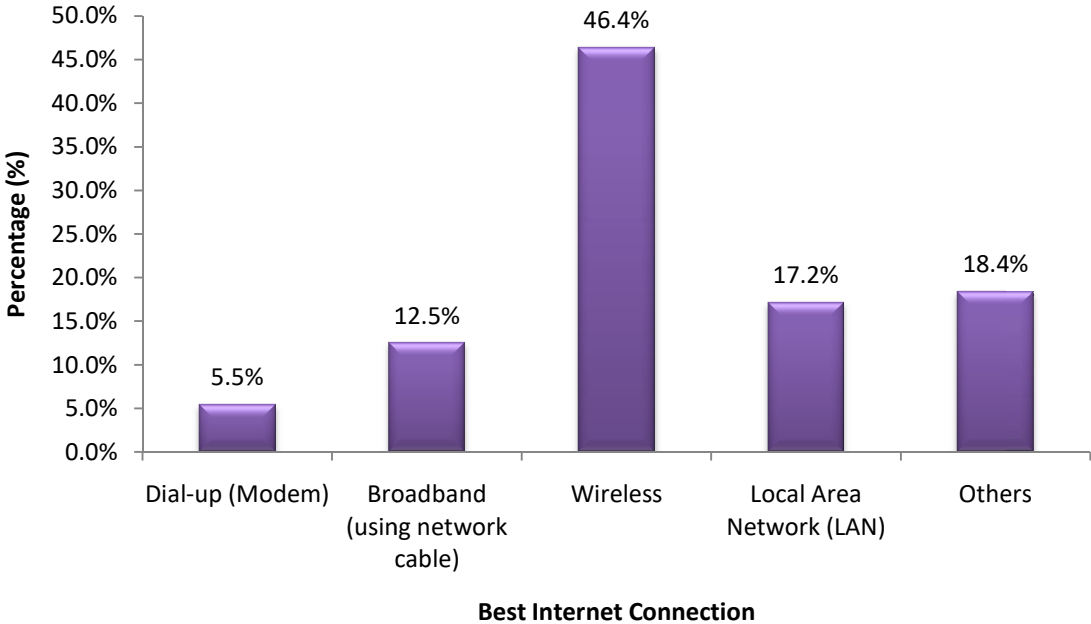
Fig. 4.3: Distribution of respondents by best internet connection within private universities in southwestern Nigeria (N=657)

As shown in Fig. 4.3, among the best Internet connection identified in the study, wireless is described as the best connection within private universities as supported by majority (46.4%) of the respondents. One hundred and twenty-one (121) of the respondents representing 18.4% also described other Internet connections as the best, followed by LAN (113, 17.2%), broadband (82, 12.5%) and dial-up (model) (36, 5.5%).

Table 4.7: Reliability (stability) of Internet connection/access by academic staff in private Universities in southwestern Nigeria (N=657)

Private University	Reliability of Internet Connection/Access by academic staff (N=657)			Total
	Unreliable n(%)	Reliable n(%)	Fair n (%)	
Achievers University, Owo	1(7.1)	11(78.6)	2(14.3)	14
Adeleke University, Ede	1(4.2)	19(26.0)	4(16.7)	24
AfeBabalola, Ado-Ekiti	5(5.8)	65(75.6)	16(18.6)	86
AjayiCrowther University, Oyo	2(7.4)	21(77.8)	4(14.8)	27
Babcock University, Ilishan-Remo	4(5.9)	52(76.5)	12(17.6)	68
Bells University, Ota	1(3.8)	21(26.0)	4(15.4)	26
Bowen University, Iwo	2(4.9)	31(75.6)	8(19.5)	41
Caleb University, Lagos	1(7.1)	9(64.3)	4(28.6)	14
Covenant University,Ota	4(5.4)	54(26.0)	16(21.6)	74
Crawford University,Igbesa	1(14.3)	6(85.7)	0(0.0)	7
Crescent University, Abeokuta	1(6.3)	13(26.0)	2(12.5)	16
Elizade University, Ilara-Mokin	0(0.0)	6(50.0)	6(50.0)	12
Fountain University, Osogbo	2(8.0)	17(35.3)	6(5.9)	25
Joseph Ayo Babalola University, Ikeji-Arakeji	1(5.9)	12(26.0)	4(23.5)	17
Lead City University, Ibadan	1(4.5)	18(81.8)	3(13.6)	22
McPherson University, SerikiSotayo, Ajebo	0(0.0)	4(57.1)	3(42.9)	7
Oduduwa University,Ipetumodu	1(5.6)	15(26.0)	2(11.1)	18
Pan-Atlantic University, Lagos	1(6.7)	12(80.0)	2(13.3)	15
Redeemer's University, Ede	1(2.8)	25(69.4)	10(27.8)	36
Southwestern University, Ijebu-ode	0(0.0)	6(60.0)	4(40.0)	10
Wesley University of Science & Technology,Ondo	1(7.7)	10(26.0)	2(15.4)	13

The result in Table 4.7 describes the reliability (stability) of the Internet connection or access in private universities in South-west Nigeria. More than 80% of the academic staff from Crawford University, Lead City University and Pan-Atlantic University affirmed that the Internet connection/access used in their institutions was reliable. The result also reveals that more than 70% of the academic staff from Achiever University, AfeBabalola University, AjayiCrowther University, Babcock University and Bowen University described the Internet connection/access used in their institutions as reliable.

In Caleb University, McPherson University, Redeemer University and Southwestern University, more than 60% of the academic staff are of the same opinion that the Internet

connection/access was reliable. The result further reveals that 50%, 42% and 40.0% of the academic staff in Elizade University, McPherson University and Southwestern University affirmed that the Internet connection/access used in their institutions was fair. The result implies the Internet connection/access is reliable in most (61.9%) private universities in South-west Nigeria, while about 38.1% of other private universities experienced fair and unreliable Internet connection/access.
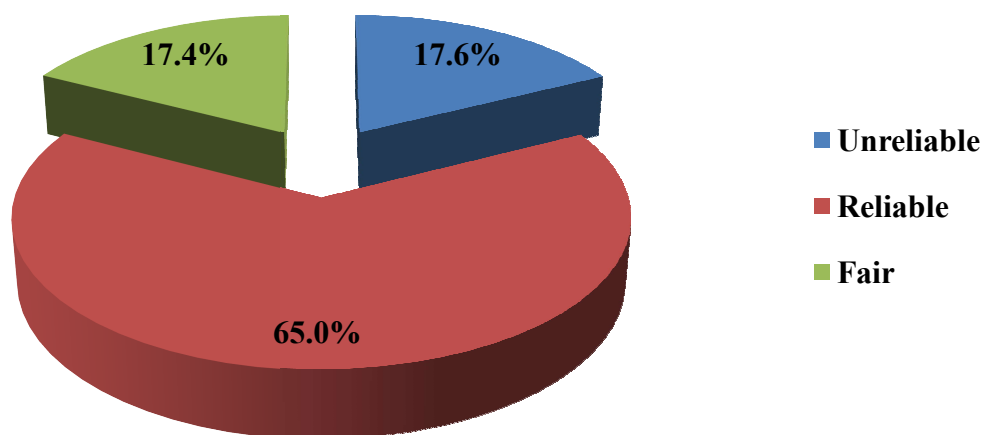
Fig. 4.4: Pie chart showing the distribution of respondents by reliability (stability) of internet connection/access in private universities in southwestern Nigeria (N=657)

Figure 4.4 described the reliability and stability of Internet connection accessed by the academic staff within private universities in South-west Nigeria. The result shows that 427 (65.0%) being the majority of the respondents described the Internet connection within private universities as reliable while 114 (17.4%) respondents claimed that Internet connection within private universities is unreliable. The result further shows that 116 (17.6%) respondents described the Internet connection within private universities to be fair. The result implies that the Internet connections within private university environment are reliable.

Research Question 3:What is the frequency of utilisation of electronic databases in Nigerian private universities by academic staff for research productivity?

In order to know the frequency of utilisation of electronic databases by academic staff in Nigerian private universities, Table 4.8 presents the respondents' opinions on the frequency of utilisation of electronic databases.

Table 4.8: **Frequency level of utilisation of e- databases by the academic staff (N=657)**

Electronic Databases	Daily N (%)	Once a week N (%)	Twice a week N (%)	Twice a month N (%)	Once a month N (%)	Quarterly N (%)	Never N (%)	Mean ($\bar{x}$)	Std.D
E-resources (e-books and e-journals)	191 (29.1%)	68 (10.4%)	139 (21.2%)	67 (10.2%)	67 (10.2%)	31 (4.7%)	46 (7.0%)	4.95	1.89
Repositories	98 (14.9%)	144 (21.9%)	68 (10.4%)	31 (4.7%)	31 (4.7%)	67 (10.2%)	218 (33.2%)	3.96	2.35
Online Public Access Catalogue (OPAC)	98 (14.9%)	140 (21.3%)	67 (10.2%)	36 (5.5%)	31 (4.7%)	73 (11.1%)	164 (25.0%)	3.95	2.33
E-abstracts and indexes	77 (11.7%)	67 (10.2%)	88 (13.4%)	130 (19.8%)	36 (5.5%)	115 (17.5%)	144 (21.9%)	3.76	2.07
E-prints	52 (7.9%)	79 (12.0%)	145 (22.1%)	119 (18.1%)	36 (5.5%)	98 (14.9%)	128 (19.5%)	3.59	1.91
E-bibliographies	31 (4.7%)	98 (14.9%)	36 (5.5%)	161 (24.5%)	79 (12.0%)	98 (14.9%)	164 (25.0%)	3.37	1.97
E-archives	31 (4.7%)	79 (12.0%)	57 (8.7%)	171 (26.0%)	124 (18.9%)	31 (4.7%)	164 (25.0%)	3.23	1.73
	Weighted Average		=	**3.60**					

The result shows that that only e-resources (such as e-books and e-journals) ($\bar{x}$= 4.95, SD=1.89), repositories ($\bar{x}$=3.96, SD=2.35), Online Public Access Catalogue (OPAC) ($\bar{x}$= 3.95, SD=2.33) and e-abstracts and indexes ($\bar{x}$=3.76, SD=2.07) are utilised by academic staff while other electronic databases such as e-print, e-bibliographies and e-archives are less frequentlyutilised as summarised by the weighted average mean of 3.60.

Furthermore, test norm (see Appendix for details) was carried out on utilisation of electronic databases by academic staff in Nigerian private universities and the result indicated that 1-6 represents never, 7-13 represents quarterly, 14-20representsonce a month,21 - 27represents twice a month,28-33representstwice a week, 34 - 41representsonce a week and 42- 49represents daily. The result further showed that the overall mean score is 26.81which fell within the oftenutilisation of electronic databases. Utilisation of electronic databases ($\bar{x}$= 3.60) was low as against the threshold of 4.00. It could therefore be concluded that there was high utilisation of electronic databases by academic staff in Nigerian private universities.

Table 4.9: Access point of e- databases used by the academic staff (N=657)

Private University	Where Electronic Databases are used by academic staff (N=657)				Total
	Library n(%)	University ICT Centre n(%)	At home n(%)	Office n(%)	
Achievers University, Owo	7(50.0)	6(42.9)	1(7.1)	0(0.0)	14
Adeleke University, Ede	14(48.3)	13(44.8)	1(3.4)	1(3.4)	29
AfeBabalola, Ado-Ekiti	55(55.0)	37(37.0)	3(3.0)	5(5.0)	100
AjayiCrowther University, Oyo	21(65.6)	9(28.1)	0(0.0)	2(6.3)	32
Babcock University, Ilishan-Remo	46(59.0)	26(33.3)	2(2.6)	4(5.1)	78
Bells University, Ota	17(56.7)	11(36.7)	1(3.3)	1(3.3)	30
Bowen University, Iwo	26(56.5)	16(34.8)	1(2.2)	3(6.5)	46
Caleb University, Lagos	8(57.1)	4(28.6)	1(7.1)	1(7.1)	14
Covenant University,Ota	43(50.6)	31(36.5)	4(4.7)	7(8.2)	85
Crawford University,Igbesa	7(63.6)	4(36.4)	0(0.0)	0(0.0)	11
Crescent University, Abeokuta	10(62.5)	5(31.3)	0(0.0)	1(6.3)	16
Elizade University, Ilara-Mokin	4(30.8)	6(46.2)	2(15.4)	1(7.7)	13
Fountain University, Osogbo	18(60.0)	9(30.0)	1(3.3)	2(6.7)	30
Joseph Ayo Babalola University, Ikeji-Arakeji	9(52.9)	6(35.3)	1(5.9)	1(5.9)	17
Lead City University, Ibadan	15(57.7)	9(34.6)	1(3.8)	1(3.8)	26
McPherson University, SerikiSotayo, Ajebo	4(50.0)	3(37.5)	0(0.0)	1(12.5)	8
Oduduwa University,Ipetumodu	10(55.6)	7(38.9)	0(0.0)	1(5.6)	18
Pan-Atlantic University, Lagos	9(60.0)	5(33.3)	0(0.0)	1(6.7)	15
Redeemer's University, Ede	19(45.2)	18(42.9)	2(4.8)	3(7.1)	42
Southwestern University, Ijebu-ode	5(45.5)	4(36.4)	1(9.1)	1(9.1)	11
Wesley University of Science & Technology,Ondo	9(69.2)	3(23.1)	0(0.0)	1(7.7)	13

The result in Table 4.9 describes where the electronic databases are accessed by the academic staff of private universities in South-west Nigeria. As shown in the table, four locations ranging from library, University ICT centre, at home, to office were identified in this study. The result reveals that most (i.e., 50% and above) of academic staff from Achiever university, AfeBabalola university, AjayiCrowther University, Babcock University, Bells University, Bowen University, Caleb University, Covenant University, Crawford University, Crescent University, Fountain University, Joseph Ayo Babalola University, Lead City University, McPherson University, Oduduwa University, Pan-Atlantic University and Wesley University used electronic databases in their university libraries. The result also reveals that about 40% of academic staff from Adeleke University, Elizade University and Redeemer University access the electronic

database in the University ICT centre. The result also shows that less than 16% of academic staff of private universities in Southwest Nigeria access electronic database at home or office.
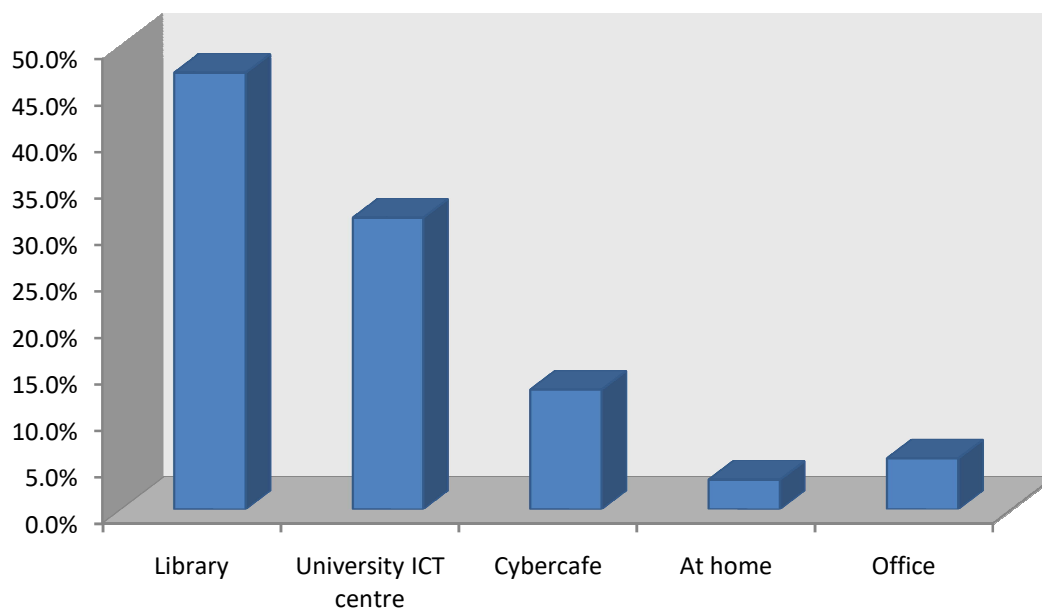
Fig. 4.5: **Bar chart showing where electronic databases are used by academic staff of private universities in southwestern Nigeria (N=657).**

The result in Fig. 4.5 shows where electronic databases are used by the respondents. From the result, 309 (47.0%) of the majority of the respondents used electronic databases in the library, followed by 206 (31.4%) who used it in university ICT centre. This implies that electronic databases are mostly used by academic staff of private universities in libraries.

Table 4.10: Challenges to effective use of electronic databases (N=657)

Challenges	Frequency	Percentage (%)
Lack of information retrieval skill	144	21.9
Difficult in finding relevant information	144	21.9
Slow access period	78	11.9
Lack of access to the Internet	85	12.9
Frequent power outage	108	16.4
Cost of access to the Internet too high	31	4.7
Lack of relevant electronic databases in my discipline	67	10.2
Total	**657**	**100.0**

As shown in Table 4.10, various challenges hinder the effective use of electronic databases among which lack of information retrieval skill and difficulty in finding relevant information were

identified by the majority (144, 21.9%) of the respondents as challenges that hinder effective use of electronic databases.

Research Question 4: What is the level of research productivity of academic staff in private universities in southwestern Nigeria?

In order to know the level of research productivity of academic staff in Nigerian private universities, Tables 4.11 and 4.12 present the number of the respondents' publications and academic activities on the job within the last 10 years and the extent to which the use of electronic databases improved the respondents' research productivity.

Table 4.11: **Level of research productivity of the academic staff (N=657).**The ratio is on a 5-point scale, 15 and above (5), 10 to 14 (4), 5 to 9 (3), 1 to 5 (2), none (1).

S/No.	Research Productivity	15above	10 to14	5 to 9	1 to 5	None	Mean	Std.D
		(5) N (%)	(4) N (%)	(3) N (%)	(2) N (%)	(1) N (%)	($\bar{x}$)	
1	Total articles in learned journals	113 (17.2%)	141 (21.5%)	113 (17.2%)	201 (30.6%)	89 (13.5%)	2.90	1.34
2	My annual research publication	36 (5.5%)	48 (7.3%)	124 (18.9%)	381 (58.0%)	68 (10.4%)	2.27	0.88
3	Ongoing research	31 (4.7%)	57 (8.7%)	46 (7.0%)	386 (58.8%)	120 (20.8%)	2.27	0.99
4	Papers published in conference proceedings	21 (3.2%)	48 (7.3%)	139 (21.2%)	324 (49.3%)	125 (19.0%)	2.13	0.85
5	Lecture seriesmaterials	57 (8.7%)	48 (7.3%)	88 (13.4%)	262 (39.9%)	202 (30.7%)	2.09	1.15
6	Chapters in books	48 (7.3%)	72 (11.0%)	36 (5.5%)	366 (55.7%)	135 (20.5%)	2.07	0.87
7	Books edited/reviewed	48 (7.3%)	57 (8.7%)	67 (10.2%)	242 (36.8%)	243 (37.0%)	1.90	0.94
8	Total number of textbooks published	-	42 (6.4%)	48 (7.3%)	231 (35.2%)	336 (51.1%)	1.57	0.81
9	Curriculum development	-	48 (7.3%)	42 (6.4%)	211 (32.1%)	356 (54.2%)	1.55	0.81
10	Supervision of PG students on dissertations	-	48 (7.3%)	42 (6.4%)	241 (36.7%)	326 (49.6%)	1.53	0.62
11	Technical papers	21 (3.2%)	48 (7.3%)	21 (3.2%)	144 (21.9%)	423 (64.4%)	1.44	0.85
12	Monographs	-	-	48 (7.3%)	247 (37.6%)	362 (55.1%)	1.41	0.49
13	Community service	-	48 (7.3%)	21 (3.2%)	190 (28.9%)	398 (60.6%)	1.38	0.55
14	Bibliographies compiled	-	21 (3.2%)	48 (7.3%)	159 (24.2%)	429 (65.3%)	1.36	0.66
		Weighted Average		**=**		**2.02**		

In Table 4.11, the mean score computed for the level of research productivity of the academic staff in private universities in South-west, Nigeria shows that they published most of their articles in learned journals (mean=2.90, SD=1.34). This is closely followed by ongoing research

(mean=2.27, SD=1.34) and papers published in conference proceedings (mean=2.13, SD=0.85), while other research productivity such as the curriculum development, occasional paper, monographs, working paper and bibliographies were poorly considered by academic staff. The weighted average of 2.02 shows a clear indication that the academic staff has a low level of research productivity.

Norm test (see Appendix for details) was carried out in order to analyse the level of research productivity of academic staff. The score range indicated that 1-14 represents very low research productivity, 15-28representslow research productivity, 29-42 represents moderate research productivity, 43-56 represents high research productivity 57-70represents very high research productivity. It could be observed that the weighted mean score for level of research productivity of academic staff is 2.02 which fall within the range of low level of research productivity of academic staff.Consequently, academic staff research productivity ($\bar{x}$ = 2.02) was low as against the norm test of 3.00. Overall, the result indicated a low level of research productivity of academic staff in private universities in southwestern Nigeria.

Table 4.12:   Extent to which the useofelectronic databases by academic staff has improved research productivity

S/N	Research Productivity	Greatly improved (4) N (%)	Averagely improved (3) N (%)	Improved (2) N (%)	Not improved (1) N (%)	Mean ($\bar{x}$)	Std.D
1	Teaching	294 (44.7%)	196 (29.8%)	119 (18.1%)	48 (7.3%)	3.29	0.77
2	Articles in learned journals	299 (45.5%)	160 (24.4%)	150 (22.8%)	48 (7.3%)	3.24	0.82
3	Lecture seriesmaterials	227 (34.6%)	108 (16.4%)	228 (34.7%)	94 (14.3%)	3.11	0.79
4	Textbooks	248 (37.7%)	124 (18.9%)	222 (33.8%)	63 (9.6%)	3.04	0.89
5	Community service	294 (44.7%)	196 (29.8%)	119 (18.1%)	48 (7.3%)	2.85	1.01
6	Curriculum development	180 (27.4%)	202 (30.7%)	150 (22.8%)	125 (20.0%)	2.80	1.00
7	Carrying out editorial duties	186 (28.3%)	172 (26.2%)	222 (33.8%)	77 (11.7%)	2.69	1.04
8	Supervision of post-graduate students on dissertations and class projects	156 (23.7%)	284 (43.2%)	104 (15.8%)	113 (17.2%)	2.64	0.98
9	Engaging in public debates and commentaries	82 (12.5%)	310 (47.2%)	125 (19.0%)	140 (21.3%)	2.63	0.90
10	Development of experimental designs	94 (14.3%)	201 (30.6%)	192 (29.2%)	170 (25.9%)	2.20	0.93
11	Obtaining research grants	63 (9.6%)	207 (31.5%)	94 (14.3%)	293 (44.6%)	1.91	.96
12	Obtaining patents and certified invention	36 (5.5%)	165 (25.1%)	142 (21.6%)	314 (47.8%)	1.87	1.00
		Weighted Average = 2.75					

Table 4.12 shows the extent to which the use of electronic databases by academic staff has improved research productivity. From the result, it shows that the use of electronic databases by academic staff has improved teachings ($\bar{x}$=3.29, SD=0.77), articles in learned journals ($\bar{x}$=3.24, SD=0.82), lecture series ($\bar{x}$=3.11, SD=0.79), textbooks ($\bar{x}$=3.04, SD=0.89), curriculum development ($\bar{x}$= 2.97, SD=0.88) and community services ($\bar{x}$=2.85, SD= 1.00) of academic staff. This is supported with the weighted average mean of 2.75. This result is in consonance with the result in Table 4.11 which revealed that academic staff have a low level of research productivity.

Research Question 5: What are the relative contributions of awareness and knowledge of electronic databases of academic staff on research productivity in private universities in southwestern Nigeria?

Table 4.13: Relative contribution of awareness, knowledge and utilisation of electronic databases of academic staff on research productivity in private universities in southwestern Nigeria

Model	Unstandardised Coefficient		Standardised Coefficient	t	p
	B	**Std. Error**	**Beta Contribution**		
(Constant)	21.522	3.493		6.161	.000
Awareness of Electronic Databases	-.049	.048	-.058	-1.041	.298
Knowledge of Electronic Databases	.471	.051	.398	9.146	.000
Utilisation of Electronic Databases	.272	.043	.331	6.379	.000

Note: *significant at p<.05

In Table 4.13, the result is presented to ascertain the relative contribution of each independent variable to predict research productivity in universities in southwestern Nigeria. All the independent variables investigated in this study were entered into a regression analysis. According to the table, the awareness of electronic database to the prediction of research productivity is β = -0.058; p< .05. This implies that awareness of electronic databases negatively contributed 5.8 per cent to the research productivity.

On the other hand, the Beta of knowledge of electronic databases to predict research productivity is β = 0.398; p< .05. This implies that knowledge of electronic databases positively contributed 39.8 per cent to the prediction of research productivity. Furthermore, the Beta of utilisation of electronic databases to the prediction of research productivity is β = 0.331; p< .05. This indicates that utilisation of electronic databases positively contributed 33.1 per cent to the

prediction of research productivity. Each of the independent variables made significant contributions to the prediction of research productivity of academic staff in private universities in southwestern Nigeria.

4.5 Hypotheses Testing

Hypothesis 1 (Ho₁): There is no significant relationship between awareness of electronic databases and research productivity of academic staff in private universities in southwestern Nigeria.

Table 4.14: Summary of the correlation matrix showing the relationship of awareness of electronic databases and research productivity

			Research productivity	Method	User Education	Consciousness About a Certain Technology	Level of Awareness of Online Database
Spearman's rho	Research productivity	Correlation Coefficient	1.000	.479**	.283**	.440**	.236**
		Sig. (2-tailed)	.	.000	.000	.000	.000
		N	609	609	609	609	609
	Method	Correlation Coefficient	.479**	1.000	.552**	.388**	.500**
		Sig. (2-tailed)	.000	.	.000	.000	.000
		N	609	657	657	657	657
	Level of User Education	Correlation Coefficient	.283**	.552**	1.000	.498**	.229**
		Sig. (2-tailed)	.000	.000	.	.000	.000
		N	609	657	657	657	657
	Consciousness about a certain Technology	Correlation Coefficient	.440**	.388**	.498**	1.000	.172**
		Sig. (2-tailed)	.000	.000	.000	.	.000
		N	609	657	657	657	657
	Level of Awareness of Online Database	Correlation Coefficient	.236**	.500**	.229**	.172**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.
		N	609	657	657	657	657

**. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

The result in Table 4.14 shows the correlation matrix relationship among method of awareness, user education, consciousness about a certain technology, level of awareness of online database and research productivity of academic staff in private universities in southwestern Nigeria. It shows there is a significant positive correlation between research productivity and methods of awareness of electronic databases (r = 0.479; p<0.05).

User education and research productivity of academic staff also had a statistical significant positive correlation between them (r= 0.283; p<0.05). This was followed by consciousness about a certain technology and research productivity which also had a significant positive correlation between them (r = 0.440; p<0.05). Finally, level of awareness of online database and research productivity had a statistical significant positive correlation between them (r = 0.236; p<0.05).

Therefore, the hypothesis is rejected in favour of method of awareness, user education, consciousness about a certain technology and level of awareness of online databases.

Hypothesis 2 (Ho$_2$):There is no significant relationship between knowledge of electronic databases and research productivity of academic staff in private universities in southwestern Nigeria.

Table 4.15: Summary of the correlation matrix showing relationship of knowledge of electronic databases and research productivity

			Research productivity	Searching and retrieval Skills	Location of Information Sources	Ease of Use	Practical Skill or Expertise	Thorectical Understanding	Experience	Intellectual Property
Spearman's rho	Research Productivity	Correlation Coefficient	1.000	.168**	.379**	.344**	.448**	.297**	.497**	.627**
		Sig. (2-tailed)	.	.000	.000	.000	.000	.000	.000	.000
		N	609	609	609	609	609	609	609	609
	Searching and retrieval Skills	Correlation Coefficient	.168**	1.000	.625**	.473**	.472**	.215**	.200**	.016
		Sig. (2-tailed)	.000	.	.000	.000	.000	.000	.000	.695
		N	609	657	609	609	609	609	609	609
	Location of Information Sources	Correlation Coefficient	.379**	.625**	1.000	.643**	.714**	.402**	.462**	.218**
		Sig. (2-tailed)	.000	.000	.	.000	.000	.000	.000	.000
		N	609	609	609	609	609	609	609	609
	Ease of Use	Correlation Coefficient	.344**	.473**	.643**	1.000	.688**	.417**	.410**	.210**
		Sig. (2-tailed)	.000	.000	.000	.	.000	.000	.000	.000
		N	609	609	609	609	609	609	609	609
	Practical Skill or Expertise	Correlation Coefficient	.448**	.472**	.714**	.688**	1.000	.630**	.696**	.315**
		Sig. (2-tailed)	.000	.000	.000	.000	.	.000	.000	.000
		N	609	609	609	609	609	609	609	609
	Thorectical Understanding	Correlation Coefficient	.297**	.215**	.402**	.417**	.630**	1.000	.594**	.377**
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.	.000	.000
		N	609	609	609	609	609	609	609	609
	Experience	Correlation Coefficient	.497**	.200**	.462**	.410**	.696**	.594**	1.000	.715**
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.	.000
		N	609	609	609	609	609	609	609	609
	Intellectual Property	Correlation Coefficient	.627**	.016	.218**	.210**	.315**	.377**	.715**	1.000
		Sig. (2-tailed)	.000	.695	.000	.000	.000	.000	.000	.
		N	609	609	609	609	609	609	609	609

**. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

The result on Table 4.15 shows the correlation matrix among information searching skills, location of information sources, ease of use, practical skill or expertise, theoretical understanding, experience, intellectual property and research productivity of academic staff in private universities in southwestern Nigeria. It shows there is a significant positive correlation between searching and retrieval skills and research productivity (r = 0.168; p<0.05). Location of information source

andresearch productivity of academic staff also had a significant positive correlation between them (r= 0.379; p<0.05). Similarly, ease of use and research productivity also had a significant positive correlation (r = 0.344 ; p<0.05).

The result further shows that there is a significant positive correlation among practical skill or expertise and research productivity (r = 0. 448 ; p<0.05). Theoretical understanding and research productivity also had a significant positive correlation between them (r = 0.297; p<0.05). Also, experience and research productivity had a significant positive correlation (r= 0.497; p<0.05) and intellectual property and research productivity also had significant positive correlation between them (r= 0.627; p<0.05). Hence, the hypothesis is rejected.

Hypothesis 3 (Ho₃): There is no significant relationship between utilisation of electronic databases and research productivity of academic staff in private universities in southwestern Nigeria.

Table 4.16: Summary of the correlation matrix showing relationship of utilisation of electronic databases and research productivity

			Research productivity	Level of utilisation
Spearman's rho	Research productivity	Correlation Coefficient	1.000	.457**
		Sig. (2-tailed)	.	.000
		N	609	609
	Utilisation of e-databases	Correlation Coefficient	.457**	1.000
		Sig. (2-tailed)	.000	.
		N	609	609

**. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

Table 4.16 shows the correlation matrix relationship betweenutilisation of electronic databases and research productivity of academic staff in private universities in southwestern Nigeria. The result reveals that there is a significant positive correlation between utilisation of electronic database and research productivity (r = 0.457; p<0.05). The null hypothesis three was rejected. This indicates that when electronic databases are utilised by the academic staff of private universities, their research productivity can be positively influenced.

Hypothesis 4 (Ho$_4$): There is no significant relationship between awareness and utilisation of electronic databases by academic staff in private universities in southwestern Nigeria.

Table 4.17: Summary of the correlation matrix showing relationship of awareness and utilisation of electronic databases

			Awareness of electronic database	Level of utilisation
Spearman's rho	Awareness of electronic databases	Correlation Coefficient	1.000	.690[**]
		Sig. (2-tailed)	.	.000
		N	657	609
	Utilisation of e-databases	Correlation Coefficient	.690[**]	1.000
		Sig. (2-tailed)	.000	.
		N	609	609

**. Correlation is significant at the 0.01 level (2-tailed)

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

Table 4.17 shows the correlation matrix showing the relationship between awareness of electronic databases and utilisation of electronic databases in private universities in southwestern Nigeria. The result shows that there is a significant positive correlation between awareness of electronic databases and utilisation of electronic databases (r = 0.690; p<0.05). The null hypothesis four was rejected.

Hypothesis 5 (Ho$_5$):Awareness, knowledge and utilisation of electronic databases will not jointly influence research productivity of academic staff in private universities in southwestern Nigeria.

Table 4.18: Summary of regression of awareness of electronic database, knowledge and utilisation of electronic databases on research productivity

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.607[a]	0.368	0.365	12.54866

Model	Sum of Squares	Df	Mean of Square	F	Sig.
Regression	55583.608	3	18527.869	117.661	0.000[a]
Residual	95268.593	605	157.469		
Total	150852.200	608			

*Note: *significant at p < .05*

Table 4.18 shows the multiple regression analysis used to test the hypothesis of joint effect of awareness, knowledge and utilisation of electronic databases (independent variables) on research productivity (dependent variable). The joint effect of awareness, knowledge and utilisation of

electronic databases on research productivity was significant with $F_{(3,605)} = 117.661$; $R = 0.607$; R-Square = 0.368 while the Adjusted R-Square = 0.365.

This implies that the awareness of electronic databases, knowledge and utilisation of electronic database contributed 36.8 per cent to the variation research productivity of academic staff. The remaining unexplained 63.2 per cent could be due to other factors that were not considered in this study. The result further reveals that the analysis of variance produced $F_{(3,605)}$ ratio equals 117.661; $P < 0.05$. In view of the fact that P value is less than 0.05, the null hypothesis five was, therefore, rejected. Therefore, there is a joint effect of joint effect of awareness of electronic databases, knowledge and utilisation of electronic databases on research productivity.

4.6   Comments by the respondents

Respondents were given the opportunity to comments at the end of the questionnaire. Various comments that relate to the dependent and independent variables in this study were identified, collated and presented below:

1. Lack of adequate awareness was identified by the respondents.
2. Subscription to relevant databases in the multi-disciplinary fields is necessary.
3. Knowledge of electronic databases is good and electronic databases are important tools that will enhance research and productivity.
4. There should be periodic training on the use of electronic databases and acquisition of journals indexed by popular/ reputable international databases such as Thompson Reuters Web of Science (WoS), SCOPUS and Google Scholar.
5. Low bandwidth is a problem common to many private universities. On the issue of bandwidth, majority of the academic staff agreed that high bandwidth encourages full-text article downloads.
6. The respondents indicated lack of electricity and ICT infrastructure/equipment such as LAN (Local Area Network), wireless and Internet connectivity in the private universities.

4.7   Discussion of the findings

This section discusses the findings of the study in line with results from previous researches.

4.7.1   Awareness of electronic databases by the academic staff

Responses to the question on the awareness of electronic databases by the academic staff revealed that the majority of academic staff were aware of electronic databases. This is an indication that the rate at which the respondents were aware of electronic databases was not the same way e-database resources were used. The finding reflects an increased in the use of the

electronic databases more than before. This result is a welcome development as the interest of electronic databases developers is to increase usage of the databases.

This development may not be unconnected with the significant level of awareness currently recorded in this study which is also above fifty percent, though the level of awareness is high. Individually, the various electronic databases available in each of the private universities studied recorded a significant level of awareness.Increasing awareness and training academic staff on how to use electronic databases is crucial. It implies, therefore, that awareness can be a factor that can influence the utilisation of electronic databases among academic staff in private universities in South-west, Nigeria.

This result supports Aina (2014) that the level of awareness of electronic resources among the academic staff of Babcock Business School is varied. Majority of the respondents were aware of academic journals (69.4%), followed by JSTOR (56.5%), as well as Theses and Dissertations and Ebscohost (54.1) and (50.6) respectively. The analysis reveals that majority of the respondents were not aware of Bookboon, World Bank Open Knowledge Repository and National Virtual Library with (25.9%), (32.9%) and (29.4) respectively. Findings also show that the respondents were averagely aware of nine out of 13 databases under consideration.

The result is also in consonance with Kwafoa, Osman &Afful-Arthur (2014) in their study of faculty's awareness and usage of online academic databases in order to determine the benefits they associate with electronic resources and the challenges they encounter in accessing electronic resources. A questionnaire was used to collect the data among 100 surveyed respondents. The Statistical Package for the Social Sciences (SPSS) software was used to analyse the data collected. The descriptive statistics established that faculty members depended highly on online electronic resources not only for the purposes of research, but also to support their teaching. Their relative advantage has also been shown to be more helpful, especially to faculty and distance learners who may have limited access to library resources in traditional formats.

4.7.2 Knowledge of electronic databases by the academic staff

Result on knowledge of electronic databases by the academic staff indicated that high proportions of academic staff in private universities have good knowledge of electronic databases. In information searching skills, the finding revealed that most respondents can effectively use input devices like mouse, arrow keys and can locate files in e-databases. Also, a significant number of the respondents agreed that operations of modern e-database facilities are so easy. Information searching skill is another factor that was significant in this study. This factor is significant because parameters used to assess this factor revealed that majority of the academic staff possess good searching skills to use electronic databases and also they can search the databases independently. Most of the academic staff can also use different keywords to search for information in electronic

databases. On the whole, information searching skill of academic staff and operations of modern e-database facilities was found to significantly correlate with utilisation of electronic databases, thus becoming a significant factor influencing utilisation of e-databases by academic staff in private universities in Southwestern Nigeria.

This result is an improvement on earlier findings reported by Harle (2010) that the ability of academics and students to search effectively is underdeveloped. In Nigeria, Adeleke et al. (2014) also reported that the proportion of IT-skill health information professionals that currently possess Internet searching skills is low and not encouraging.

A study by Sangowusi (2003) on problems of accessing scholarly publications by Nigerian scientists revealed that only 32.8 percent of respondents owned a personal computer. Search and discovery skills were often under-developed. Many researchers were unable to find and download what they need and many were not aware of the resources available to them. On the problems affecting the utilisation of electronic resources, Ibrahim (2004) identified lack of user skills, lack of technical support and insufficient spare parts as some of the major constraints to effective utilisation of electronic resources in many libraries in the developing countries including Nigeria.

The result also shows that more than 77.0% of the respondents can retrieve scholarly contents from e-databases, can use truncation search techniques and can navigate within theelectronic databases. It is also revealed that most of the respondents used e-databases in research and teachings because majority of the respondents understand the need to use appropriate search tools. The result further shows the practical skill of the respondents, and more than 70% of the respondents have good searching skills and are skillful in downloading articles from e-databases. Supporting the above result, Zin et al. (2000) observed: "Knowledge, skill and competence with computer technology are now an asset for those entering the competitive employment market. Every aspect of life from education, leisure and work environment to social interaction is being influenced by computer technology."The result obtained in this study is, however, at variance with the findings ofNwokedi (2011) who evaluated the University of Jos lecturers' knowledge of the existence of IR and willingness to submit research works, and found that majority (79%) of the respondents did not have any idea of Open Access IR and only 21% of the respondents claimed to be aware of the existence of IR in their institution.

Furthermore, about 73.0% of the respondents concurred that the Internet needs to be available before a person can use e-databases. Besides, the finding also revealed the theoretical understanding of the respondents, and most respondents find e-databases easy in accessing journal articles. On the other hand, the result of the respondents' experience in the use of electronic databases shows that 544 (82.8%) and 450 (68.5%) of the respondents have search techniques and ability to retrieve information and to compare or evaluate information obtained from different e-

database sources respectively. The result is evident that usage is enhanced where knowledge levels are high and training is provided.

A survey by Gathoni (2011) on monitoring and evaluation of electronic resources in academic and research institutions in Kenya highlighted that the majority of the respondents who were trained, indicated that training had enhanced their access and retrieval skills with much ease. According to Brown, Lund and Walton (2007) on the use of electronic journals by academic staff and researchers at Loughborough University, there was modest need for training in managing electronic journal references and locating full text from references. However, a study of online searching of scientific information in science and technology libraries of Delhi revealed a sizeable number of users (almost 60%) are facing numerous problems while browsing electronic information, such as lack of knowledge about the resources, lack of trained staff and inadequate terminals (Ali , 2005).

The findings of this study also revealed that the academic staff possessed a moderate level of skill that can afford them opportunities to use the ICT facilities available in their institutions. Also the findings are in agreement with the findings of Mostert and Olorunfemi (2013); Ajuwon and Popoola (2015), and Obuh (2009) who concluded that, in order to effectively utilise the growing range of electronic information resources, users must acquire and practise skills necessary to explore them. These skills include knowledge of structures of electronic information resources and instructions which must be put into search engines as well as ways in which instructions are linked with one another.

However, the result of this study is at variance with Ahmad and Panda (2013) who conducted a survey on the use of digital resources by the faculty members of Indian institutes in Dubai International Academic City (DIAC). Thirty faculty members representing ten from each of the institutes studied were selected. The overall result of the study indicated that the use of digital library resources in the institutes studied was reasonably high. The study confirmed that lack of knowledge and use of digital libraries specific resources and concluded that the resources could still be better put into use among the faculty members. Ansari and Zuberi (2010) also explored the University of Karachi's faculty's use of digital library resources and reported that electronic resources were used for research and for preparation of lesson notes among lecturers. Their findingsalso indicated that a majority of the academics have computer skills that facilitate the use of digital libraries, although a majority of them have little knowledge of these resources, which is not a positive aspect of the findings. Lack of knowledge and absence of facilities were also reported as the main reasons for not using electronic resources.

The study, therefore, submitted that academic staff in private universities in Nigeria have good knowledge and make use of electronic databases to obtain information materials for building

their lesson notes for teaching and research as well as to cope with fast-paced nature of innovations.

4.7.3 Utilisation of electronic databases by the academic staff

The result of the analysis on the utilisation of electronicdatabases among the academic staff was low. The result on the frequency level of Utilisation of electronic databases shows that only e-resources (such as e-books and e-journals) (mean= 4.95, SD=1.89), repositories (mean=3.96, SD=2.35), Online Public Access Catalogue (OPAC) (mean= 3.95, SD=2.33) and e-abstracts and indexes (mean=3.76, SD=2.07) are frequently utilised by academic staff while other electronic databases such as e-print, e-bibliographies and e-archives are poorly utilised as summarised by the weighted average mean of 3.60.

For the result on where the electronic databases are accessed by the academic staff of private universities.Four locations ranging from library, University ICT centre, at home, at office were identified in this study. The result reveals that most (i.e., 50% and above) of academic staff from the 17 private universities used electronic databases in their university libraries. The result also shows that less than 16% of academic staff access electronic database at home or office.The result on various barriers that hinders the effective use of electronic databases shows that lack of information retrieval skill and difficulty in finding relevant information were the major barriers identified by the majority of the respondents, while fewerrespondents identifiedcost of accessing the Internet as barrier.

Availability of passwords is another factor that can predict the use of electronic databases. Availability of passwords has been the challenge of utilisation of Research4Life databases (Salaam, 2007). Majority of academic staff agreed that passwords are very useful to download full-text articles in electronic databases but they were not readily available from their librarians.The foregoing is the comments of the academics in most of the private universities surveyed. They also stated that sometimes the passwords are difficult to memorise. The result is also in consonance with the findings of Ajuwon and Olorunsaye (2013) who reported lack of password as the main challenge of access to HINARI databases by resident doctors in tertiary health institutions in Southwestern Nigeria. Furthermore, Alison, Kiyingi and Baziraaake (2012) concluded that the complexity of HINARI password influenced access and usage of the database.

Fast Internet access and adequate training are also factors that predict the utilisation of electronic databases in this study for research productivity by academic staff as commented by the respondents. The result of the study indicated that majority of academic staff agreed that fast Internet access enhances the use of e-databases. They also indicated that fast Internet access helps in retrieving and downloading full-text articles in electronic databases. However, majority indicated that the Internet is slow in their institutions. However, many of the academic staff have

personal Internet access through their modems and smartphones to use electronic databases. This result is in agreement with ITOCA (2013) situational report in some African countries that researchers are able to access Internet due to improved connectivity.

Comments from majority of the correspondents also shows that inadequate provision of ICT facilities and frequent server downtime remained the major hindrances to the increased utilisation of electronic databases in most of the private universities. Some of the private universities are faced with the constant breakdown of equipment and low Internet bandwidth. Bandwidth refers to the amount of information that can be carried in a given time period (usually a second) over a wired or wireless communication link, expressed as bits per second (bps) (Plato, 2006). The higher the bandwidth, the more data can be transferred in bits per second. Whenever there are few data transferred in bits per second (low bandwidth), users get frustrated as it takes long to retrieve information from the Internet. Low bandwidth is a problem common to many private universities. On the issue of bandwidth, majority of the academic staff agreed that high bandwidth encourages full-text article download.

A closer look at these problems reveals that they are mostly institutional based and requires the attention of the various private universities management to address. Having said that, the fact remains that these problems hinder effective utilisation and invariably academic staff's research productivity. These findings agree with those of Afebende and Abaye (2006), Oyewusi and Oyeboade (2009), Parameshwar and Patil (2009), Agada (2010) and a host of others. For instance, the study by Afebende and Abaye (2006) study revealed that the most constraining factor to utilisation is lack of relevant databases just as Oyewusi and Oyeboade (2009) as well as Agada (2010) found that inadequate resources, lack of user skill and lack of modern ICT equipment are the most constraining factors to utilisation of library resources by academic staff.

Adeniji (2014) analysed the availability and utilisation of digital resources by lecturers of Ibogun campus of the OlabisiOnabanjo University, Ogun State, Nigeria. He selected 30 lecturers in the nominal roll from seven departments of the Institution. The study reported that majority of the respondents for the study claimed that constraints preventing them from the use of digital information resources are recurrent power outages, limited bandwidth, insufficient funds, inability to download information, and facilities and network challenges.Abolarinwa, Adewoyin and Aderanti (2015) discovered poor Internet signal/slow server and inadequate provision of full Internet connectivity as the leading problem encountered when using library electronic resources. The study concluded that high bandwidth results in fast Internet speed and download, thus making the usage of databases very easy.

Ajayi, Shorunke and Aboyade (2014) in their study identified inadequate skills on how to use electronic resources, non-availability of electronic resources, inadequate ICT equipment, and

poor Internet facilities. Gani and Magoi (2014) pointed out poor funding of subscription to electronic resources, infrastructural problems, and abuse on the part of the users. Eke (2014) identified network failure, limited number of computer work stations, lack of skilled manpower, incessant power failure, limited bandwidth, and poor funding as constraints to use ICT equipment in her study. Armstrong (2010) identified some challenges to the use of e-resources as access control, workload and shortage of personnel to assist users, technical support and security, volatility in coverage of local content, lack of formal orientation programme, electricity failure, few electronic information resources, limited access especially to use of IP authentication, slow Internet connectivity, and complexity in searching databases.

Majority of the academic staff agreed that adequate training enhances the utilisation of electronic databases, and training received improves the use of e-databases. However, most of the academic staff also indicated the need for more training.These findings were confirmed by the study of Omotayo (2010) on the access, use, and attitudes of academics towards electronic journals at the ObafemiAwolowo University, Ile Ife, Nigeria. Based on the findings also, search engines and private subscriptions were the most avenues used to access electronic information. The University e-library is slightly used by academic staff. The reason was due to the constraint faced when they want to access electronic information. This corroborates Ramayah (2006).

In Zimbabwe, Bhukuvhani, Chiparausha and Zuvalinyenga (2012) reported that electronic information resources skills training attended by lecturers influenced their use of electronic information resources to find information for their teaching and/or research at the Bindura University of Science Education.

4.7.4. Research productivity of academic staff in private universities in southwestern Nigeria
In order to ascertain the level of research productivity of academic staff in Nigerian private universities, the respondents responded on the number of publications and academic activities on the job within the last 10 years. The result of Norm test on the level of research productivity of academic staff showed a low level of research productivity of academic staff.   The analysis revealed that the highest possible mean score was 56 and the score range indicated that 1-5 represents low research productivity while 15 and above connotes very high research productivity of academic staff in Nigerian private universities in South-west Nigeria. The weighted mean score for level of research productivity of academic staff is 2.20 which fall within the range of low level of research productivity of academic staff. Overall, the result indicated a low level of research productivity of academic staff.

The result of the analysis showed that they published most of their articles in learned journals (mean=2.90, SD=1.34). This is closely followed by ongoing research (mean=2.27, SD=1.34) and papers published in conference proceedings (mean=2.13, SD=0.85), while other

research productivity such as the technical papers, curriculum development, monographs, community service and bibliographies were poorly considered by academic staff. The weighted average of 2.02 shows a clear indication that the academic staff have a moderately low level of research productivity. This result is quite unexpected because of the importance of research productivity in the lives of academic staff. Literature reviewed show that publication output is highly associated with academic staff appointment, tenure, promotion/career advancement, contribution to knowledge as well as personal/institutional visibility. What this means is that copyrighted inventions were low among academics in Nigeria.

Thus, the analysis establishes the fact that the research productivity of the academic staff in private universities in South-west, Nigeria is higher in journal publications, conference papers, chapters in books and books reviewed. Furthermore, the research productivity of the academic staff in private universities in South-west, Nigeria is on the average in total number of textbooks published, chapter in books/co-authored books. However, the research productivity of the academic staff in private universities in South-west, Nigeria is lower in technical papers, curriculum development, working papers, bibliographies compiled, monographs, patents and certified inventions.In Nigeria, university regulations state that academic staff members are to be evaluated for promotion every three years. The result shows that 381 representing 58.0% of the respondents had between 1 to 5 articles in learned journals as annual research publication. This result strongly confirms the culture of publish or perish that is a popular cliché among academics in Nigerian university settings.

The result as obtained in the study is in line with thefindings of Popoola (2002) who used a questionnaire to find out the research output of social scientists in Nigerian universities to determine the research output of the number of their publications that appeared in the refereed publication outlets in the preceding three years by types of publication. The publication types were: books, chapters in books, journal article, conference proceedings and technical reports. Journal articles top the list of research output of the respondents in the three years (1999-2001) with mean of 12.0. On the whole, the social scientists in the Nigerian university system produced an average of 7.0 publications from 1999 to 2001 with an average of approximately two publications per year.

In another study, Oduwole and Ikhizama (2007) used survey method to ascertain research output of librarians in Nigerian agricultural research institutes. They found out that the librarians' research output, although generally low, was related to their work experience.Cheimeke et al. (2009) also investigated the research output of Nigerian tertiary institutions using nine journals randomly selected from African Journals Online (AJOL). They found out, among other things, that research papers from Nigeria in the journal accounted for 39.1% of the total number of publications in the journals during 1999-2005.

However, these findings corroborate the results posted by some other studies on publication output of academic staff. For instance, Tower, Desai, Carson and Cheng's (2005) study revealed a low level of publication output among academic staff in Accounting in Australian universities. Also interesting is the work of Ogbomo (2010) which reported a low level of publication output among academic librarians in Delta State University, Abraka, Nigeria. Ogbomo's study is equally surprising because observations have shown that academic librarians in Nigeria engage in extensive research and have produced a high level of publication output.

On the other hand, one may associate the low level of publication output among the academic staff of private universities in South-west, Nigeria to their average level of electronic database utilisation. By not utilising electronic databases extensively, these staff obviously lacked the necessary information for high-level publication output because publication output is fundamentally a product of adequate utilisation of electronic databases. The result of this study is also in line with the report by Foster, Heppensta, Lazarz and Broug (2008). They revealed a low level of research productivity by academic staff in African universities; which they attributed to the poor state of accessibility and utilisation of electronic information resources.

The result is also in line with Anyaogu and Mabawonku (2014) who investigated the impact of resources availability and utilisation on the productivity of law lecturers in Nigerian universities. Using descriptive survey research design, the study reported that legal information resources such as law textbooks, periodicals, reference materials, law reports, legislations and statutes, newspapers, indexes and abstracts, digests and so on are readily available to the lecturers; electronic resources and online legal databases are less available; law reports, periodicals, legislations and statutes, indexes and abstracts, law textbooks, e-resources and so on are used by law lecturers in the course of research activities. The study concluded that "the research productivity of the law lecturers was higher in the publication of journal articles, chapters in books, conference proceedings, and foreign journals but low in co-authored books, textbooks and occasional papers.

The result of this study is at variance with the findings of Okenedo (2015) on the research and publication productivity of librarians in public universities in South-west, Nigeria. The result reveals that publication productivity of librarians was high between 2009 and 2014. When ranking the publications by types, it was discovered that articles in learned journals ranked highest followed by conference proceedings and chapters in books. The reasons for this may be as a result of the fact that journal articles are easy, less time-consuming and cheaper to publish compared to textbooks, monographs and so on.

However, the respondents' comments on dependent variable (research productivity) werecomparedwiththatof research publications, anditwasfoundthat academic staff in Covenant,

Babcock, Bowen and Redeemers universities weremoreproductivethan their counterparts in other private universities surveyed, particularly intermsofinternationalpublicationsascapturedby*TheWebofScience*.The importanceofinternationalpublicationasnoted by Atakanetal.(2008)cannotbe overemphasisedasinternationalpublicationis consideredasthemostimportantfactorin assessmentandevaluationof academicstaffanduniversitiesaroundtheworld.The resultofthe level of research productivityisconsistentwiththatofAniandOnyancha(2011)whofound that the UniversityofIbadanwasthemostproductiveuniversityinNigeriawhile the UniversityofCalabar was placedat the10thposition.

It is alsoevident that mostacademicstaffin private universities arepublishingmorepapersinthelocal/nationaljournals(or journals)thatarenot indexedby*TheWebofScience*. Mullen (2008) stated that, "If the journal isn't part of Web of Science, it is less likely to be considered "prestigious" by some faculty bodies. If it is not included in Web of Science, it will not have a published "impact factor". This is because journals with high impact factor are often more cited than other journals and, therefore, considered prestigious. Thus, publishing in such journals will provide visibility as well as impact in the field of the discipline. The lowlevelofpublicationsofacademicstaffat most private universities ininternational journalsisattributedtotheirrelativeaveragelevelofawarenessandutilisationofelectronic databasesof high impact journals.

4.7.5.Extent to which the use of electronic databases by academic staffhas improved research productivity

The result of the analysis shows that the use of electronic databases by academic staff has improved the research productivity. Response to the question showed thatuse of electronic databases by academic staff has greatly improved teaching, research publications, lecture series materials and innovation, while datasets, community service, curriculum development, models, carrying out editorial duties, web pages, supervision of postgraduate students on dissertations and class projects have averagely improved. However, use of electronic databases by academic staff were not improved by the followingresearch productivities ofacademic staff such as engaging in public debates and commentaries, development of computer programs, producing works of an artistic or creative nature, development of experimental designs and obtaining research grants.

The findings are in line with earlier study by Parameshwar and Patil (2009) which showed that the utilisation of online resources and other library resources influences academic staff's publication output. The findings also corroborate that of Khan and Dominic (2009) who in a similar study reported that utilisation has influence on publication output. This result is not surprising as it goes to show that many academic staff of private universities recognise the

importance of electronic databases in their overall academic activities, particularly in their publication output no matter the level of publication output.

The findings also revealed that electronic database utilisation has very high significant influence on teaching and research publications. These findings are clearly shown in Table 4.11. The influence of knowledge of electronic database and their influence on research productivity are well documented in the literature. For instance, Owolabi, Ajiboye, Lawal and Okpeh (2012)and Iroaganachi(2016) in their studies also found that academic staff rely on periodical literature and some other library resources which influence their publication output. The present study also conforms to those of Khan and Dominic (2009), Parameshwar and Patil (2009) and Agada (2010) which earlier reported high use of library resources by academic staff and significant influence of such use on their publication output.

The findings were the same from some earlier studies in the area of library resources utilisation. For example, Egberongbe, 2011,Popoola and Haliso (2009) in their separate studies reported various levels of library resources utilisation by academic staff and the influence it has on job efficiency and improved publication output. Although academic staff of private universities in South-west, Nigeria exhibited an average level of electronic databases and moderately low research productivity, they acknowledged the fact that electronic databases are very influential in their teaching and publication efforts. This disposition is not surprising because observations have shown that most successful researchers are those that utilise electronic databases effectively.

Academic staff in private universities in South-west, Nigeria had categories of publications, namely articles in conference proceedings, chapters in books, textbooks, articles in journals, technical reports and monographs. This was made possible by the awareness, knowledge and utilisation of electronic database for research. Access to and use of electronic databases by academic staff in private universities had a tremendous impact on their research productivity. The Report of the Visitation Committee on Uganda Public Universities (2007) cited in Owoeye and Oyebade (2009) disclosed that one of the primary functions of universities is to create and produce knowledge through research and to disseminate knowledge through publications, especially in peer-reviewed books and articles in scholarly journals.

The finding is in line with Okafor (2011) who reported that the outcome and extent of the functions of lecturers in creating new knowledge and innovation can be in the form of journal articles, technical reports, books and chapters in a book. The finding is also in agreement with Neil, Thomson and Gibson (2015) who positedthat a universal approach to measuring research productivity was to count the number of books, articles, technical reports, bulletins and book reviews published, as well as presentations given and grants received through reviewing curriculum vitae or other print materials.

The finding is in agreement with Okwilagwe (2010) who stated that lecturers are involved in the creation of knowledge such as training, research, writing, development of manuscripts and manufacturing of books. However, the finding is at variance with the assertion by a team of researchers led by Moher (2017) from Ottawa Hospital Research Institute, Ontario, Canada, who found thatNigeria is among the top three countries globally to get low-quality research published in 'predatory' journals.The investigation, published in the Journal of Naturefound that Nigeria contributed five percent of the scientific studies in bogus publications behind India (27 percent), the US (15 percent).

There are different opinions on research capability of lecturers in Nigerian universities. Anijaobi-Idem, Berezi and Akuegwu (2012) emphasised that as a result of the 'publish or perish' policy, some lecturers in Nigerian universities spend more time on research activities than teaching but this is contrary to the report of Sanyal and Varghese (2006) that universities in the developed world have a firm tradition of research while universities in the developing world have retained strong teaching functions and weak research functions. Research capability of lecturers in universities would determine the quantity and quality of their publication output. On university lecturer publication output, Hemming and Kay (2010) reported that unless the lecturers monitor the time they allocate to both teaching and service tasks, not enough time could be left for research and publishing.

According to Okiki and Mabawonku (2013) in their study to determine the level of research productivity of academics in Nigerian universities within three years period (2009-2011) revealed that 600 (65%) of the lecturers had articles in learned journals, 531 (60%) had conference papers, 236 (27%) had textbooks, 320 (36%) had chapters in books, 229 (26%) had technical reports while only 120 (13%) had monographs. They established the fact that the research productivity of the academics in Nigerian universities was higher in journal publications and conference papers and lower in textbooks, monographs, chapters in books and technical reports. They attributed the lower in publications output of lecturers in Nigerian universities to financial constraint.

Patchawong, Wangpan and Ounjit (2012) also reported on research publication in a period of three years at Mahasarakham University; most lecturers had 5-15 articles published in national journals and 5-15 articles presented in national proceedings while most lecturers were unable to produce research and academic work. They reported further that most lecturers were unable to produce research and academic work because they (90.28%) had a heavy workload; some (29.69%) claimed that compensation was too small and other reasons (75%) including lack of research funding, advisers, research equipment and tools including books and serials. The finding agrees with Okpe, Simisaye and Otuza's (2013) findings that 11(9.7%) of lecturers at Babcock University, Nigeria had within 1-3 publications, 14(12.4%) had within 4 and 6 publications, 25

(22.1%) had within 7 and 9 publications while 34 (30.1%) had above 10 publications within the period of 2001 and 2012.

Whether the private universities are adequately equipped with relevant and current databases or not, the academic staff must conduct research and disseminate the results for the benefit of others because their promotion is attached to the quantity and quality of their publications. The policy of 'publish or perish' shows the enormous importance attached to research and publication. However, there should be improvement on the research productivity of academic staff in private universities, especially chapters in books, textbooks, articles in journals and conference proceedings. This might be possible if there is good knowledge and if up-to-date electronic databases are made available, accessible in the university and fully utilised by academic staff.

4.7.6. Relationship between awareness of electronic databases and research productivity of the academic staff

A test of the relationship between level of awareness of online database and research productivity indicated that research productivity had positive correlations with the use of online databases among academic staff.It shows there is a significant positive correlation among research productivity and having perception of electronic databases ($r = 0.479$; $p<0.05$). Level of user education and research productivity of academic staff also had a statistical significant positive correlation among them ($r= 0. .283$; $p<0.05$). This was followed by consciousness about a certain technology and research productivity which also had a significant positive correlation among them ($r = 0.440$; $p<0.05$). Level of awareness of online databases and research productivity had a statistical significant positive correlation among them ($r = 0.236$; $p<0.05$).

As a result, the study establishes that there is a significant relationship between research productivity and use of online databases among academic staff. The postulation of possible increase in publication output of academic staff in private universities due to awareness and use of electronic databases is corroborated by Uhegbu (2007) who opined that the research potentials of electronic resources, when effectively utilised, impact the research productivity of academic staff in no small way. He argued further thatelectronic resourceshave become popular and "must use" among academic staff and research scholars due to their ability to report research findings more timely and allow remote access without geographical limitations. Despite the acclaimed advantages, individuals' views and perception about their research potentials vary greatly, thereby determining the impact of their usage on research output.

This is why Dulle and Minishi-Majanja (2010) stated that in the open access environment, awareness has been acknowledged as an important factor that determines usage of mode of scholarly communication.The finding is in conformity with the revelation of a study by Atakan,

Atilgan, Bayram and Arlantekin (2008). They examined the level of awareness and use of digital library resources by academics in Ankara University, Ankara, Turkey. The results of the survey showed that many academic staff have awareness of available digital library resources and are using them in their research activities. The Web of Science, ScienceDirect and EBSCO HOST were found to be the most used electronic databases among the respondents. The study revealed that 55.2% of the academic staff used electronic databases frequently, 33.6% occasionally, and 11.2% did not use these resources at all in their research.

4.7.7. Relationship between knowledge of electronic databases and research productivity of academic staff in private universities in southwestern Nigeria

The test of relationship between knowledge of electronic databases and research productivity of academic staff showed that the knowledge of electronic databases variables (information searching skills r=0.168, p<0.05, location of information source r= -0.379, p<0.05, ease of use r=0.344, p<0.05, practical skill or expertise r = 0. 448, p<0.05, theoretical understanding r = 0.297, p<0.05, experience r= 0.497, p<0.05, and intellectual property r= 0.627, p<0.05) were positively and significantly correlated with research productivity of academic staff in private universities in South-west Nigeria. Hence, the study establishes that there is a significant positive relationship between knowledge of electronic databases and research productivity of academic staff.

This result corroborates the findings from previous studies such as Ansari and Zuberi (2010) who explored the University of Karachi's faculty's use of digital library resources and reported that electronic resources were used for research and for preparation of lesson notes among lecturers. Their findings indicated that a majority of the academics have computer skills that facilitate the use of digital libraries, although a majority of them have little knowledge of these resources.

This result is also in conformity with the findings of Akande (2011) who found that information retrieval skills are strong individual characteristics that could determine the use of electronic information resources by information professionals in South-west, Nigeria. Factors motivating use can be, for example, what level of importance they allocate to e-databases, how useful they have found them, and for which purposes they use e-databases. Many authors have attempted to identify the knowledge necessary to work with e-databases. Sutton (2011) evaluated competencies present in 190 job ads (posted 2005-2009) for electronic resources librarians. She identified 75 broad (e.g., communication, collaboration, flexibility) and specific (e.g., link resolvers, licensing, ERMs) competencies.

4.7.8. Relationship between utilisation of electronic databases and research   productivity of

academic staff in private universities in southwestern Nigeria

A test of relationship among level of utilisation of electronic database, accessibility of electronic database, availability of electronic database and research productivity of academic staff was conducted. The result reveals that there is a significant positive correlation between level of utilisation of electronic databases and research productivity (r = 0.457; p<0.05). Accessibility of electronic databases and research productivity had a statistical significant positive correlation between them (r= 0.217; p<0.05). Similarly, availability of electronic databases and research productivity had a significant positive correlation (r = 0.568; p<0.05). This indicates that when electronic databases are available, accessible and utilised by academic staff of private universities, they can positively influence academic staff's research productivity.

The above findings are in line with the earlier study by Parameshwar and Patil (2009) which showed that the utilisation of online resources and other library resources influences academic staff publication output. The findings also corroborate that of Khan and Dominic (2009) who in a similar study reported that utilisation has influence on publication output. This result is not surprising as it goes to show that many academic staff of private universities recognise the importance of electronic databases in their overall academic activities, particularly in their research productivity no matter the level of publication output.

Vakkari (2008) reported the existence of a positive relationship between electronic information resources and productivity of academic staff but with a degree of variation from discipline to discipline. He observed that there is a correlation between accessibility and utilisation of electronic information resources with publication output of researchers.Nwezeh (2010) asserted that access and use of ICT and e-resources has improved research productivity and creativity in universities.Foster et al. (2008) made a proposition that academic staff in Nigerian universities will significantly increase their productivity (especially internationally) if they join their counterparts in developed countries to access and use e-resources in research.

4.7.9. Relationship between awareness and utilisation of electronic databases by academic staff in private universities in southwestern Nigeria

The result shows that there is a significant positive correlation between awareness of electronic databases and level of utilisation of electronic databases (r = 0.690; p<0.05). Awareness of electronic databases and accessibility of electronic databases had a statistical significant positive correlation between them (r= 0.420; p<0.05). Awareness of electronic database and availability of electronic database had a significant positive correlation (r = 0.652; p<0.05). Interestingly, the result of the study reveals that there is a significant positive correlation between awareness and utilisation of electronic databases in the surveyed private universities in Nigeria. The implication of

the results is that increase in awareness of electronic databases will lead to increase in the level of utilisation of electronic databases by academic staff in the surveyed universities.

According to Dinev and Goo (2005), awareness raises consciousness and knowledge about a certain technology and its personal and social benefits. This view was supported by their study which established awareness as the central determinant of user attitude and behaviour towards technology. In the open access environment, awareness has also been acknowledged as an important factor determining usage of this mode of scholarly communication (Warlick&Voughan, 2006; Fullard, 2007). Popoola (2001) carried out a study on academics' awareness of library information products and services in Nigerian universities. He reported that there was a significant difference in academic staff members' awareness of available library information products and services.

4.7.10. Relative effect ofawareness, knowledge and utilisation of electronic databases on research productivity of academic staff in private universities in southwestern Nigeria

Multiple regression analysis was used to test the joint effect of awareness of electronic database, knowledge and utilisation of electronic database (independent variables) on research productivity (dependent variable). The joint effect of awareness of electronic database, knowledge and utilisation of electronic database on research productivity was significant with $F(3,605)$ = 117.661; R = 0.607; R-Square = 0.368 while the Adjusted R-Square = 0.365. This implies that the awareness of electronic databases, knowledge and utilisation of electronic databases contributed 36.8 per cent to the variation research productivity of academic staff. The result further reveals that the analysis of variance produced F (3,605) ratio equals 117.661; $P < 0.05$. Therefore, there is a joint effect of joint effect of awareness of electronic databases, knowledge and utilisation of electronic databases on research productivity.

Therefore, the study submits that awareness of electronic databases, knowledge and utilisation of electronic databases are individual and collective predictors of research productivity of academic staff in private universities in South-west, Nigeria.The implication of the results is that, level awareness of electronic databases, knowledge and utilisation of electronic database will lead to increase in productivity of academic staff in the surveyed private universities. Furthermore, the results specifically indicate that awareness and knowledge of electronic databases by academic staff will lead to increase in productivity and international publication by academic. Thus, the results are plausible and consistent with global literature (or previous studies) that there is a positive correlation between accessibility and utilisation of electronic databases and research productivity.

The results corroborate previous findings (Mahajan, 2006; Popoola, 2008; Vakkari, 2008;Nwezeh, 2010;Ajala et al., 2010;MahmoodHartley & Rowley, 2011;Khan& Dominic,

2012). As reported in literature review, all these studies affirm that there is a significant perceived positive effect of awareness of electronic databases, knowledge and utilisation of electronic databases on research productivity. Specifically, a survey by Vakkari (2008) revealed that "perceived improved access to literature was positively associated with international publications scholars produced".

This study examines awareness, knowledge and utilisation of electronic databases in private universities in Nigeria and then compares the results with other countries, in order to place Nigerian situation in the context of globalisation as proposed by Foster et al. (2008). Foster et al. (2008) made a proposition that academic staff in Nigerian universities will significantly increase their productivity (especially internationally) if they join their counterparts in developed countries to access and use e-resources in research. This proposition provides the framework and guide for this study. Hence, the basic aim of the study was to determine if there is a correlation between awareness, knowledge and utilisation of electronic database and research productivity of academic staff in private universities in Nigeria in line with global trend.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusion and recommendations drawn from the analysis of the research data. It also captures the contribution of the study to knowledge and recommendations for future research.

5.1   Summary of thefindings

The study was on the awareness, knowledge and utilisation of electronic databases as predictors of research productivity of academic staff in private universities in southwestern Nigeria. From the data analysed and the hypotheses tested, the findings of the study revealed that:

1.   There was high level of awareness of electronic databases among academic staff in private universities in southwestern Nigeria;

2.   Knowledge level possessed by academic staff in the use of electronic databases indicated that high proportions of academic staff in private universities have good knowledge of electronic databases;

3.   The level of utilisation of electronic databases among the academic staff for research productivity was averagely high;

4.   Majority of the academic staff agreed that adequate training enhances utilisation of electronic databases, and training received improves the use of electronic databases;

5.   Academic staff exhibited moderately low research productivity; they acknowledged the fact that electronic databases are very influential in their teaching and publication efforts;

6.   Some of the private universities are faced with the constant breakdown of equipment and low Internet bandwidth;

7.   There was a low level of publication output among the academic staffin private universities in South-west, Nigeria;

8.   The low level of publications of academic staff at most private universities in international journals is attributed to their relative average level of awareness and utilisation of electronic databases of high impact journals.

9.   There was a significant relationship between awareness of electronic databases and research productivity of academic staff in private universities in southwestern Nigeria;

10.   There was a significant relationship between knowledge of electronic databases and research productivity of academic staff in private universities in southwestern Nigeria;

11.   There was a significant relationship between utilisation of electronic databases and research productivity of academic staff in private universities in southwestern Nigeria;

12. There was a significant relationship between awareness and utilisation of electronic databases by academic staff in private universities in southwestern Nigeria; and

13. Awareness, knowledge and utilisation of electronic databases jointly influence research productivity of academic staff in private universities in southwestern Nigeria.

5.2   Conclusion

The study has shown that awareness, knowledge and utilisation of electronic databases individually and collectively influenced research productivity of academic staff in private universities in South-west, Nigeria. Awareness and knowledge as variables equally made significant contributions towards the utilisation of the electronic databases. Moderate level of awareness and average level of utilisation of electronic databases were found in the study.It was specifically found that there is a significant correlation between awareness and knowledge of electronic databases by academic staff in the surveyed private universities.The observed correlation between awareness and knowledge of electronic databases readily affirms the general perception by the academic staff that awareness and knowledge of electronic databases will have a positive effect on research productivity. Therefore,awareness, knowledge and utilisation of electronic databases are predictors of research productivity of academic staff in private universities in southwestern Nigeria.

5.3   Recommendations

In view of the findings of the study, the following recommendations are hereby made:

1. The results of this study have raised some suggestions for libraries/librarians, database producers/ vendors, publishers and private universities ICT units/departments increased investment in ICT facilities at the surveyed private universities in line with the emerging digital trend in universities around the world to raise the level of awareness of electronic databases in the private universities insouthwestern Nigeria as higher awareness can influence higher utilisation of the electronic databases.

2. Private university management at the surveyed universities shouldprovide uninterrupted power supply and massively increase their investments in ICT infrastructural facilities such as computers, the Internet, computer networks (campus network/Intranet/LAN), good bandwidth and virtual/digital libraries in line with the emerging digital trend in universities around the world. Also, there is need for increased Internet access and bandwidth at various faculties and lecturers' offices in order to foster the use of electronic databases in their comfort zones. These inadequacies were observed in some private universities visited and their academic staff equally commented on them.

3. Training/re-training on informationliteracyshouldbeprovidedtoacademicstaffineverydisciplineinsurveyed private universities and otherNigerian universities. Specific training/re-training oruser education ofacademicstaffon the acquisitionofICTskills, awareness, accessanduse ofe-databasesshouldbe organisedregularly byrelevantunitssuchasuniversitylibrariesorICTcentres.

4. Academicstaffshouldbeencouraged/supportedby university managements with funds either partially or fullytoattendnational/internationalworkshops/conferences/seminars that will exposethemtobestpracticesonknowledgeandutilisationofICTs/e-databasesin modern-dayresearch and high impact factor journals.

5. There should be continuous acquisition of relevant ICT, user education and information literacy skills by academicstaff to enable them identify and use specific e-resources (online databases) in their various disciplines. They should strive to acquire relevant ICT and information literacy skills that will enable them to access and use e-resources in researchso as to help them in their field and enhance publishing in reputable journals.

6. Academicstaff should be conversant with theawarenessandutilisationofe-databases
inviewof the paradigmshiftin information explosion andinformation-seekingbehaviour
fromthe printtoe-resourcesandits attendantpositive effectonresearchproductivity.

7. Access to e-databases should be password and I.P.based and database owners/vendors should make full-text of their contents available.

5.4   Contribution of the study to knowledge

This study has contributed to knowledge in the following ways:

1. Awareness, knowledge and utilisation of electronic databases individually and collectively predict research productivity of academic staff in private universities in southwestern Nigeria.

2. There is high rate use of electronic databases by academic staff in private universities in southwestern Nigeria.

3. The theories and research model used in the study validate the variables in the study. The study has proven the explanatory qualities of each of the motivational theories.The degree of availability of the motivators and hygiene factors in private universities in Nigeria will be a major determinant of the extent of awareness,knowledge and utilisation of e-databases, and level of productivity among the academic staff.

5.5   Implications of the findings

The inferences from the study indicated that awareness, knowledge and utilisation of electronic databases were significant constructs for predicting and explaining the research productivity among academic staff. This is a reaffirmation that awareness and knowledge are a robust construct for ascertaining users' intention in relation to technology/information system utilisation.

The findings will invariably have theoretical and practical implications in the overall development of the field of Library and Information Science in respect of awareness and utilisation of electronic databases and research productivity of academic staff in private universities. And this will be useful in the formulation of likely theoretical relationship between awareness and utilisationof electronic databases and research productivity alongside existing knowledge in the field.

5.6   Limitations of the study

The study was limited to 21 out of the 27 privateuniversities established and approved between 1999 and 2012 in South-west, Nigeria, the remaining six (6) got approval to operate from NUC late in 2015. The study presented a scenario of utilisation of electronic databases by academic staff for research productivity in the surveyed 21 private universities established and approved between 1999 and 2012 in southwestern Nigeria.

The major limitation this study suffered was in the distribution and collection of the questionnaire; some private universities were owing their academic staff salary to the tune of five(5) to thirteen(13) months, while some of such universities placed their academic staff on compulsory leave without pay pending the resumption of the new academic session/calender year. As result of this, some academic staff were not available during the administration of the questionnaire.This affected not only the number of questionnaire collected from the respondents, as some of them lost the questionnaire given to them, but also the long time it took the research assistants to return the filled questionnaire to the researchers.

In addition, some lecturers were reluctant to participate in this exercise with the excuse that they were busy and had no time for completing the questionnaire.Furthermore, there was reliance on part-time/adjunct academic staff mostly from public universities. This was a common feature of some surveyed private universities, while some operate with very few regular staff. Sadly, the low response rate from McPherson University, Seriki Sotayo, Ajebo was accounted for by the fire outbreak in office of the college officer in the campus as at the time of administering the

instruments. The officer was assisting the researcher to distribute the questionnaire among the academic staff through their departmental secretary when the unfortunate incident occurred.

5.7   Suggestions for further study

The following suggestions are hereby made for further research:

1.   Institutional factors, demographic variables and computer skills as predictors of faculty members' intellectual output in private universities in southwestern Nigeria.

2.   Awareness, motivation and institutional factors influencing utilisation of electronic databases by academic staff in private universities.

3.   Knowledge, institutional factors and motivation as predictors of academic staff's publication output in high impact journals in private universities.

4.   InfluenceofICTpolicy on accessibilityand utilisation of electronic databases by academic staff in private universities in southwestern Nigeria.

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UNIVERSITY OF IBADAN, IBADAN
DEPARTMENT OF LIBRARY, ARCHIVAL AND INFORMATION STUDIES
AWARENESS, KNOWLEDGE AND UTILISATION OF ELECTRONIC DATABASES
ANDRESEARCH PRODUCTIVITY QUESTIONNAIRE (AKUEDRPQ).

Dear Respondent,

The questionnaire is designed to elicit information for a PhD research on Awareness, Knowledge and Utilisation of Electronic Databases and Research Productivity Scale (AKUEDRPS). I solicit your cooperation in completing this questionnaire for a successful study. All information provided will be treated with utmost confidentiality and the anonymity of the respondent is guaranteed.

Thank you.

B.T. Adetomiwa
Research student (08067098922)

Instruction: Please answer the following questions by either a tick (√) in the appropriate box or by writing in the space provided where applicable.

SECTION A: Demographic Information

1. Name of University: ……………………………………

2. Faculty: Science (   ); Social/Management Science ( ); Arts/Humanities( ); Engineering( )
Agriculture ( ); Law ( ); Basic Medical Sciences ( ); Vet. Medicine ( ); Environmental Studies ( ); Education ( ); Library ( ) others, (please specify) _____

3. Academic Status: Assistant Lecturer( ); Lecturer II ( ); Lecturer I ( ); Senior Lecturer ( );
Associate Professor/Reader ( ); Professor ( ); Assistant Librarian ( ); Librarian II ( );
Librarian I( );Senior Librarian ( ); Principal librarian; ( ); Deputy University librarian( );University Librarian( )

4. Gender: (a) male (   ) (b) female (   )

SECTION B: Awareness *of academic staff in the utilisation of electronic databases*

*5.*Please Indicate your level of awareness ofonline databases available through the library, ICT centers or cybercafé in your institution using these ratings: Fully Aware (FA), Averagely Aware (AA), Scarcely Aware (SA), Not Aware (NA).

Level of awareness of online databases	Fully aware (4)	Partially Aware (3)	Scarcely Aware (2)	Not aware (1)
Repositories				
E-resources (e-books, journals)				
E-Abstract and Indexes				
E-bibliographies				
E- Archives				
E- Prints				
Online Public Acces Catalogue (OPAC)				
Others, (please specify)…………..				

6. Please indicate (the method through which you become aware of e-databases) by ticking(√) from the option you find appropriate strongly agree (SA) to strongly disagree (SD)

	Statement	SA (4)	A (3)	D (2)	SD (1)
a.	**User Education** I always remember my password to access e-journals in the library				
b.	I am aware of the Directory of Open Access Repositories (DOAR)				
c.	I am aware of e-databases in my field of expertise				
d.	I am aware of Berlin Declaration on Open Access to Knowledge (BDOAK)				
e.	I am aware of adequate computers, printers and other facilities to use e-databases				
f.	**Consciousness about a certain Technology** High Internet bandwidth encourages articles download				
g.	I always find it dificult accessing online databases via wireless network				
h.	Fast Internet access enhances the use of e-databases				
i.	Certain browsers such as internet explorer, google chrome , mozila firefox are very good in accessing e-databases				
j.	**Information Literacy Programmes**received Information literacy skills help me in getting quality articles from the e-databases				
k.	I have increased my research output in referred journals as a result of my information literacy skills				
l.	I do key word searching e.g. Economic development, as a result of my information literacy skills				
m	The interface to access article is easy to follow				
n.	Through information literacy, I can search e-databases with ease				
o.	As a result of information literacy, It is quick in accessing articles in the e-databases.				
p.	My information literacy level helps to narrow my search in using e-databases				
q.	Through information literacy, I can use truncation marks, phraseal search and other such features offered by e-databases				
r.	Links to articles in the e-databases are easy to use				

SECTION C: *knowledge possessed by academic staff in the use of electronic databases available*

7. Please indicate your response (Knowledge level in the use of electronic database available from Very High (VH) to Very Low (VL) to the statements) V

	Statement	VH (4)	H (3)	L (2)	VL (1)
	Searching and retrieval skills				
a	Boolean operators, AND, OR, NOT are the best strategies for searching e-databases				
b	I have good searching skills to use e.databases				
c	As an academic staff, I understand the need to use appropriate search tools within e-databases				
d	I can use input devices like mouse/arrow key to navigate and locate files in e-databases				
e	I can limit e-databases search by fields				
	Location of Information Sources				
f	As an academic staff , I can retrieve scholarly contents from both basic and advance search within e-databases				
g	I can navigate within the e-databases from basic search to advance search				
h	As an academic staff, I can use Truncation search techniques within e-databases				
i	As an academic staff, I understand the use of online search tools				
	Ease of Use				
j	As an academic staff, I understand the need to use appropriate search tools				
k	I can save my search results within e.databases for later use				
l	e-databases are usually my first priority when sourcing for materials for my work				
m	There is no restriction to the number of articles downloaded				
n	I always find it easy downloading files from on-line database				
o	Operations of modern e-databases facilities are so easy				
p	**Practical skill or Expertise**				
	I usually peruse contents from open access journals, repositories, electronic theses and dissertations				
q	I am skillful in downloading articles in e.databases				
r	I do phrase searching e.g. 'Information Explosion', 'Environmental disaster'.				
	Thorectical Understanding				
s	Databases are user friendly and flexible to navigate				
t	I find e.databases easy in accessing journal articles				
u	Databases requires serious mental efforts to use				
	Experience				
v	I have ability to compare and evaluate information obtained from different e-databases				
w	I have search techniques to retrieve information effectively from e-databases				
	Intellectual Property				
x	I have knowledge of copyright protection upon the creation of an original work or authorship				
y	I fully understand when I need a license agreement to use somebody else's contents				
z	My Institution has a license agreements in place with the owners of rights to use the e-databases contents				

SECTION D: *Level of utilisation of electronic databases by the academic staff*

8. Tick the appropriate box to indicate the frequency of utilisation for each electronic databases available

Electronic Databases	Daily (7)	Once a week (6)	Twice a week (5)	Twice a Month (4)	Once a month (3)	Quarterly (2)	Never (1)
Repositories							
E-resources (e-books, journals)							
E- Prints							
E-Abstract and Indexes							
E-bibliographies							
E- Archives							
Online Public Acces Catalogue (OPAC)							
Others, (please specify)…………..							

9. Which of the following best describe your Internet connection within your Institution?
   (a) Dial-up (modem) ( ); (b) Broadband (using network cable) ( ); (c) Wireless ( ); (d). Local
   Area Network (LAN) ( ) ;   (e) others (please specify) --------------------------

10. Describe the reliability (stability) of your Internet connection / access within your institution
    environment: (a) Unreliable ( );   (b) Reliable   ( );   (c) fair   ( )

11. Where do you usually use the electronic databases? a. Library ( ); b. University ICT Centre ( ); c.
    Cybercafe ( ); d.   At home ( ) e. office ( )

12. What do you consider as challenges to your effective use of electronic databases? a. Lack of
    information retrieval skills( );.b. Difficulty in finding relevant information( ); c. Slow access time
    ( );   d. Lack of access to internet ( ); e. Frequent power outage ( ); f. Cost of access to Internet too
    high ( ); g. Lack of relevant electronic databases in my discpline ( );

SECTION E: *Level of research productivity by the academic staff*

13. Below are questions set out to determine the level of research productivity, number of publications and academic activities on the job within the last 10 years? This ratio is on a 5 point scale. Please tick on the space provided that best express your answer 15 and above (5), 10 to 14 (4), 5 to 9 (3), 1 to 5 (2), none (1)

	Research productivity	15above (5)	10 to 14 (4)	5 to 9 (3)	1 to 5 (2)	None (1)
a.	Total articles in learned journals					
b.	My annual research publication					
c.	Ongoing research					
e.	Papers published in conference proceedings					
f.	Lecture seriesmaterials					
g.	Chapters in books					
h.	Books edited/reviewed					
i.	Total number of textbooks published					
J	Curriculum development					
k.	Supervision of PG students on dissertations					
l.	Technical papers					
m.	Monographs					
n.	Community service					
o	Bibliographies compilation					

14. Indicate the extent to which the use of Electronic databases has improved your Research Productivity

Research Productivity	Greatly improved (4)	AveragelyImproved (3)	Improved (2)	Not improved (1)
a. Teaching				
b. Articles in learned journals				
c. Lecture seriesmaterials				
d. Textbooks				
e. Community service				
f. Curriculum development				
g. Carrying out editorial duties				
h. Supervision of post-graduate students on dissertations and class projects				
i. Engaging in public debates and commentaries				
j. Development of experimental designs				
k. Obtaining research grants				
l. Obtaining patents and certified invention				

15. Briefly, how would you describe the contributions of Knowledge and Utilisation of electronic databases of academic staff on research productivity?

16. General Comment(s)…………………………………………………………………………
Thank you.Kindly return this copy to the research assistant.

MAXIMUM NORM SCORE OBTAINABLE FOR INDEPENDENT VARIABLES

1. AWARENESS OF DATABASES (AD)

Maximum scores obtainable from the 7-item scale on AD   (4 x 7)   =   28

The average score is (4 + 3 + 2 + 1) / 4   =   10/4   = 2.50

   Interval score   (28/4)   =   7

Interval table for Awareness of Databases

Interval	Overall mean score image	Remark
1- 6		Not aware
7- 13		Scarcely aware
14 - 21		Partially aware
22 - 28	22.76	Fully aware

2. KNOWLEDGEOF DATABASES (KD)

Maximum scores obtainable from the 26-item scale on KD   (26 x 4)   =   104

The average score is (4 + 3 + 2 + 1) / 4   =   10/4   =   2.50

Interval score   (28/4)=   7

Interval table for knowledge of databases

Interval	Overall mean score image	Remark
1 - 26		Very low
27 - 53		Low
54 - 79	73. 18	High
80 - 104		Very high

3. UTILISATIONOF DATABASES (UD)

Maximum scores obtainable from the 7 -item scale on UD   (7 x 7)   =   49

The average score is (7+ 6 +5 +4 + 3 + 2 + 1) / 7   =   28/7   =   4.0

Interval score   (49/7)   =   7

Interval table for Utilisation of Databases

Interval	Overall mean score image	Remark	Remark
1 - 6		Never	NEVER
7 - 13		Quarterly	NEVER
14 - 20		Once a month	NEVER
21- 27	26.81	Twice a month	OFTEN
28 - 33		Twice a week	OFTEN
34 - 41		Once a week	REGULARLY
42- 49		Daily	REGULARLY

MAXIMUM NORM SCORE OBTAINABLE FOR DEPENDENT VARIABLE

RESEARCH PRODUCTIVITY (RP)

Maximum scores obtainable from the 14 -item scale on RP   (5 x 14)   =   70

The average score is (5+4 + 3 + 2 + 1) / 5   =   15/5   =   3.0

Interval score   (70/5)   =   14

Interval table for Research Productivity of respondents

Interval	Weighted mean score image	Remark
None		
1-14	2.02	Very Low
15 – 28		Low
29 - 42		Moderate
43 - 56		High
57 - 70		Very High

LIST OF FIGURES