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INFLUENCE OF LIBRARY INFORMATION RESOURCES AND SERVICES ON RESEARCH PRODUCTIVITY OF AGRICULTURAL SCIENTISTS IN AGRICULTURAL INSTITUTIONS IN BENUE STATE

Hajaratu Mafo Ilo

Federal University of Agriculture, Makurdi, Nigeria, ilohajratu@yahoo.com

Anthony Agena Igbashal

Federal University of Agriculture, Makurdi, Nigeria, igbash@yahoo.com

Jessica Ahemen Agoh

Federal University of Agriculture, Makurdi, Nigeria, jessicaagoh@gmail.com

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**INFLUENCE OF LIBRARY INFORMATION RESOURCES AND SERVICES ON
RESEARCH PRODUCTIVITY OF AGRICULTURAL SCIENTISTS IN
AGRICULTURAL INSTITUTIONS IN BENUE STATE**

By

ILO, Hajartu Mafo
Academic Librarian @ Federal University of Agriculture, Makurdi, Nigeria
ilohajartu@yahoo.com

&

Dr. IGBASHAL, Anthony Agena
Deputy University Librarian, Federal University of Agriculture, Makurdi, Nigeria
igbash@yahoo.com

&

Dr. (Mrs) AGOH, Jessica Ahemen
Deputy University Librarian, Federal University of Agriculture, Makurdi, Nigeria
jessicaagoh@gmail.com

**Thesis submitted to the Department of Educational Foundations and General Studies,
Federal University of Agriculture, Makurdi in partial fulfillment of the requirements for
the award of Master of Library and Information Science (MLIS)**

SEPTEMBER, 2018

DECLARATION

I declare that the work described in this thesis is original and has not been previously submitted to any University or similar institutions for the award of any degree or certificate.

Name of Candidate: ILO, Hajaratu Mafo

Date: 28-09-2018

CERTIFICATION

We the undersigned, hereby certify that this thesis presented by ILO, H. M. (15/8602/MLIS) be accepted as fulfilling part requirements for the award of Master of Library and Information Science (MLIS)

Title: Influence of Library Information Resources and Services on Research Productivity of Agricultural Scientists in Agricultural Institutions in Benue State, Nigeria

Dr A. A. Igbashal,
Supervisor

.....
Sign/ Date

Dr. (Mrs) J. Agoh
Co-Supervisor

.....
Sign/Date

Rev. Fr.Dr. D. T. Kajo
Head of Department

.....
Sign/Date

Prof. R. Sha'ato
Dean, Postgraduate School

.....
Sign/date

DEDICATION

This work is dedicated to the Almighty God who has been the source of my strength and inspiration throughout my study.

ACKNOWLEDGEMENTS

The researcher is most grateful to God Almighty, the Father for the hopeless and helpless, whom by His infinite mercy, grace and favor made the accomplishment of this great task possible.

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ABSTRACT

The study investigated the influence of Library Information Resources and Services on Research Productivity of Agricultural Scientists in Agricultural Institutions in Benue State. Seven purposes with corresponding research questions guided the study and two hypotheses were formulated. The study adopted survey research design. The population for the study comprises of 242 Agricultural Scientists in Agricultural Institutions in Benue. The sample size for the study was 151 Agricultural Scientists by using proportionate stratified and simple random sampling techniques. The instrument employed for data collection was a self constructed structured questionnaire which was validated by experts. The reliability of the instrument was established using Cronbach alpha method and an overall reliability index of 0.86 was obtained which shows that the instrument was highly reliable. Data for the study was collected with the help of research assistants. The data for the study were analyzed using Frequency Count, Percentages, Mean and Standard Deviation to answer the research questions and Chi-Square Statistic to test the hypotheses at 0.05 level of significance. The findings of the study revealed that Library Information Resources and Services are available and highly utilized for research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State. However, the research productivity of the agricultural scientists is considerably low. The researcher concluded that, the research productivity of Agricultural Scientists is low despite the high availability and utilization of library information resources and services. Recommendations were made that, Library information resources such as E-books, Granary, Monographs and Bibliographies should be made available in Libraries to enhance the research productivity of Agricultural Scientists and Library services such as Selective Dissemination Information Services and Bibliographic services should be made available in Libraries to enhance the research productivity of Agricultural scientists. The limitations of the study were pin-pointed. Based on the limitations, suggestions for further studies were made.

Key words: Information Resources and Services, Research Productivity and Agricultural Scientists

1.0

INTRODUCTION

1.1 Background to the Study

Agriculture is an important sector in the economy of all countries, developed or underdeveloped including Nigeria. Nigeria having realized the value of agriculture, is making frantic effort to sustain it by pragmatic agricultural policies. One of such policies in Nigeria is the establishment of specialized institutions, to carry out research in agriculture for socio-economic development of the country. These specialized institutions which enhance agricultural development largely rely on library resources and their information services. Consequently, recent empirical studies by librarians and information scientists are not only concerned with the acquisition, processing, storage and dissemination of 'hard' information to individuals and organizations for their use, but also concerned with the manner in which the information resources and services provided is put to use. They have also become concerned with the outcomes in terms of satisfaction the recipient of the information services has in carrying out their several functions (Tiamiyu, 2012).

Research in agriculture is widely recognized as one of the most significant tools for sustainability of agricultural productivity and economic development in the developing countries, including Nigeria. Agricultural research holds a great potential for raising agricultural productivity and reducing poverty in every nation. This is because research in agriculture is required to meet the food and economic needs of the nation, provide employment for the populace, as well as preserve the natural resources (Islam, 2010). The policy makers, researchers and stakeholders in agriculture are also of the opinion that information resources and services provision and utilization are key components of research and development efforts in agriculture, thus the need for effective library and information service provision (Osigwe, 2011). Modern

agricultural research and development efforts have also been partly attributed to the spread of information and the ability of researchers to access and utilize research results. The key tenet of this information provision view point is that researchers need to access and utilize information in order to optimally enhance their research and productivity outputs in agriculture (Griffith, 2010). Public agricultural research system is criticized on several occasions – first, in terms of global impact factor of the journals in which the papers published lag behind and second, the internal rate of return to research investment in agriculture has shown a declining trend over the years (Chand, Kumar & Kumar, 2012). According to the author, the agricultural scientists have problems of increasing agricultural research productivity to solve. The complex nature of agricultural research demands highly motivated scientists in an environment conducive to research. Since agricultural research has become increasingly multi-disciplinary in nature, skills in team playing and communication have become essential in scientific achievement. The lowering of academic and research standard of educational institutions in Nigeria in general and the agricultural institutions in particular has been a matter of concern to the researcher. The present situation demands a highly efficient public agricultural research system to address all the growing concerns over agricultural research and its output. It is well understood that the overall efficiency of the research system largely depends upon productivity of individual scientists.

Library resources and services are key tenets in boosting research productivity in any discipline. Popoola, and Haliso, (2009) define information resources as those information-bearing materials that are in both printed and electronic formats, such as textbooks, journals, indexes, abstracts, newspapers and magazines, reports, CD-ROM databases, the Internet/E-mail, video tapes/cassettes, diskettes magnetic disk, computers, micro forms and so on. These information materials are the raw materials that libraries acquire, catalogue, stock, and make

available to their patrons. According to Hanif, Zabeed, and Nasir, (2007) a good library should be well equipped with books and periodicals in all subjects to advance study and research. The duty of an Academic library like Agricultural libraries is to collect, organise and disseminate information to academics, research scholars and students, and support the generation of new knowledge. This is why Adeyemi (2010) argued that the users intellectual development is linked to constant use of library resources. It is the duty of the library to identify the information needs of its users and ensure their availability in libraries for immediate use (Agulu, and Aguolu, 2002). Availability, accessibility and use of information resources are indispensable to the teaching, research and community activities of academic staff members in any university system. The up-to-datedness of contents in courses, competence and research productivity of academic staff members as well as the quality of learning environment depend eagerly on how effective the academic library is in identifying and connecting information on current developments in various subject fields with the academic community. Hanif,et.al (2007) claims that, in order to satisfy the diverse information needs and interests of the academic community (agricultural scientists), the library collection must be adequate in terms of quantity, quality and currency. The collection must also be accessible to the agricultural scientists for use. The provision of quality information will invariably have positive impact on research productivity in agriculture; on the contrary, if the quality of the information provided leaves much to be desired, the result or productivity would be worse. From the foregoing, one can conclude that information resources are pertinent to research productivity.

From a food policy perspective, International Food Policy Research Institute (IFPRI) (2012) maintains that sustainable strategies aimed at reducing poverty and hunger and improving nutrition in Africa requires access to high quality information resources that enable decision

makers to articulate and plan for the long term, as well as to enable researchers to enhance their research activities. Thus high quality information services provision is fundamental to research in agriculture, and the necessity to provide the information services rest squarely on agricultural research libraries in Nigeria. Osigwe (2012) states that one major factor that makes agricultural libraries different from other information gateways is their ability to provide information resources and services unique to the institutions they serve. The author concludes that other information gateways such as Google scholars, internet among others do not provide such information and services.

Libraries has also provided a range of services which facilitates the inter-change of library data, promote the interoperability of library system, and support the operation of national and international networking of libraries. These are the various services rendered in the library to their users. It include the resources, activities and programs among others which are provided by libraries to enable users meet their information needs. Australian Library Association (2010) notes that these services include reference services, circulation services, current awareness services, selective dissemination of information, internet services, inter-library loan services among others. According to the authors, reference services are the services provided by libraries whereby users are assisted in the location and retrieval of information relevant to their information needs; circulation services are the ones that provides lending services and facilities for return of loaned items; current awareness services inform the users about new acquisitions in their libraries. Selective dissemination information refers to tools and resources used to keep a user informed of new resources on specified topics while internet services are the services that provide opportunity for users to access the internet for their needs (information resources).

These services play important roles in the library collection, in collections of other libraries or which are accessible in the world wide web. The purposes of these library services according to Matthews (2011) are: to stimulate the students to access relevant materials for the teaching and learning process; serve as one of the inputs in the school system, to enhance the performance of the users; serve as a reference point for other users of library information and to offer wider opportunities for users to explore the library resources. To this end, the importance of library services to users cannot be overemphasized. Hence these services if available and utilized by library users (agricultural scientist inclusive) are believed to enhance their productivity of agricultural scientists which is a lingering concern of the researcher especially in the agricultural institutions in Benue State.

Essentially, information resources and services are provisions aimed at disseminating desirable information to information users; library and information professionals have to provide the range of resources and services. These resources and services play important role in improving users' accessibility and utilization for enhanced research. However, Ezeala and Yusuf (2011) noted that, it is pertinent to state that considering the mandates of agricultural research institute in a developing country, expectation of research libraries performance is high, frequent evaluation of library resources and service should not be compromised, research library evaluation would increase users utilization of information which in the past has been adjudged to be very low. Apart from supporting the management with both immediate and strategic management information, research library evaluation would also help libraries understand their position within the cycle of information resources provided in the library. This would lead to upgrading of library resources and services according to needs of agriculturalists.

Agricultural research libraries are libraries established under the auspices of agricultural research institutes including universities of agriculture and colleges of agriculture set aside for the use of students, agricultural scientists, researchers and practitioners in agriculture and related areas. The emphasis for the agricultural research libraries is the dissemination of specialized information primarily devoted to a special discipline, offering specialized services to specialized clientele. (Uganneya, Ape &Ugbagir, 2012). For any effective and successful research and development to take place, it is necessary for the agriculturalist to acquire the knowledge from the library. According to Rhoe, Oboh and Shelton (2010), libraries support agricultural research by enhancing access to information through effective management of its resources and provision of wide range of information services to researchers, scientists and policy maker in agriculture sector. These libraries are special libraries that are expected to acquire, organize, preserve, and disseminate information as well as to improve, stimulate and guide research in agriculture by coordinating the efforts of research findings in agriculture, setting in motion interaction and better working relation between producers and consumers of agriculture research. Uganneya, Ape and Ugbagir (2013) maintained that agricultural research libraries remain societal mechanisms designed essentially for the provision of needed information services and resources for high quality agricultural productivity. These libraries are mandated to provide information services for study and research activities that will enhance the provision of prompt solution to farmers practical problem and raise farmers output, income and accelerate the drive toward national food self sufficiency.

The quest for a better understanding of our environment to enhance agricultural production propels human societies to seek and acquire more knowledge through research activities. Research is a systematic investigation towards increasing the sum of human

knowledge to discover new facts or to refurnish old knowledge. Research is cumulative in that it builds upon what is already known. The completeness of a research library and the availability of relevant learning materials help the researcher not only to know whether he is unnecessarily duplicating what has already been done, or being done by another research, but also to determine whether there is an adequate bibliographical basis for his study (Ezeala and Yusuf, 2011). In this line, research in every field of endeavor including agriculture can be better enhanced with a well-equipped library where information resources and services can easily be obtained.

Agricultural scientists are those individual researchers and practitioners in agriculture and related areas that are committed to sharing information and working together to solve agricultural problems. They include soil scientists, crop scientists, weed scientists, agricultural economists, agricultural engineers among others. These individuals are expected to use library information services and resources to solve agricultural problems through research and as a consequence, enhance food productivity of the nation (Uganneya, 2011).

Research productivity is the output of research work in form of creative work, conference paper, innovation, research books including critical scholarly texts, new interpretation of historical events and new ideas or perspectives based on established research findings. Research productive agricultural scientists is defined as those agricultural scientists with a demonstration of on-going commitment to research which meet the minimum threshold of performance prescribed by a given institution (Southern Cross University, 2010). In measuring research productivity, Blackburn, and Lawrence in Okiki (2013) used three outcome variables: published work, presentations on a national and international level, and conversations regarding research. Published works are any literary, artistic or intellectual production that is publicly available such as books, journal and articles among others while presentations are demonstrations, introduction,

lectures, or speeches meant to inform, persuade, inspire, motivate or to build good will or to present a new idea.

The need for agricultural information services and resources, provision and utilization by agricultural scientists in Nigeria cannot be overemphasized. This is because Nigeria is predominantly an agricultural country. In spite the pre-eminent position of the petroleum sub-sector, the agricultural sector still plays prominent role in the Nigeria economic development contributing to 40% of the Nation GPA and employing about 70% of the active population. It is in recognition of this important role that agriculture plays, that the government of Nigeria established libraries in all agricultural research institutes, including universities of agriculture as information support system (ISSs). Uganneya (2011) is of the view that these libraries have the capacity to make impact on the research productivity of agricultural scientists, but in most cases, the needed impact is lacking or inadequate. For example, the Global Hunger Index published by the International Food Policy Research institute (IFPRI) cited by Federal Ministry of Agriculture and Natural Resources (FMANR) (2011) which ranked developing countries on the basis of then dimension of hunger in the range of 0 – 100 with ‘0’ as state of “No hunger” and 100 as the worst states of hunger placed Nigeria at “20” in the rank of 10 – 20 labeled as having a serious state of hunger among compared sub-saharan African countries. Furthermore, the food and agricultural organization (FAO) also cited by FMANR (2006) reported that Nigeria had over 12 million people reported as undernourished as at 2003.

Agricultural Scientists have a primary function to undertake research activities focused towards boosting knowledge generation and innovation capacity to ensure the attainment of development in the economy. Agricultural Scientists in research especially in the developed countries have been observed to use information resources and services such as library and

reference services, consulting and planning services, current awareness activities, selective retrieval services, analysis and interpretation services; advisory services, and publishing services, to access knowledge and to keep abreast of inventions and innovations. Some of the resultant effects have been shown to include increased information flow, and increased research productivity, in terms of publications output (Owens, Wilson and Abel, 2008).

The use of information resources and services is one of the channels which scientists manage their research activities that helps in decision-making, communications; improvement of performance and enhancement of productivity (Owens 2008). Agricultural Scientists research productivity is therefore increasingly viewed as an important contributor to the production of knowledge and growth within any National Innovation System (NIS) (Salter and Martin, 2001). Agricultural Scientists in Research require the use of information resources and services to gain access to frontier knowledge nationally and internationally to keep abreast of developments in inventions and innovations, which they also need to adapt to the local environment, while creating awareness for the dissemination of their research results. It is evident that, the availability of these information resources and services can enhance the research productivity of agricultural scientists. To be acknowledged as an international scholar, an academic must publish internationally and locally. For this to be possible, the academic must have access to wide range of information resources and services provided by the library. However, the researcher having observed the laxity in research productivity of agricultural scientists is mooted with the question of availability, utilization and the extent of utilization of these resources and services by the agricultural scientists. It is against this backdrop that the study seek to investigate the influence of library information resources and services on research productivity of Agricultural Scientist in the agricultural institutions in Benue State, Nigeria.

1.2 Statement of the Problem

The library and information services delivery has been recognized to be essential for effective research productivity of scientists in agriculture. This is because researchers need current and relevant information resources to be able to carry out quality research. It is in the recognition of this fact that government established libraries in agricultural institution to provide library and information services and resources to support research activities to solve agricultural problem and enhance food production of the nation. To achieve this, it has to involve the development of viable agricultural research libraries, with strong mandate to provide information resources and services to meet the information needs of agriculturalists and other stakeholders in agriculture to find solution of improvement on agriculture. These libraries remain societal mechanism designed essentially for provision of needed information resources and services for high quality agricultural productivity through research.

Uganneya, Ape and Ubagir, (2013) observed that there had been low patronage to the agricultural research libraries by agriculturalists in Nigeria in recent years, resulting to poor development of agricultural programmes. In the same vein, the researcher observed that Agricultural scientists in Nigerian universities and especially in Benue state seem to be alienated in global research and publications in spite of digital revolution in research. This problem could be attributed to inadequate library information resources and services leading to low levels of accessibility and utilization of library resources and services. However, it is known that the provision of relevant information resources and services in research institute libraries motivate/influence users' patronage and subsequently their productivity and the absence of relevant information resources and services on the other hand retards or limits maximum utilization of information in the libraries and hence hampers productivity. The researcher hence

seek answer to questions like “Are these information resources and services available in the agricultural institutions in Benue State?” “To what extent are these resources and services utilized by agricultural scientists?” “To what extent does the utilization of these resources and services influence the research productivity of agricultural scientist?”. It is against this backdrop that the study investigated the influence of library information resources and services on research productivity of Agricultural Scientists in the agricultural institutions in Benue State, Nigeria.

1.3 Purpose of the Study

The main purpose of the study is to investigate the influence of library information resources and services on research productivity of agricultural scientists in agricultural institutions in Benue state. The specifically, the study seeks to:

1. Identify the available library information resources for research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State
2. Identify the available library information services for research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State
3. Determine the extent to which Agricultural Scientists utilize the available library information resources in the agricultural institutions in Benue State
4. Determine the extent to which agricultural scientists utilize the available library information services in the agricultural institutions in Benue State
5. Determine the extent to which the use of the available library information resources by agricultural scientists influence their research productivity in the agricultural institutions in Benue State

6. Determine the extent to which the use of the available library information services by agricultural scientists influence their research productivity in the agricultural institutions in Benue State
7. Determine the quantity of research productivity among agricultural scientists in agricultural institutions in Benue State

1.4 Research Questions

The following research questions guided the study:

1. What are the available library information resources for research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State?
2. What are the available library information services for research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State?
3. What is the extent to which Agricultural Scientists utilize the available library information resources in the Agricultural Institutions in Benue State?
4. What is the extent to which Agricultural Scientists utilize the available library information services in the Agricultural Institutions in Benue State?
5. To what extent does the use of the available library information resources by agricultural scientists influence their research productivity in the agricultural institutions in Benue State?
6. To what extent does the use of the available library information services by agricultural scientists influence their research productivity in the agricultural institutions in Benue State?
7. What is the quantity of research productivity among agricultural scientists in agricultural institutions in Benue State?

1.5 Research Hypotheses

The following null hypothesis guided the study and were tested at 0.05 level of significance

1. The use of the available library information resources by Agricultural Scientists do not significantly influence their research productivity in the Agricultural Institutions in Benue State
2. The use of the available library information services by Agricultural Scientists do not significantly influence their research productivity in the Agricultural Institutions in Benue State

1.6 Significance of the Study

The findings of this study when published and made available to academic libraries would be significant to professional librarians, agricultural scientist, government/policy makers, agricultural research institutes and students of library and information science.

The work on the use of library information services and resources and research productivity of agricultural scientists in Benue State is significant to professional librarians as the knowledge gained from this study would help them to provide quality information resources and services in their libraries. It would also enable them to intimate library users, the importance of library resources and services in enhancing research productivity.

The study would be significant to agricultural scientists as the information gotten from the study would help them for further research and the need to make adequate use of libraries resources and services. The finding would equally enable them to identify their strengths and weaknesses in the use of these information resources and services.

The study would also be significant to government/policy makers as they would realize the need of information resources and services in agricultural research libraries and make

adequate provisions for these resources and services in order to enhance the research productivity of agricultural scientists.

Finally, the study would be of benefit to agricultural research institute libraries as the information gotten from the study would be kept as resources material for researchers in their libraries. This study would also benefit students of library and information science as the study would help them in carrying out further research work.

1.7 Scope of the Study

The study is focused on the influence of library information resources and services on research productivity of agricultural scientists in the agricultural institutions in Benue State. The content scope for this study is limited to the availability of library information resources and services, the use of the library information resources and services, the influence of library information resources and services on research productivity and the quantity of research productivity among agricultural scientists.

The population scope for this study includes all the agricultural scientists (agricultural lecturers) in Federal University of Agriculture Makurdi and Akperan Orshi College of Agriculture, Yandev, Gboko, all in Benue State.

1.8 Operational Definitions of Terms

Information services: These are the core Library Services provided to users in any academic library. Example circulation, bibliographic instructions, distance learning, government documentation, reference, Cataloguing, Clasification among others.

Information resources: Information resources as used in this study refers to those materials, strategies, manipulations, or apparatus consulted by researcher to enhanced research and development. Generally, resources are aids to the researcher.

Research Productivity: as used in the work, it is the quantity/number of books, Journal, articles among others produced by agricultural scientists in the agricultural institutions in Benue State.

2.0

LITERATURE REVIEW

The chapter is a review of related literature and it is discussed under the following Sub-headings:

- 2.1 Theoretical Framework
- 2.2 Conceptual Framework
- 2.3 Review of related literature
- 2.4 Summary of the study

2.1 Theoretical framework

2.1.1 The SERVQUAL Theory by Parasurman, Zeithaml and Berry (1988)

The SERVQUAL theory was developed by a group of American authors, Parasurman, Zeithaml and Berry (1988). According to the proponents, the theory is conceived as the extent to which consumers' (library users') pre-consumption expectations of quality are confirmed or disconfirmed by their actual perceptions of the service experience. Service quality is an approach to manage library processes in order to ensure full satisfaction of the library users & quality in service provided. It works as an antecedent of library user's satisfaction. If expectations are greater than performance, then perceived quality is less than satisfactory and hence library users' dissatisfaction occurs. SERVQUAL is a service quality framework, aimed at measuring the scale of Quality in the service sectors. The theory of service quality is built on the expectancy-confirmation paradigm which suggests that library users perceive quality in terms of their perceptions of how well a given service delivery meets their expectations of that delivery. Library users' expectations are beliefs about a service that serve as standards against which service performance is judged.

Parasuraman et al.(1988) suggested that customer (library users’) expectations are what the library users think a service should offer rather than what might be on offer. The authors stated that SERVQUAL had been designed to be “applicable across a broad spectrum of services” and the format could be adapted to fit specific needs, and that it would be most valuable when used to track service quality trends periodically. The authors proposed that the SERVQUAL theory could be extended to measure gaps in quality and could therefore be used as a diagnostic tool to enable management to identify service quality shortfalls. The gap score is calculated by the perception statements being deducted from the expectation statements. If any gap scores turn out to be positive then this implies that expectations are actually being exceeded. This allows service library staff to review whether they need to re-deploy resources to areas of under performance

The authors identified five core components of service quality which capture library users’ expectations and perceptions of a service: reliability, assurance, tangibles, empathy and responsiveness.

1. **Tangibles** involve appearance of physical facilities, equipment, personnel and communication materials.
2. **Reliability** is ability to perform the promised service dependably and accurately
3. **Responsiveness** means willingness to help library users and to provide prompt service, whilst capturing the notion of flexibility and the ability to customize the service to library users’ needs
4. **Assurance** means competence and courtesy of employees and their ability to convey trust and confidence. (This category includes this measured components: competence, courtesy, credibility and security)

5. **Empathy** represents provision of caring, individualized attention to library users.
(Includes access, communication and understanding the customer)

These are the five dimensions of service quality that form the basis of the SERVQUAL. According to the proponents, when library users expectations are greater than their perceptions of received delivery, service quality is deemed low. When perceptions exceed expectations then service quality is high.

The SERVEQUAL theory is related to this study in that, the quality of library services: current awareness services, classifications services, selective dissemination information services, orientation services among others can influence research productivity of the library users (Agricultural Scientists).

2.0 Conceptual Framework

2.2.1 Library Information Resources

Library information resources are those information-bearing materials that are in both printed and electronic formats, such as textbooks, journals, indexes, abstracts, newspapers and magazines, reports, CD-ROM databases, the Internet/E-mail, video tapes/cassettes, diskettes magnetic disk, computers, micro forms and so on. These information materials are the raw materials that libraries acquire, catalogue, stock, and make available to their patrons.

The Wiki online encyclopedia (undated), gave the meaning of library in two parts. First, library was defined traditionally as a collection of books and in the second part which gave the contemporary use, library was defined as a collection of sources, resources and services organized to support teaching and research by the public, an organization or private individual (<http://en.wikipedia.org/wiki/library>). In the same information source, a resource was described as something that can be used for support or help. Resources are total means available for

increasing production or profit. Library resources are therefore total means available and organized for the support of learning, teaching and research for the public, an organization or for an individual.

Nwalo (2012) asserted that effectiveness in the use of library resources is measured in terms of satisfaction expressed by the users of such resources. The users may include people within the environs of the library, staff and affiliate staff of the mother institute (number of registered users of resources in the libraries under the study. Effectiveness of library services could be measured in various ways which may include judging the library by its set objectives, its resources and in determining the extent of application of its set standards. The interest of this work is on the library (information) resources and as Kabir and Holmgren (2013) wrote, the development and implementation of evidence-based health care policy and practice depends on research that addresses the need of the local populace. Such research requires information/library resources to be carried out. Researchers readily accept the fact that information contained in journals and other academic materials in the library are essential to their work but this feeling hardly translates into support for library growth in terms of provision of resources.

The library resources under discussion here are the print, non-print and electronic materials. The print materials are in the form of books; monographs; serials- journals, newspapers, bulletins; reference works- formularies, dictionaries, abstracts, indexes, encyclopedias, handbooks and manuals, Atlases, pamphlets and printed sheets including music and cartographies. The non-print resources are items like microforms, slides, transparencies, pictures and photographs, sound records etc. while the electronic resources include radio, television, computers, fixed and mobile phones, video machines, bandwidths, satellite dishes,

Compaq discs, (CDs) flash discs (USB), diskettes, modems, servers, scanners, fax machines and all other equipment that necessitate transfer of news pieces.

These library resources according to Dike (2010) are classified into three major categories. According to the author, the first category is the Nonfiction print media- which is the most diverse and included here are reference materials, general nonfiction, periodicals and vertical files materials. These have two basic things in common. First is to give information rather than tell a story and additionally, they are mostly printed documents used for reference purposes. The second category is the Fiction print media or Literature in a common parlance. These types of resources tell stories and only motivate people to read in order to gain speed in reading, mastery of a language and in-depth comprehension. Common examples are the story books and picture books but they are not necessary for this study. The third category is the audiovisual resources which do not depend solely upon reading to convey meaning. This type of resources presents information through sense of sight, hearing or both. The group includes maps, pictures, cassettes, films, videotapes and most of the present day information technology resources.

All these resources in their different forms help to provide some library services in the form of current awareness, video and teleconferencing, internet services, web browsing, electronic mails, cable networks, virtual library, inter and intra networks and many others that are considered ingredients of research. In his work, Liu (2012) wrote that preferences in application and use of either print or electronic resources vary among different people and disciplines. He was of the view that researchers or graduate students seem to expect a hybrid of print and electronic resources and presently, they desire to meet their information needs through a mix of print and online resources.

Agricultural research libraries are established with the primary goal of providing information to the students, staff and workers of the university community. One of the objectives of these libraries in Nigeria is to develop and maintain collections of information resources in all formats such as print and non-print and to make these information resources available and accessible to all users. The main goal of a university library is to support the objectives of a university, which are generally in the area of teaching, research and service (Aina, 2004; Mabawonku, 2004; and Johnson, 2006). It is pertinent, therefore that academic libraries facilitate information resources to meet academic staff members' research needs. Supporting this objective, Chisenga, (2006) observes that: The central purpose of libraries is to provide a service: access to information, and modern information and communication technologies, especially computers. Information networks and software applications are making it possible for libraries to provide a variety of library and information services to their clients.

It is the duty of the library to identify the information needs of its users and ensure their availability in libraries for immediate use (Aguolu, and Aguolu, 2002; and Aina, 2002). Availability, accessibility and use of information resources are indispensable to the teaching, research and community activities of academic staff members in any university system. The information resources and services available in institutional information systems (library, archives, records offices, documentation centers, and data centers) must be capable of supporting research activities (Shokeen, and Kaushik, 2002). Agba, Kigongo-Bukenya, and Nyumba, (2004) state that the shift from print to electronic information means that both academic staff and students in a university system must use these resources for better quality, efficient, and effective research more than ever.

The measure of academic success in academia is research productivity which requires information resources. The universities and other higher institutions set up libraries to make information resources available to assist academic staff members in their research quest. However, Omolewa (2008) reports that many of the professors in Africa are only local professors who are hardly known outside their institutions and are not recognized for the quality of their knowledge or scholarship. To be acknowledged as an international scholar, an academic must publish internationally and locally. For this to be possible, the academic must have access to wide range of information resources, must be current and know what is going on in his/her field. Armstrong (2005) asserts that understanding availability of information resources requires the academic to have the ability to identify what resources are available, for exploitation, where they are available, how to access them, the merits of individual resource, type and when it is appropriate to use them. This may have great implication for academics research activities. According to Igbo (2008) it is necessary for one to decide where to look, what clues to search for and what to accept especially now that we are faced with staggering quality of information.

Library is central to the provision of relevant information resources and services for adequate support of teaching, learning and research in any academic environment. From the foregoing, it can be seen that the importance of library resources to research productivity (productivity in agriculture inclusive) can not be overemphasized. Hence these resources if made available for adequate usage by agricultural scientist can enhance their research productivity

2.2.2 Library Information services

Generally speaking, library user services can be divided into two categories: library public user services and library technical user services. Library public user services refer to

circulation, bibliographic instructions, distance learning, government documentation, reference and special collection. Library information user services focuses on procedures and operations of maintaining, developing and supporting library collection and services behind the scene such as acquisition, cataloguing, classification, inter library loan, document delivery and serial systems. In the 1990s, the Internet became the primary platform for libraries to build and deliver information resources, services and instructions. Lately library user information services, also called library user service became evolving into two sections: traditional library user information services and electronic library user information services.

Library services are the activities that libraries and their personnel render to meet the information needs of their users. Such services are core and traditional library services . It is vital that the views of the service users are sought to help inform the debate about the library's performance. Satisfactory service cannot be provided unless the views of users are considered. Users' views about the services they use should be sought regularly and systematically to inform decision makers about what services should be provided.

Essentially, library and information services are library processes and activities which aim at disseminating desirable information to library and information users. Library and information professionals have provided a range of services including reference, circulations among others. These services facilitate the inter change of library data, promote the inter-operability of library system and support national and international networking of libraries. These services play important role in improving user's accessibility and utilization of library resources, which are held in the library collection, collection of other libraries or which are accessible in the world wide web (www) (Osigwe, 2012).

Depending on the type of library or information Centre, reference service may range from the provision of desired information to the training and educating the user to identify and locate what he needs (Fisher and Kinch, 2011). The term circulation service applies to the process of lending books and other library information resources to users and then accurately re-shelving them after they have been returned to the library so that they could be retrieved by the next users. Bataite (2011) maintained that this process involves a cycle where an item moves from shelf to user and back to shelf, in addition to the adjunct record keeping. The entire process is based on policies that libraries adopted concerning who may borrow what, for how long and what happens if the item is not returned. Although there has been a steady growth in agricultural information services provision in Nigeria, the persistent puzzle is: why is the growth in agricultural sector not impressive? The people of this country questioned the relevant and appropriateness of the services provision in spite of all the efforts and funds expended on it.

The extents to which information services actually satisfy users and contribute to agricultural development are subject of controversy and debate (Uganneya, 2013). Logic dictates that library and information services provision is essential for meaningful agricultural research and development in Nigeria, but how can this be demonstrated? How, tangible is the linkage between information service provision and the satisfaction and empowerment of library users for high research and productivity output? The limited status accorded to library and information service provision in Nigeria suggests that its potential value is not self-evident. Evidence from research also indicate users frustration, low patronage of library services / products, dearth of trained librarian, lack of modern tools for service delivery etc. as some of the factors affecting information service delivery in Nigeria and as a consequent users satisfaction (Osigwe, 2010, 2012; Phiri, 2010; Ogunleye, 2012).

In the digital age, the most common library user information services start from the personal oral or written communications between librarians and library users: Traditional library user information services have the following major features: Face to face, this face-to-face personal communication includes eye contact, facial expression, oral communication, and written communication. Onsite, this includes, campus outreach coordination and collaboration, library tour, ready reference, user technical support and virtual reference Electronic library user services include the Internet and the worldwide web, computerized library catalogs, digital libraries, distance learning services, e-databases, government, instant message services, interlibrary loan and virtual references.

From the literature reviewed on this concept, it can be concluded that library services are vital in enhancing research productivity in any field of endeavor (productivity in agriculture inclusive) can not be overemphasized. Hence the availability of these services in universities libraries can promote/enhance research productivity of agricultural scientists

The use of information services is one of the channels which scientists manage their research activities that helps in decision-making, communications; improvement of performance and enhancement of productivity (Owens et al, 1997). Scientist research productivity is therefore increasingly viewed as an important contributor to the production of knowledge and growth within any National Innovation System (NIS) (Salter and Martin, 2001)

From the above, it is evident that investigations of the relationship between the use of information services and research productivity generally find support for the view that information services enhance research productivity. To this end, the services provided by libraries in agricultural institutions can to a great extent to enhance research productivity of agricultural scientists.

Reference Services

Reference service provides the user of the library and information services an interface with the larger body of knowledge to satisfy their information needs. Reference service is one of the essential services of the library. The activities, roles, functions and services rendered by the reference librarian constitute reference service. Depending on the type of library and information Centre, reference service may range from the provision of the desired information to the training and educating the users to identify and locate what he needs (Fisher and Kirnch,2012), (Nwagu et al 2011) reports that reference service satisfies the need of patrons(in person, by telephone, or electronic means) by answering subjective questions, instructing users in the selection and use of appropriate tools and techniques and directing users to the location of the library resources. The author added that reference service assists in the evaluation of information and referring patrons to resources outside the library when necessary in order to satisfy their information needs.

To this end, reference service involves instructing researchers to operate independently and at own pace and to use electronic and print resources of the library. It also involved personal assistance given to the researchers to enable them meet their needs. If agricultural researchers are instructed and encouraged by librarians on the use of the available library resources and services, enhanced research productivity can be assured.

Circulation Services

The term circulation service applies to the process of lending books and other library and information resources to users and then accurately shelving them after they have been returned to the library so that they could be retrieved by the next users. According to Rhima (2014) special libraries have developed a wide range of activities to keep the clientele abreast of new and

current development. Such as selective dissemination of information [SDI] and Current Awareness Services [CAS]. This sophisticated services SDI and CAS, according to Rhima matches the individual interest against incoming information resulting in a personalized service to each user. The stresses further that the major advantage of SDI and CAS is that it can find answers for inquired information more rapidly than he could himself and added that it could also provide answers which the enquirers need but have not thought to request. Rhima state's that at its best, SDI brings forward on a regular basis new information item within the patron's scope of interest.

Popoola (2010) maintains that the purpose of CAS in the agricultural research libraries is to supplement individual faculty member's methods and habits of keeping current by providing systematic and selective review of recently published literature. The service is intended to save time, offer extensive coverage of literature and incorporate the searching enterprise of the professional library staff in order to satisfy user information needs (Zainab2011).

Aguolu and Aguolu (2012) state that current awareness service is designed to maximize satisfaction through alerting users to current information services that might be of interest to them. They assert further that the services are usually rendered through weekly or bi-weekly bulletins of new publications added to the library stock. It gives update on field of interest, time saving, control of information overload, immediate awareness of new field of interest by profile adjustment and identification and support of information gatekeepers.

The circulation services unit of the library is responsible for the borrowing and returning of all Library materials. Once a researcher is registered with the library, they have the privileges

of borrowing any library material that can be loaned out. These materials when borrowed can enhance researchers' productivity (agricultural scientists inclusive)

Internet Services

The product of a combination of desktop computing and high speed communication is more than just a different way of delivering library services. It constitutes a new paradigm and delivering library and information services. Ago and Ugannya, (2016) studied the use of internet in satisfying library user information needs and stresses its importance. Ezeala et al (2011) provides numerous benefits and advantages of internet on sport administration which can be applied to agricultural research libraries. Some of these benefits include; speedy and easy access to information, remote access to users, access to unlimited information from different sources, more updates information, facilitate the reformation and combining of data from different sources etc. the driving force behind internet services is its convenience, efficiency and cost saving in satisfying users information needs.

As libraries start to provide public access to the Internet they, agricultural researchers are at advantage to explore these services in order to boost their research productivity.

Inter-Library Loan (ILL)

Inter-Library Loan (ILL) service has been designed to enable library users have access to information or document that are useful for their research and study, but are not available in their local libraries. Rehima (2014), defines ILL as a process by which a library requests from another library upon request from a library user, materials that are not available in the user's library. According to Roberson (2010) agricultural research libraries have a duty to provide highly specialized and important materials for their users. They maintained that ILL represents one

means of achieving the goal in order to provide resources to satisfy user needs. ILL in Agricultural research libraries provide users or researchers access to material that are essential for research but not available in their institute library. The importance of ILL is succinctly captured by Roberson (2010) when he called ILL a 'Gift' to all scholars in the world and not just those residents in our institution or community hence resource sharing through ILL.

Agricultural scientists through these services can have access to information or documents that are useful for their research and study, but are not available in their local school libraries.

2.2.3 Research productivity

Research productivity has been defined in this work as the gain or the output obtainable for the use of certain input (in this case, library resources) in a research process. Studies on research productivity according to Halil and Lewis (2011) have continued to draw attention and record increasing importance since the 70s. Numerous and different types of studies have examined factors affecting the productivity of research organizations and the academic performance of universities in various nations. These studies John, (2012); Levin, Monir and Keith, (2010); and Argyris, (2011) have shown some pertinent indicators used in assessing research productivity in either academic or core research environment.

Some of these indicators include the number of faculty members, number of publications-books and journal articles, journal impact factor, registered patents, citation counts, number of products on the shelf amongst many others. In the work of Monir and Keith (2012) some limiting factors to research productivity were discussed and these factors include lack of time for planning and conducting research, teaching load, funds, lack of resources, equipment and facilities (including library resources), isolation of researchers, poor motivation and support, age

and family issues. The work closely tied research productivity with library resources with the belief that given the right nurturing, many people could become highly productive researchers.

Research productivity is the output of research work in form of creative work, conference paper, innovation, research books including critical scholarly texts, new interpretation of historical events and new ideas or perspectives based on established research findings. Research productive agricultural scientists is defined as those agricultural scientists with a demonstration of on-going commitment to research which meet the minimum threshold of performance prescribed by a given institution. In measuring research productivity, three outcome variables are used: published work, presentations on a national and international level, and conversations regarding research.

Research productivity can therefore be seen as the quantity or number of publications of agricultural scientists in terms of number of books published, articles and journals among others. In order to analyze research productivity, they are basically three major categories of factors that can be argued to affect research productivity.

Individual factor

The individual's role with respect to the research function cannot be overstated in the university setting. Various individual attributes have been found to be instrumental in stimulating the research behavior of academics. A number of these, including a passion for or interest in the discipline, ambitions, self- esteem, age, career rank, academic qualifications, and a desire to collaborate with others, are related to academics' level of intrinsic motivation. Lechuga and Lechuga (2012) sum these up as 'self- determination' (i.e. autonomy, competence and relatedness). Another motivation- related characteristic is the confidence of the academic to engage in research activities, which Kotrlik et al. 2002 in Lertputtarak (2008), found to be

essential for research productivity. Other studies have dealt with different individual attributes, which have also been found to vary according to academic disciplines (hard or soft); for instance, Jung (2012) states that gender, years of experience, teaching time versus research time, level of multi-disciplinary collaboration, research style and workload are of relevance. Hence, the present study equally aimed at finding out if individual factor (personal experience and knowledge of computer usage) influence research productivity through accessing and utilizing of library internet resources and service.

Organizational factor

The research function does not occur in an organizational vacuum. Historically, the university has brought together individual academics with different intellectual interests and ambitions. Clark, in Okon (2013) refers to the traditional department as the ‘academic heartland’ around which university disciplines and fields are built, and Cloete et al., (2011) refer to the ‘academic core’ of the university where knowledge is produced and academic degree programs are offered. As a consequence, for examining research productivity it is of importance to include the organizational context of research activities undertaken within a university as one of the major factors. A number of studies have argued that organizational factors have an important influence on research productivity (see, for example, Fairweather 1999, in McGill & Settle 2012). for instance, list a vast number of organizational factors vital for research productivity, including the clarity of the institution’s research expectations; the availability of student research assistance; financial incentives for conducting research; and access to internal and external research funds, to name but a few. Different institutional components ranging from financial incentives (allowances, salaries), to non- financial incentives (improved research management, modern infrastructure, promotions) have been employed by different universities to stimulate the

research productivity of their academic staff members (Ubogu & Van den Heever 2014). In the African context in particular, studies have examined the weak research management structure and the prevalence of a consultancy culture as impediments to research capacity in African universities (Maassen 2012). In the HERANA study, Cloete et al., (2011) identified three major hindrances to research productivity including the lack of funds and a proper incentive system; the absence of PhD mentorship programs and incentives; and the competition for time between undertaking research and teaching in private universities.

Research culture

Research productivity is highly dependent on the belief and general orientation of faculty to advance in their discipline. Popoola, (2008) stresses that in order to understand the productivity of universities, it is important not only to focus on the organizational structure, but also to include the organizational culture – that is, the non- rational or symbolic side of universities – as an important factor. For the purposes of this study, research culture is assumed to be a sub- culture of the broader organizational culture (Maassen, in Abraham 2010). What then does research culture comprise? Jung (2012) uses key terms to refer to research culture, such as observed behavior regularities (the language and rituals, research group norms and research leadership focus); the philosophy guiding the organization’s research policies; and the climate or feeling that the organization conveys on research. This is also recognizable in Salazar-Clemeña & Almonte- Acosta’s (2008) understanding of research culture, which includes institutional research policies and agenda, departmental culture, budget for research, as well as policies and guidelines with respect to research benefits and incentives. Thus, the study equally finding out that research culture (norms and value of research writing and output) has influence on the quantity of research productivity.

From the literature reviewed on this concept, it can be seen that research productivity can be affected by a myriad of factors. Some of these factors are individual factor, research culture, organizationaql factor among others. These factors among others can affect research productivity of agricultural scientists.

2.2.4 Library Use and Research Productivity

The concept of “use” implies the putting of a thing or service into action so as to accomplish an end, or apply to a given purpose, while “productivity” is understood to be “a function of the quantity of factors required for production in relation to the quantity of items produced” (i.e. units of output produced per factor inputs over times. Productivity is also now recognized as a consideration of qualitative measurements, such as quality of service, consumer satisfaction, timeliness of service, etc. are important and significant productivity measurements, because they allow for inputs on ‘perceived benefits’ by users of the service.

Investigations of the relationship between the use of information services and research productivity generally find support for the view that information services enhance productivity. Hesse et al. (1993) surveyed oceanographers and found a positive relationship between oceanographers’ use of computer networks and their publication counts as well as professional recognitions. In a survey of scientists from four disciplines, namely, chemistry, philosophy, political science and sociology in 26 institutions, Cohen (1996) similarly found that scientists using computer-mediated communication tools reported higher numbers of publications and more professional recognition. Evidence of a positive IT-productivity relationship is also reported in Bonzi (1992) and Odesanya & Ajiferuke (2000).

Ang & Koh (1997), have also contributed to the discourse on relationship between use and purpose of information services in the Asia-Pacific region. Ang and Koh (1997) explored the

relationship between use of information services and job satisfaction in a Singaporean organization and found a positive correlation between the two variables, while Burn (1990) studied the strategic use of information technology services in small and medium sized organizations in Hong Kong, and found out that that the purpose for using the information services was related to a mindset of accomplishing a competitive advantage. To these end, many of the firms were observed to have developed an offensive strategy as suggested by Freeman and Soete (1997). An offensive strategy involves the combination of the following organizational enablers: adequate funding for information services; recruitment of competent personnel; good information system; consultancy and brokerage activities, and continuous learning.

Highly productive organizations have been observed to be ardent users of steady stream of information services to sustain a competitive advantage (Davidow & Malone, 1999). It is in this respect that (Koenig, 1999) concluded that the more competitive the market place, the greater the information need, and the greater the investment in information services, but also adds that that there is evidence that companies consistently under-invest in information resources. Olson & Weill (1989) showed that internal and external factors affect a company's productivity gains. Internal factors may be top management's commitment, a company's prior experience and satisfaction with information investments, and company politics. External factors can include marketplace, a company's financial standing prior to the investment, and the company's size and ability to benefit from economies of scale. Bryssonfson (1993) identified accessibility costs; usage costs; experience of users; ease of use; income of user; urgency of use ; technology associated,; planning and management as expectation of what happens to the service in future, as variables that may influence use in the context of an information service.

Overall, the studies have provided mixed empirical evidence with regard to the view that information services differentially affect subsets of the scientific labor force. Information services offered by libraries in agricultural institutions can to a great extent influence the researcher productivity of agricultural scientists.

Although the research process may have many outcomes, the NBEET studies (1993, 1994) indicate that publications within education, journal articles, books, conference presentations and chapters of books are highly valued indicators of research performance. Publications have been acknowledged to be the most valid, fair and direct measure of research performance amongst academics (Grigg and Sheehan 1989; Hattie et al. 1991; Hattie et al. 1994). Indeed Fox (1983) argues that research work only becomes 'a work' in the academic world when it takes on the conventional, physical form of a published paper or its equivalent. Where such is the case, postgraduate students' research outputs can be measured in tangible formats such as: paper presentations made at conferences, seminars or workshops, articles published in journals, or books published. Few researchers have tried to look at the library's role in enhancing research productivity, majority however, concentrate on measuring library use and learning outcomes of which research productivity is a subset.

In an early work carried out by Barkey (1995), the study found a direct correlation between books borrowed from the library by "freshmen" and their grade point averages. Hiscock (1986) investigated influence of library use on academic performance, but was unable to establish a strong relationship between library usage and academic performance. Qun and Onwuegbuzie (1997) in a study on reasons for university library usage, found out that academic achievement, semester course load, number of earned credit hours, etc. have no significant influence on how frequently students use the library.

In a more recent study, Watson (2001) focused on how students' perceptions of the library could influence their educational outcomes, the study discovered among other things, that students feel strongly that the library is a place to use technology but do not correlate this function with their academic success or failure. Whitmire (2002), also examined the relationship between library

resources and services and students' educational outcomes, the study revealed that library resources and services had almost no influence over undergraduates' use of library or their self-reported gains in critical thinking skills.

Among the few studies that looked directly at research productivity, Majid, Eisenschitz and Anwar (1999), studied library use pattern of Malaysian agricultural scientists, the result of the study revealed that majority of the respondents (88.4%) used the library extensively while writing research reports, 87.5% also admitted using the library extensively while writing research proposals. This can be inferred to mean that there is a relationship between library use and research outputs. Liu and Allmang (2008) assessed customer satisfaction at the National Institute of Standards and Technology Research Library (NIST), findings revealed that library services do have impact on research outputs as attested to by 71% of the respondents who affirmed that library services were valuable to their publishing in refereed journals. Another 69% affirmed that it assisted their presentations at a conference.

Singh (2007) in another study of postgraduate students use of library resources for research found out that the respondents were generally satisfied with the resources (books, journals, databases, indexes, etc.) provided by the library and with the services (e.g. information skills classes, inter-library loans, etc.) In general, the students felt that the library had been useful

to them in their research. From the foregoing, it can be concluded that, high percentage of library use by agricultural researchers can enhance their research productivity. Similarly, if agricultural scientists cultivate in them the habit of frequent library use, their research productivity will be immensely enhanced.

2.3 Review of related Empirical studies

This section is to review empirical studies done already, that are related to the researchers study. In their own study, Uganneya, Ape and Ugbagir (2012), ‘Information services provision and user satisfaction in agricultural research libraries in Nigeria’ The study adopted a descriptive survey research design. Four research objectives and corresponding research questions were raised to guide the study, and the population of the study was 701 users from the sampled Universities in Nigeria: namely: the library of National Root Crop Research Institute (NRCRI) of Nigeria. Umudike, the library of Veterinary Research Institute (VRI) of Nigeria, VOM, the Library of Cocoa Research Institute (CRI) of Nigeria, Ibadan, the library of University of Agriculture Makurdi (UAM), the library of University of Agriculture Abeokuta (UAA) and the University of Agriculture Umudike (UAU). The sample and was 701 users selected through simple random sampling technique from users in University libraries and Agricultural Research Institute and 6 reader’s services librarians. The method of instrument for data collection was questionnaire administered to the respondents while the method of data analysis was the use of Mean and Standard deviation. The major finding of the study reveals that agricultural research libraries in Nigeria have no commitment in the provision of information resources so as to enhance information dissemination to agricultural scientists.

The studies are related but differ in that, the present study also delved into information resources unlike the reviewed study which considered only information services. They also differ

in that, the present study adopted a survey research design and was carried out only in agricultural institutions in Benue State.

Foluso (2014) conducted a study on Information Services and Scientists' Research Productivity in Nigeria: Evidence from Research and Development Institutions. The research design was survey design. Four research objectives and corresponding research questions were raised to guide the study and two hypotheses were tested. The study population of the study comprised the total population of scientists in the twenty-four Research development institutions (RDIs) involved in core research and development (R & D) activities in Nigeria. Based on data from some of the past surveys on RDIs in Nigeria, this study purposively selected 30 scientists in ten RDIs. In each of the selected RDIs, the snowball sampling technique was adopted in the selected of 30 scientists, to give a total of 300 scientists from all the sampled RDIs. Primary data was collected through the administration of a structured questionnaire. Data was collected on the frequency of use of information services in RDIs in Nigeria. Data was also collected on the number and types of publications of scientists for five years, and this was the main variable used in the measurement of productivity. To analyze the data, frequency distributions of the responses were constructed to describe the data. The analysis of Variance (ANOVA) technique was used to establish how the observations vary across scientists based on the RDI characteristics. The major finding of the study shows that there was a confirmation of high productivity in the area of number of publication output however, resources and services were inadequate. The study finally recommends amongst other things the need to increase funding of research and development institutes libraries to enable the acquisition and maintainance of necessary information resources especially equipments and facilities needed for physical presence and smooth running of adequate information services. This study is related to the present study in that it centred on

information services and scientists' research productivity in Nigeria. The studies however differ in that, the sample for the present study was drawn using a proportionate stratified random sampling and simple random sampling techniques unlike the reviewed study that employed snowball sampling technique. The method of data analysis also differs in that, the presented study employed chi square statistic to test the hypothesis unlike the reviewed study where ANOVA was used.

Popoola (2008) carried out a study on the Use of Information Sources and Services and Its Effect on the Research Output of Social Scientists in Nigerian Universities. The research design was descriptive survey. Three objectives and corresponding research questions were raised for the study and three hypotheses were formulated to guide the study. The population of the study comprises of 315 social scientists in the thirteen Nigerian federal universities that were founded between 1948 and 1975, which offer at least three of the core disciplines in social science (geography, economics, psychology, sociology, anthropology, and political science). The instrument for data collection was the questionnaire developed by the researcher. The instrument had a reliability index of 0.85 which was established using Cronbach alpha method. The data collected was analysed using Means and Standard deviation to answer the research questions and correlation statistics to test the hypothesis. The major findings of the study revealed the use of information sources and services and its effects on research out put on social scientists in Nigerian Universities is very high and the recommendation were that Social scientists in Nigerian universities should endeavour to use electronic information resources and services in support of their research activities; University libraries should acquire current information materials for their use; Library management should organize information literacy programmes for social scientists to improve their information searching and retrieval skills; and Information

sources and services available to them should be used for their improved productivity. The study is related to the present study in that, both studies focused on information resources and services on research output. However, they differ in that, the present study adopted a survey research design in its execution unlike the reviewed study in which descriptive survey was adopted. The studies also differ in terms of method of data analysis in that, the present study used chi-square statistic to test the hypothesis unlike the reviewed study that used correlation statistics.

Ochogwu (1992), carried out a study on the availability of instructional and research resources for Library education in six Nigerian Universities. Five research objectives and corresponding research questions and three hypotheses were raised for the study. The design of the study was survey and the population was 335 respondents. Because to the population was relatively small, the entire population was used for the study. The instrument for data collection was a self-structured questionnaire and was validated by experts. The instrument was found to be highly reliable with a reliability index of 0.91 which was established using Cronbach alpha method. Mean, Standard deviation and Chi square statistics were used to analyze the data collected. The study found that most of the schools have significant gaps in resource provisions. Again the author acknowledges the existence of the problem of availability of adequate resources to carry out research in the research institutions. The author further states that even where these resources are available, empirical evidence showed that this does not necessarily guarantee access to them. Therefore, availability of a resources is not coterminous with accessibility to resources. The work is related to the study hence Both studies adopted a survey research design and employ a self-structured questionnaire for data collection. The studies however differ in that, the present study focused on how information resources and services influence research productivity of agricultural scientists unlike the reviewed study.

In another study of Library resources and services and publication productivity by Zainab (2011), a survey was done to compare the perceived adequacy of Library resources for research productivity. The research design was survey and the population for the study was 83 subjects. The whole population for the study were used for the study. The instruments for data collection were questionnaire and interview method. The instruments were developed by the researcher and validated by experts. The method of data analysis used was frequency counts and Mean statistic. The findings were that scientists or researchers who used varied method to keep themselves up to date with current research literature are highly productive. It was also found that most of the problems faced by scientists are inability to find relevant information and services, lack of information and not knowing how to choose relevant database. It was recommended that Libraries should constantly organize orientation and current awareness services for Library users. These work is related to the present study in that both seek to determine the extend to which Library information resources and services influence research productivity of researchers. However they differ in that, in the present study, the population of the subjects will be sampled for the study. They also differ in that in the present study, interview method will not be used for data collection hence the gap between the studies.

2.4 Summary of the literature review

This section gives a brief summary of the literature reviewed on Theoretical Framework, Conceptual Framework and Empirical studies. Under the Theoretical framework, SERVQUAL theory was reviewed. According to the proponents, the theory is conceived as the extent to which consumers' (library users') pre-consumption expectations of quality are confirmed or disconfirmed by their actual perceptions of the service experience. Service quality is an approach to manage library processes in order to ensure full satisfaction of the library users & quality in

service provided. Concepts such as Library Information resources, library information services, research productivity, use of library and research productivity, use of library services and research were explained and the need for the former in achieving the later was expressed. The reviewed empirical study shows that the availability of resources in support of research productivity in Nigeria was considered inadequate at present when compared with other African countries.

In Nigeria, there is also a vast difference in the ability to access and use information from the print media or electronically as reported by literature and information resources are seen to have not complimented research and research productivity as expected. This has led to varying levels of application in which library resources are put into and such differs from library to library and between countries. The review also showed that most users in Nigeria are contented with application of the resources in current awareness services like selective dissemination of information and electronic mails. However, a general view was that information is an essential commodity that is needed for improved productivity of researchers in a given system or environment hence there could be a relationship between library resources and research productivity but not known.

Since from the reviewed literature, the relationship between use of library information resources and research productivity has not been established in the country, this study was conducted to fill the gap.

3.0 METHODOLOGY

This chapter presents the procedure that was followed in carrying out the study. The procedures include; Research Design, Area of the Study, Population of the Study, Sample and Sampling Technique, Instrument for Data Collection, Validation of the Instrument, Reliability of the Instrument, Method of Data Collection and Method of Data Analysis

3.1 Research Design

The study adopted a survey research design. Survey research design is one in which a group of people or item is studied by collecting and analyzing data from a few people or item considered to be representative of the entire population. This design is therefore appropriate for the study because data on the influence of library information resources and services on research productivity of agricultural scientists in Benue State was collected from a sample of agricultural scientists (lecturers) in the agricultural institutions in Benue state using a questionnaire.

3.2 The Area of the Study

The study was conducted in Benue State –Nigeria. Benue State was created on the 3rd of February, 1976 with the capital city at Makurdi. It is inhabited predominantly by the Tiv and Idoma peoples, who speak the Tiv language and Idoma, respectively. There are other ethnic groups, including the Igede, Etulo, Abakwa, Jukun, Hausa, Igbo, Akweya and Nyifon. Benue State is a state in the middle belt region of Nigeria with a population of about 4,253,641 in 2006 census. Benue State was formed from the former Benue-Plateau State in 1976. Benue is a rich agricultural region; some of the crops grown there are potatoes, cassava, soya bean, guinea corn, flax, yams, sesame, rice, and groundnuts. Benue state shares boundary with Nasarawa state in the North, Ebonyi State and Enugu State in the South west, Kogi State in the North west, Taraba

state in the North East and Cross River State in the South. The state is located in the North Central Geo-Political Zone of Nigeria. Benue State has two agricultural institution; University of agriculture Makurdi and Akperan Orshi College of Agriculture, Yandev. The University of Agriculture Makurdi was established in 1988 with the mandate of complementing the effort of Federal Government in the area of agriculture while Aperan Orshi College of Agriculture Yandev was established in 1973. The suitability of Benue State for the study is that, the state is predominant by agricultural activities and the researcher observed inadequate research productivity in terms of published books, articles, journals among others by agricultural scientists.

3.3 Population of the Study

The population for the study comprises of 242 Agricultural scientists in the two agricultural institution in Benue State. Among the 242 agricultural Scientists, 160 were from Federal University of Agriculture, Makurdi (UAM) and 82 Agrcultural scientists from Akperan Orshi College of Agriculture Yandev (AOCAY), Gboko (FUAM, 2017 & AOCAY, 2017).

3.4 Sampling and Sample technique

The sample size of 151 Agricultural scientists (lecturers) was used for this study. The sample size was drawn using Taro Yamen formulae. The proportionate stratified random sampling technique was used to select the sample from the two agricultural institutions: University of Agriculture, Makurdi and College of Agriculture Yandev to ensure that, appropriate weights of the agricultural scientists in the two agricultural institutions are included in the sample. By this method, 100 out of the 242 agricultural scientists were selected in Federal University of Agriculture Makurdi and 51 out of 160 from Akperan Orshi College of Agriculture Yandev, Gboko. The agricultural scientists were selected using simple random sampling

technique. The names of all Agricultural scientists on each stratum (agricultural institutions) were written in a piece of paper and put in a sack. The sack was then shaken and required number of Agricultural Scientists were picked one after the other.

3.5 Instrument for data collection

The instrument for data collection was a questionnaire developed by the researcher and titled “Influence of Library Information Resources and Services on Research Productivity of Agricultural Scientists” (ILIRSRPAS). The instrument was divided into seven sections A-G in consonant with the research questions raised for the study. Section A has 16 items and contain information on the available library information resources, Section B has 12 items and contain information on the available library information services, Section C has 16 items and seeks to obtain information on the extent of use of the available library information resources, Section D has 12 items and seek to obtain information on the extent of use of library information services, Section E has 9 items and seek to obtain information on the extent to which the use of library information resources influence research productivity, Section F has 9 items and seek to obtain information on the extent to which the use of library information services influence research productivity and section G has 11 items and seek to obtain information on the quantity of research productivity of agricultural scientists in Benue State. The response format for items measuring the available information resources and services was AV=Availabe and NAV=Not available. For the items measuring extent of utilization, the response format was: VHI=very High Extent; HE=High Extent; LE=Low Extent and VLE=Very Low Extent. For the items measuring the quantity of research productivity, it required the respondents to indicate 1-5, 6-10, 11-15, 16-20, and 21 and above.

3.6 Validation of the instruments

The instrument for data collection was subjected to face and content validation by three experts, one from Measurement and Evaluation, another from Library and Information Science, all from Department of Educational Foundations and General Studies, Federal University of Agriculture Makurdi and also, a third validate from Library and Information Science, Department of library and information Science, Benue state University, Makurdi. These experts were requested to scrutinize the instrument with respect to; clarity of terms, simplicity of vocabulary, relevance of terms to the study and made necessary suggestions such as the items that relate to the research questions and the respond options. The comments and suggestions of the experts helped in modifying the items and response options to suit the problem under investigation.

3.7 Reliability of the instrument

To establish the reliability of the instrument, it was subjected to trial testing. The instrument was administered on a sample of thirty (30) Agricultural scientists randomly drawn from Federal University of Agriculture, Umudike who have similar characteristics with the subjects under study but outside the study area. The scores obtained from the trial testing were used to obtain a coefficient of reliability using Cronbach alpha method. Cronbach alpha method was used because the responses takes the form of a continuum. The reliability coefficient obtained was Alpha Coefficient 0.95. This shows that the instrument was highly reliable as the coefficient approaches 1.

3.8 Method of data collection

The researcher engaged 2 research assistants with whom she administered the questionnaire. The research assistants were chosen from each of the institutions under study. The researcher contacted them and solicited for their help in the data collection and were duly informed/instructed on the process of administering the questionnaire and to be careful to collect back the entire questionnaire administered. This approach yielded high return of questionnaire from the respondents under study. Instrument administration and collection was done within a period of one week.

3.9 Data analysis Techniques

The data collected was analyzed using descriptive statistics of Frequency Counts, Percentages, Mean and Standard Deviation to answer the research questions while non-parametric statistics of chi-square statistics was used in testing of the hypotheses at 0.05 level of significance. For the instrument with two response format on availability, the benchmark for decision was 50%. This means that 50% and above was considered available and below 50% was considered not available. For the instrument in the form of a continuum (Very High Extent, High Extent, Low Extent and Very Low Extent) the items were scored using the format thus; VHE=4, HE=3, LE=2, VLE=1. The benchmark or anchor point was obtained thus

$$\frac{4+3+2+1}{4} = 2.50.$$

A mean of 1.00 – 2.00 was considered very low extent, 2.00 - 2.49 was considered low extent, 2.50 – 2.99 was considered high extent and 3.00 – 4.00 was considered very high extent

Also for the instrument measuring the quantity of productivity which takes the continuum of (1-5, 6-10, 11-15, 16-20, and 21 and above) was scored thus, 0-5=1, 6-10=2, 11-15=3, 16-

20=4 and 20 above =5. The benchmark or anchor point Mean for High and Low quantity was calculated thus

$$\frac{1+2+3+4+5}{5} = 3.0$$

Hence any Mean of 3.0 and above was considered High quantity and Mean values below 3.0 were considered Low quantity.

4.0

RESULT AND DISCUSSION

This chapter is concerned with data presentation, analysis, interpretation and discussion of findings. The presentation follows the sequence of the research question and hypothesis that guided the study.

4.1 Results

4.1.1 Research question one:

What are the available library information resources for research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State?

Table 1: Frequency Counts and Percentages of the Available Library Information Resources in Agricultural Institutions in Benue State (N=151)

S/N	ITEMS	FREQUENCY		PERCENTAGE (%)		DECISION
		AV	NAV	AV	NAV	
1	Textbooks	123	28	81.5	18.5	AV
2	Journals	106	45	70.2	29.8	AV
3	Newspapers	97	54	64.2	35.8	AV
4	Dictionaries	133	18	88.1	11.9	AV
5	Encyclopedias	87	64	57.6	42.4	AV
6	Handbooks	115	36	76.2	23.8	AV
7	Magazines	92	59	60.9	39.1	AV
8	Manuals	80	71	53.0	47.0	AV
9	Atlas & Maps	97	54	64.2	35.8	AV
10	Thesis/Dissertations/Projects	151	0	100	0.0	AV
11	E-books	54	97	35.8	64.2	NAV
12	Abstracts	99	52	65.6	34.4	AV
13	Granary	53	98	35.1	64.9	N AV
14	Monographs	44	107	29.1	70.9	NAV
15	Bibliographies	63	88	41.7	58.3	NAV
16	Articles	93	58	61.6	38.4	AV

AV= Available, NAV= Not Available

Table 1 shows the available Library information resources as indicated by the Agricultural Scientists in the Agricultural Institutions in Benue State in Frequencies and Percentages. From the table as indicated by the Agricultural Scientists, item 1 have 123(81.5%) availability and 28(18.5%) non availability; item 2 have 106(70.2%) availability and 44(29.8%) non availability; item 3 have 97(64.2%) availability and 54(35.8%) non availability; item 4 have 133(88.1%) availability and 18(11.9) non availability; item 5 have 87(57.6%) availability and 64(42.4%) non availability; item 6 have 115(76.2%) availability and 36(23.8%) non availability; item 7 have 92(60.9%) availability and 59(39.1%) non availability; item 8 have 80(53%) availability and 71(47%) non availability; item 9 have 97(64.2%) and 54(35.8%) non availability; item 10 have 151(100%) availability and 0(0.0%) non availability, item 11 have 54(35.8%) availability and 97(64.2) non availability; item 12 have 99(65.6) availability and 53(34.4%) non availability; item 13 have 53(35.1%) availability and 98(64.9%) non availability; item 14 have 44(29.1%) and 107(70.9%) non availability; item 15 have 63(41.7%) and 88(58.3%) non availability; item and 16 have 93(61.6%) availability and 58(38.4%) non availability. On the whole, 12 items out of the sixteen were available with a grand 70.3% while 4 of the items were not available with a grand of 29.7%.

4.1.2 Researches question two:

What are the available library services for Agricultural Scientists' research productivity in the Agricultural Institutions in Benue State?

Table 2: Frequency Counts and Percentages of the Available Library Services in the Agricultural Institutions in Benue State.

SN	ITEM	FREQUENCY		PERCENTAGE (%)		DECISION
		AV	NAV	AV	NAV	
17	Circulation Services	85	66	56.3	43.7	AV
18	Indexing Services	94	57	62.3	37.7	AV
19	Reference Services	118	33	78.1	21.9	AV
20	Bibliographic Services	72	79	47.4	52.6	NAV
21	Current Awareness Services	99	52	65.6	34.4	AV
22	Online/Internet Services	81	70	53.6	46.4	AV
23	Selective Dissemination Information Services	39	112	25.8	74.2	NAV
24	Documentation Services	125	26	82.8	17.2	AV
25	Photocopying Services	113	38	74.8	25.2	AV
26	Printing Services	90	61	59.6	40.4	AV
27	Classification Services	96	55	63.6	36.4	AV
28	Abstracting Services	106	45	70.2	29.8	AV

AV=Available,NAV=NotAvailable

Table 2 shows the available Library services as indicated by the Agricultural Scientists in the Agricultural Institutions in Benue State in Frequencies and Percentages. From the table as indicated by the Agricultural Scientists, item 17 have 85(56.3) availability and 66(43.7%) non availability; item 18 have 94(62.3%) availability and 57(37.7%) non availability; item 19 have 118(78.1%) availability and 33(21.9%) non availability; item 20 have 72(47.4%) and 79(52.6%) non availability; item 21 have 99(65.6%) availability and 52(34.4%) non availability; item 22 have 81(53.6%) availability and 70(46.4%) non availability; item 23 have 39(25.8%) availability and 112(74.2%) non availability; item 24 have 125(82.8%) availability and 26(17.2%) non availability; item 25 have 113(74.8%) availability and 38(25.2%) non availability; item 26 have 90(59.6%) availability and 61(40.4%) non availability; item 27 have 96(63.6%) availability and 55(36.4%) non availability and item 28 have 106(70.2%) and 45(29.8%) non availability. On the whole 10 items out of the 12 were available with a grand of 66.7% while 2 of the items were not available with a grand of 33.3%.

4.1.3 Research Question Three:

What is the extent to which Agricultural Scientists utilize the available library information resources in the Agricultural Institutions in Benue State?

Table 3: Mean and Standard Deviation of the Extent to which Agricultural Scientists Utilize the available Library Information Resources

S/N	Items Statement	VHE	HE	LE	VLE	Mean(X)	SD	Decision
29	Textbooks	68	48	20	15	3.12	.99	V H E
30	Journals	71	53	17	10	3.23	.90	V H E
31	Newspapers	57	46	27	21	2.92	1.06	H E
32	Dictionaries	79	44	19	9	3.28	.90	V H E
33	Encyclopedias	31	33	49	38	2.38	1.08	L E
34	Handbooks	60	54	28	9	3.09	.90	V H E
35	Magazines	53	49	27	22	2.88	1.05	H E
36	Manuals	72	45	24	10	3.19	.93	V H E
37	Atlas & Maps	46	49	33	23	2.78	1.04	H E
38	Theses	89	40	16	6	3.40	.83	V H E
39	E-Books	30	22	59	40	2.28	1.07	L E
40	Abstracts	57	41	23	30	2.83	1.14	H E
41	Granary	21	15	71	44	2.09	.97	L E
42	Monographs	13	17	33	88	1.70	.98	V L E
43	Bibliographies	27	33	40	51	2.24	1.11	L E
44	Articles	64	48	18	21	3.03	1.05	V H E
	Grand Mean					2.78	1.00	H E

VHE=Very High Extent, HE=High Extent, LE=Low Extent, VLE=Very Low Extent

Table3 shows the extent to which Agricultural Scientists utilize the available library information resources in the Agricultural Institutions in Benue State in Frequencies, Means and Standard Deviations. From the table as indicated by the Agricultural Scientists item 29 with Mean= 3.12 and SD=.99 is to a very high extent, utilized; item30 with Mean=3.23 and SD=.90 is to a very high extent, utilized; item31 with Mean=2.92 and SD=1.06 is to a high extent utilized; item 32 with Mean=3.28 and SD=.90 is to a very high extent utilized; item33 with Mean=2.38 and SD=1.08 is to a low extent, utilized; item 34 with Mean=3.09 and SD=.90 is to a very high extent utilized; item 35 with Mean=2.88 and SD=1.05 is to a high extent utilized; item 36 with Mean=3.19 and SD=.93 is to a very high extent utilized; item 37 with Mean=2.78 and SD=1.04 is to a high extent utilized; item 38 with Mean=3.40 and SD=.83 is to a very high extent utilized; item39 with Mean=2.28 and SD=1.07 is to a low extent utilized; item 40 with Mean=2.83 and SD=1.14 is to a high extent utilized; item 41 with Mean=2.09 and SD=.97 is to a low extent utilized; item 42 with Mean=1.70 and SD=.98 is to a very low extent utilized; item 43 with Mean=2.24 and SD=1.11 is to a low extent utilized and item44 with Mean=3.30 and SD=1.05 is to a very high extent utilized. The table also reveal a Grand Mean=2.78 and corresponding SD=1.00 which shows that the library information resources are to a high extent utilized by the Agricultural Scientists in the Agricultural Institutions in Benue State. The standard deviation have close value ranges from .83-1.14 which shows the homogeneity of the data collected from the respondents.

4.1.4 Research Question Four:

What is the extent to which Agricultural Scientists utilize the available library services in the Agricultural Institutions in Benue State?

Table 4: Mean and Standard Deviation of the Extent to which Agricultural Scientists Utilize the available Library Services

S/N	Item	VHE	HE	LE	VLE	Mean(X)	SD	Decision
45	Circulation services	67	42	31	11	3.09	.97	V H E
46	Indexing Services	58	49	24	20	2.96	1.04	H E
47	Reference services	56	41	41	13	2.93	.99	H E
48	Bibliographies service	21	33	55	42	2.22	1.01	L E
49	Current Awareness	60	39	28	24	2.89	1.10	H E
50	Online/Internet Services	73	47	17	14	3.19	.97	V H E
51	Selective Dissemination Information Services	14	15	63	59	1.89	.92	V L E
52	Documentation Services	84	57	7	9	3.47	.68	V H E
53	Photocopying services	79	46	17	9	3.29	.89	V H E
54	Printing Services	65	52	20	14	3.11	.96	V H E
55	Classification Services	47	49	28	27	2.77	1.08	H E
56	Abstracting Services	49	53	30	19	2.87	1.01	H E
	Grand Mean					2.89	.88	H E

VHE=Very High Extent, HE=High Extent, LE=Low Extent, VLE=Very Low Extent

Table 4 above shows the extent to which Agricultural Scientists utilize the available library services in the Agricultural Institutions in Benue State in Frequencies, Means and Standard Deviations. From the table as indicated by the Agricultural Scientists item 45 with Mean= 3.09 and SD=.97 is to a very high extent, utilized; item46 with Mean=2.96 and SD=1.04 is to a high extent, utilized; item47 with Mean=2.93 and SD=.99 is to a high extent utilized; item 48 with Mean=2.22 and SD=1.01 is to a low extent utilized; item49 with Mean=2.89 and SD=1.10 is to a high extent, utilized; item 50 with Mean=3.19 and SD=.97 is to a very high extent utilized; item51 with Mean=1.89 and SD=.92 is to a very low extent utilized; item 52 with Mean=3.47 and SD=.68 is to a very high extent utilized; item 53 with Mean=3.29 and SD=.89 is to a very high extent utilized; item 54 with Mean=3.11 and SD=.96 is to a very high extent utilized; item55 with Mean=2.77 and SD=1.08 is to a high extent utilized and item 56 with Mean=2.87 and SD=1.01 is to a high extent utilized. The table also reveal a Grand Mean=2.89 and corresponding SD=.88 which shows that the library services are to a high extents utilized by the Agricultural Scientists in the Agricultural Institutions in Benue State. The standard deviation have close value ranges from .68-1.10 which shows the homogeneity of the data collected from the respondents.

4.1.5 Research Question Five:

To what extent does the use of the available library information resources by agricultural scientists influence their research productivity in the agricultural institutions in Benue State?

Table 5: Mean and Standard Deviation of the Extent to which the Use the available Library Information Resources Influence the Research Productivity of Agricultural Scientists

S/N	Items Statement	Mean	SD	Decision
57	I use library information resources to investigate recent discoveries in Agriculture	3.09	1.00	V H E
58	I use library information resources for my agricultural term papers	3.11	1.04	V H E
59	I use library information resources to keep abreast with agricultural development to enhance my research	3.05	1.05	V H E
60	I use library information resources to write journals in agriculture	3.03	.94	V H E
61	I use library information resources to exchange ideas with colleagues on agricultural research	3.26	.96	V H E
62	I use library information resources to popularize my journals	2.99	1.04	H E
63	I use library information resources to stay up to date with current agricultural policies	3.26	.86	V H E
64	I use library information resources for my book writings	3.36	.90	V H E
65	I use library information resources to write articles in agriculture	3.13	1.01	V H E
	Grand Mean	3.14	.98	V H E

VHE=Very High Extent, HE=High Extent, LE=Low Extent, VLE=Very Low Extent

Table 5 shows the extent to which the use of the available library information resources influences the research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State in Means and Standard Deviations. From the table as indicated by the Agricultural Scientists item 57 with Mean= 3.09 and SD=1.00 is to a very high extent, utilized; item58 with Mean=3.11 and SD=1.04 is to a very high extent, utilized; item59 with Mean=3.05 and SD=1.05 is to a very high extent utilized; item 60 with Mean=3.03 and SD=.94 is to a very high extent utilized; item61 with Mean=3.26 and SD=.96 is to a very high extent, utilized; item 62 with Mean=2.99 and SD=1.04 is to a very high extent utilized; item63 with Mean=3.26 and SD=.86 is to a very high extent utilized; item 64 with Mean=3.36 and SD=.90 is to a very high extent utilized and item 65 with Mean=3.13 and SD=1.01 is to a very high extent utilized. The table also reveal a Grand Mean=3.14 and corresponding SD=.98 which shows that the library information resources are to a very high extents utilized by the Agricultural Scientists in the Agricultural Institutions in Benue State to enhance their research productivity. The standard deviation has close value ranges from .90-1.05 which shows the homogeneity of the data collected from the respondents.

4.1.6 Research Question Six:

To what extent does the use of the available library services by Agricultural Scientists influence their research productivity in the Agricultural Institutions in Benue State?

Table 6: Mean and Standard Deviation of the Extent to which the Use the available Library Services Influence the Research Productivity of Agricultural Scientists

S/N	Items	Mean	SD	Decision
66	I use library information services to investigate recent discoveries in Agriculture	2.98	1.03	H E
67	I use library information services for my agricultural term papers	3.04	.98	V H E
68	I use library information services to keep abreast with agricultural development to enhance my research	3.07	1.07	V H E
69	I use library information services to write journals in agriculture	3.15	.92	V H E
70	I use library information services to exchange ideas with colleagues on agricultural research	3.25	.93	V H E
71	I use library information services to popularize my journals	3.04	.97	V H E
72	I use library internet services to stay up to date with current agricultural policies	3.17	.91	V H E
73	I use library information services for my book writings	3.21	.91	V H E
74	I use library information resources to write articles in agriculture	2.96	.99	H E
	Grand Mean	3.10	.97	V H E

VHE=Very High Extent, HE=High Extent, LE=Low Extent, VLE=Very Low Extent

Table 6 shows the extent to which the use of the available library services influences the research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State in Means and Standard Deviations. From the table as indicated by the Agricultural Scientists item 66 with Mean= 2.98 and SD=1.03 is to a high extent, utilized; item67 with Mean=3.04 and SD=.98 is to a very high extent, utilized; item68 with Mean=3.07 and SD=1.07 is to a very high extent utilized; item 69 with Mean=3.15 and SD=.92 is to a very high extent utilized; item70 with Mean=3.25 and SD=.93 is to a very high extent, utilized; item 71 with Mean=3.04 and SD=.97 is to a very high extent utilized; item72 with Mean=3.17 and SD=.91 is to a very high extent utilized; item 73 with Mean=3.21 and SD=.91 is to a very high extent utilized and item 74 with Mean=2.96 and SD=.99 is to a very high extent utilized. The table also reveal a Grand Mean=3.10 and corresponding SD=.97 which shows that the library services are to a very high extents utilized by the Agricultural Scientists in the Agricultural Institutions in Benue State to enhance their research productivity. The standard deviation have close value ranges from .91-1.07 which shows the homogeneity of the data collected from the respondents.

4.1.7 Research Question Seven:

What is the quantity of research productivity of Agricultural Scientists in the Agricultural Institution in Benue State?

Table 7: Mean and Standard Deviation of the Quantity of Research Productivity of Agricultural Scientists in the Agricultural Institutions in Benue State

S/N	Items	0 -5	6-10	11-15	16-20	21 +	Mean	SD	Decision
75	Co-authored textbooks	88	34	11	10	8	1.78	1.17	Low Qty
76	Abstracts	92	23	16	9	11	1.83	1.26	Low Qty
77	Textbooks written	116	34	1	0	0	1.24	.44	Low Qty
78	Technical reports	72	56	11	7	5	1.79	.99	Low Qty
79	Research report	121	18	8	4	0	1.30	.69	Low Qty
80	Term paper	80	22	14	12	23	2.18	1.51	Low Qty
81	Bibliography	151	0	0	0	0	1.00	.00	Low Qty
82	Edited books	117	22	6	1	5	1.34	.87	Low Qty
83	Chapter in book	109	31	5	3	3	1.41	.82	Low Qty
84	Journals	99	31	8	6	7	1.61	1.07	Low Qty
85	Articles	87	29	15	9	11	1.86	1.25	Low Qty
	Grand Mean						1.58	.92	Low Qty

Table 7 shows the quantity of research productivity of agricultural scientists in the agricultural institutions in Benue State in Frequency Counts, Means and Standard Deviations. From the table as indicated by the Agricultural Scientists item 75 with Mean= 1.78 and SD=1.17 has low quantity productivity; item76 with Mean=1.83 and SD=1.26 has low quantity productivity; item77 with Mean=1.24 and SD=.44 has low quantity productivity; item 78 with Mean=1.79 and SD=.99 has low quantity productivity; item79 with Mean=1.30 and SD=.69 has low quantity productivity; item 80 with Mean=2.18 and SD=1.51 has low quantity productivity; item81 with Mean=1.00 and SD=.00 has low quantity productivity; item 82 with Mean=1.34 and SD=.87 has low quantity productivity; item 83 with Mean=1.41 and SD=.82 has low quantity productivity; item 84 with Mean=1.61 and SD=1.07 has low quantity productivity and item 85 with Mean=1.86 and SD=1.25 has low quantity productivity. The table also reveal a Grand Mean=1.58 and corresponding SD=.92 which shows that the quantity of research productivity of Agricultural Scientists in the Agricultural institutions in Benue State is Low. The standard deviation have wide value ranges from .00-1.26 which shows the heterogeneity of the data collected from the respondents.

4.1.8 Hypothesis one:

The use of the available library information resources by Agricultural Scientists do not significantly influence their research productivity in the Agricultural Institutions in Benue State

Table 8: Chi-Square Test on the Influence of Library Information Resources on Research Productivity of Agricultural Scientists

	Df	x^2_{cal}	Sig	Alpha Level	Remark
Pearson Chi-square	24	504.464	.000	.05	Significant
Number of Valid Cases		151			

Table 8 shows the Chi-square calculated value of 504.464 and a sig or P-value of 0.00 which is less than the alpha value ($\alpha=.05$). Therefore, Library Information Resources significantly influence the research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State. Hence, the null hypothesis is rejected.

4.1.8 Hypothesis two:

The use of the available library information services by Agricultural Scientists do not significantly influence their research productivity in the Agricultural Institutions in Benue State

Table 9: Chi-Square Test on the Influence of Library Services on Research Productivity of Agricultural Scientists

	Df	χ^2_{cal}	Sig	Alpha Level	Remark
Pearson Chi-square	24	473.656	.000	.05	Significant
Number of Valid Cases		151			

Table 8 above shows the Chi-square calculated value of 473.656 and a sig or P-value of 0.00 which is less than the alpha value ($\alpha=.05$). Therefore, Library Services significantly influence the research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State. Hence, the null hypothesis is rejected.

4.2 Major Findings of the Study

The following findings emanated from the study based on the research questions answered and the hypothesis tested

1. The Agricultural Scientists indicated that, except for E-books, Granary, Monographs and Bibliographies, all the other Library Information resources presented to them are available for their research productivity
2. The Agricultural Scientists indicated that, except for Selective Dissemination Information Services and Bibliographic services, all the other Library Services presented to them are available for their research productivity
3. The Agricultural Scientists indicated that, except for Encyclopaedia, E-books, Granaries, Monographs and Bibliographies, all the other library information resources presented to them are to a high extent, utilised
4. The Agricultural Scientists indicated that, except for Bibliographic and Selective dissemination information all the other library information services presented to them are to a high extent, utilized
5. The Agricultural Scientists indicated that, library information resources to a very high extent, are utilized for their research productivity in the Agricultural Institutions in Benue State
6. The Agricultural Scientists indicated that, library services to a very high extent, are utilized for their research productivity in the Agricultural Institutions inn Benue State
7. It was found that the quantity of research productivity of Agricultural scientists in the Agricultural institutions in Benue State is low

8. The utilization of the available library information resources by the Agricultural Scientists in the Agricultural Institutions in Benue State significantly influence Agricultural Scientists' research productivity
9. The utilization of the available library services by the Agricultural Scientists in the Agricultural Institutions in Benue State significantly influence Agricultural Scientists research productivity

4.3 Discussion of Findings

Based on the findings derived from the results of the study, the following were discussed.

Findings of the study as shown on table 1 revealed that, except for E-books, Granary, Monographs and Bibliographies, the agricultural Scientists indicated that, all the other Library Information resources presented to them were available for their research productivity. This implied that, most library information resources are available for research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State. The finding of this study contradicts that of Uganneya, Ape and Ugbagir (2012) who reported in their study that, agricultural research libraries in Nigeria have no commitment in the provision of information resources so as to enhance information dissemination to agricultural scientists. The finding of the study is also at variance to that of Foluso (2014) who reported inadequate library information resources and services and recommended the need to increase funding of research and development institutes libraries to enable the acquisition and maintenance of necessary information resources especially equipment and facilities needed for physical presence and smooth running of adequate information services.

Similarly, the findings contradict that of Ochogwu (1992) who acknowledge the existence of the problem of availability of adequate resources to carry out research in the research institutions. However, this is not the case in the Agricultural Institution in Benue State as the library information resources were found to be available for research productivity of Agricultural Scientists. This finding may be that, immense efforts are made the by the institution and Government in the provision of library information resources in the Agricultural institutions in Benue State since Benue is a State dominated by Agricultural activities.

The findings of the study as shown on table 2 revealed that, except for Bibliographic and selective dissemination information services, the agricultural Scientists indicated that all the other Library services presented to them were available for their research productivity. This implied that, most library services are available for research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State. This finding is at variance with the submission of Zainab (2011) that, most problems faced by Scientists for their research productivity is the inability to find relevant information services needed for the professional growth and recommended that Libraries should constantly organized orientation and current awareness services for Library users. The finding also contradicts that of Foluso (2014) who reported inadequate library services and recommended the need to increase funding of research and development institutes libraries to enable the acquisition and maintenance of necessary information resources especially equipment and facilities needed for physical presence and smooth running of adequate information services. The variation observed from the finding of this study may be as a result that, since agricultural activities are highly concentrated in Benue State, efforts are made by the Agricultural institutions and Government to provide the necessary library services for boost the research productivity of agricultural Scientists.

Findings of the study as shown on table 3 revealed that, except for Encyclopedias, E-books, Granary, Monographs and Bibliographies, the Agricultural Scientists indicated that all the other Library Information resources such as journals, newspapers, dictionaries, handbooks, magazines, manuals, atlas and maps, theses, abstracts and articles are to a high extent being utilized. This implied that, there is a high utilization of the available library information resources by the Agricultural Scientists in the Agricultural Institutions in Benue State. The finding disagrees with the submission of Uganneya, Ape and Ugbagir (2012) who reported in their study that, agricultural research libraries in Nigeria have no commitment in the provision of information resources so as to enhance information dissemination to agricultural scientists. The findings of this study differs evident to the fact that, library information resources are adequately provided and consequently utilized by the Agricultural Scientists in the agricultural Institutions in Benue State. The high utilization of these resources could be as a result to enhance their professional growth.

Findings of the study as shown on table 4 revealed that, except for Bibliographic and Selective dissemination information all the other library information services such as circulations services, indexing services, reference services, current awareness services, online/internet services, documentation services, photocopying services, printing services, classification services and abstracting services are to a high extent being utilized. This implied that, there is a high utilization of the available library services by the Agricultural Scientists in the Agricultural Institutions in Benue State. The finding disagrees with that of Ochogwu (1992) who reported that the problems faced by scientists are inability to find relevant information and services, lack of information and not knowing how to choose relevant database and recommended constant organization of orientation and current awareness services for Library users. This contradiction is

evident to the fact that library services are available and highly utilized by the Agricultural Scientists in the Agricultural Institutions in Benue State. The high utilization of these resources as observed from the findings of this study by the Agricultural Scientists could be as a result to boost their professional growth in the field of agriculture since Benue State is regarded as an Agricultural State.

The findings of this study as shown on table 5 revealed that library information resources to a very high extent, are utilized by the Agricultural Scientists for their research productivity in the Agricultural Institutions in Benue State. This implied that there is a high utilization of the available library information resources by the agricultural scientists for their research productivity. This finding agreed to that of Popoola (2008) who reported that, the use of information sources and services and its effects on research output of social scientists in Nigerian Universities is very high. This scenario as witnessed in the Agricultural institution in Benue State among the Agricultural Scientists could be as a drive to promote agriculture in the State since Benue State is widely regarded as an Agricultural State evident by its predominant agricultural activities. Similarly, hypothesis one on table 8 which state that, the use of the available library information resources does not significantly influence the research productivity of agricultural Scientists in Benue State was rejected which also concord with the report of Popoola (2008).

The findings of this study as shown on table 6 revealed that library services to a very high extent, are utilized by the Agricultural Scientists for their research productivity in the Agricultural Institutions in Benue State. This implied that there is a high utilization of the available library services by the Agricultural Scientists for their research productivity. This finding corroborates that of Popoola (2008) who submitted that, the use of information services and its effects on research output of social scientists in Nigerian Universities is very high. The

situation as witnessed in the Agricultural Institution in Benue State among the Agricultural Scientists could be as a drive to promote agriculture in the State. Similarly, hypothesis two on table 9 which state that, the use of the available library services does not significantly influence the research productivity of agricultural Scientists in Benue State was rejected which also corroborate with the report of Popoola (2008). Hence, the use of the available library services significantly influences the research productivity of Agricultural scientists

Findings of this study as shown on table 7 revealed that the quantity of research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State is low. Popoola (2008) however reported that, the use of information resources and services and its effects on research output of social scientists in Nigerian Universities is very high. This is not the case in the Agricultural Institutions in Benue State due to the fact that, despite the high utilization of the library information resources and services by the Agricultural scientists to enhance their research productivity, their productivity in terms of the number of published books, journals, articles, abstracts, term papers, co-authored books among others are low. This infer that, research productivity among agricultural scientists in Benue State is low.

5.0

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of the study, conclusion, educational implications of the study, recommendations, limitations of the study and suggestions for further studies.

5.1 Summary

The study investigated the influence of library information resources and services on the research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State. The specific objectives of the study were to: Identify the available library information resources for research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State; Identify the available library information services for research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State; Determine the extent to which Agricultural Scientists utilize the available library information resources in the agricultural institutions in Benue State; Determine the extent to which agricultural scientists utilize the available library information services in the agricultural institutions in Benue State; Determine the extent to which the use of the available library information resources by agricultural scientists influence their research productivity in the agricultural institutions in Benue State; Determine the extent to which the use of the available library information services by agricultural scientists influence their research productivity in the agricultural institutions in Benue State and Determine the quantity of research productivity among agricultural scientists in agricultural institutions in Benue State. Seven research questions in correspondence to the objectives of the study were raised and two hypotheses were formulated and tested at 0.05 level of significance using Chi-square statistic.

Literature was reviewed under theoretical framework, conceptual framework and empirical studies. The study adopted a survey research design and was carried out in Benue State, Nigeria. The population of the study was 242 Agricultural Scientists in the two Agricultural Institutions in Benue State which was made up of 160 Agricultural Scientists from Federal University of Agriculture Makurdi and 82 from Akperan Orshi College of Agriculture, Yandev, Gboko. A sample of 151 Agricultural Scientists were composed for the study using proportionate stratified and simple random sampling techniques. The instrument for data collection was a questionnaire developed by the researcher titled “Influence of Library Information Resources and Services on Research Productivity of Agricultural Scientists” (ILIRSRPAS). The questionnaire was subjected to face and content validation by experts in Measurement and Evaluation and Library Information Science. To establish the reliability of the instrument, it was trial tested on a sample of thirty (30) Agricultural scientists randomly drawn from Federal University of Agriculture, Umudike who have similar characteristics with the subjects under study but outside the study area. Cronbach Alpha method of reliability was used to determine the internal consistency of the instrument which yielded a reliability coefficient of 0.95. Data was collected by the researcher with the aid of two research assistants each from the sampled institutions. Data collected was analyzed using descriptive statistic of frequency Counts, Percentages, Means and Standard Deviations to answer the research questions and a non-parametric statistical tool of Chi-Square was used to test the null hypotheses at 0.05 level of Significance.

Finding of the study revealed that, Library information resources were available and highly utilized by Agricultural Scientists to enhance their research productivity except for E-books, Granary, Monographs and Bibliographies. Library services were also available and highly

utilized by Agricultural Scientists to enhance their research productivity except for Selective Dissemination Information Services and Bibliographic services. It was noted in the findings however that, despite the high utilization of the available library information resources and services by the agricultural scientists in the agricultural institutions in Benue State, their research productivity was considerably low.

5.2 Conclusion

The study successfully investigated the influence of library information resources and services on research productivity of Agricultural Scientists in the Agricultural Institutions in Benue State. Based on the findings of the study, the researcher concluded that, Agricultural Scientists in the Agricultural Institutions in Benue State highly utilize the available library information resources and services to enhance their research productivity, however their research productivity is considerably low.

5.3 Recommendations

Based on the finding of the Study, the following recommendations were made

1. Library information resources such as E-books, Granary, Monographs and Bibliographies should be made available in Libraries to enhance the research productivity of Agricultural Scientists
2. Library services such as Selective Dissemination Information Services and Bibliographic services should be made available in Libraries to enhance the research productivity of Agricultural scientists

5.4 Limitations of the Study

In the course of the research work, the researcher encountered some challenges. The research work initially was intended to cover Agricultural Institutions in North-Central Geopolitical Zone, Nigeria but due to the limited duration of the programme, the researcher resorted to only Agricultural Institutions in Benue State which limited the scope of this work.

5.5 Suggestion for Further Studies

Further research should be conducted on this topic but with a larger geographical scope and sample size. Hence, research should be conducted on the topic thus:

The influence of Library Information Resources and Services on Research Productivity of Agricultural Scientists in the Agricultural Institution in North Central Geopolitical Zone, Nigeria.

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