Information Literacy Skills, Use of Electronic Information Resources and Research Competence of Academic Staff in Public Universities, Lagos State, Nigeria

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Certification

This is to certify that **Abiodun Soliu ADEKANBI** with Matriculation number **LCU/PG/002567**carried out this project at the Department of Information Management, Lead City University, under my supervision, in the Faculty of Communication and information Science, Lead city Ibadan, Nigeria and the project has not been previously submitted.

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Dedication

This project work is dedicated to the Almighty God

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Abstract

The hallmark of academic excellence depends on the research competence of academic staff of university who are shouldered with the responsibilities of modelling both undergraduate and postgraduate students in the part of quality academic achievements. The pivotal role of Research competence in raising quality products in institution of higher learning is the reason for this study which is aimed at finding out the influence of Information Literacy Skill(ILS) and use of Electronic Information Resources(EIR) on research competence of academic staff in public universities in Lagos, State. It is a descriptive survey study. The population comprises 3556 out of which 346 were sampled using Krejce and Morgan table. The instrument for data collection was questionnaire. The data was analyzed using descriptive statistics, the hypothesis were tested using linear regression. The study found moderate level of research competence, high level of ILS was found and a moderate level of use of EIR .. The test of hypothesis revealed that ILS (Adj.R^2=0.202,F(1,105)= 26.610, p=000) and Use of EIR (Adj.R^2=0.359,F(1,105)= 60.424, p=000) have significant positive influence on service quality. The study concludes that both ILS and use of EIR should be encouraged and supported by the institution to achieve a viable research competence. The study recommends that Universities should allocate resources and support for the development of research competence and information literacy skills. This can include funding for research projects, access to academic journals, and dedicated research support services

Key words: Research competence, Information Literacy skill, Electronic resources, digital literacy skills,

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Table of Content

List of tables

List of Figures

Chapter One

Introduction

1.1 Background to the Study

Academics' reputations and careers in universities are often judged by the number and quality of research they produce. Therefore, research competence is a necessity. Research competence refers to the skills, knowledge, and abilities that individuals possess to conduct effective and high-quality research. It encompasses a range of capabilities that are essential for successfully planning, executing, and communicating research findings[1]. Through research that advances

knowledge in various fields of human endeavour, universities around the world have been agents of progress in their local communities and beyond[2].

Research competency is a product of conscious actions set by an organization to achieve specific set goals. Research competence is critical and of utmost importance to the existence, growth and competitive advantage of any university in the world and specifically, Nigeria. While Universities need academic staff to get the job done, how well it is done affects a whole lot with regards to student recruitment, positive ranking and ability to secure funds, general reputation, as well as attraction and retention of top-notch lecturers. One must also add that competence here would directly impact the fiscal posture of a university, through increased revenue from more subscription to its programs by students. Invariably, the need for enhanced competence necessitates the quest for performance appraisal[3]. Research competence refers to the effectiveness and efficiency with which researchers generate new knowledge, publish scientific papers, and contribute to their respective fields and this is always appraised by institution of higher learning via regular appraise which brought about the concept of publish or perish.

Academic research is significant because it gives academicians a forum for their ideas and helps them build a reputation for their expertise and originality. To add to the body of knowledge, researchers conduct systematic efforts to answer questions and solve problems. It's the application of scientific rigour to the investigation of a particular problem, worry, or issue. It's an organised effort to figure out what's going on so that it can be explained, predicted, and managed. As a result of research, there are more chances for academics all over the world to work together and make connections with one another. This allows for the study of both the national and

international dimensions of research competences, since researchers can talk to their peers and specialists all over the world. Knowledge is either created or unlocked through the process of research[4].

Transnational trend analysis through human and instrumental cooperation can be the focus of research highlighted by knowledge creation in collaborative studies. A scholar thought of research as a vital means of finding out information about the world or human culture and that the primary goal of research is knowledge generation and dissemination[5]. However, because of the ever-changing nature of human culture, environment and the society at large, there is always pressure to adapt to novel circumstances and this is best done by carrying out researches. As opined above,

As society develops, new problems and opportunities arises, necessitating the idea of innovation. Because of this, people are engaged in research to push the boundaries of understanding further. A researcher has claimed that every three to four years, professors and lecturers at both the junior and senior levels are examined for promotion based on their research production, particularly in the form of scholarly publications and patents[6]. Writing, reading, and publishing research findings in professionally revered journals, and having that work available online or otherwise visible to the public, all contribute to competence. Research competence can be measured, in part, by counting the number of publications in which researchers cite their own work as a primary or secondary source[7]. Research is done by faculty members, and their efficiency can be gauged in a number of ways. Research competence in universities is typically evaluated by looking at outputs like publications, grants from outside sources, and citations to those publications. Measures of competence often focus on the number of manuscripts that are either accepted for publication, in press, or published. Journal articles (both revered and non-revered), books, book chapters,

monographs, conference papers, and grant proposals for both external and internal funding all count as published works. However, competence goes beyond the number of publication it involves the quality of the publication serving as frontiers of knowledge and serving a solution to issues for which the study was carried out.

The role of academic staff in higher education institutions extends beyond teaching; it encompasses conducting research, generating new knowledge, and contributing to the academic community. Research competence refers to the ability of academic staff to design, conduct, and disseminate scholarly research effectively. It encompasses various aspects, including formulating research questions, selecting appropriate methodologies, analyzing data, and communicating findings. Research competence not only ensures the quality and rigor of research but also contributes to the reputation and standing of institutions as well as an individual.

Information literacy skills are the foundation upon which research competence is built. It refers to the ability to recognize when information is needed, locate relevant information efficiently, critically evaluate the credibility and relevance of sources, and use the information effectively to address specific needs. Information literacy skills are essential for academic staff as they engage in rigorous research, stay updated with current developments in their fields, and provide accurate and reliable information to their students. The advent of electronic information resources has revolutionized the way academic staff engage with information. These resources, which include online databases, digital libraries, academic journals, and e-books, offer vast amounts of information at the fingertips of researchers. However, the sheer volume and diverse nature of electronic information resources necessitate a high level of information literacy skills to navigate, filter, and utilize the available resources effectively. Academic staff must be proficient in

utilizing search strategies, understanding database structures, evaluating online sources, and managing electronic citations.

Whether a university or any other organization, performance appraisal is a part of the management system that starts with the recruitment of trainable staff and continues to include efforts to ensure suitability for promotion, training and periodic evaluation of employee's performance measured against the job's stated requirements[8]. It is a form of human resource management that enables the employer to assess the performance of the employee to give guidelines or advice for improving the organization's efficiency and effectiveness[9]. In Nigeria, just as it is obtained in other climes, the university has standard criteria for the recruitment of academic staff as the staff needs of a university is provided for, chiefly by the National Universities Commission's requirement as stated in their rules. What is critical to this process remains the identification of the tools and strategies for performance appraisal and the variation in the application of the same tools from university to university are largely based on the nature of the ownership and general objectives and challenges of the university.

Globally, universities are recognized as centers for the production, accumulation and transfer of knowledge. Universities all over the world are mandated to perform three core functions namely: teaching, research and community service, with the overall aim to produce trained manpower for various areas of national development. Scholars averse that the mission of higher education is to advance knowledge, create knowledge, disseminate knowledge through research and provide service to the community[10]. Universities are like greenhouses where various types of seeds grow into plants and are sent out to the world. While there has been a tendency to place teaching over research and community service delivery, it is increasingly clear that research is extremely critical and important if universities are to serve as engines of national development[11].

Research in academic institutions serves multiple purposes. It is the avenue for the academic institution to drive intellectual, social, economic and cultural development of their immediate environments and, by extension, the global community. Conducting research is essential in promoting the prosperity of a nation. Research is also the best way for scholars to sharpen their minds, keep abreast of developments in their field of interest and become renown in their chosen profession. Most importantly, the volume and quality of a scholar's research output is highly important to their career advancement which gave rise to the cliché; 'publish or perish' among scholars[12].

It is expedient to note that access to relevant information resource is highly essential in conducting any type of research. In fact, a lot of researches have been inspired by the information available to the researcher. When the decision is made to conduct a research, information resources in are also need to gauge the state of the art concerning the area being research and help the researcher situate his/her own work in the context of available literature. That is one of the reasons academic libraries are seen as crucial to the vision and missions of any university. It is the role of the academic library to make the relevant information resources available to all members of the academic community[13].

This means that academic staff who are passionate about their work and have a sense of autonomy tend to be more productive. Resource-Based theory emphasizes the role of resources in research competence, it posits that access to funding, laboratory facilities, equipment, and support staff can significantly impact a researcher's ability to conduct studies and produce high-quality outputs. To get a more general understanding for research competence, some scholars came up with a five factor models based on five factors. These were content knowledge, skills in

reviewing the state of research, methodological skills, skills in reflecting on research findings and communication skills.

Harnessing these assertions together research competence of academic staff as a dependent variable of this study would be measured and predicated upon the modified version of the F-Komp theoretical model of research competence. The model distinguishes among four skill dimensions namely, skills in reviewing the state of research, methodological skills, skills in reflecting on research findings, and communication skills, along with the dimension of content knowledge.[14] The whole skills were modified into the quartet of content knowledge, Methodological skill, Evaluation and operationalization of research and Ethical issues in research. Content knowledge in research competence refers to the knowledge of the subject matter that is being researched. It is one of the competencies of the 21st century that can help researchers, lecturers and academicians to navigate through the complexities of a continuously shifting world. In research, content knowledge is important because it helps researchers understand the context of their research and make informed decisions about their research design and methodology[15].

The methodical skills according to the model is more practically oriented. Its subscales are based on the aspects that are necessary to realize a research project. It about researcher's ability to formulate hypotheses, plan a research process, select and apply adequate methods. The third competence which is evaluation and operationalization of research, Operationalization is the process by which researchers set indicators to measure concepts. Researcher's intellectual prowess to set indicators to help measure changes in concepts. As qualitative researchers, a researcher need to be able to define the key concepts that should be used in our research. In librarianship this is called vocabulary control. The fourth skill is the ethical concept skill. It involves creating definitions that help identify the concept in relation to other concepts. this

factor is based on the skills that are necessary to reflect the general, practical and ethical implications of the research. A researcher that is vast in this four domain is adjudged competent research-wise.

Moreover, the 21st century is characterized with Electronic Information Resources which demands that a researcher be information literate. Effectiveness in research demands that a researcher is equipped adequately with competences that make do for effective access, search, use and dissemination of information ethically and professionally. Information literacy skills are the foundation upon which research competence is built. It refers to the ability to recognize when information is needed, locate relevant information efficiently, critically evaluate the credibility and relevance of sources, and use the information effectively to address specific needs. Information literacy skills are essential for academic staff as they engage in rigorous research, stay updated with current developments in their fields, and provide accurate and reliable information to their students. Information literacy is defined as "the ability to think critically about content, widen self-directed explorations, and prepare for organized learning" in any subject, learning setting, or degree of schooling[16].

It was stressed that information literacy is linked to making autonomous (informed) decisions about oneself. This should also be reflected in communication patterns and the social structuring of various interactions. The authors work with an example in the healthcare setting, where an informed patient should make decisions about their treatment. Still, a paternalistic narrative prevails in the healthcare setting that does not assume any patient information. A text can be situated within the broader context of whether information literacy enables the abandonment of entrenched power structures in society that reduce autonomy and freedom or whether it enhances these structures (because of its unevenness)[17].

Besides, in today's knowledge-driven society, the ability to locate, evaluate, and effectively use information has become a crucial skill set. This is particularly true in academic settings, where research competence plays a pivotal role in the advancement of knowledge and the overall success of academic staff. The increasing availability and reliance on electronic information resources have further amplified the need for individuals to possess information literacy skills to navigate and make the best use of these resources. A popular and widely used measures of information literacy skills is the information literacy model propounded by Society of College, National and University Libraries otherwise known as SCONUL. The model emphasized seven measures based on which a person is adjudged and perceived to be information literate. The measures are called seven pillar which are ability to locate, analyze, evaluate, use and present information. The pillars are identify, scope, plan, gather, evaluate, manage and present.

An information literate academic staff is able to identify a personal need for information, understand that information is constantly being produced, there is always more to learn and that ideas/opportunities are created by investigating/seeking information. An information literate academic staff can assess current knowledge and identify gaps. He/she must understand what types of information are available, the characteristics of the different types of information source available to them and how they may be affected by the format (digital, print), the publication process in terms of why he/she need to publish and the currency of information, issues of accessibility, what services are available to help and how to access them for his/her research. More so, planning as one of the pillar of information literacy is the ability of academic staff to create strategies for locating information. Information literate academic staff understands the range of searching techniques available for finding information and the differences between search tools. He/she is able to scope their search question clearly and in appropriate language,

define a search strategy by using appropriate keywords and concepts. Gather of information has to do with academic staff being able to locate and access the information he/she need for research. An information literate person understands how information is organized, electronically and in print sources, how libraries provide access to resources, how digital technologies are providing collaborative tools to create and share information.

Evaluation of information is the ability of academic staff to review the research process, compare and evaluate information. He/she understands the information landscape of their teaching/research context, the issues of quality, accuracy, relevance, reputation and credibility relating to information sources and the importance of citation in their research context. Management of information is the ability of academic staff to organize information professionally and ethically. An information literate person understands their responsibility to be honest in all aspects of information handling and dissemination (for example, copyright, plagiarism and intellectual property issues). Lastly, presentation of information is about an academic staffs' ability to apply the knowledge gained in presenting the results of their research, synthesizing new and old information and data to create new knowledge, and disseminating it in a variety of ways.

Moreover, the emergence of technological innovation has given rise to the use Electronic Information Resources with many nomenclatures like digital resources, electronic resources and so on. It is clear that viable studies cannot be carried out without the use of electronic publications. Online resources has become inevitable and veritable tools for quality researches. Electronic information resources refer to the various digital platforms and tools that provide access to information, data, and content. These resources are widely used in many aspects of human daily lives, including education, research, business, entertainment, and personal

communication. Electronic information resources are extensively used by students, researchers, and scholars for accessing academic journals, e-books, databases, and other online resources. Of all the Electronic Information Resources are scholarly databases which can only be accessed and used via subscription by the institution of higher learning. They includes but not limited to PubMed, Directory of Open Access Journals (DOAJ), JSTOR, Emerald, ProQuest, ERIC, IEEE Xplore, ScienceDirect, and so on.

These platforms provide a vast collection of information and facilitate research and learning across various disciplines. Overall, electronic information resources offer increased accessibility, availability, searchability, up-to-date information, space efficiency, portability, cost-effectiveness, multimedia capabilities, and environmental sustainability compared to physical resources[18]. These advantages have significantly transformed the way we access and utilize information in various domains. To the academic world and to the academicians and the library as the information nerve centre of any academic institution electronic information resources is inevitable and invaluable resources for viable research.

The use of technological inventions like Electronic Information Resources has be delineated by different studies using several measures like types of Electronic Information Resources, frequency purpose of use, perceived ease of use, perceived usefulness and so on. This study based on previous studies measures use of electronic information resources by frequency and purpose of use. Frequency deals with the degree of regularity with which academic staff uses electronic information resources while the purpose connotes the reasons for which electronic information resources are used.

This means that electronic information must be seen as useful before they are used for various purposes. Academic staff has been reported to need information for different purposes which include research resulting in publications[19]. They also need information for their classes, teaching, life and some other aspect of life. It therefore, expected that academic staff would access the information system for usefulness and also rely on the feedback of those who have used similar resource to be convinced of using online resources. Academic community, Librarians and other information services provider are therefore interested in the purpose to which academic staff make use of online resources which the library acquire and even the once not available in the library. Some researchers asserted the reasons for which academicians uses electronic information resources is because of the fact that Electronic information resources provide access to a wide amount of information that can be easily accessed and searched[20 21]. Users can find articles, books, research papers, and other types of information quickly and conveniently.

Furthermore, electronic resources are valuable tools for research and study purposes. Students, researchers, and professionals can use these resources to gather information, conduct literature reviews, and stay up-to-date with the latest developments in their field. Moreso, Electronic resources enable users to collaborate and communicate with others. They can share information, exchange ideas, and work on projects together using online platforms, email, and other communication tools[19]. Electronic resources are widely used in educational institutions to support teaching and learning. They provide educational materials, online courses, multimedia content, and interactive tools that enhance the learning experience. Moreover, Electronic resources are valuable for professional development. They provide access to professional

journals, conferences, webinars, and other resources that help individuals stay updated in their field and enhance their skills and knowledge[20].

For frequency of use, In a study conducted at Sardar Vallabhbhai Patel University of Agriculture and Technology, it was found that 94.2% of respondents used the internet daily, while a small percentage used it once a week[22]. A study conducted among university lecturers in South-west Nigeria found that only a small percentage of respondents used electronic databases every week, while a slightly larger percentage used them twice every week[23]. Overall, the frequency of use of electronic information resources can range from daily use to less frequent use depending on the individual and their specific needs and preferences.

E-library in any university is the hallmark of online information activities and the hub of electronic information synchronization including, access, retrieval, dissemination and storage. E-library is a library in which collections are stored in digital formats (as opposed to print, microform, or other media) and accessible by computers. The e-library provides opportunity for all types of learners, teachers and researchers irrespective of social status, economic, academic level and position, to interact with research works from any part of the world through the Internet[24]. E-library enhances communication and collaboration among people including students, staff and researchers by providing a platform for teaching, learning and research activities in a university. In Nigeria, e-library is a core division of the university library that collects different electronic information resources such as e-book, e-journal, e-database, e-newspaper, CD-ROM, e-thesis/dissertation and digitized materials among others. The e-library also creates access point to digital collections of a university through institutional repository (IR) via local area network (LAN) connecting to offices, laboratories, workshops and classroom for the purpose of making research accessible to students, staff and researchers. It is evident in some studies that an e-

library in university is very important and its development is sometimes shrouded with several challenges[25].

In a study of three universities in Kogi State, Nigeria found out that online databases, OPAC, e-journals, e-books, wireless network and search engines ranked high among all other electronic information resources for the development of an e-library[26]. Similarly, a study showed that electronic databases such as AGRIS, AGRICOLA, CAB abstract, and agriculture & natural resources were used at the e-library by postgraduate students in at GBPUAT, India[27]. However, the modern information society has introduced another dimension to the relationship between information availability, retrieval and utilization for various purposes such as research activities. Advancement in information technology and the rise of online digital libraries has created a glut of information resources that may be difficult to navigate for scholars without the relevant skills. Information literacy is defined as the ability to recognize the need for information, identify relevant sources of needed information, evaluate, retrieve and manipulate the information to meet particular need in a manner that does not cross any ethical boundary.

Information literate person is one who, apart from being able to access information, is also able to ascertain its veracity, reliability, bias, timeliness, and context. It is therefore imperative, when measuring the relationship between information availability and research competence to also measure information literacy level of the targeted group because it often happens that the available information is being underutilized due to lack of information literacy skills[28]. This is acknowledged in studies by scholars who measured the impact of information literacy on the utilization of electronic resources among Indian scholars observed that the available of electronic information resources in Nigerian libraries are often underutilized due to factors which include lack of information skills[29] [30].

The rapid advancement of technology has revolutionized the way information is accessed, disseminated, and utilized. Academic staff, including professors, researchers, and scholars, heavily rely on Electronic Information Resources to support their research endeavors. However, the ability to navigate through the vast ocean of information and extract relevant and reliable data has become a critical challenge. Information literacy, defined as the ability to identify, locate, evaluate, and effectively use information, has gained significant attention in educational and research settings. In today's digital age, information literacy skills and the effective utilization of Electronic Information Resources play a vital role in the research competence of academic staff. With the vast amount of information available online, it has become increasingly important for researchers to possess the necessary skills to locate, evaluate, and effectively use digital resources. This study aims to investigate the relationship between information literacy skills, the utilization of online information resources, and the research competence of academic staff at Public Universities in Lagos State, Nigeria

1.2. Statement of the Problem

In the rapidly evolving landscape of higher education and scholarly research, the critical role of information literacy, the utilization of electronic information resources, and the cultivation of research competence among academic staff members has garnered increasing attention. Academic staff members are often confronted with a vast and dynamic array of digital information sources and tools. However, a significant proportion of them may lack adequate information literacy skills, hindering their ability to effectively locate, evaluate, and utilize electronic information resources for research and teaching purposes. The proliferation of electronic databases, online journals, and digital libraries has revolutionized the way academic research is conducted. Yet, disparities exist in the access and utilization of these resources, which

can impact the quality and relevance of academic work. The competency of academic staff in undertaking rigorous and innovative research is pivotal for the advancement of knowledge and the success of their institutions. However, there may be gaps in the research competence of academic staff members, encompassing methodological, analytical, and dissemination skills, which may hinder their contribution to scholarly activities. These based on Extant literature and observation may be attributed to the drastic deficiencies information literacy skill and low usage of electronic information resources. Moreover dearth of literature was found as regard the influence of information literacy and use of electronic resources with regards to there influence on research competence. It against these backdrops the study sets out to investigate the influence of information literacy skill, use of electronic information resources on research competence of academic staff in public universities, Lagos State, Nigeria.

1.3. Aim and Objectives of the Study

The aim of this study is to investigate the influence of information literacy skill and use of Electronic Information Resources on research competence of academic staff in public universities, Lagos State.

The objectives are to:

i. identify the level of research competence of academic staff of public universities in Lagos State, Nigeria
ii. identify the level of information literacy skills of the academic staff of the Public universities in Lagos State, Nigeria
iii. examine the frequency of use of electronic information resources by academic staff in the public universities in Lagos State, Nigeria

iv. determine the purpose of use of electronic information resources by academic staff in public universities, Lagos State, Nigeria

v. examine the influence of information literacy skills on research competence of academic staff of public universities in Lagos State, Nigeria

vi. determine the influence of the use of electronic information resources on the research competence the academic staff in public universities in Lagos State, Nigeria

vii. ascertain the combined influence of information literacy skills and use of electronic information resources on research competence of academic staff in universities in Lagos State, Nigeria

1.4. Research Questions

i. What is the level of research competence of academic staff in public universities in Lagos State, Nigeria?

ii. What is the level of information literacy skills of the academic staff of the public universities in Lagos State, Nigeria?

iii. What is the level of use of electronic information resources by academic staff of public universities in Lagos State, Nigeria?

1.5 Hypotheses

The following null hypothesis would be tested at 0.05 level of significance

$H_0$1: There will be no significant influence of information literacy skills and research competence of academic staff in the public universities in Lagos State, Nigeria

$H_0$2: There will be no significant influence of use of electronic information resources on research competence of academic staff in the Public Universities in Lagos State, Nigeria

$H_0$3: There will be no joint significant influence of information literacy skills and use of electronic information resources on research competence of academic staff in the public universities in Lagos State, Nigeria

1.6 Significance of the Study

The study titled "Information Literacy Skills, Use of Online Information Resources, and Research Competence of Academic Staff of Public Universities" holds great significance for various categories of stakeholders such as Management of institution of higher learning, lecturers, policy makers, Universities of higher learning, researchers and body of knowledge.

To the management of Institutions of Higher Learning, the findings of this study are crucial for the management of institutions of higher learning as it provides insights into the information literacy skills, online information resource usage, and research competence of academic staff. This information can help the management in developing appropriate strategies, policies, and interventions to enhance the overall research quality and effectiveness of their academic staff.

To the lecturers, Lecturers play a vital role in shaping the educational experience of students. This study's significance to lecturers lies in its potential to identify areas of improvement in information literacy skills and research competence. By understanding these areas, lecturers can refine their teaching methodologies, incorporate effective Electronic Information Resources into their courses, and guide students towards better research practices.

Policy makers in the field of education can benefit from this study by gaining insights into the current state of information literacy skills and research competence among academic staff. These

findings can inform the development of policies and initiatives aimed at promoting a research-oriented culture, enhancing digital literacy, and fostering the effective use of Electronic Information Resources within higher education institutions.

For universities, this study holds significance in assessing the overall research capacity and quality of their academic staff. By understanding the information literacy skills and research competence of their staff, universities can implement targeted training programs, provide necessary resources, and create an environment that promotes continuous professional development. Ultimately, this can lead to improved research outcomes and academic excellence.

Researchers in the field of information literacy and educational technology can benefit from this study by gaining valuable insights into the current trends and challenges related to information literacy skills, online information resource usage, and research competence among academic staff. This study can provide a foundation for further research and exploration in this area, contributing to the body of knowledge on effective strategies for promoting information literacy and research competence.

1.7 Scope of the Study

This study focuses on information literacy skills, use of electronic information resources and research competence of academic staff in public universities in Lagos. It covers the Universities in the Lagos State and targets the academic staffs in the universities. The dependent variable is research competency of academic staff which would be measured by content knowledge, methodological skill, evaluation/operationalization of research and ethical issues in research. The independent variables are information literacy skills and use of electronic information resources. Use of Electronic Information Resources being one of the independent variables will

be measured with the duo of frequency and purpose of use. The second independent variable information literacy skill will be measured by the seven pillars of information literacy as modelled by SCONUL which are ability to identify, scope, plan, gather, evaluate, manage and present information ethically. The respondents for the study are the academic staff of the four public universities in Lagos State namely, University of Lagos (UNILAG) Akoka-Yaba, Lagos, Lagos State University (LASU), Ojo, Lagos, Lagos State University of Science and Technology (LASUSTECH),Ikorodu, Lagos and Lagos State University of Education (LASUED) Otto-Ijanikin, Lagos State.

1.8. Limitation of the study

The major limitation encountered in the course of this study is the tight and busy schedule of the respondents. The researcher however, overcame the challenge with continuous visits, calls and reminders.

1.9 Operational Definitions of Terms

Research Competency: is the set of skills, knowledge, and abilities possessed by academic staff of Public universities in Lagos State to conduct effective and high-quality research in terms of quality and quantity.

Content Knowledge: This refers to the academic staff of public universities in Lagos knowledge of the subject matter that is being researched, the theories, the scientific standards, literature research and reflection.

Methodological skill: This is the academic staff of public universities in Lagos's ability to formulate hypotheses, plan a research process, select and apply adequate methods for research, and how the results are prepared and presented.

Evaluation: This how academic staff in Public Universities, Lagos State evaluates their own research work and that of others

Operationalization Skills: Operationalization is the ability of academic staff in Public Universities in Lagos State to turn abstract concepts into measurable observations.

Research Ethical Skills: This is the ability of the academic staff in public universities to adhere to the set of principles that guide a research designs and practices.

Information Literacy skills: The is the ability of academic staff of Public Universities in Lagos State to find, evaluate, organize, use, and communicate information in all its various formats.

Identify**:** This is the ability of academic staff of Public Universities in Lagos State to identify a personal need for information

Scope**:** This is the ability of academic staff of Public Universities in Lagos State to assess current knowledge and identify gaps

Plan**:** This is the ability of academic staff of Public Universities in Lagos State to construct strategies for locating information and data

Gather**:** This is the ability of academic staff of Public Universities in Lagos State to locate and access the information and data they need

Evaluate: This is the ability of academic staff of Public Universities in Lagos State to review the research process and compare and evaluate information and data

Manage**:** This is the ability of academic staff of Public Universities in Lagos State to organise information professionally and ethically

Present: This is the ability of academic staff of Public Universities in Lagos State to apply the knowledge gained: presenting the results of their research, synthesizing new and old information and data to create new knowledge and disseminating it in a variety of ways

Electronic Information resources: These are information resources in digital formats, downloadable through the internet, that are relevant to the research and academic needs of academic staff in Public universities in Lagos State.

Use Electronic Information resources: This refers to the use of scholarly databases like Emerald, ProQuest, PubMed, Ajol and so on by academic staff of Public Universities in Lagos State.

Frequency of use: This is the degree of regularity with which academic staff of public universities in Lagos State make use of electronic information resources

Purpose of use: This is the reason for which academic staff of Public universities in Lagos State make use of electronic information resources. Which could be for research, for conferences, and so on.

Endnotes

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Chapter two

Literature review

This chapter attempt a review of literature on the topic under study. Literatures will therefore be reviewed under the following subheadings:

2.1 Conceptual Review

2.1.1. Research Competence of Academic Staff

2.1.2. Information Literacy Skills of Academic Staff

2.1.3. Use Electronic Information Resources among Academic Staff

2.2 Theoretical Frameworks

2.2.1. Integrated theoretical model of research competence

2.2.2. SCONUL Information Literacy Model

2.2.3. Technology Acceptance Theory

2.3 Empirical Review

2.3.1. Information Literacy Skills and Research Competence of Academic Staff

2.3.2. Use of Electronic Information Resources and Research Competence of Academic Staff

2.3.3. Information Literacy Skill, Research Competency and Research Competence of Academic Staff

2.4. Conceptual Model

2.5 Summary of Literature Review

Endnotes

2.1 Conceptual Review

2.1.1. Research Competence of Academic Staff

Competency refers to a set of demonstrated abilities, skills, knowledge, and behaviors that enable an individual to perform tasks, fulfill responsibilities, and achieve desired outcomes effectively and efficiently within a specific context. Competencies can encompass a wide range of areas, from technical skills and expertise to interpersonal skills and emotional intelligence. Competencies are often used as a framework for assessing and evaluating an individual's suitability for a particular role, job, or task. They provide a way to measure and communicate the qualifications and capabilities required for successful performance. Competency frameworks are commonly used in various fields, including education, workforce development, human resources, and professional development. However, in the field of academics, the greatest and most revered of all competence is research competence because that is were sound knowledge is derived from and a worth living life is built on.

Research competence, also known as research skills or research proficiency, refers to the ability to effectively and efficiently conduct research activities. These activities involve gathering, analyzing, evaluating, and interpreting information and data to address specific questions, problems, or objectives. Research competence is crucial in various academic, professional, and personal contexts, as it enables individuals to contribute to the advancement of knowledge, make informed decisions, and solve complex problems. Research outputs are used as a yard stick for measuring success in an academic circle which in turn may lead to promotion and probably increase in salary[1]. It was stated that research output are not only meant for solving practical problems but it also provides opportunities in acquiring new ideas that will help to improve human understanding, social, economic and cultural phenomena[2].

Globally, it is acceptable that research output plays an important role in advancing the prosperity of a Nation and its citizens in this era of knowledge base[3].

Research output has two major components which are knowledge creation and knowledge dissemination[4]. It has been ascertained that the benefits of research is the advancement of knowledge being created and facts, which are communicated in an academic environment through scholarly seminars, conferences and publications in the universities. An academic staff is being recognized and respected through the quality and quantity of research work produced and published. Academic staffs are lecturers ranging from graduate assistant cadre to the highest level known as the professorial cadre. It has been known that academic staff members in any higher institution, especially the universities are given time and opportunities to carry out research programs that will help them to be able to share their acquired knowledge with their students through lectures and with others in the drive to develop professional skills and impact on their own field of specialization to other members of the society. The major function of academic staff in the university is to carry out research and teaching with the aim of producing trained human resources for academic and social development[5].

It is made clear in the schemes of service that regulate the appointments and promotions of academic staff at these institutes that the academic staff member's level of research output is a very important factor in the appointment and promotion process. They are required to gain appointments and promotions on evidence of satisfying research publications in renowned journals, conference proceedings, and seminar papers in addition to educational credentials and experience in the relevant field because of their work and positions. This is in addition to the educational qualifications and experience in the relevant field. According to the Federal

Republic of Nigeria, 2000, different academic positions inside research institutes require varying numbers of publications, and the possession of a doctorate in a relevant discipline is required to be appointed as a Principal Research Officer within these research institutes. The importance of research competence in the career advancement and prestige of researchers in these institutes is quite obvious; as a result, it is not treated with levity by academic staff or employers. Because of this, the popular saying that "publish or perish" that is said in academics is also practiced in the research institutes in the South-West region of Nigeria.

Research is a core activity in any university. This is obvious because conducting researches is the best avenue to expand the frontiers of knowledge and drive development in a bid to make the world a better place. The importance of research can be better understood from the fact that universities around the world are ranked based on the quality and quantity of research output. Furthermore, conducting research is also beneficial to the researcher. Innovative and high impact researches improve the profile of the researcher among their peers and expedite their career progression. Research output is exemplified by peer reviewed research reports published in professional journals or presented at scholarly conferences, published book or chapter, etc. research competence is therefore the measure of the quantity of these publications by researchers over a particular period of time[6].

As observed, despite the fact that Nigeria has several policy documents that highlights the importance of research as a catalyst for national development, Nigerian scholars are not performing up to expectation in term of research and innovation. Studies conducted on research competence in South-west and Northern Nigeria respectively show that scholars in Nigerian universities published an average of one research paper per year[7]. This rate of research publication is very low compared to scholars in developed countries. As the unit

responsible for the selection, acquisition, organization and dissemination of relevant information resources to facilitate research activities in academic institutions, the academic library has come under scrutiny to justify its existence in the light of low research output and general quality of scholarship in tertiary institutions.

A researcher opined that availability of relevant information resources has a significant relationship with research competence of scholars in an institution[8]. This is backed by a finding who averred that availability and accessibility of relevant Information resources are essential to knowledge acquisition, learning and research[9]. Therefore, various studies have examined the availability of information in academic libraries. It was also reported that some law libraries in Nigerian are unable to effectively meet the needs of their patrons because of insufficient and outdated collection, furthermore, most of the resources are irrelevant and lack variety. However, some researcher believes that the advancement in Information and Communication Technology (ICT) has provided the library with a great opportunity to meet the diverse need of researchers. The integration of digital information resources, according to has expanded access to information for teaching, learning, and research than the traditional print through the use of information and communications technologies (ICTs) by library patrons[10]. Today, libraries can make information resources available to their patrons beyond what they have under their roofs to enhance research and facility research competency.

Times Higher Education (THE) World University Rankings highlight the significance of academic research. There are five main factors that are taken into account when determining a university's standing in the Times Higher Education (THE) World University Rankings. These include the school's capacity for instruction, research, citations, an international focus, and industry funding as a percentage of total faculty pay. One of the most important aspects

of a college education is research[11]. Volunteering and teaching are two others. Research entails looking at a topic in depth in order to learn more about it and gain new perspectives on it. Extremely important, it is the defining factor in the credibility of any academic establishment. It's a major factor in determining who gets a rise in the faculty, therefore it's important, sought-after, and demanding of top-notch engagement and output.

Research is an ongoing process through which we seek the truth or get closer to it[12]. Research identifies fresh issues, amasses facts about those issues, analyses the data, draws conclusions, and proposes solutions. Research involves extensive inquiry, analysis, explanation, and verification of facts. Mistakes are fixed and knowledge is expanded thanks to research. Research-based knowledge is always neutral and empirical. Knowledge obtained from research is always reasonable, sound, and founded on practice. Research publications in any field of specialization is aimed at providing current information for growth, progress, development and improved society. Research competence is very critical to academic staff worldwide. Decision regarding tenure and promotion for individual academic members are frequently linked to scholarly achievement. Prestige of programs and institutions often is built on the scholarly accomplishments of their academic staff [13].

Academic researchers publish to establish their claim to a specific result at specific result at a specific time. When researchers publish their academic works, it is an avenue for their peers to access their research and communicate with other colleagues interested in a similar subject area. One of the core missions of research institutions is to advance, create and disseminate knowledge through research and provide service to the community. Through research, research institutes contribute to innovation for mobilization of resources in the country. However, in many African countries including Nigeria, research is faced with numerous

challenges[14]. These includes research capacity financial constraints, other resources (physical development of research institutions) research and policy, relevance publication of findings, social, political and cultural context in which research processes occur, as well as information technology.

The term "Research Competence" is a portmanteau of the phrases "Research" and "Competence."To "research" anything is to examine it with extreme attention to detail and vigilance in order to unearth previously unknown information. "Competence" refers to the amount of work done in a certain time frame. Both terms have various connotations depending on who you ask. Publishing articles in academic journals, writing books, and presenting research at conferences are all examples of productive academic research. Project work, monograph publication, experimental design, and creative output all fall under this broad category. The research competence of a professor is measured by the number of scholarly articles he or she has published in peer-reviewed journals, the number of conference proceedings in which he or she has participated, the number of books and/or chapters he or she has written, the number of dissertations and projects he or she has supervised for graduate students, the number of patents and licenses he or she has obtained, the number of monographs he or she has written, the number of experimental designs he or she[15].

The level of research output in Nigerian universities must be examined together with other factors. Researchers' output can be measured, in part, by tallying the number of articles they wrote, whether they relied on primary or secondary sources for their findings. Publications in academic journals and conference proceedings, books and book chapters, original research, advising graduate students on theses and projects, grants, editorial work, patents, licences,

monographs, experimental designs, creative works, public debates, and other activities are all examples of research competence. It has been noted that the number of articles published in reputable refereed journals and conference proceedings is a major or most significant indicator of academic staff competence in the university[16].

The number and calibre of articles published by a university's affiliated faculty are two measures of the institution's research output. Many departments use a faculty member's "publication count" as a measure of their performance, although some researchers have argued that this unfairly places a heavy burden on them. It is important for universities to provide its faculty with the resources they need to conduct research and publish their findings in peer-reviewed publications published in other countries.[17] Universities in Nigeria need to be fully engaged in their research responsibilities if the country is to join the mainstream of scientific, technological, and economic progress. The scientific and technological advancements that Nigerians devour with uncontrolled fervour have their origins in the country's many excellent educational and research facilities[18].

It is also very important for every research outfit to show appreciable levels of research competence, this is an indication of its trends, contribution to development and researchers' preferences for publication outputs. Research competence could be defined as research product and research effort of which researcher produces. Research competence in this study means the publications published by academic staff in the research institutes surveyed: such publications include books, journal articles, chapters in books, conference papers and proceedings, technical reports, patents, scientific peer- review bulletin, occasional papers, monographs, co-authored books, theses/dissertations and Journal publications published[19].

In order to achieve given mandates, research institutes in South-West Nigeria employed personnel, which of course include researchers who undertake researches relating to the mandates given to various institutes. By virtue of the nature of these institutes, the researchers are line staff and as such very important for the attainment of the objectives of these institutes. In addition, the 77 researchers are regarded as academic staff as they belong to Academic Staff Union of Nigerian Research Institutes, which is an umbrella labour union of all the academic staff in research institutes in Nigeria. The academic staff members also include Librarians that work in these institutes. According to the Scheme of Service in the Federal Civil Service of Nigeria published by the Office of Head of Service of the Federation, researchers and librarians are categorized as academic staff members[20].

Research competence is very important in the appointment and promotion of academic staff of these institutes as it is spelt out in the schemes of service governing their appointments and promotions. By virtue of their work and positions, apart from educational qualifications and cognate experience, they are required to get appointments and promotions on evidence of satisfying research publications in reputable journals, conference proceedings and seminar papers. The numbers of publications vary with different academic positions in the research institutes and possession of Ph.D. in relevant field is a prerequisite for appointment of Principal Research Officer in these research institutes. The importance of research competence in the career advancement and prestige of researchers in these institutes is quite obvious as such it is not taken with levity by academic staff and employers, so the popular saying that "publish or perish ''that is said in academics is also practiced in the research institutes in the South-West, Nigeria.

Research provides a good platform for academic staff members to become successful academics. This is because research develops academic knowledge and reinforces the skills needed for effective knowledge. However, it was observed that both the quantity and quality of research output from these institutions in Nigeria are generally too low to make the desired impact on national development. Worse still, there is a general lack of research focus by the higher education sector in relation to Nigeria's national Research & Development needs[21].

A study by Centre for Higher Education Transformation (CHIET) concluded that the knowledge of the academics scores production flagship African universities is not strong enough to enable universities to make a sustainable contribution to development. The challenges of research in Africa are not purely academic. They are caused by failure of the governments to put in place policies that recognize the fundamental impact research activities could have on governance and efficient use of public resources. Consequently, research has been accorded insufficient attention and resources by governments and institutions of higher education[22].

The new millennium witnessed the arrival of global rankings of universities which have soon become a worldwide phenomenon. In 2003, the Center for World-Class Universities from the Shanghai Jiao Tong University published the Shanghai ranking (ARWU), "a global big bang of immediate interest to anyone involved in higher education and research"[23]. The latest ARWU ranks "top 1000" universities whose position is determined on the basis of six indicators: the number of alumni and staff winning the Nobel Prize or the Fields Medal Award, the number of highly cited researchers, articles published in scientific journals (Nature and Science) or indexed in citation databases (Science Citation Index Expanded – SCIE or Social Sciences Citation Index – SSCI) and per capita institutional performance.

These indicators are grouped on the basis of four criteria which "measure" the quality of education and faculty, research output and per capita performance[24]. However, ARWU is frequently criticised for its methodology which gives a clear priority to institutional research performance, while the use of English bibliometric databases also raises bias in relation to other languages and cultures. As such, the ARWU supports English-language research at mostly private US higher education institutions and to a lesser extent at those from the UK.

Studies have demonstrated varying effects of Internet applications on the research competence of scientists. A scholar asserts that, in scholars' opinions, access to databases and computer support are facilitators to research competence[25]. A researcher however, aver that Nigerian academic scientists heavily dependent on printed information sources, especially journals, indexes and abstracts. The study reveals that 64.4 per cent of academic scientists sampled each had a computer while 50 per cent had access to and were using Internet facilities[26].

A study undertaken by a researcher suggests the Internet connectivity improved faculty collaboration and facilitated supervision of distance education and external research students[27]. Some scholar surveyed how academics have been using Internet services and resources. They note that 100 per cent of the United States' universities are connected to the Internet. Academics were among the first set of people to participate in Internet activities[28]. A scholar emphasized the importance of the Internet as a learning tool, saying it provides easy and quick access to almost unlimited global information as well as easy and fast communication[29]. It was noted that discussion groups on the Internet might be the best forum for information exchange. He observes that academics are the most represented part of the

society within Internet discussion groups, as they have greater access to the Information Superhighway through university settings.

It was claims that information retrieval from electronic journals and full-text databases correlate positively with the number of journal articles, conference presentations, and reports published. Searching on peers' Websites was associated with the number of working papers and conference presentations published. Thus, those scientists who used electronic resources published more journal articles and other reports than their peers who did not use Internet-based tools as much[30]. A study explored how the use of electronic information resources has influenced scholars' opinion and its effect on publication competence[31]. Similarly, some researchers examined the perception and use of e-resources and the Internet by the engineering, medical and management academics in Bangalore City, India. The results of the studies show that the students and faculty, who participated in this survey, are aware of e-sources and the Internet. Even though the majority of the academic community uses information sources for their academic-related work, most of them prefer print to electronic information sources[32]. The study further revealed that many of the students and faculty learnt about the electronic information sources either by trial and error or through the advice of friends.

In a research conducted a study on the use of electronic resources by students and academic staff members of Ashesi University, Ghana, in order to determine the level of use, the type of information accessed, and the effectiveness of the library's communication tools for information research. The study found a high level of general computer usage for information access, and a high usage of some Internet resources, compared to a low use of scholarly databases. The low percentage was attributed to inadequate information about the existence

of these library resources. The study recommends the introduction of information competency within the curriculum and introduction of computer courses to be taught at all levels and the provision of more personal computers[33].

Publication is the most obvious indicator that an individual is actively engaged in research. It is essential for a successful research career and for advancing one's academic standing. Additionally, there is an increase in status for both the institution and the researcher, as well as professional advancement opportunities. The findings of a thorough examination into current literature and perspectives of the factors that affect faculty research competence were analyzed and presented in a study. The purpose of the study was to discuss themes and components of such work and to provide a conceptual framework. In order to find solutions to the challenges, a comprehensive review of the previous research was performed. It has been discovered that individual factors (such as self-efficacy, affiliation, motivation, commitment, orientation, basic and advanced research skills, sense of achievements, contributing to society, sense of responsibility, scholarly pursuit, autonomy and flexibility, satisfying interest and curiosity), as well as institutional factors (such as having fewer course preparations, staff support, advising and mentoring, resources, rewards, sufficient work time,), have an effect on faculty research competence. The terms "ascriptive factors" and "intelligence" and "personality of the individual" refer to a faculty member's gender and age at a specific point in time, respectively[34].

For this study, research competency is measured by the quartet of content knowledge, Methodological skills, Evaluative and Operationalization skills and research ethic skills as modified by a group of researchers[35]. Content knowledge is one of the competencies required to become a researcher. It refers to the knowledge of the subject matter that is being

researched. According to a researcher's model, content knowledge is one of the key competencies that a professional must have in order to carry out research[36]. The researcher in his view came up with nine inevitable skills that must be possessed by a potential researcher. These abilities are: The skill of formulating a research question by working backwards from what is already known to what should be known. Learn to develop a contextual framework by analysing the stated problem's occurrence within the entire and the setting you intend to study. Assess the current knowledge base by reading up on what has been written regarding the identified gap in understanding. It is necessary to analyse the problem's components independently.

Get your data collection instruments ready by deciding what kind of research will be performed, what instruments will be used, and who will validate and answer them based on the study's objectives. Create a research model: after you have a mental picture of the issue or event you want to investigate, map out the steps you'll take to examine it and accomplish your goals for the study. Familiarity with data analysis methods is essential, as is an understanding that processing options vary according to study design and measurement scale. Write scientific articles with ease by familiarising yourself with the Modern Language Association (MLA) style, the Chemical Biology and Engineering (CBE) style, and the American Psychological Association (APA) style. Use the IMRaD format (introduction, methods, findings, and discussion) and keep your writing short and sweet. Participate at a conference and present your findings; doing so will ensure that your findings are disseminated and will likely lead to opportunities to network with other academics, in this case, educators from a variety of fields and institutions. Learn a new language fluently;

worldwide journals and conferences require knowledge of English, the international language[39].

Methodological Competencies in doing research include the development of methodological abilities. Competencies such as reviewing the current state of research, using appropriate methodology, critically analysing the results of that study, effectively communicating the results, and knowing the subject matter are all necessary. Among the four pillars of action competence—personality competence, social competence, methodological competence, and self-reflection—is the subcategory known as "methodological competence[37]." It covers, knowledge about research methods, how the project is realized and how the results are prepared and presented.

A researcher's methodology describes the steps that will be taken to complete the study. It's a methodical, well-thought-out strategy for fixing a research issue. A researcher's methodology describes the steps they used to collect relevant data and reach meaningful conclusions. It includes not only what data will be collected and from where, but also how that data will be gathered and analysed. The reliability and verifiability of study results depends on the research methodology used. It lays forth a comprehensive strategy that may be used to keep researchers on track and keep the whole thing reasonable. A researcher's methodology sheds light on the thought process and procedures that led to the study's findings. The following advantages result from using a reliable research methodology: If other scientists wanted to repeat your study, they would have all the data they needed to do so. When confronted with criticism, researchers can point to their methodology to justify their methods. It can be useful for giving researchers a road map to follow as they conduct their studies. Researchers

are aided in their method selection by the methodology design process. It enables researchers to record early on the goals they hope to accomplish with their study[38].

In operationalization, researchers specify the exact criteria by which a notion will be evaluated in quantitative studies. It entails settling on the precise methodologies we'll employ to collect evidence for our hypotheses. The process of operationalization involves the selection of appropriate indicators to stand in for the concepts under investigation. An operational definition includes (1) the variable to be measured, (2) the measure to be used, and (3) the intended interpretation of the findings of the measure. Operationalization is particularly important to evaluators who use qualitative and quantitative indicators to measure progress or change over time — usually conducting research with program participants and using archival documents such as program quarterly reports. Operationalization is the process of defining how to measure the concept that you want to study. It involves turning abstract concepts into measurable observations1. Through operationalization, researchers can systematically collect and evaluate phenomena that can't be observed directly[39]. Operationalization is the process of strictly defining variables into measurable factors. The process defines fuzzy concepts and allows them to be measured, empirically and quantitatively[40].

On the other hand, Evaluation of the quality of research practice is a truly important issue in most scientific domains and at many levels. Evaluation, in the researcher's perspective, can be described as an endeavour in which particular facets of research practise quality are explored. But can we get to the bottom of this? There is a long and tumultuous history of attempts to assess the quality of research. While bibliometric analyses may be the primary focus of national commissions in some countries, the appraisal of research can encompass a

wide variety of factors. For instance, the issue of having evaluations "led by the data rather than by judgement" is being brought to light in the current debate. A common definition of evaluation states, "Evaluation is the process of gathering and synthesising evidence in order to draw conclusions about the state of affairs, the value, the merit, the worth, the significance, or the quality of a programme, product." This definition suggests that evaluation can employ a wide variety of methods and measure many different aspects.

It is challenging to create a general definition of what constitutes good scientific practise when it comes to the question of gauging the quality of research in the larger scientific community. Some schools place more importance on the quantity and quality of articles published in scholarly journals than others do, while others give equal weight to all types of scholarly output. Scientific output, however, is increasingly being evaluated in ways apart from the quantity and quality of publications in a growing number of academic disciplines.

In recent years, a number of expensive quality-assessment projects have been undertaken with the goals of improving research practise in Nigeria institution, allocating funding to the most promising areas of research, identifying areas in need of quality improvement, and comparing the quality of a given institution to that of top institutions worldwide. However, there is a dearth of academic writings addressing research quality and the nature of research itself. There are some real-world instances of this. In Italy, for instance, national reference guidelines have generally endorsed an approach that incorporates socio-economic effect, resource recruitment, and resource management as criteria for evaluating research practise[41]. Short descriptions of five concepts—significance, strategy, innovation, investigators, and environment—form the basis of the National Institutes of Health's evaluation criteria for research funding applications in the United States[42]. Scientific, technological, clinical, and

socio-economic significance of their publications, as well as implementation of research results in society, were taken into account in a recent evaluation of research constellations at a large Swedish university to determine the quality of research practise. However, it now appears that there are at least as many research organisations in Sweden measuring what makes a good scientific study or publication. In Canada, both quantitative and qualitative research have their own sets of established quality assessment criteria for research articles.

From the above, it is clear that assessment strategies differ from institution to institution, country to country. However, it is expected that a citizen or a member of an institution that is adjudged competent in research is well conversant with the institutional demands, measures or yardstick for quality research.

Ethical and moral values are not only a part of modern research. They are also heavily linked to higher education's teaching[43]. Almost every research association has its own moral codes and these codes are also taught to university students. These guidelines show exactly how to plan, organize and conduct scientific experiments in an ethically correct way. Other guidelines give advice to students, how they should behave in ambivalent situations in the field of research or in the job.

A authors asserted that when conducting ethical research, there are several skills that are required and according to the author, some of the skills include: Honesty and Integrity: This means that you need to report your research honestly, and that this applies to your methods (what you did), your data, your results, and whether you have previously published any of it. Objectivity: This means that you need to be objective in your research and not let your personal beliefs or biases influence your research. Carefulness: This means that you need to

be careful in your research and take steps to ensure that your research is accurate and reliable. Openness: This means that you need to be open about your research and share it with others so that they can review it and provide feedback. Respect for Intellectual Property: This means that you need to respect the intellectual property rights of others and not use their work without permission. Confidentiality: This means that you need to keep the information you collect confidential and not share it with others without permission. Responsible Publication: This means that you need to publish your research responsibly and ensure that it is accurate and reliable. Legality: This means that a researcher needs to ensure that their research is legal and does not violate any laws or regulations[44].

According to the research that has been conducted on management, personality can be used as a substitute for an individual's level of motivation[45]. The Five-Factor Model of Personality has gained widespread acceptance among researchers in recent years due to its replicability and ability to provide a cohesive taxonomy of personality. One researcher in particular stated that conscientious people have stronger intentions for achievement striving[46]. Individuals that have a high level of conscientiousness are dependable, accountable, organized, and achievement-oriented; all of these characteristics appear to be relevant for academic research production. According to the available data, the standard deviation of academic performance is quite high, while the publishing rate among faculty members tends to be quite low[47]. According to the findings of a study, this difference can be explained in a number of different ways, including the fact that effective researchers possess particular psychological and individual traits that are lacking in less productive researchers. High producers may have an innate scientific aptitude or talent, possess a sacred spark of motivation and desire, and have

a certain sort of personality or cognitive structure. In addition, high producers may have a certain type of personality or cognitive structure. The biographies of prominent scientists indicate people who put in a lot of hard effort and are creative thinkers who enjoy playing with ideas, easily recombining familiar concepts, and can accept ambiguity and abstraction.

According to the findings of one piece of research, the level of true individual interest in one's specialty or field is a strong predictor of the amount of research that is produced[48]. Previous empirical study has, in point of fact, demonstrated that academic researchers who have a high level of professional commitment and values also demonstrate the highest level of research output[49]. An academic postulates that even if one understands the relationship between collaboration and the publishing competence of individual researchers in all of its richness and complexity, the health and well-being of scientific fields will continue to depend, critically, on the ability to replicate and extend research skills across generations[50]. This is because scientific fields are becoming increasingly interdisciplinary.

The term "faculty development" refers to a variety of program activities, practices, and initiatives that have the dual purpose of preserving and enhancing the individual academics' level of professional competence. It is possible that research development will be included as a component of faculty career development; however, the writers have not specified the nature of the activities. It was noticed that when faculty members were questioned about the areas in which they needed professional development, progress in teaching ranked top, but research-oriented activities such as article preparation and publication, proposal writing, and computer use ranked second. This was something that was observed. Publication is the most obvious indicator that an individual is actively engaged in research. It is essential for a successful research career and for advancing one's academic standing. As a result, writing

papers while working for a doctoral degree is becoming an increasingly expected practice[51]. Some studies use the subsequent competence of PhD candidates as an indicator of the quality of doctoral programs[52] [53]. These studies measure the subsequent competence of doctoral candidates. Candidates who have completed their doctorates and have published at least a few works are in a stronger position for future employment, particularly research jobs.

According to one definition of the term "motivation," it is "the forces acting on or within a person that cause that person to behave in a particular way that is directed toward achieving a goal[54]." Because the motivations of employees have an effect on their levels of competence, one of the responsibilities of management is to efficiently channel employee motivation toward the accomplishment of corporate goals. Even though job success is dependent on a number of elements other than drive, motivation remains an essential component in reaching high levels of performance. Aside motivation, job commitment is the concept of self - efficacy.

Self-efficacy, a concept introduced by renowned psychologist Albert Bandura, refers to an individual's belief in their own abilities to successfully execute a task or achieve a desired outcome. In the context of academic staff and research competence, self-efficacy plays a significant role in shaping their attitudes, motivation, and performance[55]. The influence of self-efficacy on research competence is multifaceted and can be observed in several key aspects.

Firstly, self-efficacy impacts academic staff's goal-setting behavior. Individuals with high self-efficacy tend to set ambitious but realistic goals for themselves. They believe that their efforts and capabilities will lead to successful outcomes. This self-assurance drives them to

set challenging research goals, pursue complex projects, and aim for innovative contributions to their respective fields. As a result, their research competence tends to be higher, as they consistently strive for excellence and are more likely to persevere in the face of obstacles[56].

Secondly, self-efficacy influences the level of effort individuals invest in their research endeavors. Academic staff with high self-efficacy are more likely to engage in sustained and focused efforts towards their research projects. They perceive their work as meaningful and believe in their ability to overcome difficulties and produce valuable outcomes. This strong belief in their own capabilities serves as a motivating factor, encouraging them to put in the necessary time, effort, and persistence required for successful research outcomes[57]. Furthermore, self-efficacy affects the approach individuals take when confronted with challenges or setbacks in their research. Academic staff with high self-efficacy view challenges as opportunities for growth and problem-solving rather than insurmountable barriers. They are more likely to persist in the face of setbacks, adapt their strategies, seek additional resources or support, and maintain their enthusiasm for their research pursuits. This resilience and positive mindset contribute to their overall research competence by enabling them to navigate through difficulties and find alternative solutions[58].

Additionally, self-efficacy influences the selection and utilization of coping strategies. Individuals with high self-efficacy tend to employ adaptive coping strategies when faced with research-related stressors. They are more likely to proactively seek support, collaborate with others, engage in effective time management, and prioritize tasks strategically. By effectively managing stress and utilizing appropriate coping mechanisms, they can maintain focus, competence, and a healthy work-life balance, thus enhancing their overall research competence. More so, self-efficacy can impact academic staff's engagement in research-

related activities. Individuals with high self-efficacy exhibit greater initiative and proactivity in pursuing research opportunities. They are more likely to seek out collaborations, publish their work, present at conferences, and engage in knowledge exchange activities. Their belief in their own abilities fuels their confidence to showcase their research, contribute to academic discourse, and expand their professional network, all of which can lead to increased research competence and impact[59].

Aside the personality issue, research competence has been found to largely depend on the institution of higher learning in terms of publication culture, research support and research emphasis. An exceptional achievement in research is already acknowledged and sought for across all levels of the institutional system[60]. The ability of a faculty member to teach improves when they produce scholarly work since this allows them to get a deeper understanding of their field and contribute to the most recent advancements[61]. Efficiency is highly valued by presidents and trustees of an institution because of the visibility and reputation that it inadvertently earns for the organization[62]. Competence is admired by administrators and deans because of the creative and invigorating forces it brings to the environment of a workplace or academic setting. Researchers measured resources such as the percentage of worktime spent on research, the number of research assistants, and the proportion of respondents who reported that they "always" get the grants they seek. They discovered that the percentage of worktime spent on research is a significant factor in determining high research performance[63]. One of the methods that can be utilized as a reward to assist in the process of motivating workers is promotion, for instance. Some academics are of the opinion that promotions serve as a source of motivation for increased levels of research output. For instance, one study found that academic institutions with higher levels of

education were able to alter the research behavior of their academic staff by manipulating the reward structure for promotion[64]. Some researches came to the conclusion that tenured faculty members are more driven by the rewards associated with intrinsic motivation, whereas untenured faculty members are more motivated by the benefits associated with extrinsic motivation[65]. Pay increases are not sufficiently linked to research competence to be considered an effective incentive. On the other hand, tenure and promotion are powerful motivators that lead to increased staff research output. The majority of educational institutions have developed comprehensive written papers that outline the performance requirements for academic staff[66]. The amount of labor that is required for lectures and research papers on an annual basis varies from university to university. Every academic year, both the departmental and individual perspectives of academic staff members' professional performance are taken into consideration throughout the evaluation process. According to the research, academic rank and tenure are both connected to an individual's level of research competence[67]. To give just one example, members of the faculty who have higher professorial ranks tend to have larger publishing totals. We are cognizant of the fact that full professors, i.e., those who have, in principle, achieved the highest promotional position, continue to write as well. It is true that intellectual curiosity plays a considerable impact in publication production, and this is especially true for tenured teachers, who, according to certain research, produce the greatest scholarship overall[68].

Organizational culture plays a significant role in influencing research competence within an organization. The culture of an organization encompasses its shared values, beliefs, norms, and practices, which shape the behavior and attitudes of its members. Here are some ways in which organizational culture can impact research competence[69]. Emphasis on innovation. A

culture that values and encourages innovation can foster a research-friendly environment. When employees are encouraged to think creatively, take risks, and explore new ideas, it can lead to breakthroughs and increased research competence. Collaboration and teamwork. A collaborative culture promotes knowledge sharing, interdisciplinary research, and teamwork. When researchers can work together, exchange ideas, and leverage each other's expertise, it can enhance competence by pooling resources, reducing duplication of efforts, and fostering synergies[70].

Comparing competence and commitment, researchers has found that generally competence increases in employees that are committed to their job. In a study that examine employee commitment and job performance of private sector employees. The researcher asserted that the role of employee commitment has been accepted as an active method for improving the employee performance. Therefore, in their study job performance is taken as dependent variable and employee commitment is employed as an independent variable. The finding of the study reveals that the committed employees have good leadership quality, increased competence, high turnover, reduced absenteeism and job satisfaction[71].

Organizations that prioritize and invest in R&D demonstrate their commitment to research competence. Adequate funding, resources, infrastructure, and support mechanisms such as grants, incentives, and dedicated research departments can significantly boost the competence and output of researchers. Clear goals and performance expectations. A culture that establishes clear goals, expectations, and performance metrics for research can drive competence. When researchers have a clear understanding of what is expected from them and how their performance will be evaluated, it can enhance their focus and motivation. Open communication and feedback. Open communication channels and provides regular feedback

can positively impact research competence. Effective communication channels facilitate the exchange of ideas, collaboration, and timely resolution of issues. Feedback mechanisms, such as constructive evaluations, mentorship, and peer reviews, can help researchers improve their work and make progress.

Recognition and rewards, a culture that recognizes and rewards research achievements can motivate researchers and increase their competence. Publicly acknowledging research contributions, providing career advancement opportunities, and offering financial incentives or awards can incentivize researchers to perform at their best. Flexibility and autonomy: A culture that allows researchers flexibility and autonomy in their work can enhance competence. Researchers often require freedom to explore and experiment, and a culture that supports independent thinking and decision-making can foster creativity and competence. Work-life balance. A culture that values work-life balance can contribute to research competence. Burnout and excessive workload can hamper competence and creativity. Organizations that prioritize employee well-being and offer supportive policies, such as flexible working hours, sabbaticals, and a healthy work environment, can help researchers maintain their competence and overall satisfaction.

However, academic institution have a general culture as regards publishing " Publish or Perish". Institution of higher learning that come up with research support programs have a higher tendency of raising it research quality. From different dimensions, from the personality to the organization culture. The researcher as looked into factors that stimulate research competency of academic staff as stick to the four competencies as highlighted by some scholars who modified the F-Komp model questionnaire of research competence which are Content Knowledge, Methodological skill, Evaluation and Operationalization Skills, and

Research Ethical Skills[72]. All these put together or acquired by an academic staff would trigger research competence.

2.1.2. Information Literacy Skills of Academic Staff

Information literacy skills refer to a set of abilities and competencies that enable individuals to effectively find, evaluate, interpret, use, and communicate information. In the digital age, where information is abundant and easily accessible, information literacy has become increasingly important. Information literacy involves skills like Identifying information needs. Recognizing when information is needed and defining the scope of the information required for a specific purpose or task. Accessing information. knowing how to access information from various sources, such as libraries, databases, websites, and online platforms. Evaluating information, assessing the reliability, credibility, and relevance of information by considering its source, authority, accuracy, currency, and objectivity. Organizing and managing information: Effectively organizing and storing information for easy retrieval and future reference. This includes using tools like bookmarks, citations, databases, and file management systems. Analyzing and interpreting information, critically examining information, identifying key ideas, detecting bias, and understanding different perspectives or interpretations. Synthesizing and integrating information. combining information from multiple sources to create new insights, develop informed opinions, or produce original work. Ethical and responsible use of information, Understanding and adhering to copyright laws, intellectual property rights, and ethical principles related to the use and dissemination of information. Communicating information, effectively presenting information in oral, written, or visual forms, utilizing appropriate citation styles, and adapting communication for different audiences and purposes. Information literacy skills are essential in academic

settings for conducting research, writing papers, and completing assignments. However, they are also crucial in everyday life for making informed decisions, staying updated with current events, and navigating the vast amount of information available online

Some researchers stated the need for academic staff in Nigerian universities to possess web-based information literacy skills which will help greatly in improving their research competence. This is because Nigerian academics need to join their counterparts in other parts of the globe who have taken advantage of the open access and other ICT resources tremendously to improve their research competence[73]. A group of researchers opined that academic staff are expected to exhibit high level of information literacy skills by virtue of their carrier and exposure to research. This is because research process requires them to formulate need for information, identify and evaluate sources, retrieve the needed information and synthesis the information in order to create new knowledge[74].

The first skill an information literate person needs to possess is the skill to identify the extent of information need[75]. For information literate person to identify information need, it is important for such individual to adopt diverse techniques to gather information. However, several factors might influence their information need. Some of the factors identified are: range of available information sources; use of information; background motivation; individual characteristics of users and consequences of information[76].

The steps in identifying information need as noted include: recognize the need for information, identify the extent of information you need, define the information need, decide how to find the information and initiate the search process[77]. Identifying information need focuses on individuals' ability to recognize and understand the level of their information

need. That is, people are able to identify first a gap in knowledge, identify and define questions, transform the questions into a topic, assess his/her knowledge on the topic and use information to initiate a search. In other words, to become information literate, an individual need to continuously develop skill to articulate the type of information required[78].

The report of IL skills at a State University in California suggested that the skill to identify information need involves formulating and defining the research problems in an understandable and accessible manner[79]. Also, some authors opined that identifying information need is the ability to define the necessary information needed, nature of the information and why the information is needed[80]. This skill also requires an individual to identify the exact research problem, type of information to solve the identified problem, itemize the specific questions and hypothesize from the problem, which provides a clear focus of what is needed[81].

The ability to identify the extent of information need involves the ability to understand and articulate the scope of information needed. Identifying information need is the ability to define clear and key concepts, extensive access to information resources and formulate an effective search technique to be used to access the information[82]. It also opined that identifying the extent of information need is the ability to identify when there is need for information and phrase questions to provide answers to the needed information. In addition, skills to recognize and identify when information is needed and the extent it is needed provide answers to research questions[83].

The behaviour of an information literate begins with recognizing that information is needed for task-related activities and to make proper decisions[84]. Therefore, looking at the concept of

ability to identify information need from the perspective of problem-solving and answering research questions, an information literate should be able to identify their information need, display confidence in their ability to solve problems and know the relevant the information needed[85].

There are however conflicting assessments regarding the level of information literacy skills possessed by Nigerian scholars. Some Nigerian researchers observed that most Nigerian university lecturers lack relevant ICT literacy skills so they are often unable to identify relevant sources of information or retrieve them through the use of ICT because they are not ICT literate[86]. It was also reported that the lecturers in their study reported a high level of information literacy which enables them to formulate information needs, identify and evaluate sources, retrieve needed information and synthesis the information to create new knowledge. This inconsonance may be due to time lapse between the two studies which has enabled more lecturers to acquire or improve on their information literacy skills[87].

However, there are few disagreements to the assertion that information literacy skills affect the level of research competence of scholars. It was reported that training lecturers on the use of electronic information resources in a Zimbabwean University resulted in improved use of the library databases and an increase in research output[88]. Defining Information Literacy as the ability to define one's information needs and then to access, evaluate, process and use retrieved information strategically. Therefore, any researcher who is unable to do this may not be as productive as expected[89]. This is further reinforced by the study which found that researchers with information and media literacy are more productive than those without[90].

At the centre of intellectual and scholarly research are academics that are expected to show interest in the creation, dissemination as well as preservation of knowledge. Academics are lecturers ranging from graduate assistant cadre to professorial cadre in Nigerian universities context[91]. It was note that academic staff members in any higher institution, especially universities, are provided the opportunity to focus on an area of inquiry, develop a research programme and later share the knowledge with students and others in the drive to develop professional skills and impact on a field and society, as a whole[92].

Information literacy skills acquisition is an aspect of information literacy and may be seen as the process of gaining the tools that assist the development of information literacy in an individual. Information literacy implies the intellectual capabilities involved in using information, as distinct from the technical know-how required for using information technologies that hold or deliver data. This latter ability can be characterized as information technology literacy[93]. Academics with low information literacy skill may spend too much time retrieving information owing to problems they may encounter when seeking information especially in electronic information resources.

A study examined the information literacy skills of faculty members: A case study of the University of Lahore, Pakistan. The study showed that majority of the faculty members possessed skills needed to determine the existence of needed information and to organize, analyse, evaluate and fully understand the found information. The analysis further showed that those faculty members were less in number who had ability to identify and define information, to find needed information, to communicate and presented the information and to evaluate the reliability of information resources. Those faculty members were very small

who had skills to utilize, dispose, and realize the need and to create information which they had needed[94].

The reviewed literature has shown that, among other factors, research competence is impacted by the level and quality of available information resources as well as the information literacy skills of the researcher who must navigate his way through an ocean of available information both within and beyond the academic library. It is therefore important to evaluate how significant are these factors to research output of the targeted population.

2.1.3. Use Electronic Information Resources by Academic Staff

E-resources are those resources which include documents in electronic or e-format that can be accessed via Internet in digital library environment. E-resources are that electronic product that delivers a collection of data, be it text, image collection, other multimedia products like numerical, graphical mode for commercially available for library and information centers. These may be delivered on CD-ROM, DVD, over the Internet and so on. Providing access to e-resources is a service to help library users to find e-Databases, e-Journals, e-magazines, e-Books/e-Audio/e-images, Data/GIS, Digital Library Projects, Electronic exhibitions, e-Subject Guide, e- Newsletters, e- Conferences proceedings and web search tools on a range of topic. Many of the e-resources are freely available to anyone over Internet access but some are commercial resources. ICT is one of the important buzzwords of today's world. It has changed the society into information society and is way of life[95].

The digitization of information in print media has brought a new concept altogether in all the fields of human life and this has marked the beginning of the information era. An electronic resource is defined as a resource which requires computer access or any electronic product

that delivers a collection of data, be it referring to full text bases, electronic journals, image collections, other multimedia products and numerical, graphical or time based, as a commercially available title that has been published with an aim to being marketed. These may be delivered on CD ROM, on tape, via Internet and so on. These are more useful due to inherent capabilities for manipulation and searching, providing information access is cheaper to acquiring information resources, savings in storage and maintenance etc. and sometimes the electronic form is the only alternative. The developments in scientific publishing and the pricing policies of publishers posed new challenges and opportunities for academic libraries in purchasing and managing the serials within their restricted budget[96].

The library and information services of the 21st century are fast changing. With the rapid development of electronic publishing, libraries are not only acquiring reading materials such as printed books and journals but also arranging for providing access to various learning resources in electronic form. The web resources and the use of web as a tool is changing the way users live and learn. While in the early phase, the World Wide Web was mainly used for push type applications to provide information and resources to users, the development of Web 2.0 and the spread of open sources and shared use concept have focused on user generated content and applications for sharing. This has led to the rapid development and popularity of electronic resources. E-Resources are occupying a significant portion of the global literature. They refer to information sources in electronic form. The different types of e-resources are, E-books, E-journals, Databases, CDs/DVDs, E-conference proceedings, E-Reports, E-Maps, E-Pictures/Photographs, E-Manuscripts, E-Theses, E-Newspaper, Internet/Websites - Listservs, Newsgroups, Subject Gateways, USENET, FAQs[97].

The tremendous change in the nature of information environment in the universities, occasioned by the information revolution, in which information has now migrated from print to electronic form, has made information easily accessible in the universities. Information is now accessible on the computers, the CD-ROMs, the Internet or other digital networks. Due to the relative ease of accessibility of electronic information resources, there have been corresponding innovations and a shift in paradigm in information seeking behavior of academic staff in the universities toward electronic resources from the print. The advancing digital age is therefore characterized with applications, access and use of ICTs and electronic resources in the academic environments for teaching, learning, and research. In the universities the academic staffs essentially are involved in research and they need access to modern ICTs and electronic resources to support their research activities. Notably, a scholar argued "that one does not have to use technology because it is there, but one uses it if there is a genuine advantage"[98].

In view of the seeming benefits of ICTs and electronic resources in the universities, scholars have been investigating the pattern of access and use of these new tools and facilities in research process in a global perspective[99]. Although, there are existing research into the provision, access and use of electronic resources in developing countries, there is still need for more research in this area. Observably, the increasing interest in research in this field is attributed to the rising expectation on the potential effect of electronic resources on the information seeking behavior of academic staff in global arena[100]. The present study is a contribution towards this goal in respect of Nigerian universities.

Some researchers explored the extent to which academics in the UK universities are accessing information as a result of the emerging electronic information resources,

particularly the Internet resources. The basic aim of the study was to determine the extent of accessibility and utilization of the Internet resources in research in the Humanities. It was found that most of the respondents were accessing and using the World Wide Web and the Internet to search for e-resources in their research. In the same study was extended to selected "researchers in the United States, Canada, New Zealand and Australia with the aim of finding out whether or not the attitudes toward electronic information resources vary"[101]. The study indicated that compared with the researchers in the UK, overwhelming majority of the respondents were using the electronic journals for research. A large percentage of the respondents were using online database and CD-ROMs as most of them preferred electronic to the traditional printed materials. It was also found that lack of computing skills was the most inhibiting factor on the use of electronic resources among the respondents. The authors had recommended the need to redress problem of information literacy in relation to access and use of electronic resources in surveyed countries.

In another study on the use of ICT facilities by academic staff in the UK universities has shown that 87% of the respondents are using ICTs and e-resources in their academic and research activities. However, the paper concluded that, access and use of ICTs by academic staff in the universities is influenced by divergence in cultures and contexts of research[102].

A study investigated the extent of use of electronic resources by academic staff in three countries (Australia, Finland, and the United States). It was found that the extent of use of e-resources by academic staff varies from country to country. From the results more than half of the respondents were using electronic resources in the U.S., while two-thirds of the academic staff used e-resources in Australia. Furthermore, electronic resources were predominantly used in research activities in all the surveyed universities in the three

countries[103]. The paper concluded that the use of electronic resources is an integral part of the research process in Australia, Finland and the U.S. Another study on five U.S. universities has also shown that academics are significantly accessing and using e-resources (particularly the electronic journals) that are available in the library collection rather than the print[104].

The Electronic Information Resources exist primarily for the benefit of faculty and staff at higher learning institutions, so it is crucial that these individuals are aware of and make good use of them. To this end, researchers at the University of Cape Coast surveyed professors on their familiarity with and use of online databases. The majority of professors (92%) in the poll said they had heard of online databases. In addition, the results showed that professors were already familiar with the databases. The (BIONNE) database was the least well-known of all of them. Another study also surveyed doctoral research students at India's Goa University about their experiences with online databases. According to the findings, every single academic surveyed reported being quite knowledgeable about and comfortable using academic databases.

Some researchers have found that at least 80% of the lecturers polled at the University of Ibadan and the University of Lagos, both of which have medical schools, are aware of the availability of electronic information resources (e-resources).

Low awareness of the electronic resources, especially TEEAL and AGORA, the two agricultural databases in the library collection, was reported by the researchers who conducted a study to determine the level of familiarity with, motivation for, and use of the agricultural information resources available at the library of Nigeria's Federal University of

Technology, Akure. They interpret this as evidence that the library has failed to adequately promote its electronic resources.

One polytechnic, one college of education, and two universities in Imo State, Nigeria were utilized in a study to gauge faculty members' familiarity with and adoption of information and communication technologies. Access to ICTs was determined to be the greatest barrier against use, even though half of respondents were already using computers and the Internet. In addition, another researcher assessed the academic and research use of IT resources at Delta State University, Nigeria, across all levels of staff (academic, senior non-academic, and junior non-academic). Academic employees were found to be the most frequent users of ICTs, with 92.2% reporting computer use, 13.7% reporting LAN use, and a significant majority reporting Internet use for academic and research purposes.

The study's findings were fascinating. Electronic database awareness was shown to be lower than utilization in a research by Kwando at the University of Ghana, Legon. In spite of respondents' claims to the contrary, database use was widespread. However, the results of a researcher's survey contradicted this conclusion. While the general computer usage was high due to the cutting-edge ICT infrastructure, her research at the Ashesi University College in Ghana found that users were unaware of the databases subscribed to by the library on behalf of the college. The research also showed that database use is quite low. They concluded that people simply did not know that these databases existed, which led to poor usage.

It's general knowledge that research resources from every subject of study may be found online, including academic publications, electronic databases, online library catalogues, grey literature, and more. The proliferation of information made possible by the Internet has led to

a substantial growth in the number of online libraries and other electronic information sources. In order to be more productive in their endeavors, information users now have access to more information, more of it in more formats, and more methods to use that information. Despite the widespread lack of computer literacy among university professors in Nigeria, one group of researchers found that their students were more likely to have taken courses taught by younger professors than those taught by more senior professors. Five schools in southwestern Nigeria were surveyed by him.

Perceived ease of use and perceived usefulness are two crucial concepts in the field of technology acceptance and adoption. They form the basis of the Technology Acceptance Model (TAM), which was developed by Fred Davis in the 1980s to explain user acceptance and adoption of information systems and technological innovations. This model has been widely used and expanded upon in various research studies and has contributed significantly to our understanding of user behavior towards new technologies. Perceived ease of use refers to the degree to which a person believes that using a particular technology will be free from effort. It relates to the user's perception of how easy or difficult it will be to learn and operate the technology. When a technology is perceived as easy to use, users are more likely to adopt it and incorporate it into their daily lives.

Several factors influence the perception of ease of use. One of the primary factors is the user's prior experience and familiarity with similar technologies. If users have prior experience with similar systems, they are likely to perceive the new technology as easier to use. Additionally, the design and interface of the technology play a crucial role. Intuitive and user-friendly interfaces contribute to the perception of ease of use, while complex and cumbersome interfaces can create barriers to adoption.

Furthermore, the availability of adequate training and support also affects the perceived ease of use. If users receive proper training and have access to ongoing support, they are more likely to feel confident in their ability to use the technology effectively. On the other hand, a lack of training or support can lead to frustration and a perception of increased difficulty. Perceived usefulness, on the other hand, refers to the degree to which a person believes that using a particular technology will enhance their job performance or make tasks easier and more efficient. It relates to the user's perception of the benefits and advantages that the technology offers. When a technology is perceived as useful, users are more motivated to adopt and utilize it.

The perceived usefulness of a technology is influenced by various factors. One critical factor is the user's perception of the technology's relevance to their needs and goals. If users perceive that the technology aligns with their requirements and can fulfill their objectives, they are more likely to view it as useful. Another factor is the perceived impact of the technology on competence and efficiency. If users believe that the technology can streamline their tasks, save time, or improve their overall performance, they are more inclined to consider it as useful. Additionally, compatibility with existing systems and processes can also affect the perceived usefulness. Technologies that seamlessly integrate with current workflows and systems are often seen as more useful.

Perceived ease of use and perceived usefulness are interconnected concepts. A technology that is perceived as easy to use is more likely to be seen as useful because users believe that they can quickly learn and effectively operate it. Conversely, if a technology is perceived as difficult to use, users may question its usefulness and be hesitant to adopt it. Research studies have consistently shown that both perceived ease of use and perceived usefulness

significantly influence user acceptance and adoption of technological innovations. In fact, they have been identified as key determinants in the initial stages of the technology adoption process. Organizations and designers recognize the importance of these factors and strive to develop user-friendly technologies that offer clear benefits to users[105].

Electronic information resources provide a vast amount of information that can be easily accessed and searched. Users can find articles, books, research papers, and other types of information quickly and conveniently. Moreso, Electronic resources are valuable tools for research and study purposes. Students, researchers, and professionals can use these resources to gather information, conduct literature reviews, and stay up-to-date with the latest developments in their field. Another reason people uses Electronic Information resources is the fact that Electronic resources enable users to collaborate and communicate with others. They can share information, exchange ideas, and work on projects together using online platforms, email, and other communication tools[106].

Furthermore, Electronic resources offer convenience and efficiency in accessing and managing information. Users can access resources from anywhere with an internet connection, save and organize information digitally, and easily search for specific content within resources. Electronic resources are widely used in educational institutions to support teaching and learning. They provide educational materials, online courses, multimedia content, and interactive tools that enhance the learning experience[107]. Professional Development is another reasons for which electronic information resources are used. Electronic resources are valuable for professional development. They provide access to professional journals, conferences, webinars, and other resources that help individuals stay updated in their field and enhance their skills and knowledge.

2.2 Theoretical Frameworks

Theoretical frameworks are foundational concepts or models that serve as the basis for understanding and analyzing a particular topic or area of study within various disciplines, including science, social sciences, humanities, and more. These frameworks provide a structured and systematic approach to conceptualizing, organizing, and explaining complex phenomena. They help researchers, scholars, and practitioners make sense of the subject matter they are studying by offering a theoretical perspective, guiding research questions, and shaping the interpretation of data and findings. The theories adapted for this study are research competence framework, SCONUL information literacy skill pillars and Technology Acceptance theory

2.2.1. Research Competence Framework

The F-Komp Model for Research Competence is a valuable tool for evaluating and enhancing research capabilities. It helps identify areas of strength and areas that need improvement, promoting high-quality research practices and advancing knowledge across diverse fields. By adhering to this model, researchers can contribute more effectively to their disciplines and society as a whole. The "F-Komp" Model for Research Competence is a comprehensive framework designed to assess and evaluate the research skills, knowledge, and abilities of individuals involved in academic or professional research. This model serves as a tool to gauge the overall research competence of academic staff across various disciplines and research contexts. The submetrics of F-Komp model of research competence are content knowledge, research ethical skills, evaluation and operationalization of research and methodological skills all in the context of research competence of academic staff of public universities, Lagos State.

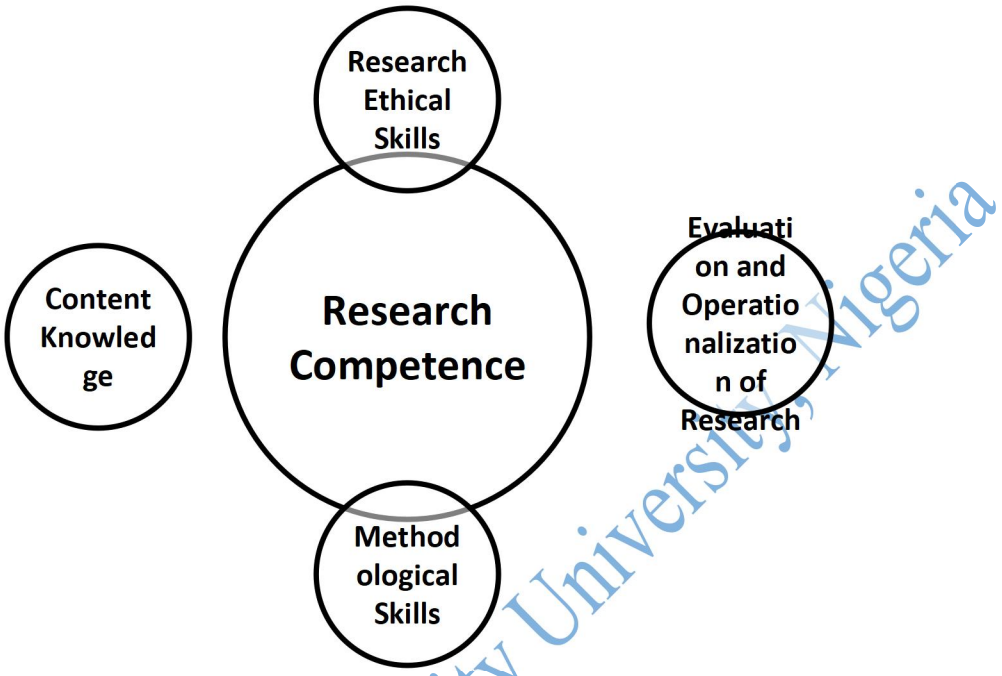


Fig. 2.1. Research Competence Framework Adapted from "F-Komp" Model Questionnaire for Research Competence by Hauser, Reuter, Gruber, & Mottok, 2018.

Research competence is an embodiment of several skills among which is Content Knowledge. Been the first pillar of the F-Komp Model, if focuses on the foundational knowledge of research. This includes an understanding of research paradigms, research methodologies, statistical methods, data collection techniques, and ethical considerations. Academic staff should possess a solid grasp of research principles to design and conduct rigorous studies. Familiarity with Literature: The second aspect of the model assesses the individual's familiarity with existing literature in their respective field. A competent researcher should be well-versed in relevant literature, able to critically analyze previous studies, and identify gaps that can contribute to their research. Another aspect of content knowledge is formulation of

research questions. The F-Komp Model emphasizes the importance of asking well-defined and relevant research questions. Researchers need to articulate clear objectives, hypotheses, or research aims that guide their investigations effectively.

Secondly, research ethical skill refer to the ability of researchers to navigate and uphold ethical principles and standards in the design, conduct, and dissemination of research. These skills are essential for ensuring that research is conducted in an ethical and responsible manner, with a focus on protecting the rights, welfare, and dignity of research participants and the integrity of the research process. Research ethical skills encompass a range of competencies and behaviors, including: Informed Consent: Researchers should have the skill to obtain informed and voluntary consent from research participants. This involves providing clear and understandable information about the research, its purpose, potential risks and benefits, and the rights of participants. Researchers must also ensure that participants have the capacity to provide informed consent. Researchers should be skilled in safeguarding the privacy and confidentiality of research participants. This includes protecting sensitive information, maintaining anonymity when necessary, and using secure data storage and handling practices. Moreso, Researchers need to have the skills to collect and handle data in an ethical manner. This involves ensuring that data collection methods are non-coercive, respectful, and do not cause harm to participants. Researchers should also be proficient in data security and protection. Furthermore, research ethical skills include a commitment to research integrity, which involves honesty, transparency, and the avoidance of plagiarism, fabrication, or falsification of data.

Thirdly, Evaluating research is a critical process that involves assessing the quality, relevance, and significance of a research study or project. Researchers, scholars, and decision-makers

use various criteria and methods to evaluate research to determine its validity and contribution to knowledge. It could be by scope, recency, methods adopted and so on. The ability to effectively evaluate previous study is real competence especially in this 21st century where the internet has become a dumping ground. It takes evaluative ability to sieve and come out with authentic and viable information resources.

Another inevitable aspect of research competence needed by academic staff of public universities according to F-Komp theory is operationalization skill. Research operationalization skill refers to the ability to translate abstract or theoretical concepts and variables into measurable and observable terms. It involves the process of defining and specifying how researchers will measure and manipulate the variables of interest in a research study. Operationalization is a crucial step in research design as it bridges the gap between theoretical concepts and concrete data collection methods. Academic staff must clearly understand and define the concepts they are studying. They should be able to articulate what these concepts mean in the context of their research. They need to identify the specific variables or constructs that represent the concepts of interest. Variables can be independent (causal factors) or dependent (outcomes).

Data Collection and Analysis. The F-Komp Model evaluates researchers' proficiency in data collection techniques and their ability to employ appropriate data analysis methods. Competent researchers should be skilled in managing data and interpreting results accurately. Findings and Knowledge Dissemination: The model also emphasizes the significance of effectively communicating research findings. Researchers should be able to present their results in a clear, concise, and meaningful manner, making their work accessible to both

experts and non-experts. Feedback Incorporation: A competent researcher is open to feedback and peer review, using constructive criticism to improve their work continually.

Methodical skill is another indices of research competence among academic staff. Methodological skills are a set of competencies and abilities that researchers and scholars possess to design, conduct, and analyze research effectively and rigorously within their respective fields of study. These skills are essential for ensuring that research is conducted in a systematic and valid manner. Methodological skills encompass a wide range of knowledge and practices, including Proficiency in selecting appropriate research designs, such as experimental, observational, survey, case study, or qualitative methods, depending on the research questions and objectives. Knowledge of various sampling methods, such as random sampling, stratified sampling, and convenience sampling, and the ability to select the most suitable approach for a particular study. Competence in collecting data through surveys, interviews, observations, experiments, archival research, or other means, while ensuring data quality, reliability, and validity. Skill in designing and developing measurement instruments, questionnaires, and surveys that accurately capture the variables of interest. More so is Proficiency in using statistical and analytical techniques, software tools (e.g., SPSS, R, or qualitative analysis software), and methodologies to analyze and interpret data, including descriptive statistics, inferential statistics, content analysis, and thematic analysis.

The F-Komp Model provides a standardized framework for assessing research competence, allowing for fair and consistent evaluation across individuals and research domains. By identifying strengths and areas for improvement, the model aids in identifying specific training needs for individuals looking to enhance their research skills. Quality Assurance: Institutions and organizations can use the F-Komp Model to ensure that their researchers

meet a certain level of research competence, promoting the overall quality of research output. Personal and Professional Development. The F-Komp Model encourages researchers to continually develop their skills and knowledge.

2.2.2. SCONUL Information Literacy Model

The study adopted information literacy model propounded by Society of College, National and University Libraries SCONUL. This model placed emphasis on people's experience of using information, that is, how individuals are able to locate, analyze, evaluate and use information effectively. The seven areas or pillars of information literacy as defined by SCONUL are identify, scope, plan, gather, evaluate, manage and present. The model describes a set of generic skills and understandings.

The first of the seven component of information literacy according to the model is the ability of academic staff in public libraries, Lagos state to Identify information need. An information literate academic staff is able to identify a personal, academical needs for information, understand that information is constantly being produced, there is always more to learn and that ideas/opportunities are created by investigating/seeking information.

Scope of information as the second sub-measures iterates that information literate academic staff can assess current knowledge and identify gaps. He/she must understand what types of information are available, the characteristics of the different types of information source available to them and how they may be affected by the format (digital, print), the publication process in terms of why he/she need to publish and the currency of information, issues of accessibility, what services are available to help and how to access them for his/her research works

Information Planning as the third sub-measure is the ability of academic staff of public universities in Lagos to create strategies for locating information. Information literate academic staff understands the range of searching techniques available for finding information and the differences between search tools. He/she is able to scope their search question clearly and in appropriate language, define a search strategy by using appropriate keywords and concepts.

Information gathering being the fourth sub-measure is the ability of academic staff being able to locate and access the information he/she need for research. An information literate person understands how information is organized, electronically and in print sources, how libraries provide access to resources, how digital technologies are providing collaborative tools to create and share information. He/she knows were to get viable information. This skills involves the ability to father relevant and up-to-date information from various sources like libraries, digital libraries, scholarly databases and so on. It also involves the ability to use internet search skills to navigate digital world.

Ability to evaluate information as the fifth component of information literacy skills explains that information literate academic staff should be able to review the research process, compare and evaluate information. He/she understands the information landscape of their teaching/research context, the issues of quality, accuracy, relevance, reputation and credibility relating to information sources and the importance of citation in their research context. In the digital world where vast information is produced on daily basis, it takes serious information evaluation skill to sieve out the best information. Academic staff must be vast and kept abreast of latest and most recent knowledge in his/her field of study so as not to be mislead my the avalanche of information dumped on the internet[108].

Information Management is also an inevitable skill of the 21st century. It is the ability of academic staff to organize information professionally and ethically. An information literate person understands their responsibility to be honest in all aspects of information handling and dissemination (for example, understanding of copyright laws, plagiarism and intellectual property issues and so on are skills that make up of credible academic life). Skills in this group consist of data privacy skills and so on. Academic staff is expected to be able to manage information from creation, use to eventual disposal without any ethical infringement.

The last on the pillar is information presentation and it is all about academic staffs' ability to apply the knowledge gained in presenting the results of their research, synthesizing new and old information and data to create new knowledge, and disseminating it in a variety of ways. Information presentation refers to the manner in which data, facts, findings, or other forms of information are displayed and communicated to an audience. It is an essential aspect of effective communication, as it can greatly influence how well the information is understood, retained, and acted upon. Information presentation can take various forms, including verbal communication, written documents, visual aids, and multimedia formats

Moroever, situating the model to the study, Information literacy skills are crucial for academic staff, as they play a vital role in teaching, research, and professional development. These skills enable academic staff to access, evaluate, use, and communicate information effectively and ethically. For effectiveness, academic staff is expected to know how to locate and retrieve relevant information from a variety of sources. This includes utilizing library databases, online resources, academic journals, books, and other scholarly materials. They should be proficient in conducting advanced searches and navigating different information systems and platforms. It's essential for academic staff to critically evaluate the quality,

credibility, and relevance of information. They should be able to assess the authority of the authors, the accuracy of the content, and the objectivity of the information source. This skill ensures that they rely on trustworthy and reputable sources for their teaching and research.

Moreover, in terms of organization of information, an information literate researcher should be proficient in organizing and managing the information they collect. This includes effectively categorizing and storing information for easy retrieval and future reference. They should also be familiar with citation management tools, such as EndNote or Zotero, to appropriately document their sources and avoid plagiarism. The ability to synthesize information from multiple sources is crucial for academic staff. They should be skilled in identifying key themes, concepts, and arguments across different texts and integrating them into their own work. This skill helps them develop a comprehensive understanding of a topic and produce well-informed teaching materials and research papers.

Moreso, academic staff who is adjudged to be information literate must understand and adhere to ethical standards when using and sharing information. This includes respecting copyright laws, properly attributing sources, and avoiding plagiarism. They should guide students on how to use and cite information ethically, ensuring academic integrity within the institution. Therefore, academic staff should be able to teach information literacy skills to their students. This involves designing and delivering effective instruction sessions on information seeking, evaluation, and use. They should be familiar with pedagogical techniques and tools to foster critical thinking, research skills, and responsible use of information among students. Information literacy skills also include the ability to stay updated with emerging trends, technologies, and resources in their respective fields. Academic staff should be aware of new databases, research methodologies, and scholarly

communication practices. This allows them to provide up-to-date guidance and resources to their students and contribute to the advancement of knowledge in their disciplines.

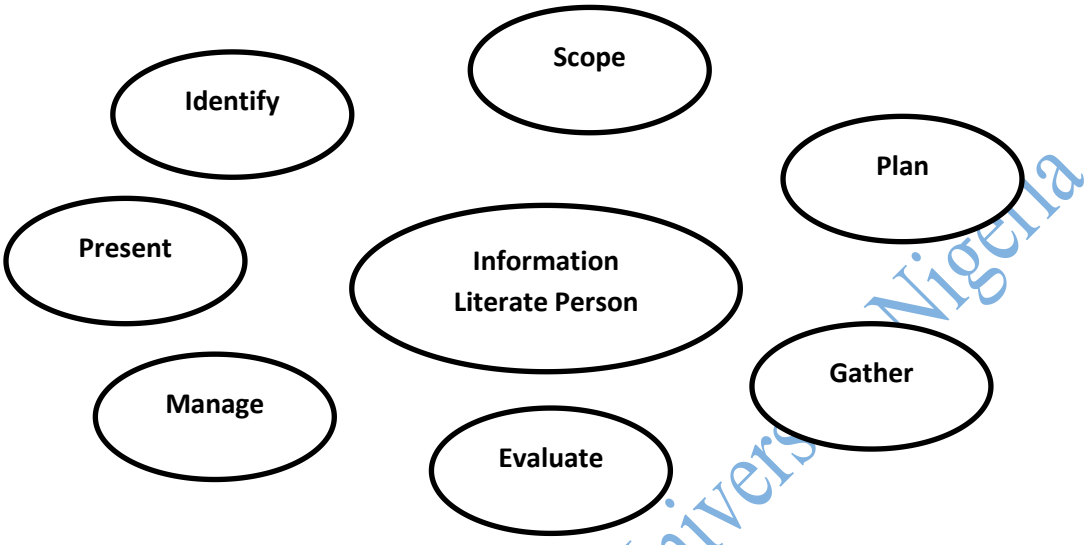


Fig. 2.2. SCONUL Seven Pillars of information literacy skills

2.2.3. Technology Acceptance Theory

TAM, or the Technology Acceptance Model, is a widely recognized and influential theoretical framework used to understand and predict how individuals accept and adopt new information technologies, particularly in the context of user acceptance of information systems and software applications. The model was originally developed by Fred Davis in 1986 and has since undergone various modifications and extensions. TAM is rooted in the field of psychology and focuses on the psychological factors that influence technology adoption. The core components of the Technology Acceptance Model are:

Perceived usefulness refers to the degree to which a person believes that using a particular technology or system will enhance their job performance, productivity, or overall

effectiveness. If individuals perceive a technology as useful, they are more likely to accept and use it. Perceived ease of use is the perception of how user-friendly and easy it is to use a particular technology or system. If a technology is perceived as easy to use, individuals are more inclined to adopt it. Ease of use can include factors such as user interface design, simplicity of operation, and the availability of training or support. According to TAM, these two factors, perceived usefulness and perceived ease of use, directly influence an individual's attitude toward using a technology, which in turn affects their intention to use the technology. Additionally, actual usage behavior is influenced by the individual's intention to use. TAM has been used extensively in research and practice to explain and predict user acceptance and adoption of various technologies, including software applications, mobile apps, websites, and more. Researchers and practitioners often use surveys and questionnaires to measure the perceived usefulness, perceived ease of use, attitudes, intentions, and actual usage of a technology among users[109].

Extensions of TAM, such as TAM2, TAM3, and UTAUT (Unified Theory of Acceptance and Use of Technology), have built upon the original model by incorporating additional factors and variables to account for a wider range of influences on technology adoption, such as social and organizational factors. In summary, TAM theory provides a structured framework for understanding why individuals accept or reject new technologies based on their perceptions of usefulness and ease of use, with the ultimate goal of helping organizations design and implement technologies that are more likely to be accepted and effectively used by their target users

The Technology Acceptance Model (TAM) can be effectively situated within the context of the use of electronic information resources, such as digital libraries, databases, online research tools, and websites. TAM provides a valuable framework for understanding and predicting how individuals, including researchers, students, and professionals, accept and adopt electronic information resources in their work and daily lives. Here's how TAM relates to the use of electronic information resources:

In the context of use of electronic information resources, perceived usefulness refers to the extent to which individuals in this case academic staff believe that using these resources will enhance their ability to gather information, conduct research, solve problems, or achieve their information-related goals. For instance, researchers may perceive electronic databases as useful because they provide easy access to a vast amount of scholarly literature, making their work more efficient. Perceived ease of use in the context of electronic information resources pertains to how user-friendly and accessible these resources are. Individuals are more likely to adopt electronic information resources if they find them easy to navigate, search, and use. User-friendly interfaces, robust search functionalities, and clear navigation paths contribute to a higher perception of ease of use[110].

TAM suggests that an individual's attitude toward using a technology is influenced by both perceived usefulness and perceived ease of use. When individuals have a positive attitude toward electronic information resources because they believe these resources are valuable and easy to use, they are more likely to embrace them in their information-seeking and research processes. TAM posits that an individual's attitude toward using a technology influences their intention to use it. In the context of electronic information resources, a favorable attitude is likely to lead to a higher intention to use these resources. Researchers

who believe that using a specific database or digital library will improve their research outcomes are more inclined to intend to use it.

The intention to use electronic information resources, as influenced by TAM, often leads to the actual use of these resources. Academic staff who perceive these resources as useful and easy to use are more likely to engage with them, access information, and incorporate it into their work or studies. TAM recognizes that external factors, such as social influence and organizational support, can affect an academic staff's perception of usefulness and ease of use. For instance, if an academic institution promotes the use of electronic information resources and provides training or resources, it can positively influence the adoption of these resources by its members.

2.3 Empirical Review

2.3.1. Information Literacy Skills and Research Competency of Academic Staff

The relationship between information literacy skills and research competence of academic staff is becoming a subject of discussion in recent times. As users of information, academic staff members are faced with diverse, abundant information choices in their quest for knowledge because of the complexity of information sources and formats. This causes new challenges for academic staff members in assessing and understanding the content. The uncertain quality and increasing volume of information poses great challenge for any society. It is obvious from literature that information literacy can greatly improve academics' research competence.

A study investigated research competence of agricultural scientists in high performing and low performing institutes in India. The sample of the study comprised of randomly drawn two hundred agricultural scientists. The researchers developed 80 a research competence index to measure the research competence of the agricultural scientists. The study among other things revealed that there is ample scope of enhancing research competence among the scientists as the majority (63.5%) had low to very low level of competence. The findings further indicated the crucial need for revisiting the system of career advancement for principal scientists and senior scientists as the t-test failed to produce significant value of competence difference between the principal scientists and senior scientists[111].

Many studies have been carried out on research competence of various research institutions. A researcher investigated the contribution and impact research output on PEC University of technology as reflected in its publications covered in Scopus international multidisciplinary database and described broad characteristics of research publications of PEC during 1990-2009. She concludes that in all 177 research papers that were published during the period by the departments of the PEC, showing an average of growth rate of 131.85%. Some researchers analysed the research output of academics in the science and engineering faculties of Federal Government owned universities in Nigeria. It was found out that 30.6% of the academics published between 0-4 journals articles, that only2-7% of them published 30 or more articles during the period and as 42.1% did not have any article in overseas journals. Similarly, a scholar investigated research competence of Indian scientists contributing to world soybean research for the period 1989- 2009 based on the data available in the International Crop CD database. They concludes that Indian scientists contributing to

world soybean research, have higher publication output as Indian was rated 2nd in rank, just after United States of America that has 13.64% of the world publication on soybean[112].

A scholar reported that while research competence in terms of articles in the rest of the world is increasing fast, the relative position of Africans countries as knowledge is decreasing gradually. Sub Saharan Africans contribute around 0.7% of world scientific output and this figure has decreased over the last 15-20 years. The scholar affirmed that except for South Africa lack of incentives to publish was also a problem. He lamented that most of the research conducted in African countries to gather dust in rooms in many universities and research institutions while many researchers are forced to seek publication in foreign journals[113].

In a study on the relationship between Information Literacy Skills and Research Competence of Researchers in Nigeria, and the Mediating Role of Socio-Economic Factors. The finding of the study revealed that there is significant, high, positive relationship between Information Literacy Skills and research competence of the academic staff of Nigerian research institutes[114]. To corroborates that above study, a study investigated information literacy skills, availability of information resources as factors influencing research competence of academic staff of Lead City University, Nigeria. The result of the study revealed that there is a significant relationship between information literacy skills and research competence among Lead City University scholars, in Nigeria[115]. As submitted by a researcher, research competence is highly dependent on effective utilization of quality information resources so it is crucial for academic libraries to be well stocked with relevant information resources in diverse formats and equipped with adequate facilities which will ensure that researchers and other library users are able to effectively and maximally utilize the available resources[116].

Some researchers investigated the impact of web-based information literacy skills on research competence among academics in Nigerian Federal Universities. The findings of the study indicated that possession web-based information literacy skills have greatly resulted to improved research competence among academic staff in federal universities in the country[117]. Also, in a conducted a study on the relationship between the possession of web 2.0 technology skills and academic competence of staff in Nigerian universities in the North central political zone of Nigeria. The result from the finding showed that there is a pronounced relationship between web 2.0 technology /information literacy skills and academic staff competence. The t-value calculate at 17.028 indicated that the variables have a positive and strong relationship showing that the acquisition of web 2.0 technology skills increases academic competence this include research[118].

Another study examined the information literacy skills of faculty members: A case study of the University of Lahore, Pakistan. The study showed that majority of the faculty members possessed skills needed to determine the existence of needed information and to organize, analyse, evaluate and fully understand the found information. The analysis further showed that those faculty members were less in number who had ability to identify and define information, to find needed information, to communicate and presented the information and to evaluate the reliability of information resources. Those faculty members were very small who had skills to utilize, dispose, and realize the need and to create information which they had needed[119].

During the period between 2009 and 2014, this study studied the research competence of academic personnel working in research institutes in southwest Nigeria. The descriptive research design was chosen for this study, and the questionnaire served as the instrument for

collecting data. Seven hundred and eighty-two academic staff members were counted using the total enumeration method at twelve research institutes. The findings indicate that the academic staff published a total of 15,477 research outputs; however, the degree of research competence of the academic staff is low (= 11.51; = 2.36).The majority of the publications were articles that were published in journals, which accounted for 3,486 (22.6%) of the total, followed by conference proceedings, which accounted for 2,364 (15.3%) of the total. The patterns of research competence of the academic staff working in research institutes in the SouthWest showed that the majority 10,016 of the publications were published locally, while 5,461 (35.3% of the total) were published offshore (in international outlets). The patterns also showed that the majority of the research competence, 5,604 (36.2%), had a single author, while 5,216 (33.7%), and the rest 4,657 (30.08%) had numerous writers. Inadequate information accessibility, inadequate information literacy, and insufficient encouragement from employers are some of the major reasons that contribute to the low research competence of academic staff working at research institutes. Other issues include the presence of family responsibilities and budgetary restraints. Accordingly, the study suggests a number of things, including the following: the establishment of a Special Research Trust Fund for the development of the research in these institutes; adequate research funds or grants for academic staff; continuous training programs on information literacy skills; mentoring; improved research skills of academic staff; and the encouragement of collaboration and interdisciplinary researches among the academic staff in the research institutes[120].

A researcher investigated the use of Internet resources in Nigeria with the aim of determining if it has “any positive influence” on the competence of academic scientists in ten Nigerian universities. His review of literature had shown that the use of electronic journals has been

positively associated with scientific competence. But the findings of the study revealed that very few of the scientists agreed that the use of the Internet had greatly facilitated their research work or that the Internet facilitated higher competence. In specific terms, 89.3% of the respondents strongly disagreed that the use of Internet resources facilitates higher competence. The study concluded that the extent to which access and use of electronic resources on the Internet meets the research needs of scientists in Nigerian universities is minimal, and its contribution to increase in competence is, therefore, not significant[121]. Another survey findings also revealed that the use of electronic information resources contributed little in improving the research competence of academic scientists in Nigerian universities[122].

Empirically, a study that investigated the influence of information literacy skills on the research competence of academic staff in Nigeria, with the mediating role of socioeconomic factors. Methods. Out of a total of 782 academic staff in research institutes in South West Nigeria, 610 responded to a questionnaire survey. Descriptive, correlation analysis and hierarchical regression analysis were used to analyze the data. Results. A relationship was found between information literacy skills and research competence ($r=0.56$, $p<0.05$). Socioeconomic factors (monthly salary, academic status, age, highest educational qualification, work experience and employment nature) have mediating effects on the relationship between information literacy skills and research competence. Together, they accounted for 47% of the variance in the research competence of the respondents. Therefore, Management of the research institutes should put more effort in increasing the level of information literacy skills, taking into consideration the socioeconomic factors identified[123].

A study examined the influence of information literacy skills on academics research competence in federal universities in Nigeria. The study adopted the descriptive survey research design. Multistage sampling technique was used to select one thousand one hundred and fifty-seven (1,057) academic staff members from federal universities in the six geo-political zones of Nigeria. The instruments used for data collection were Information Literacy Skills Acquisition, Information Literacy Skills and Research Competence of Academic Scale. Eight hundred and seventy-three (873) copies of questionnaire were completed, returned and used in the study which represent (83%) response rate. Three research questions were answered and data were analysed using descriptive statistics. The result shows that the academic staff acquires information literacy skill mostly through attending workshops/seminars, self-taught, assistance from other colleagues, trial and error, guidance from library staff and faculty/departmental training. Also, the analysis establishes the fact that the research competence of the academic staff in Nigerian federal universities is higher in journal publications, technical reports, conference papers, working papers and occasional papers. However, the research competence of the academic staff in Nigerian federal universities is lower in textbook publications, monographs, patents and certified inventions. The finding, however, shows that the mean scores of each of the seven components tested under the information literacy skills is higher than the mid-point scores of 2.5 on a scale of five. Therefore academics in Nigerian federal universities possessed high information literacy skills based on the overall mean scores. Information literacy is considered an important element in educational and professional settings in particular, the academic environment[124].

Another study that investigated the influence of information literacy and critical thinking on research competence of doctoral students in universities in Ogun State, Nigeria. The study employed a survey research design drawing on a sample of 309 respondents out of a target population of 1,418 doctoral students from six participating universities guided by the Research Advisor's Table. Findings of the study established that research competence of doctoral students in universities in Ogun State, Nigeria was low. The low research competence manifested in form of unusually prolonged doctoral education, high attrition rates, difficulties/inability to complete doctoral thesis which is the hallmark of doctoral education and poor research publication measured in quality and quantity. The study also established a positive significant relationship between information literacy and research competence of doctoral students. Similarly, there was a significant positive relationship between critical thinking and research competence[125].

Furthermore, a study aims to determine the impact of perceived information literacy (IL) skills on the research competence of mathematics faculty members in Pakistan. The study explores their opinion of their ability to identify information needs and information sources. It also examines their perceived capability of constructing effective and efficient strategies for locating, accessing, evaluating, and applying the needed information legally and ethically. A structured questionnaire was developed based on the SCONUL Seven Pillars of Information Literacy. Questionnaires were sent to 300 academicians from 36 public sector universities in the Punjab province of Pakistan through personal visits, e-mail, and postal service. After repeated follow-up calls, 185 filled questionnaires were received. The major findings of the study showed that the mathematics faculty members believed they had reasonable IL skills. The majority of them had published research articles in learned journals.

The study revealed a positive impact of perceived IL skills on the research competence of mathematics faculty members. IL instruction sessions designed for faculty may improve the research output of mathematics scholars in their respective universities[126].

2.3.2. Use Electronic Information Resources and Research Competence by Academic Staff

The use of Electronic Information Resources has significantly impacted research competence in recent years. Online platforms and databases provide researchers with easy access to a vast amount of information, enabling them to gather data, explore existing literature, and collaborate with colleagues more efficiently.

A study on awareness, knowledge and utilisation of electronic databases as predictors of research competence of academic staff in private universities in southwestern Nigeria. Summarily, although awareness and knowledge of databases were high, their utilisation and academic competence were low: awareness was high, as against the threshold of 2.50, knowledge was high as against the threshold of 2.50, while utilisation of electronic databases was low as against the threshold of 4.00, and consequently, academic staff research competence was low as against the norm test of 3.00. Utilisation knowledge and awareness of databases had positive significant correlations with research competence. Jointly, awareness, knowledge and utilisation of electronic databases significantly predicted research competence accounting for 37.0% of its variance. Awareness, knowledge and utilisation of electronic databases had relative significant contributions to research competence of academic staff. Awareness, knowledge and utilisation of electronic databases determined the research competence of academic staff in private universities in the southwestern Nigeria[127].

Research on the knowledge, availability, and use of electronic databases by faculty at Babcock University's Business School revealed a wide range of familiarity with these tools among the faculty. The most popular academic database was JSTOR, used by 56.5% of respondents, followed by Theses and Dissertations (54.1%) and Ebscohost (50.6%). According to the data, only 25.9% of respondents were familiar with Bookboon, while 32.9% were unfamiliar with the World Bank Open Knowledge Repository, and 29.4% were unfamiliar with the National Virtual Library. Nine of the thirteen databases analyzed were generally known to responders, according to the results. According to the report, hardly anyone used the electronic databases SAGE (27.1%), World Bank Open Knowledge Repository (36.8%), International Research Journal (29.4%), or National Virtual Library (29.4%)[128]. Another researcher polled professors at the University of Jos to gauge their familiarity with institutional repositories (IR) and their willingness to submit research. Of those polled, 79% said they were unaware of open access IR, and 21% said they had learned about IR at their institution through a library seminar. When researchers presented the benefits of IR to participants, 91.6 percent felt that it was highly effective, while 8.3 percent were still on the fence[129].

Academics from Nigeria's University of Ibadan and University of Lagos were surveyed to see how familiar they were with open access initiatives and how likely they were to adopt them.

The two schools were picked at random to represent the larger population. Two hundred and fifty copies of the questionnaire were sent out to a random sample of 2,224 faculty and employees in the research locations. The majority of responders (58.3%) were scientists, while the second largest group (40%) was humanists. The remaining 1.7% did not specify

their study discipline. This study's most important finding is that academics' knowledge of open access initiatives about open access e-resources does not match their actual use of information resources from such open access outlets, both as users and readers of scholarly publications[130]. Findings show that while more than half of academics are familiar with open access, fewer than half actually use various OA channels to obtain and disseminate scholarly literature. The respondents' preference for open access journals over alternative open access channels was another important conclusion of this study. This is seen as evidence of open access journals' growing legitimacy in the developing world as a formal medium for the distribution of scholarly knowledge.

A research Investigated the Faculty of Medical Sciences' (FMS) knowledge and use of electronic resources provided by the Medical Sciences Library (MSL) at the University of the West Indies and the need for training in the use of these resources. The researcher found that academic staff were quite knowledgeable about the electronic resources available at MSL in general, averaging 80%. However, they were not as well informed about MSL specific resources. In addition, reasons for using electronic resources were for communication (86%), professional (79%), personal research (77%), supporting teaching activities (74%) and administrative purposes (41%), and the reason given the least often was recreation (38%). Furthermore, the researcher found that resources available on the Internet were used more by respondents: Internet/Web (79%), email (67%), search engines (59%), online databases (67%), PubMed (65%) and online journals (45%). Overall, the study showed that the electronic resources were used to support academic staff's research (83%), teaching (65%) and clinical practice (37%)[131].

Moreso, in a study whose purpose was to find out how the level of awareness and satisfaction, the challenges and extent of use of open access resources impact research competence of faculty in Dartum University. A quantitative survey research method was adopted. A sample size of 62 full-time lecturers and 134 part-time lecturers was selected for the study using a stratified simple random sampling technique. The findings revealed that research competence is low despite the high level of awareness and satisfaction with open access use. Again, the findings showed that faculty members use open access to a considerable extent and point out some challenges associated with open access use. It was concluded that there is a very weak but significant influence of open access use on research competence in Dartum University[132].

Evaluating the effectiveness of user database resource utilization and research, the purpose of this study is to assist management in developing an excellent academic policy. Design/methodology/approach This study establishes a quantitative method to analyze the competence of academic research using digital databases. The secondary data extracted from the databases of 52 universities provided by Higher Education Commission (HEC) and the literature published on the Institute of Scientific Information (ISI) Web of Science. The statistical technique simple linear regression was used to analyze the data for understanding the impact of independent variables the "digital databases" on the dependent variable "research competence". The result of the coefficient of multiple determination, R -squared, R^2 0.679, indicated 67 per cent impact of the predictor on the outcome variable. However, the standardized coefficient Beta 0.824 revealed 82 per cent impact of the individual predictor on the outcome variable. Overall, the result of linear regression showed a significant effect of independent variables on the dependent variable. Besides, the result of correlation and the

strength of association between the database resources and the academic publication was significant was found to be significant [133].

Furthermore, in a study that look into Electronic Information Resources (EIRs) Use and Research Competence (RP) of lecturers in private universities in Oyo state. The study used a Descriptive research design. Population consists of 520 lecturers in private universities in Oyo state, Nigeria. After Krejcie and Morgan were applied, the sample size was 217 lecturers. After Krejcie and Morgan were used to establish the sample size. To collect data, a multi-stage sampling technique was employed, as well as a validated questionnaire. For each variable, the reliability coefficient ranged from 0.72 to 0.81. Descriptive and inferential statistics were used to analyze the data. EIRs had a substantial influence on (RP), according to the findings. According to the findings, EIRs has an influence on RP[134].

An empirical research on Knowledge of Electronic Databases as Predictors Research Competence of Academic Staff in Nigerian Private Universities South-West Nigeria. It shows there is significant positive correlation among information searching skills and research competence. Location of information source and research competence of academic staff also had a statistical significant positive correlation among them. The result further shows that there is significant positive correlation among practical skill or expertise and research competence. In the same study, theoretical understanding and research competence also had significant positive correlation among them. Also, experience and research competence had significant positive correlation

In bid to evaluate the impact of digital library database resources on the competence of academic research, a study title 'Evaluating the impact of digital library database resources

on the competence of academic research, found that the coefficient of multiple determination, R-squared, R2 0.679, indicated 67 per cent impact of the predictor on the outcome variable. However, the standardized coefficient Beta 0.824 revealed 82 per cent impact of the individual predictor on the outcome variable. Overall, the result of linear regression showed a significant effect of independent variables on the dependent variable. Besides, the result of correlation and the strength of association between the database resources and the academic publication was significant [135].

Looking at factors that influences research competence of academic staff, a study on awareness and use of electronic databases as determinants of research competence of academic staff in Nigerian private universities, it was a descriptive survey research design of the correlational type was adopted. Out of the 27 private universities established and approved between 1999 and 2012 in South-West Nigeria, 21 were purposively covered in the study. The stratified random sampling technique based on probability proportionate to size method was adopted in selecting 1,656 (60 per cent) academic staff from the population size of 2,760. The main research instrument used to collect data for the study was questionnaire. Data generated were analysed using descriptive and inferential statistics. Spearman's rank was used to test hypothesis at 0.05 level of confidence. There was a significant positive correlation between awareness and utilisation of electronic databases. The result of the analysis showed that there was average level of awareness of electronic databases among academic staff in private universities in South-West, Nigeria[136].

As technological innovation a study on drivers of farmers' intention to adopt technological innovations in Italy: The role of information sources, perceived usefulness, and perceived ease of use considering the role played by different sources of information, Perceived Ease of

Use (PEU), and Perceived Usefulness (PU). A questionnaire assessing the PEU and PU of the two types of SFTs, farmers' previous exposure to different impersonal and personal (formal and informal) sources of information, and farmers' intentions to adopt SFTs was administered to a sample of Italian farmers. A mediated model, built on the TAM, showed that the PU affected farmers' intention to adopt a technology and that personal sources of information, both formal and informal, affected the PU; however, while formal sources increased the PU, informal sources decreased the PU[137].

Moreso, in a study that proposes an e-government adoption model to determine the factors which lead to citizens' adoption of e-government services in the Togolese context while investigating the mediating roles of perceived usefulness and perceived ease of use. The proposed model was tested using valid and reliable data gathered from a sample of 482 respondents. Findings indicate that behavioral intention to use e-government services is significantly influenced by perceived usefulness and perceived ease of use. More importantly, the analysis revealed that, perceived usefulness and perceived ease of use play a mediating role, either full or partial between the antecedent variables, social influence, trustworthiness and facilitating conditions and the outcome variable, behavioral intention to use. The implementation of e-government services with a focus on these fundamental factors will eventually increase the acceptance and adoption of such services by citizens[138]. Use of technological innovations like Electronic Information Resources would be use if the user perceived it useful and easy to use.

An assessment study on the satisfaction levels among medical postgraduate trainees at the Postgraduate Institute of Medicine, University of Colombo, regarding their utilization of electronic resources and services. The findings of the study indicate that a significant

majority of the respondents, specifically 95.5%, possess personal computers and Internet connectivity for the purpose of accessing electronic resources. Postgraduate medical trainees employ electronic resources for various objectives., 98.6% of the participants reportedly use electronic resources for the purpose of studying and staying informed., 70.5% of the respondents utilize electronic resources for the purpose of acquiring general information. In relation to the degree of contentment with electronic resources and services A significant majority of the respondents, specifically 60.2%, expressed strong agreement with their satisfaction level with the provision of Internet access. A total of 56.8% of the participants concurred with the level of satisfaction pertaining to the subscribed electronic journals. The substantial concern include limited time for accessing e-journals at the library, inadequate training, and the unavailability of remote access to subscribed resources. Based on the findings of the research, it is proposed that the library increase its subscription to electronic books and journals, organize more training programs, and establish remote access capabilities for subscribed electronic sources[139].

Use of electronic resources has been measured by various factors among which are frequency and purpose of use. A study on Frequency and purpose of utilizing electronic resources within the academic setting of Sardar Vallabhbhai Patel University of Agriculture and Technology. Three study objectives were addressed, and a null hypothesis was tested at a significance level of 0.05. The findings of the study indicate that students engage with electronic resources on a daily basis, with the internet being the most frequently utilized resource at a rate of 98.4%, followed by e-Books at 85.6%. Regarding the aim of utilization, it has been shown that individuals mostly employ electronic resources for assignments,

classwork, and enjoyment, with research academics exhibiting a greater propensity for their utilization[140].

Using a descriptive research design of a correlational type with a population comprising of 10,452 lecturers in fifteen public universities in South-west, Nigeria from which a sample size of 836 was drawn using a multi-stage sampling procedure. Findings of the study revealed that university lecturers in South-west, Nigeria are aware of the usefulness of most of the electronic databases for teaching and research; university libraries in South-west, Nigeria use different promotional methods to create awareness of the usefulness of databases; and the frequency at which University lecturers in South-west, Nigeria use electronic databases was very low[141].

2.3.3. Information Literacy Skill, Use of Electronic Information Resources and Research Competency

However, there is dearth of literature as regards that combination of the three variables. Separately, researches and scholars has proved and found that information literacy skills are a survival skill of the 21st century and any viable and reliable research depends on information literacy skills to navigate the digital world effectively and efficiently.

2.4. Conceptual model

Information literacy skills and the use of Electronic Information Resources can be considered independent variables that can have an impact on the research competence of academic staff. Research competence refers to the output and impact of scholarly work produced by academic staff members. It can be measured by various factors, including the quantity and quality of published papers, citations received, grants obtained, conference presentations, and collaborations. The research competence of academic staff is influenced by several factors,

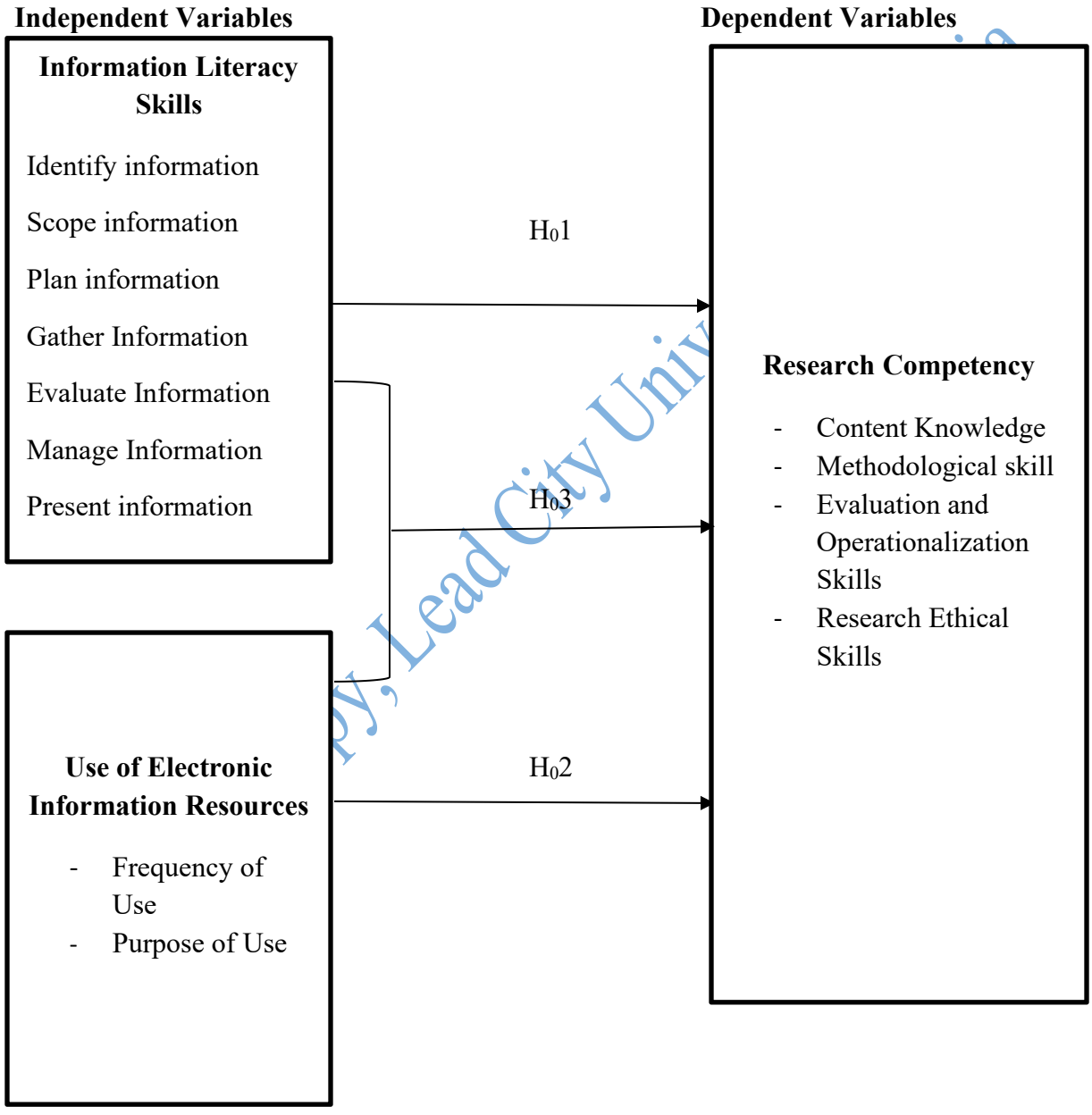
and information literacy skills and the use of Electronic Information Resources are crucial among them. By possessing strong information literacy skills and effectively utilizing online resources, academic staff members can enhance the efficiency and effectiveness of their research processes. They can access relevant and reliable information, critically analyze it, and incorporate it into their research, leading to higher-quality outputs and increased competence.

Information literacy refers to the ability to identify, locate, evaluate, and effectively use information from various sources. Academic staff members with strong information literacy skills are better equipped to access and utilize relevant information for their research endeavors. These skills enable them to critically assess the credibility, relevance, and reliability of information sources, ensuring that their research is based on accurate and valid data. By possessing information literacy skills, academic staff can efficiently navigate through the vast amount of information available online, avoiding misinformation or irrelevant sources. They can effectively search for scholarly articles, books, and other academic resources, which significantly contributes to the quality and depth of their research. Information literacy skills also encompass the ability to organize and manage information, enabling researchers to efficiently store, retrieve, and cite their sources, which is crucial for producing high-quality research outputs.

The advent of the internet has revolutionized the availability and accessibility of information for researchers. Electronic Information Resources such as academic databases, digital libraries, research journals, and other scholarly platforms provide academic staff with a vast array of research materials at their fingertips. Utilizing these resources effectively can greatly enhance research competence. Academic staff members who leverage Electronic Information

Resources can access the latest research findings, stay updated with advancements in their field, and explore interdisciplinary connections. The use of online resources allows researchers to broaden their knowledge base, discover new perspectives, and incorporate diverse viewpoints into their work. Moreover, online resources often offer advanced search capabilities, enabling researchers to narrow down their focus, find specific information, and save time in the research process.

In conclusion, information literacy skills and the use of Electronic Information Resources act as independent variables that positively impact the research competence of academic staff. Developing and honing these skills, along with effective leverage of online resources, empower researchers to access, evaluate, and utilize information effectively, resulting in improved research outputs and academic contributions.



Source: Researcher, 2023

Fig. 2.3. Conceptual Model.

2.5 Summary of Literature Review

The availability and access to electronic information resources play a crucial role in supporting research and enhancing information literacy skills among scholars. In the context of Nigerian scholars, there have been conflicting assessments regarding their level of information literacy skills. Some studies have found that many Nigerian university lecturers lack the necessary ICT literacy skills, which hinders their ability to identify and retrieve relevant sources of information using ICT tools. This suggests that they may struggle to effectively utilize electronic resources in their research and academic work.

However, it has also been observed that the availability of relevant information resources has a significant relationship with research competence among scholars. When scholars have access to a wide range of electronic resources such as e-Databases, e-Journals, e-Books, and web search tools, it can greatly enhance their ability to conduct comprehensive and high-quality research. Possessing web-based information literacy skills, which include the ability to navigate online resources, critically evaluate information, and effectively use search tools, has been shown to improve research competence among academic staff in federal universities in Nigeria. By developing these skills, scholars can efficiently locate and utilize relevant electronic resources, leading to more informed and impactful research outcomes. It is important for institutions to recognize the importance of information literacy skills and provide adequate support and training to their academic staff.

According to the findings of the review of the relevant literature, awareness and knowledge have a significant role in determining the degree to which lecturers utilize electronic databases for research competence. It is essential to take into account that the vast majority of the research examined was carried out in underdeveloped nations, and narrows the focus to the contexts of universities in Nigeria. Although there were a few studies, particularly in Nigeria, that contradicted this postulation, the majority of the papers that were looked at showed that electronic databases had a discernible beneficial impact on the amount of research that is produced. It has also been demonstrated in the scholarly literature that the evaluation of each member of the academic staff working in universities is typically based on the quality and quantity of the individual's research competence in the form of books, journal articles, technical reports, and so on, for the purpose of promotion.

There have only been a handful of empirical studies conducted on the topic of how academic staff in private universities in Nigeria are making use of electronic databases to increase research output. The vast majority of the limited empirical research were carried out before the broad availability of electronic information resources, the growth of academic electronic publications, and Internet access in universities in Nigeria.

In addition, there have only been a select few empirical studies that have sought to explain the relationship between research competence of academic staff in private universities in Nigeria and awareness, understanding, and utilization of electronic databases. This is a particularly important area for future research. The current state of academics' utilization of electronic databases in private universities in Nigeria is not well understood. This knowledge gap results in a lack of understanding.

Because of this, having an understanding of the relationship will make it possible for university managers, university librarians, database owners, vendors, and other stakeholders to construct more effective electronic database access interventions for academic staff utilization in private universities located in southern Nigeria. These are the voids that were filled by the findings of this investigation.

Conclusively, literature reviews revealed important elements that influence the amount of research produced by the faculty. The findings indicate that individual factors, such as self-efficacy, affiliation, and motivation, have an effect on the amount of research produced by faculty members. commitment, orientation, basic and advanced research skills, sense of achievements, contributing to society, sense of responsibility, scholarly pursuit, autonomy and flexibility, satisfying interest and curiosity), institutional factors (have fewer course preparations, staff support, advising and mentoring, resources, rewards, sufficient work time, culture, research emphasis, tenure and promotion, financial rewards, satisfying performance standards, peer and social recognition), and individual factors (commitment, orientation, basic and advanced research skills, sense of achievements, contributing to society, sense of responsibility, scholarly pursuit. It is essential for administrators of higher education institutions to have a conceptual framework for managing the research performance of faculty members. Effort should be promoted, and faculty members should be recognized for the amount of effort they contribute; immediate (or short-term) metrics of competence alone should not be the sole criterion for such rewards. It would be beneficial for faculty competence if the institution had policies that required a reduced amount of teaching when a certain amount of research output was required.

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Chapter Three

Methodology

3.0 Introduction

This chapter presents the methodology used in this study. It includes research design, population, sampling techniques, research instrument, validity and reliability of research instrument, methods of data collection and method od data analysis.

3.1 Research Design

The research design used in this study is the descriptive research of the survey type. Descriptive research focuses on the collection of data and information about the research problem to enable the researcher to test hypotheses or answer questions about the current status of the subject of the study. Clearly the purpose of the descriptive research is to describe, as well as explain or validate a hypothesis of objective regarding a certain group of people. In this case the research design will enable the researcher to properly measure the status of the study variables such as research competence, use of electronic information resources and information literacy skills. It will also help to delineate the influence of the study independent variables on the dependent variable[5].

3.2 Population of the Study

The study population will comprise of academic staff in the four Public universities in Lagos State. The population of these study is approximately 4433 lecturers from the four federal and state government owned universities in Lagos State namely, University of Lagos (UNILAG), Akoka, Yaba, Lagos, Lagos State University (LASU), Ojo, Lagos State, Lagos State University of Science and Technology (LASUSTECH), Ikorodu, Lagos State and

Lagos State University of Education (LASUED), Oto/Ijanikin, Lagos State. The population is presented in table 3.1

Table 3.1. Population Table and Sample Size

S/n	Name of the University and Location	Number of Academic Staff
1	University of Lagos (UNILAG), Akoka, Yaba, Lagos	1700
2	Lagos State University (LASU), Ojo, Lagos State	581
3	Lagos State University of Science and Technology (LASUSTECH), Ikorodu, Lagos State	608
4	Lagos State University of Education (LASUED), Oto/Ijanikin, Lagos State	667
	Total	3556

3.3 Sample size and Sampling Technique

The study will make use of Krege and Morgan sampling technique which is often regarded as Krejcie and Morgan table[1]. Therefore, from the table 3.2 the sample for this study would be 346 as the total population of the study 3,556 falls within the range of 3500 on the table. The sampled size would be calculated proportionally to the number of academic staff in each of the Universities using the formular, n = N/T x S where 'n' is the proportional sample size, 'N' is number of Librarians, 'T' is the total population of the study and 'S' is the sampled size.

Table 3.2. Krejcie and Morgan sampling table

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Table 3.2. Sample Size table

S/n	Name of the University and Location	Calculation	Sample Size
1	University of Lagos (UNILAG), Akoka, Yaba, Lagos	$\frac{1700}{3556}x\frac{346}{1}=165$	165
2	Lagos State University (LASU), Ojo, Lagos State	$\frac{581}{3556}x\frac{346}{1}=57$	57
3	Lagos State University of Science and Technology (LASUSTECH), Ikorodu, Lagos State	$\frac{608}{3556}x\frac{346}{1}=59$	59

4	Lagos State University of Education (LASUED), Oto/Ijanikin, Lagos State	$\frac{667}{3556}$x$\frac{346}{1} = 64$	65
	Total	4433	346

3.4. Description of Research instruments

The instrument for this study is a standardized questionnaire adapted from previous studies.. Structured questionnaire adapted from a related studies would be used to gather data from the respondents. The study would adopt the four points Likert scale design which would allow the researchers in listing options from which respondents can choose. The instrument is made up of four sections A to D.

Section A consists of questions on demographic information of respondents which is self-developed. The biodata of the respondents is measured by six variables such as: Name of institution, Field of study, Staff cadre, Work experience, and Gender. Section B contains questions on level of research competence of academic staff in Public universities in Lagos State. The questionnaire is a standard scale adapted from F-Comp research competence model questionnaire[4]. Example of question in this section includes "I can define the research question in my current field of study. I understand that relationship between objectives of the study and research questions

I can formulate hypothesis, both null and alternate". The questions are measured on a four point Likert scale of 'To a very High Extent To a High Extent To a Very Low Extent To a Low Extent'. Section C contains questions on the level of information literacy skills of the academic staff of the Public Universities in Lagos State[3]. Example of questions in this

section are “I can Identify a lack of knowledge in a subject area”, “I can Identify a search topic / question and define it using simple terminology”, “I can Articulate current knowledge on a topic”. All the questions are measured on a four point Likert scale of Very High Extent, High Extent, Very Low Extent,

Low Extent. Section D contains questions on the level of use of Electronic Information Resources by academic staff of Public universities in Lagos State. Example of questions includes “It is easy for me to become skillful at using Online Information resources”, “I found the Electronic Information Resources to be flexible to Use”, “I found it easy to get Electronic Information Resources to do conduct research” All the questions are measured on a four point Likert scale of Strongly Agree, Agree, Strongly Disagree, and Disagree

3.5 Validity of the research instrument

For content validity, the questionnaire for this study would be adapted from an established scale and a previous related study. For face validity, the instrument would be submitted to the research supervisor and some other professionals on the field of information management to scrutinize and make corrections and suggestion which will be incorporated into the instrument before administering it.

3.6 Reliability of the research instrument

Reliability is concerned with the consistency between independent measurements of the same phenomenon. The reliability of the instrument would be tested through a pilot study using

thirty Academic Staff in University of Ibadan, Oyo state which is not part of the geographical location where the study would be carried out.

3.7 Procedure for Data Collection

The designed questionnaire will be distributed to the academic staff in the Public universities in Lagos State with the aid of two research assistants, who will help in distributing the questionnaires to the respondents and ensure they respond to the questionnaire correctly within a period of two weeks.

3.8 Procedure for Data Analysis

The data collected from the survey would be coded and analyzed using the IBM SPSS statistics software. The demographic data would be analyzed using descriptive statistics such as simple frequency tables and percentages. The research questions would be analyzed using descriptive statistics. Hypothesis 1 and 2 would be analyzed using simple linear regression and hypothesis 3 would be analyzed using multiple linear regression with all hypotheses tested at 0.05 level of significance.

Endnotes

1. R.V. Krejcie, and W. D. Morgan, *Determining sample size for research activities.* **Educational and psychological measurement** 30, no. 3 (1970): 607-610.

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3. M. Abdekhoda, D. Afsaneh, & Z. Javad, *Determinant factors in applying electronic medical records in healthcare.* **East Mediterranean Health Journal** 25, no. 1 2019: 24-33.

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Chapter Four

Results and Discussion of Findings

This chapter dealt with data presentation, analysis and the interpretation of the results. The analysis is guided by the specific objectives and hypotheses that were formulated in the study. The first section shows the presentation of the descriptive analysis using tables showing percentages and interpretations below the tables. Section two presents inferential statistics and discussion of findings comes at the later end of the chapter. The results presented were based on the research questions and hypotheses, which the study set out to answer and understudy. The Decision rule: 1.0.-1.49 = very low, 1.50-2.49 – low, 2.50 -3.49 = High, 3.50-4.00 = Very high. Hypothesis will be test at 0.05 level of significance.

4.1. Questionnaire Return Rate

A total of three hundred and forty-six (346) copies of questionnaire were administered, and two hundred and sixty- eight (268) copies responses was received all duly filled. The usable questionnaire represented 77% response rate.

4.2: Demographic Data Analysis of Respondents

Table 4.1: Demographic distribution of respondents

Demographics	Items	Frequency	Percent
Gender	Male	153	43.0
	Female	115	57.0
	Total	**268**	**100.0**
Age			
	< 29 years	78	29.0
	30–35 years	75	28.0
	36–40 years	107	40.2
	>40 years	8	2.8
	Total	**268**	**100.0**
Year of Experience			
	<5 years	84	31
	±5 years	74	28
	> 5 years	110	41

	Total	**268**	**100**
Level			
	Graduate Assistant	84	31
	Lecturer II	47	18
	Lecturer I	58	22
	Associate Prof.	36	13
	Professor	43	16
	Total	**268**	**100.0**

Source: Researcher, 2023

The table 4.1 above provides a demographic analysis of a group of 268 respondents' categorized by gender, age, years of experience, and level or position. The group is almost evenly split between males (43.0%) and females (57.0%). The majority of respondents in the group fall into the age category of "36–40 years" (40.2%). The next largest age group is "30–35 years" (28.0%). Only a small percentage of individuals are above 40 years (2.8%). For the years of experience, significant portion of individuals have "greater than 5 years" of experience (41.0%). The next largest group has "less than 5 years" of experience (31.0%). Those with "approximately 5 years" of experience make up 28.0% of the group. For the level or academic cadre of the respondents, majority of the respondents position in the group is "Graduate Assistant" (31.0%). "Lecturer I" (22.0%) and "Lecturer II" (18.0%) positions are also well-represented. "Associate Prof." (13.0%) and "Professor" (16.0%) positions make up a smaller percentage of the respondents.

4. 2. Analysis of Research questions

4.2. 1: What is the level of research competence of academic staff in Public universities in Lagos State?

VHE: Very High Extent ; H E: High Extent ; VLE: Very Low Extent; and LE: Low Extent

Table 4.2. Level of research competence of academic staff

Options	Very High Extent	High Extent	Very Low Extent	Low Extent	Mean
Content Knowledge Skills					
I can define the research question in my current field of study.	130 (48.6%)	130 (48.6%)	6 (1.9%)	2 (.9%)	3.45
I understand the relationship between objectives of the study and research questions	128 (47.7%)	130 (48.6%)	10 (3.7%)		3.44
I can formulate hypothesis, both null and alternate	138 (51.4%)	120 (44.9%)	10 (3.7%)		3.48
I know how to harness my objectives of the study with the research findings	133 (49.5%)	122 (45.8%)	13 (4.7%)		3.45
Weighted Mean					**3.5**
Methodological Skills					
I know What type of research design would be most suitable for investigating research question? (e.g., experimental, correlational, qualitative, mixed-methods, etc.)	78 (29.0%)	125 (46.7%)	58 (21.5%)	7 (2.8%)	2.72
I can explain the rationale for selecting the research design mentioned in the previous question above	47 (17.8%)	123 (45.8%)	73 (27.1%)	25 (9.3%)	2.52
I can choose and justify the sampling technique for your research study?	47 (17.8%)	78 (29.0%)	110 (41.1%)	33 (12.1%)	3.54
I can describe the data collection methods I would	85 (31.8%)	95 (35.5%)	80 (29.9%)	8 (2.8%)	3.02

use for my research (e.g., surveys, interviews, observations, etc.).					
Weighted Mean					**2.95**
Evaluation					
I can plan to address potential biases or limitations in the data analysis process?	133 (49.5%)	123 (45.8%)	12 (4.7%)		3.45
I can describe how I would structure and format a research paper to report the findings.	130 (48.6%)	130 (48.6%)	5 (1.9%)	3 (.9%)	3.45
I know how to plan as regards dissemination of my research results to relevant stakeholders or the wider scientific community?	138 (51.4%)	120 (44.9%)	10 (3.7%)		3.48
I can discuss the potential implications of your research findings in your field of study or for society as a whole.	128 (47.7%)	130 (48.6%)	10 (3.7%)		3.44
Weighted Mean					**3.5**
Operationalization Skills					
I know how to set indicators to measure research concepts	103 (38.3%)	135 (50.5%)	30 (11.2%)		3.27
I know it is acceptable to use constructs from theories as indicators and measures of concept	70 (26.2%)	125 (46.7%)	65 (24.3%)	8 (2.8%)	2.96
I can turn abstract ideas into measurable concepts	70 (26.2%)	125 (46.7%)	65 (24.3%)	8 (2.8%)	3.16
I know that operationalization is needed in quantitative studies	85 (31.8%)	95 (35.5%)	80 (29.9%)	8 (2.8%)	2.96
Weighted Mean					**3.1**
Ethical Consideration skills					
I can outline the ethical considerations I need to take	85 (31.8%)	95 (35.5%)	80 (29.9%)	8 (2.8%)	3.02

into account when conducting research involving human participants.					
I know how to obtain and ensure informed consent form participants in my research?	48 (17.8%)	123 (45.8%)	73 (27.1%)	25 (9.3%)	2.52
I know the steps to take to protect the confidentiality and anonymity of research participants?	78 (29.0%)	125 (46.7%)	58 (21.5%)	8 (2.8%)	2.72
I know how to do in-text citations	48 (17.8%)	78 (29.0%)	110 (41.1%)	33 (12.1%)	3.54
Weighted Mean					**2.95**
Grand Mean					**2.6**

Source: Researcher, 2023

Table 4.2 above shows the research competence level of the respondents. To start with the Content Knowledge Skills, like "I can define the research question in my current field of study", 48.6% of respondents rated their proficiency as "Very High Extent." 48.6% rated it as "High Extent."1.9% rated it as "Very Low Extent while 0.9% rated it as "Low Extent. "The mean score is 3.45, indicating that, on average, respondents have a high level of confidence in their ability to define research questions. More so, "I understand the relationship between objectives of the study and research questions", 47.7% of respondents rated their proficiency as "Very High Extent." 48.6% rated it as "High Extent."3.7% rated it as "Very Low Extent." The mean score for this item is 3.44, indicating a high level of understanding of the relationship between study objectives and research questions. Furthermore, "I can formulate hypotheses, both null and alternate", 51.4% of respondents rated their proficiency as "Very High Extent." 44.9% rated it as "High Extent." 3.7% rated it as "Very Low Extent." The mean score for this item is 3.48, suggesting a high level of proficiency in formulating hypotheses. Moreover, for skill like "I know how to harness my objectives of the study with

the research findings", 49.5% of respondents rated their proficiency as "Very High Extent." 45.8% rated it as "High Extent." 4.7% rated it as "Very Low Extent." The mean score for this item is 3.45, indicating a high level of skill in connecting study objectives with research findings.

Methodological Skills being the second research competence skill. For question like "I know what type of research design would be most suitable for investigating research questions (e.g., experimental, correlational, qualitative, mixed-methods, etc.)", 29.0% of respondents rated their proficiency as "Very High Extent." 46.7% rated it as "High Extent." 21.5% rated it as "Very Low Extent." 2.8% rated it as "Low Extent." The mean score for this item is 2.72, indicating a moderate level of knowledge regarding research design selection. More so, for questions like "I can explain the rationale for selecting the research design mentioned in the previous question above", 17.8% of respondents rated their proficiency as "Very High Extent." 45.8% rated it as "High Extent." 27.1% rated it as "Very Low Extent." 9.3% rated it as "Low Extent." The mean score for this item is 2.52, suggesting room for improvement in explaining the rationale for research design. "I can choose and justify the sampling technique for your research study", 17.8% of respondents rated their proficiency as "Very High Extent." 29.0% rated it as "High Extent." 41.1% rated it as "Very Low Extent." 12.1% rated it as "Low Extent." The mean score for this item is 3.54, indicating a high level of proficiency in selecting and justifying sampling techniques. "I can describe the data collection methods I would use for my research (e.g., surveys, interviews, observations, etc.)", 31.8% of respondents rated their proficiency as "Very High Extent." 35.5% rated it as "High Extent." 29.9% rated it as "Very Low Extent."2.8% rated it as "Low Extent." The mean score for this item is 2.95, suggesting a moderate level of proficiency in describing data collection methods.

The third skill which is Evaluation for statements like "I can plan to address potential biases or limitations in the data analysis process", 49.5% of respondents rated their proficiency as "Very High Extent." 45.8% rated it as "High Extent." 4.7% rated it as "Very Low Extent." The mean score for this item is 3.45, indicating a high level of skill in planning for addressing biases and limitations in data analysis. "I can describe how I would structure and format a research paper to report the findings", 48.6% of respondents rated their proficiency as "Very High Extent." 48.6% rated it as "High Extent." 1.9% rated it as "Very Low Extent." 0.9% rated it as "Low Extent." The mean score for this item is 3.45, suggesting a high level of proficiency in structuring and formatting as well as evaluating research papers. "I know how to plan as regards dissemination of my research results to relevant stakeholders or the wider scientific community", 51.4% of respondents rated their proficiency as "Very High Extent." 44.9% rated it as "High Extent." 3.7% rated it as "Very Low Extent." The mean score for this item is 3.48, indicating a high level of proficiency in planning for the dissemination of research results. "I can discuss the potential implications of your research findings in your field of study or for society as a whole", 47.7% of respondents rated their proficiency as "Very High Extent." 48.6% rated it as "High Extent." 3.7% rated it as "Very Low Extent." The mean score for this item is 3.44, indicating a high level of proficiency in discussing the implications of research findings.

For Operationalization Skills. For statement like "I know how to set indicators to measure research concepts", 38.3% of respondents rated their proficiency as "Very High Extent." 50.5% rated it as "High Extent." 11.2% rated it as "Very Low Extent." The mean score for this item is 3.27, suggesting a moderate level of proficiency in setting indicators for research concepts. "I know it is acceptable to use constructs from theories as indicators and measures

of concept": 26.2% of respondents rated their proficiency as "Very High Extent." 46.7% rated it as "High Extent." 24.3% rated it as "Very Low Extent." 2.8% rated it as "Low Extent." The mean score for this item is 2.96, indicating that respondents have a moderate understanding of the acceptability of using constructs as indicators. "I can turn abstract ideas into measurable concepts", 26.2% of respondents rated their proficiency as "Very High Extent." 46.7% rated it as "High Extent." 24.3% rated it as "Very Low Extent." 2.8% rated it as "Low Extent." The mean score for this item is 3.16, indicating a moderate level of proficiency in turning abstract ideas into measurable concepts. "I know that operationalization is needed in quantitative studies", 31.8% of respondents rated their proficiency as "Very High Extent." 35.5% rated it as "High Extent." 29.9% rated it as "Very Low Extent." 2.8% rated it as "Low Extent." The mean score for this item is 2.96, suggesting a moderate level of understanding regarding the necessity of operationalization in quantitative studies.

The last of the competence is Ethical Consideration Skills. For statement like "I can outline the ethical considerations I need to take into account when conducting research involving human participants", 31.8% of respondents rated their proficiency as "Very High Extent." 35.5% rated it as "High Extent." 29.9% rated it as "Very Low Extent." 2.8% rated it as "Low Extent." The mean score for this item is 3.02, indicating a moderate level of proficiency in outlining ethical considerations. "I know how to obtain and ensure informed consent from participants in my research", 17.8% of respondents rated their proficiency as "Very High Extent." 45.8% rated it as "High Extent." 27.1% rated it as "Very Low Extent." 9.3% rated it as "Low Extent." The mean score for this item is 2.52, suggesting room for improvement in understanding and ensuring informed consent. "I know the steps to take to protect the

confidentiality and anonymity of research participants", 29.0% of respondents rated their proficiency as "Very High Extent." 46.7% rated it as "High Extent." 21.5% rated it as "Very Low Extent." 2.8% rated it as "Low Extent." The mean score for this item is 2.72, indicating a moderate level of proficiency in protecting participant confidentiality and anonymity. For statement like "I know how to do in-text citations", 17.8% of respondents rated their proficiency as "Very High Extent." 29.0% rated it as "High Extent." 41.1% rated it as "Very Low Extent." 12.1% rated it as "Low Extent." The mean score for this item is 3.54, suggesting a higher level of proficiency in in-text citations. In the "Content Knowledge Skills" category, respondents expressed a high level of confidence in their abilities. The mean score for this category is 3.5, indicating a strong understanding of fundamental research concepts. Respondents reported that they could define research questions, understand the relationship between study objectives and research questions, formulate hypotheses (both null and alternate), and connect study objectives with research findings with relative ease. The "Methodological Skills" category showcases a moderate level of proficiency. While respondents demonstrated good knowledge of choosing and justifying sampling techniques, the ability to explain the rationale for selecting research designs and describing data collection methods received lower mean scores, indicating areas where improvement may be needed.

In the "Evaluation" category, the respondents displayed a high level of proficiency in skills related to planning for addressing potential biases and limitations in data analysis, structuring and formatting research papers, and discussing the implications of research findings. The mean score of 3.5 in this category suggests a strong ability to evaluate and communicate research effectively. The "Operationalization Skills" category assesses the respondents' skills

in defining measurable concepts. The mean score for this category is 3.1, indicating a moderate level of proficiency. Respondents reported a reasonable understanding of setting indicators for research concepts, turning abstract ideas into measurable concepts, and recognizing the need for operationalization in quantitative studies. However, they may benefit from further improvement in understanding the acceptability of using constructs from theories as indicators.

In the "Ethical Consideration Skills" category, the mean score is 2.95, suggesting a moderate level of proficiency. Respondents demonstrated a good grasp of ethical considerations when conducting research involving human participants. However, areas such as obtaining informed consent and protecting participant confidentiality could be further strengthened. The overall grand mean of 2.6 showed a moderate level of research competence among academic staff in public universities, Lagos state, Nigeria.

4.2.2. What is the level of information literacy skills of the academics staff of the public universities in Lagos State?

TVHE: Very High Extent HE: High Extent; VLE: Very Low Extent LE: Low Extent

Table 4.3. Level of information literacy of academic staff

Identify: Able to identify a personal need for information	Very High Extent	High Extent	Very Low Extent	Low Extent	Mean
I can Identify a lack of knowledge in a subject area	90 (33.6%)	153 (57.0%)	2.5 (9.3%)		3.69
I can define research question using simple terminology	115 (43.0%)	130 (48.6%)	23 (8.4%)		3.51
I can Articulate current	190	75	3		3.61

knowledge on a topic	(71.0%)	(28.0%)	(.9%)		
I can Recognise a need for information and data to achieve a specific end and define limits to the information need	140 (52.3%)	125 (46.7%)	3 (.9%)		3.56
Weighted Mean					**3.6**
SCOPE: Can assess current knowledge and identify gaps.					
I know what you don't know" to identify any information gaps	165 (61.7%)	100 (37.4%)		3 (.9%)	3.42
I can identify which types of information will best meet the need	155 (57.9%)	108 (40.2%)	5 (1.9%)		3.24
I can identify the available search tools, such as general and subject specific resources at different levels	118 (43.9%)	145 (54.2%)	5 (1.9%)		3.35
I can identify different formats in which information may be provided	118 (43.9%)	140 (52.3%)	10 (3.7%)		3.40
Weighted Mean					**3.4**
PLAN: Can construct strategies for locating information and data					
I can define a search strategy by using appropriate keywords and concepts, defining and setting limits	118 (43.9%)	145 (54.2%)	5 (1.9%)		3.35
I can select the most appropriate search tools	155 (57.9%)	108 (40.2%)	5 (1.9%)		3.24
I can identify controlled vocabularies and taxonomies to aid in searching if appropriate	165 (61.7%)	100 (37.4%)	3 (.9%)		3.42
I can identify appropriate search techniques to use as necessary	118 (43.9%)	140 (52.3%)	10 (3.7%)		3.40
Weighted Mean					**3.4**
GATHER: Can locate and access the information and data they need. I Can….					

I can use appropriate techniques to collect new data	140 (52.3%)	125 (46.7%)	3 (.9%)		3.56
I can keep up to date with new information	115 (43.0%)	130 (48.6%)	23 (8.4%)		3.51
I can engage with their community to share information	190 (71.0%)	75 (28.0%)		3 (.9%)	3.61
I can identify when the information need has not been met	90 (33.6%)	153 (57.0%)	25 (9.3%)		3.69
Weighted Mean					**3.6**
EVALUATE: Can review the research process and compare and evaluate information and data					
I can assess the credibility of the data gathered	118 (43.9%)	145 (54.2%)	5 (1.9%)		3.35
I can read critically, identifying key points and arguments	155 (57.9%)	108 (40.2%)	5 (1.9%)		3.24
I can relate the information found to the original search strategy	165 (61.7%)	100 (37.4%)	3 (.9%)		3.42
I can critically appraise and evaluate their own findings and those of others	118 (43.9%)	140 (52.3%)	10 (3.7%)		3.40
Weighted Mean					**3.4**
MANAGE: Can organise information professionally and ethically					
I can use bibliographical software if appropriate to manage information	155 (57.9%)	108 (40.2%)	5 (1.9%)		3.24
I can cite printed and electronic sources using suitable referencing styles	118 (43.9%)	140 (52.3%)	10 (3.7%)		3.40
I can create appropriately formatted bibliographies	118 (43.9%)	145 (54.2%)	5 (1.9%)		3.35
I can meet standards of	165	100	3		3.42

conduct for academic integrity	(61.7%)	(37.4%)	(.9%)		
Weighted Mean					**3.4**
PRESENT Can apply the knowledge gained					
I can……					
I can use the information and data found to address the original question	115 (43.0%)	130 (48.6%)	23 (8.4%)		3.51
I can summarise documents and reports verbally and in writing	190 (71.0%)	75 (28.0%)		3 (.9%)	3.61
I can incorporate new information into the context of existing knowledge	90 (33.6%)	153 (57.0%)	25 (9.3%)		3.69
I can communicate effectively using appropriate writing styles in a variety of formats	140 (52.3%)	125 (46.7%)	3 (.9%)		3.56
Weighted Mean					**3.6**
Grand Mean					**3.5**

Source: Field work, 2023

The table 4.3 above provides a detailed analysis of respondent's abilities related to information literacy skills which are categorized into seven aspects. The responses gotten from the table 4.3 showed that the respondents excels in identifying a lack of knowledge in a subject area, with a very high extent (57.0%) and a high extent (33.6%).More so, they can articulate current knowledge on a topic with a very high extent (71.0%) and a low extent (.9%). They recognize a need for information and data to achieve a specific end and can define limits to the information need to a high extent (52.3%) and a very high extent (46.7%). The means score of Mean 3.69 shows a high level competence in the ability to identify personal need for information. On the respondents ability to scope information, the table revealed that the respondents can assess current knowledge and identify gaps with a very high extent (61.7%) and a high extent (37.4%). They know what information gaps exist with a very high extent (61.7%) and a high extent (37.4%). More so, they can identify which types

of information will best meet the need with a very high extent (57.9%) and a high extent (40.2%). The means score of 3.42 showed high level literacy skill in the respondents ability to assess current knowledge and identify gaps. Moreover, on the respondents ability to construct strategies for locating information and data. They can define a search strategy using appropriate keywords and concepts with a high extent (54.2%) and a very high extent (43.9%). They can select the most appropriate search tools with a high extent (57.9%) and a high extent (40.2%). The mean score of 3.4 showed a high levl information literacy skills in the area of selecting appropriates search tools, and define search strategy. The individual can locate and access the information and data they need effectively. Furthermore, for ability to review the research process and compare and evaluate information and data, respondents can keep up to date with new information with a high extent (48.6%) and a very high extent (43.0%). More so, they can engage with their community to share information with a high extent (71.0%) and a low extent (.9%). The respondents can identify when the information need has not been met with a high extent (57.0%) and a very high extent (33.6%). The mean score of 3.6 showed a high literacy skill with regards to ability to review research processes and compare and evaluate information to bring out the best. More so for evaluative skills, the responses gotten from respondents showed that the respondents can review the research process and compare and evaluate information and data. They can assess the credibility of the data gathered with a high extent (54.2%) and a high extent (43.9%). They can read critically, identifying key points and arguments with a high extent (57.9%) and a high extent (40.2%). The means score of 3.4 showed a high level literacy skills in the area of information evaluation. For information organization, the responses of the respondents showed that the respondents can use bibliographical software if appropriate to manage information to a high

extent (57.9%) and a high extent (40.2%). Respondents can cite printed and electronic sources using suitable referencing styles with a high extent (54.2%) and a high extent (43.9%). The means score of 3.4 showed a high level management skills with regards to information management. Furthermore, for information presentation, the respondents according to the responses can apply the knowledge gained effectively. They can use the information and data found to address the original question to a very high extent (48.6%) and a high extent (43.0%). They can summarize documents and reports verbally and in writing to a high extent (71.0%) and a low extent (.9%). The means score of 3.6 showed a high level competence with regards to information presentation. The Grand Mean, which represents an overall score, is 3.5, indicating a strong level of competency in information literacy and research skills. This individual appears to excel in most aspects of these skills, with strengths in "Gather" and "Present," while consistently demonstrating above-average abilities across the other categories.

4.2.3. What is the use Electronic Information Resources by academic staff of public universities in Lagos State?

Table 4.4 Use of Electronic Information Resources.

Frequency of Use / Items	Very Frequently	Frequently	Once a while	Not at all	Mean
Full-text databases	78 (34.1 %)	90 (39.6 %)	43 (18.7%)	18 (7.7 %)	3.00
Online Databases scholarly databases (Ebcohost, Jstor, and so on)	55 (24.2 %)	135 (59.3 %)	38 (16.0%)		3.08
Institutional Websites	53 (23.1%)	88 (38.5%)	20 (8.8%)	68 (29.7 %)	2.55
Institutional Repositories	95 (41.8 %)	80 (35.2%)		53 (23.1%)	2.96
Search Engines	73 (31.9 %)	95 (41.8 %)	60 (26.4 %)	--	3.05

Average Mean					**2.93**
Purpose of Use	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**	**Mean**
I use EIR for Research and Academic Purposes	48 (20.9%)	98 (42.9 %)	30 (13.2 %)	53 (23.1 %)	2.62
I use EIR for Education and Learning	58 (25.3 %)	153 (67.0%)		18 (7.7 %)	3.10
I use EIR for Communication and Social Interaction	130 (57.1%)	48 (20.9%)		50 (22.0 %)	3.13
I use EIR for Personal Development and Hobbies	80 (35.2%)	128 (56.0%)	8 (3.3%)	13 (5.5%)	3.21
I use EIR for Information Retrieval and Referencing	98 (42.9 %)	80 (35.2%)		45 (19.8 %)	3.03
I use EIR for Publishing my research works	48 (20.9%)	155 (68.1 %)	25 (11.0%)	(%)	3.10
I use EIR because of the several advantages it has like time saving, quick access, comfort of access, abundance of content and so on….	53 (23.1%)	128 (56.0 %)		48 (20.9%)	2.81
Average Mean					**3.00**
Grand Mean					**2.96**

Source: Field work, 2023

Table 4.4 above showed the frequency of use and purpose of use of use of electronic information resources. For Full-text databases, approximately 34.1% of respondents use full-text databases very frequently, indicating that they rely on these resources extensively for their information needs, 39.6% use them frequently, 18.7% use them once in a while and a smaller 7.7% do not use full-text databases at all. The mean score for this resource's frequency of use is 3.00, indicating that it's used relatively often. For, Online Databases (e.g., Ebscohost, JSTOR), about 24.2% use online databases very frequently. A majority of 59.3% use them frequently.16.0% use them once in a while. The mean score for this resource's

frequency of use is 3.08, reflecting significant usage. For Institutional Websites, Only 23.1% use institutional websites very frequently. 38.5% use them frequently. 8.8% use them once in a while. A significant 29.7% do not use institutional websites at all. The mean score for this resource's frequency of use is 2.55, indicating a lower level of use compared to the previous resources. For Institutional Repositories, A substantial 41.8% use institutional repositories very frequently. 35.2% use them frequently. 23.1% use them once in a while. The mean score for this resource's frequency of use is 2.96, indicating a moderate level of usage. For Search Engines, approximately 31.9% use search engines very frequently. A significant 41.8% use them frequently. 26.4% use them once in a while. The mean score for this resource's frequency of use is not provided, but it's likely to be moderately used given the percentages.

For Purpose of Use, Research and Academic Purposes, 20.9% strongly agree that they use EIR for research and academic purposes. 42.9% agree. 13.2% disagree. 23.1% strongly disagree. The mean score for this purpose is 2.62, indicating mixed opinions about EIR's suitability for research and academics. For Education and Learning, A significant 25.3% strongly agree that they use EIR for education and learning. A substantial 67.0% agree. 7.7% disagree. The mean score for this purpose is 3.10, showing strong agreement with EIR being used for educational purposes. For Communication and Social Interaction, 57.1% strongly agree that they use EIR for communication and social interaction. 20.9% agree. 22.0% disagree. The mean score for this purpose is 3.13, indicating a strong emphasis on communication and social interaction. For Personal Development and Hobbies, 35.2% strongly agree that they use EIR for personal development and hobbies. A significant 56.0% agree. 3.3% disagree. 5.5% strongly disagree. The mean score for this purpose is 3.21, reflecting a substantial use for personal development and hobbies. For Information Retrieval

and Referencing, 42.9% strongly agree that they use EIR for information retrieval and referencing. 35.2% agree. 19.8% disagree. The mean score for this purpose is 3.03, suggesting EIR is moderately used for these activities. For Publishing Research Works, 20.9% strongly agree that they use EIR to publish their research works. A significant 68.1% agree. 11.0% disagree. The mean score for this purpose is 3.10, indicating a significant use for publishing research. For the Advantages of EIR, 23.1% strongly agree that they use EIR because of its advantages, such as time-saving, quick access, and abundance of content. 56.0% agree. 20.9% disagree. The mean score for this purpose is 2.81, suggesting that respondents see value in the advantages of EIR, though not all strongly agree.

The grand mean combines both the frequency of use and the purpose of use. It is calculated to be 2.96, indicating that EIR is moderately used for a variety of purposes. The primary purposes appear to be education and learning, communication, and personal development, while the frequency of use varies depending on the specific type of resource.

4.3. Analysis of Hypothesis

4.3. 1: There will be no significant influence of Information literacy skills on Research Competence of Academic Staff of public universities in Lagos State

Table 4.5a-c Significant influence of information literacy skills on Research competence of academic staff

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.450[a]	.202	.195	.42800

a. Predictors: (Constant), Information_literacy_skills

ANOVA[a]

Model	Sum of	df	Mean	F	Sig.

		Squares		Square		
1	Regression	4.875	1	4.875	26.610	.000[b]
	Residual	19.234	105	.183		
	Total	24.109	106			

a. Dependent Variable: Research_competence

b. Predictors: (Constant), Information_literacy_skills

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.337	.367		3.641	.000
	Information literacy skills	.542	.105	.450	5.158	.000

a. Dependent Variable: Research competence

Table 4.5a-c presents the results of the simple linear regression analysis for the influence of Information literacy skills on research competence of Academic staff in public universities, Lagos State, Nigeria. From the results in Table 4.5a, Information literacy skills has a significant relationship on the research competence of Academic staff in public universities, Lagos State, Nigeria ($R = 0.450^a$, $p<0.05$). The coefficient of determination (Adj. R^2) of 0.195 also shows that Information literacy skills explains 19.5% of the research competence of Academic staff in public universities, Lagos State, Nigeria while the remaining 79.5% discrepancy in the research competence of Academic staff in public universities, Lagos State, Nigeria is explained by other variables which are not considered in this study.

Table 4.5b presents the results of ANOVA (Overall Model Significance) of regression test which revealed that Information literacy skills has significant relationship research competence of Academic staff in public universities, Lagos State, Nigeria. This can be

explained by the F-value (26.610) and p-value (0.000[b]) which is statistically significant at 95% confidence interval. Hence, the result posited that Information literacy skills has a strong significance influence research competence of Academic staff in public universities, Lagos State, Nigeria. Furthermore, the results of regression coefficients in table 4.5c revealed that at 95% confidence level, a unit change in Information literacy skills will lead to a 0.542 increases in research competence of Academic staff in public universities, Lagos State, Nigeria, given that all other factors are held constant.

On the strength of this result (Adj.R^2=0.202,F(1,105)= 26.610, p=000), the null hypothesis One (Ho1) which states that there will be no significant influence of Information literacy skills on research competence of Academic staff in public universities, Lagos State, Nigeria is hereby rejected.

Overall, the regression model indicates that "Information literacy skills" is a significant predictor of "research competence," and the relationship is positive. In other words, an increase in Information literacy skills is associated with an increase in research competence. This finding is statistically significant and suggests that possessing Information literacy skills can lead to improved research competence**.**

4.3. 2: There will be no significant influence of Use of Electronic Information Resources on Research Competence of Academic Staff of public universities in Lagos State.

Table 4.6a-c Significant influence of use of electronic information resource on research competence of academic staff

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.604[a]	.365	.359	.38176

a. Predictors: (Constant), Use_of_IER

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.806	1	8.806	60.424	.000[b]
	Residual	15.303	105	.146		
	Total	24.109	106			

a. Dependent Variable: Research_competence

b. Predictors: (Constant), Use_of_IER

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.111	.274		4.057	.000
	Use_of_IER	.666	.086	.604	7.773	.000

a. Dependent Variable: Research_competence

Table 4.6a-c presents the results of the simple linear regression analysis for the influence of use of electronic information resources on research competence of Academic staff in public universities, Lagos State, Nigeria. From the results in Table 4.6a, use of electronic information resources has a significant relationship on the research competence of Academic staff in public universities, Lagos State, Nigeria ($R = 0.604^a$, $p<0.05$). The coefficient of determination (Adj. R^2) of 0.365 also shows that use of electronic information resources explains 36.5% of the research competence of Academic staff in public universities, Lagos State, Nigeria while the remaining 63.5% discrepancy in the research

competence of Academic staff in public universities, Lagos State, Nigeria is explained by other variables which are not considered in this study.

Table 4.5b presents the results of ANOVA (Overall Model Significance) of regression test which revealed that use of electronic information resources has significant relationship research competence of Academic staff in public universities, Lagos State, Nigeria. This can be explained by the F-value (60.424) and p-value (0.000^{b}) which is statistically significant at 95% confidence interval. Hence, the result posited that use of electronic information resources has a strong significance influence research competence of Academic staff in public universities, Lagos State, Nigeria. Furthermore, the results of regression coefficients in table 4.5c revealed that at 95% confidence level, a unit change in use of electronic information resources will lead to a 0.666 increases in research competence of Academic staff in public universities, Lagos State, Nigeria, given that all other factors are held constant.

On the strength of this result (Adj.R^2=0.359,F(1,105)= 60.424, p=000), the null hypothesis One (Ho2) which states that there will be no significant influence of use of electronic information resources on research competence of Academic staff in public universities, Lagos State, Nigeria is hereby rejected.

Overall, the regression model indicates that " use of electronic information resources " is a significant predictor of "research competence," and the relationship is positive. In other words, an increase in use of electronic information resources is associated with an increase in research competence. This finding is statistically significant and suggests that possessing use of electronic information resources can lead to improved research competence.

4.3. 4. There will be no combined significant influence of Use of Electronic information resources and information literacy skills on Research competence of Academic staff of public universities in Lagos State.

Table 4.7a-c: There will be no combined influence of Use of Electronic information resources and information literacy skills on Research competence of Academic staff of public universities in Lagos State.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.609[a]	.371	.359	.38179

a. Predictors: (Constant), Information_literacy_skills, Use_of_IER

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.949	2	4.475	30.697	.000[b]
	Residual	15.160	104	.146		
	Total	24.109	106			

a. Dependent Variable: Research competence

b. Predictors: (Constant), Information literacy skills, Use of IER

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.916	.337		2.717	.008
	Use of IER	.594	.112	.539	5.287	.000
	Information literacy skills	.122	.123	.101	.990	.324

a. Dependent Variable: Research competence

Table 7a-c showed the output of a multiple regression analysis, used to assess the relationship between the dependent variable 'research competence' and two independent variables: 'Information literacy skills' and 'use of electronic information resources'. Table 7a showed the r-squared value (0.609) indicates that approximately 39.1% of the variability in research competence can be explained by the independent variables Information literacy skills and "use of electronic information resources, this value represents the goodness of fit of the regression model, suggesting that the model explains a moderate portion of the variance in the dependent variable. the adjusted r-squared value (0.359) adjusts the r-squared value for the number of predictors in the model. it is slightly lower than the r-squared value, suggesting that there may be some overfitting or that the additional predictors Information literacy skills and use of electronic information resources might not contribute significantly to explaining the variance in the dependent variable. the standard error of the estimate (0.38179) represents the average amount by which the actual values of the dependent variable "research competence " differ from the predicted values by the regression model.

Table 8b showed the ANOVA table assessing the overall statistical significance of the regression model. the "f" statistic (30.697) is highly significant ($p < 0.000$), indicating that at least one of the independent variables (Information literacy skills and use of electronic information resources) is significantly related to the dependent variable " research competence."

Table 7c showed the coefficients table provides information about the contribution of each predictor variable (Information literacy skills and use of electronic information resources) to the dependent variable while controlling for other variables. the constant term (2.104) is the estimated value of the dependent variable ("research competence") when both Information

literacy skills and use of electronic information resources are zero. in this context, it represents the expected service quality when there is no continuous professional development or ICT skills.

The coefficient for information literacy skill (0.122) is not statistically significant ($p > 0.324$). this suggests that, in this model, use of electronic information resources may not have a significant impact on "service quality." the coefficient for us of electronic information resources (0.594) is statistically significant ($p < 0.000$). it suggests that a one-unit increase in Information literacy skills is associated with a 0.594 -unit increase in "research competence"

The regression model indicates that Information literacy skills is a significant predictor of " research competence," while use of electronic information resources does not appear to have a significant impact in this context. the relationship between Information literacy skills and research competence is positive, indicating that an increase in continuous professional development is associated with an increase in research competence. It is on the strength of this result (Adj. $R^2 = 0.371$, $F(2,104) = 30.697$, $p = 0.000$) that the null hypothesis three (H_o3) which state that there will be no combined influence of information literacy skill and use of electronic information resources on research competence of Academic staff in public universities, Lagos State, Nigeria is rejected as only use of electronic information resources has significant influence while information literacy skill is not significant.

4.4. Discussion of Findings

The aim of the study is to determine the influence of information literacy skills and use of electronic information resources on research competence of academic staff in public universities, Lagos state, Nigeria. To achieve this aim, the researcher came up with three research question and three null hypotheses respectively. The first research question is based

on the level of competence of academic staff in terms of research. With a grand mean score of 2.6 the study found a moderate level of research competence among academic staff in public universities, Lagos state, Nigeria. Several authors has carried researches related to the research competence and several finding has been reported. For instance a study on the Students' perceptions toward academic competencies, the case of German first-year students found that First-year students in Germany perceive academic staff as supportive but have low self-confidence in research skills, suggesting universities should help them develop these skills through personalized programs and emerging technologies[1]. The obviously negated the findings of this study. A study in Swaziland on Self-reported Levels of Competence and Training Needs in Statistical Procedures by University Academic Staff in Botswana and Swaziland found that University academic staff in Botswana and Swaziland are competent in basic statistical procedures but need training in intermediate and advanced procedures, with publication history playing a significant role[2]. This means that some studies uses the number of publication to measure the research competence of academic staff.

The second research question which deals with the information literacy skills of academic staff found a high level information literacy skills with a grand mean score of 3.5. In corroboration of this study, a study titled Information Literacy Skills of Academic Staff in Nigerian Federal Universities found that Academic staff in Nigerian federal universities have high information literacy skills, which positively impact research productivity[3]. Another study that support this findings titled relationship between Information Literacy Skills and Research Output of Academic Staff in Nnamdi Azikiwe University Awka, Nigeria found that Nnamdi Azikiwe University, Awka academic staff have moderate information literacy skills, which positively correlate with their research output and rank[4]. The implication of this

finding is that information literacy skill will definitely affect and positively influence research competence of academic staff.

The third research question which seeks to know the level of use of electronic information resources among academic staff of public universities in Lagos State, Nigeria. The study found that a mean score of 2.55 and 2.96 indicates that both institutional websites and institutional repositories respectively indicate a lower level of use. For purpose of use, a means score of 2.62 and 2.81 Uses EIR for research and academic purpose and because of the several advantages it has like time saving, quick access, comfort of access, abundance of content and so on. A study A study conducted in Nigeria found that effective ICT skills significantly influence the use of EIRs by lecturers in tertiary institutions. The study recommended that tertiary school management should provide funding for the acquisition of EIRs and training for lecturers to enhance their research competence[5]. Use of EIR is pivotal for research competence because of Electronic information resources have vastly expanded access to information, making it easier for individuals and organizations to obtain data, research, and knowledge from a wide range of sources. EIR is important because of reasons like: Search engines and databases have made it much easier to locate and retrieve relevant information quickly, improving research efficiency and productivity. Electronic resources enable individuals and teams to collaborate on projects and share information, regardless of their physical location, fostering global collaboration and knowledge sharing. Electronic resources provide real-time access to current information, which is crucial for industries where up-to-date data is essential, such as news, finance, and healthcare. Electronic resources have the potential to reduce the costs associated with storing and distributing physical materials, like books and printed journals, leading to cost savings for libraries, educational

institutions, and businesses. The digital nature of electronic information resources reduces the need for paper and printing, contributing to environmental conservation and sustainability efforts. Many electronic resources allow users to customize and personalize their information consumption, tailoring content to their specific needs and interests. Electronic resources generate vast amounts of data, which can be analyzed to gain insights into user behavior, preferences, and trends, helping organizations make data-driven decisions. Electronic resources can be made accessible to a broader range of people, including those with disabilities, through features like screen readers and text-to-speech technology. More so, While electronic information resources provide access to a wealth of information, they also present challenges related to information overload, where users may struggle to filter and manage the vast amount of available data.

The use of electronic information resources has raised important issues related to copyright and intellectual property rights, as it is easier to duplicate and distribute digital content. The digital nature of electronic information resources has brought forth concerns related to privacy and data security, as the collection and sharing of personal information are prevalent in the digital ecosystem. The availability and accessibility of electronic information resources are not uniform, and there is a digital divide, with some individuals and communities having limited access to these resources.

The test of the first hypothesis one found that Information literacy skills has significant positive influence on research competence of academic staff of public universities in Lagos State, Nigeria. This finding was supported by a study on academic staff development programme: research competence formation where it was found that Participation in research modules in academic staff development programs effectively influences the development of

research competence in teachers, promoting their professional and personal growth[6]. A study on Influence of information literacy skills on research productivity of academic staff of federal universities in North-eastern Nigeria found that Information literacy skills have no significant effect on research productivity of academic staff in federal universities in North-eastern Nigeria[7]. Another study titled Relationship between information literacy skills and research productivity of researchers in Nigeria, and the mediating role of socio-economic factors found that Increased information literacy skills in academic staff in Nigeria positively impact research productivity, with socio-economic factors mediating this relationship[8]. Moreover, a study on Impact of Information Literacy Skills on Academic Staff Research Productivity in Nigerian Federal Universities found that that the academic staff acquires information literacy skill mostly through attending workshops/seminars, self-taught, assistance from other colleagues, trial and error, guidance from library staff and faculty/departmental training. Also, the analysis establishes the fact that the research productivity of the academic staff in Nigerian federal universities is higher in journal publications, technical reports, conference papers, working papers and occasional papers. However, the research productivity of the academic staff in Nigerian federal universities is lower in textbook publications, monographs, patents and certified inventions[9].

The test of the second hypothesis found that Use of Electronic information resources has significant positive influence on research competence of academic staff of public universities in Lagos State, Nigeria. This study is supported by a study conducted in private universities in Nigeria that found that EIRs have a positive influence on research productivity. The study recommended that academic libraries should provide adequate access to EIRs to enhance research productivity. A related study found that A study conducted in Nigeria found that

effective ICT skills significantly influence the use of EIRs by lecturers in tertiary institutions. The study recommended that tertiary school management should provide funding for the acquisition of EIRs and training for lecturers to enhance their research competence[10].

The multiple regression analysis of the test of hypothesis three found that the, although the combination of both information literacy skills and use of electronic information resources has significant influence on research competence of academic staff of public universities in Lagos State, Nigeria. However, Information literacy skill does not have significant influence on research competence. Separately both use of electronic information resources has significant influence on research competence.

Endnotes

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Chapter Five

Summary, Conclusion and Recommendations

5.1. Summary of Findings

These findings collectively highlight the crucial role of electronic information resources, information literacy skills, and research competence in education, the workforce, and society. They underscore the importance of developing and nurturing these competencies to harness the full potential of the digital age and advance knowledge in various in academic world and in the area of research. The findings of the study is has follows:

1. The study found a moderate level of research competence among academic staff in public universities, Lagos state, Nigeria
2. The study found a high level information literacy skills among academic staff of public universities, Lagos state, Nigeria.
3. The study found a low level use of institutional websites and a moderate level use of institutional repositories. More so on the purpose of use the study found a low level use of EIR for research and academic purpose.

4. The first null hypothesis that there will be no significant influence of information literacy skill on research competence of academic staff was rejected as the findings indicated a positive significant influence of information literacy skills on research competence
5. The second null hypothesis that there will be no significant influence of use of EIR on research competence of academic staff was rejected as the findings indicated a positive significant influence of information literacy skills on research competence of academic staff in public universities, Lagos State, Nigeria.
6. The third null hypothesis was also rejected as the combination of information literacy skill and use of EIR have significant positive influence on research competence of academic staff in public universities in Lagos state, Nigeria.

5.2. Conclusion

The study revealed that there is a moderate level of research competence among academic staff in public universities in Lagos State. This suggests that while academic staff possess some research skills, there is room for improvement and further development in this area. The study found that academic staff exhibit a high level of information literacy skills. This is a positive outcome, as information literacy is crucial for conducting effective research and staying up-to-date with the latest developments in their respective fields. The study found that academic staff have a low level of engagement with institutional websites and a moderate level of use of institutional repositories. This indicates that there is potential for universities to enhance the utilization of these resources for research purposes. The first null hypothesis, which proposed no significant influence of information literacy skills on research competence, was rejected. The study revealed a positive and significant relationship between

information literacy skills and research competence among academic staff. The second null hypothesis, which suggested no significant influence of the use of Electronic Information Resources (EIR) on research competence, was also rejected. The findings indicated a positive and significant influence of information literacy skills on research competence. The third null hypothesis was rejected as well, indicating that the combined influence of information literacy skills and the use of EIR has a significant positive impact on the research competence of academic staff in public universities in Lagos State.

In conclusion, this study underscores the importance of information literacy skills and the utilization of Electronic Information Resources for enhancing research competence among academic staff in public universities in Lagos State, Nigeria. It highlights the need for educational institutions to invest in training and resources to further improve research competencies and promote the effective use of information sources and technologies. Additionally, these findings can serve as a basis for developing targeted interventions to empower academic staff with the necessary skills and resources to excel in their research endeavors, ultimately contributing to the advancement of knowledge and academic excellence in the region.

5.3. Recommendations

Based on the findings of the study regarding the research competence, information literacy skills, and the use of Electronic Information Resources (EIR) among academic staff in public universities in Lagos State, Nigeria, several recommendations can be made:

1. Provide training and workshops for academic staff to improve their research skills and competencies. This can include research methods, data analysis, and academic writing.
2. Encourage the continued development and application of information literacy skills among academic staff. This can be achieved through ongoing training, workshops, and resources that promote critical thinking and information retrieval.
3. Increase awareness and utilization of institutional websites and repositories as valuable resources for academic staff. Universities should make efforts to enhance these platforms and ensure that they are user-friendly and up-to-date.
4. Encourage academic staff to incorporate Electronic Information Resources (EIR) into their research and academic activities. Provide access to relevant databases, e-journals, and other EIR, and offer training on how to effectively use these resources.
5. Facilitate collaboration among academic staff within and across departments. Encourage the sharing of research findings, expertise, and best practices. This can foster a culture of learning and innovation.
6. Universities should allocate resources and support for the development of research competence and information literacy skills. This can include funding for research projects, access to academic journals, and dedicated research support services.

5.4. Area for further studies

Based on the findings of the study, there are several areas for further research that could provide valuable insights into the field of research competence, information literacy, and the use of Electronic Information Resources (EIR) among academic staff in public universities in Lagos State, Nigeria. Here are some potential areas for further studies:

1. Conduct longitudinal studies to track the development of research competence and information literacy skills among academic staff over an extended period. This would help understand how these skills evolve and their long-term impact on research productivity.
2. Compare the research competence and information literacy levels of academic staff across different universities in Lagos State or other regions in Nigeria. This can provide insights into regional variations and identify best practices.
3. Evaluate the effectiveness of specific interventions or training programs designed to enhance research competence and information literacy. Assess which types of training have the most significant impact.

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Appendix

Questionnaire

Department of Information Management, Faculty of Communication and Information Science, Lead City University, Ibadan, Oyo State, Nigeria.

Dear Respondent,

I am a Master degree student of the above-named Department and Institution. I seek your indulgence to help attend to this questionnaire to the best of your ability. It's aimed at gathering relevant data on the topic, *Information Literacy Skills, Use of Electronic Information Resources and Research Competency of Academic Staff in Public Universities in Lagos, Nigeria.* Your response is strictly confidential and will be used only for research purposes.

Thanks.

Demographic Profile of Respondents
Section A Demographic Information

1. Name of Institution:

   _____

2. Gender: Male ( ) Female ( )
3. Age group: < 29 years ( ); 30–35 years ( ); 36–40 years ( ); >40 years ( )
4. Year of Experience <5 years ( ) ±5 years ( ); > 5 years ( )
5. Job level: Graduate Assistant , ( ) Lecturer I ( ) ; Lecturer II ( ) ; Senior Lecturer ( ); Associate Professor ( ); Professor ( )

Section B:
What is the level of research competence of academic staff in Public universities in Lagos State?

VHE: Very High Extent ; H E: High Extent ; VLE: Very Low Extent; and LE: Low Extent

S/N	Options	Very High Extent	High Extent	Very Low Extent	Low Extent
	Content Knowledge Skills				
1	I can define the research question in my current field of study.				
2	I understand the relationship between objectives of the study and research questions				
3	I can formulate hypothesis, both null and alternate				
4	I know how to harness my objective of the study with the research findings				
5	I can Outline the specific steps to take to conduct a literature review on my research topic.				
	Methodological Skills				
6	I know What type of research design would be most suitable for investigating research question? (e.g., experimental, correlational, qualitative, mixed-methods, etc.)				
7	I can explain the rationale for selecting the research design mentioned in the previous question above				
8	I can choose and justify the				

	sampling technique for your research study?				
9	I can describe the data collection methods I would use for my research (e.g., surveys, interviews, observations, etc.).				
10	I can ensure the reliability and validity of the data collected?				
	Evaluation				
11	I can plan to address potential biases or limitations in the data analysis process?				
12	I can describe how I would structure and format a research paper to report the findings.				
13	I know how to plan as regards dissemination of my research results to relevant stakeholders or the wider scientific community?				
14	I can discuss the potential implications of your research findings in your field of study or for society as a whole.				
15	I understand how to find out the impact of your research?				
	Operationalization Skills				
16	I know how to set indicators to measure research concepts				
17	I know it is acceptable to use constructs from theories as indicators and measures of concept				
18	I can turn abstract ideas into measurable concepts				
19	I know that operationalization is needed in quantitative studies				
20	I know that operationalization is need in a qualitative study				
	Ethical Consideration skills				
21	I can outline the ethical considerations i need to take into account when conducting research involving human participants.				
22	I know how to obtain and ensure				

	informed consent form participants in my research?				
23	I know the steps to take to protect the confidentiality and anonymity of research participants?				
24	I know how to do in-text citations				
25	I know the implication of plagiarism to my academic reputation				

What is the level of information literacy skills of the academics staff of the Public universities in Lagos State?

TVHE: Very High Extent HE: High Extent; VLE: Very Low Extent LE: Low Extent

	Identify: Able to identify a personal need for information	**Very High Extent**	**High Extent**	**Very Low Extent**	**Low Extent**
1	I can Identify a lack of knowledge in a subject area				
2	I can define research question using simple terminology				
3	I can Articulate current knowledge on a topic				
4	I can Recognise a need for information and data to achieve a specific end and define limits to the information need				
	SCOPE: Can assess current knowledge and identify gaps.				
5	I know what you don't know" to identify any information gaps				
6	I can identify which types of information will best meet the need				
7	I can identify the available search tools, such as general and subject specific resources at different levels				
8	I can identify different formats in which information may be provided				
	PLAN: Can construct strategies for locating information and data				

9	I can define a search strategy by using appropriate keywords and concepts, defining and setting limits				
10	I can select the most appropriate search tools				
11	I can identify controlled vocabularies and taxonomies to aid in searching if appropriate				
12	I can identify appropriate search techniques to use as necessary				
	GATHER: Can locate and access the information and data they need. I Can….				
13	I can use appropriate techniques to collect new data				
14	I can keep up to date with new information				
15	I can engage with their community to share information				
16	I can identify when the information need has not been met				
	EVALUATE: Can review the research process and compare and evaluate information and data				
17	I can assess the credibility of the data gathered				
18	I can read critically, identifying key points and arguments				
19	I can relate the information found to the original search strategy				
20	I can critically appraise and evaluate their own findings and those of others				
	MANAGE: Can organise information professionally and ethically				
21	I can use bibliographical software if appropriate to manage information				
22	I can cite printed and electronic sources using suitable referencing styles				
23	I can create appropriately formatted bibliographies				
24	I can meet standards of conduct for academic integrity				
	PRESENT Can apply the knowledge gained **I can……**				

25	I can use the information and data found to address the original question				
26	I can summarise documents and reports verbally and in writing				
27	I can incorporate new information into the context of existing knowledge				
28	I can communicate effectively using appropriate writing styles in a variety of formats				

Section D:

What is the use Level of use Electronic Information Resources by academic staff of public universities in Lagos State?

	Frequency of Use / **Items**	**Very Frequently**	**Frequently**	**Once a while**	**Not at all**
1	Full-text databases				
2	Online Databases scholarly databases (Ebcohost, Jstor, and so on)				
3	Institutional Websites				
4	Institutional Repositories				
5	Search Engines				
	Purpose of Use	Strongly Agree	Agree	Disagree	Strongly Disagree
6	I use EIR for Research and Academic Purposes				
7	I use EIR for Education and Learning				
8	I use EIR for Communication and Social Interaction				
9	I use EIR for Personal Development and Hobbies				
10	I use EIR for Information Retrieval and Referencing				
11	I use EIR for Publishing my research works				

12	I use EIR because of the several advantages it has like time saving, quick access, comfort of access, abundance of content and so on….				

Bio –Data

Name: **Soliu ADEKANBI**

Date of Birth: **31st December, 1973**

State of Origin: **Lagos State**

Nationality: **Nigerian**

Marital Status: **Married**

Email: **Soliu2020@gmail.com**

Phone Number: **7035614693**

Academic Qualifications (with Dates)

Master –in-Library and Information Science (in view)

Bsc Ed Economics Education	2017
OND Business Administration	1995
Certificate in Information Technology	2011

Institutions Attended (with Dates)

Lead City University, Ibadan, Nigeria	2021 – till date
Ekiti State University, Ado Ekiti, Nigeria	2017
Lagos State Polytechnic, Ikorodu, Lagos	1995
Yaba College of Technology, Iragushi, Epe	2011

_____ _____

Signature **Date**

The University Compliance Certification

This is to certify that this thesis by Abiodun Soliu ADEKANBI with Matriculation number LCU/PG/002567 in the Department of Information Management, Lead City University, Ibadan, has fully complied with the approved university format and style.

Signature	**Date**