ANALYSIS OF GENDER DIFFERENCES IN THE USE OF LIBRARY ELECTRONIC INFORMATION RESOURCES (EIR) IN TERTIARY INSTITUTIONS IN NASARAWA STATE, NIGERIA

LADI B. HABILA

Library Department, College of Education, Akwanga, Nasarawa State, Nigeria.
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ABSTRACT

The study analyses gender differences in the frequency of use of Library electronic information resources such as the Internet, online databases, online public access catalogues, electronic journals, and electronic books, as well as issues that work against students' use of these resources. It also examined the types of electronic information resources used by

Introduction

Libraries are regarded as the information dissemination lighthouses, a vital part of any academic institution, and the centre of learning activities where instructors, researchers, and students can delve into the wealth of available knowledge. As the university's centre of learning, the library has the heavy burden of assisting with research, teaching, and community engagement, particularly within the university. According to Kenchakkanavar, A. Y. (2014) and Kuhlthau, C. C. (2025), the purpose of the library, which is the beating heart of each university, is to assist the academic endeavours of its users, who include students, faculty, and other stakeholders in the advancement of education. The library's provision of information services and resources is crucial for assisting users' academic and research efforts. It obtains and retains information in

students based on gender. The study was conducted in Tertiary Institutions in Nasarawa State. The research employed a survey design, with a population consisting of 5332 undergraduate students at the 300 level; 400 level from Tertiary Institutions in Nasarawa State, Nigeria, and a sample size of 372 undergraduate students selected using proportionate stratified and simple random sampling techniques. The study was guided by seven objectives and corresponding research questions, and five hypotheses were developed and tested at the 0.05 level of significance. A structured questionnaire served as the data-gathering tool. Using the Cronbach Alpha method, the questionnaire's reliability was determined, and a reliability coefficient of 0.84 was found. Frequency counts, percentages, means, standard deviations, and independent t-tests were used to assess the hypotheses at the 0.05 level of significance and to answer the research questions based on the obtained data. The findings revealed a significant difference in the frequency of use of electronic information resources between male and female undergraduate students in tertiary institutions. No significant difference in the use of the internet between the male and female students was observed. The study revealed that there is a gender differences in tertiary institutions' utilization of ICT resources. The study recommends that library administrations should promote female students' interest in using electronic information resources through seminars and workshops. Library staff should also provide digital literacy to help female students to access electronic resources, to enable them enhance their access to electronic resources.

Keywords: Electronic Information Resources, Online Databases, Online Public Access Catalogues, Barriers to Use, Electronic Journals and Books, ICT Resources, Information Literacy, Gender Differences, Digital Literacy.

electronic, audio-visual, and book media (Uganneya & Ugbagir, 2012; Wolverton, Davidson, & Maliheh, 2022).

Since the start of the twenty-first century, university libraries in developing nations like Nigeria have been working to transform from manual process-driven establishments into contemporary ones whose operations rely entirely or partially on applications of information and communication technology. The acquisition,

processing, storage, retrieval, and communication of information in academic libraries in developing nations have all undergone substantial changes due to ongoing advancements in information and communication technology (ICT). The way academic libraries provide information has changed significantly as a result of persistent innovations and advancements in information and communication technology, which has also altered the way the library, which is clearly and strongly positioned in the information management profession, necessitating that library and information workers possess the ICT skills required for the efficient delivery of information services (Tiemo & Ateboh, 2016; Daniels, Wiche, & Nsirim, 2023).

Institutions' libraries have incorporated electronic resources into their collections and enabled remote access to information items to effectively, fulfil the information needs of their patrons, thanks to technological advancements in information and communication. This is the reason Umoh (2017) claimed that acquainting library patrons with the electronic resources available in the library serves as a gateway to all ensuing questions, thereby preparing them not only as self-sufficient users but also as citizens, consumers, professionals, and for leisure purposes.

Information materials in the library that are exclusively accessible electronically through information and communication technology (ICT) facilities are known as electronic information resources or EIRs. Electronic information resources need to be accessed through a computer, or any electronic product that provides a collection of data; these can include full-text databases, electronic journals, image collections, other multimedia products, and numerical, graphical, or time-based information. Bamane (2023) defined electronic information resources as commercially available titles t published to be marketed. E-books, E-journals, Databases, CDs/DVDs, E-conference proceedings, E-reports, E-maps, E-pictures/photographs, E-manuscripts, E-Thesis, E-Newspapers, Internet/Websites-Listserves, Newsgroups, Subject Gateways, USENET, and FAQs are a few examples of the various kinds of electronic information resources. According to Ibrahim (2023), students frequently use the internet, CD-ROM technology, online databases, online public access catalogues (OPACs), electronic journals, electronic books, and digital materials as sources of electronic information. The study will concentrate on undergraduate students in Nasarawa State institutions' use of electronic information resources, including the Internet, online databases, online

public access catalogues, electronic journals, and electronic books. The author believes that these resources are gradually replacing print media because they can offer timely and up-to-date information.

The Internet is a vast network of millions of computers connected by telecommunications devices to exchange information, resources, and data. Platform describes the Internet as a true tool for international online services (Platform, K. A. (2020). Without regard to a person's physical location, the Internet serves as a platform for collaboration and communication between users and their computers (Sunyaev, 2020). The internet presents libraries with a fantastic opportunity to offer value-added services as part of an electronic information resource. The use of the Internet and other network resources is altering how traditional library services are performed. It is increasingly becoming an essential part of the general operations and services provided by libraries and information centres. The internet has evolved into a necessary component for university undergraduates to have access to information.

Another electronic resource library make available to undergraduate students is an online database. An online database can be accessed over the Internet or a local network, as opposed to a local database kept on a single computer or any connected storage (like a CD). The online database serves as a platform for users to look for academic material; it includes many journals from different fields and is accessible online (Azlan, Daud, Zulkifli, Samsuri, Ali & Hussin, 2015). Online databases, according to Islam, A. A., & Sheikh, A. (2020) are structured collections of data where each unit is labelled and described uniformly. These are compilations of digital information sources from different publishers in different areas and fields. Universities typically purchase subscriptions to online databases to assist with student research projects. Online databases, accessed through the Internet, frequently include journal articles or citations. Online databases are used by undergraduate students in universities to fulfil their information needs. The Online Public Access Catalogue is closely associated with online databases.

The public can access the Online Public Access Catalogue (OPAC), a computerised library catalogue that offers bibliographic details on the resources housed inside the library. OPAC, according to Nwobu & George (2024), is a tool that gives users a lot of freedom and alternatives when finding information about library resources by merging two or more bibliographic fields or access points. Aju, D. T., & Tofi, S. T. (2020) cites the following reasons for its significance: it gives consumers greater

access because they can obtain information from any participating library or even conduct an internet search from the comfort of their own home; gives the public direct access to a library's bibliographic database via a terminal that can be searched through a wider range of access points than those offered by a card form catalogue; allows users to search the database using a common command language that they can take with them when they switch libraries; displays search results in an easily comprehensible format; offers helpful links to other databases; and allows multiple users to query the database at once. In this era of information, OPAC helps university undergraduates find information more easily. The electronic journal is another electronic resource that university libraries make available to undergraduate students.

Electronic Journals (e-journals) are journals available only in electronic medium. In general, a journal that is available in electronic form through an online host is called e-journals. E-journals are the simple electronic representation of journals. There is no standard definition available for electronic journals. As a result, they have been called by various names, such as e-journals, virtual journals, paperless journals, online journals, scholarly electronic journals, networked journals, and CD-ROM journals.

Statement of the Problem

Most students pursuing higher education worldwide, especially those attending universities, now use Internet resources daily. The way students learn and engage with others has significantly changed because of useful tools known as electronic information resources. University students find electronic resources appealing for various reasons, including diminishing knowledge production and utilization lag, international cooperation and opinion exchange, increased information sharing, and support for multidisciplinary research. For male and female university students, using electronic information resources is essential, especially when advancing their academic goals. In light of this, comparing genders is necessary to provide a deeper knowledge of how students use technological resources for their academic work.

Over the years, the researcher has noted that gender inequality has been a hot topic of passionate public debate in many areas of life, but especially in education. Gender differences in learning outcomes, information literacy practices, classroom dynamics, instructional strategies, reading habits, and utilisation of

technological resources have all been documented in education. Notwithstanding the breadth of research on gender issues, there are still important gaps in the literature on gender equality and the utilisation of information resources that require further study.

The researcher saw a gender gap in the utilisation of electronic information resources through her interactions with students at Nasarawa State Universities through conferences and workshops. Male students appear to use electronic resources more frequently than female students, which is an indication of a gender disparity. If this remark is accurate, it means that the public's and nation's attention on ending gender disparity and advancing parity will keep getting lost in a maze of confusing issues related to gender equality. Empirical evidence is required to verify the validity of the researcher's observation before recommendations for solutions can be made. Because of this, the researcher plans to look at how gender affects how electronic information resources are used in tertiary institutions in Nasarawa State, Nigeria.

Purpose of the Study

The main objective of this study is to investigate gender analysis of the use of library electronic information resources in Nasarawa State universities.

More specifically, the research aims to:

1. Ascertain the types of electronic information resources used by male and female undergraduate students in universities in Nasarawa State

2. Ascertain how often undergraduate students use the internet in universities in Nasarawa State based on gender

3. Determine how often undergraduate students use the Online databases in universities in Nasarawa State based on gender

4. Find out how often undergraduate students use the Online Public Access Catalogue in universities in Nasarawa State based on gender

5. Investigate how often undergraduate students use the electronic journal in universities in Nasarawa State based on gender

6. Ascertain how often undergraduate students use electronic books in universities in Nasarawa State based on gender

7. Investigate the constraints militating against student's use of electronic information resources in the Universities in Nasarawa State.

Scope

The scope of this study is limited to two Universities in Nasarawa State which are Federal University Lafia and Nasarawa State University, Keffi. Also, the study is limited to undergraduate students in the two universities in Nasarawa State. The study is narrowed to types of electronic information resources used by students based on gender, gender differences in the frequency of use of electronic information resources and problems militating against students' use of electronic information resources. The information resources covered in this study are the Internet, online databases, online public access catalogues, electronic journals and electronic books. The population of the study was confined to all 400-level undergraduate students in universities in Nasarawa State.

Benefits of the Project

The results of this study will be helpful to scholars, university administration, students, and the library. This study aims to raise awareness among students regarding the importance of acquiring the required skills for the efficient use of electronic information resources, regardless of gender. The results of this study will also educate the students on the disparities in how different genders use electronic information resources. The results of this study are anticipated to benefit the university library by improving student use of and acquisition of electronic information resources (EIRs), which will improve research output and give them a competitive advantage over their counterparts from more developed regions of the world. This would make it possible for the university library to address the issues and improve the way that students use e-resources based on their gender.

The link between male and female consumers of electronic information resources at the universities under investigation will be empirically supported by the data presented in this study. This will make it possible for the administration of the university to create plans that will encourage gender parity in the usage of electronic resources inside the institution. This material will be helpful to other researchers, particularly those in the discipline of library and information science, who wish to do additional research in this area of study since it will help address the issue of gender disparities in the use of electronic information resources. The research will also improve discipline in particular curriculum areas.

Beneficiaries will be able to access the study's findings through library exploration because hard copies of the results will be made available at the departmental, college, and university library levels. Additionally, the results will be made available to the public through publication in national and international journals. Through the researcher's blog, online sources will also provide access to the findings.

Methods and Instruments

This section addresses the methodologies that will be applied to the study's execution. The following subheadings will be used to discuss it: Study Area, Research Design, The study's population, samples and sampling strategies, data collection tools, instrument validation, tool reliability, data collection methodology, and data analysis strategies. The instrument for data collection for this study is a self-developed structured questionnaire titled. "Analysis of Gender differences in the use of Library electronic information resources (EIR) in Tertiary Institutions in Nasarawa State, Nigeria".

The questionnaire is divided into five (4) sections: A, B, C D and E. Section A contains 18 items with response options of 'Provided and Not Provided' and will be used to elicit information on the types of reference services provided by university libraries. Section B with 18 items seeks to collect data on the extent of provision of reference services by the university libraries under study. Section C of the questionnaire also with 18 items seeks to elicit information on undergraduate students' level of satisfaction with the reference services provided. Sections D and E have 9 each and seek to elicit information on the challenges that affect the provision of reference services and strategies for enhancing the provision of reference services respectively. On the whole, the questionnaire has a total of 72 items.

Research Design

This study is using a survey research design. A survey design is one in which a subset of individuals or objects is investigated through the collection and analysis of data from a small number of subjects deemed to constitute a representative sample of the total population. Its primary use of questionnaires as a strategy for data collection is one of its unique selling points. Because it is impossible to contact every undergraduate student enrolled in a library at a university in Benue State, the survey research design is best suited for this study. Instead, a

representative sample of the respondents' population will be used to collect data, and the results will be applied to the entire population. Additionally, the only tool used for data collection in this study will be a questionnaire.

Study Area

The study will be carried out in Nasarawa State. Nasarawa State is located at the North-Central Zone of Nigeria with thirteen local government areas. Nasarawa State, with Lafia as the capital, was created in October 1996 and is in the North-central region of Nigeria. It is bounded to the North by the Kaduna State, Kogi State, and the Federal Capital Territory (FCT) Abuja to the West, to the South by the Benue State, and to the East Taraba and Plateau States. Linking all the rural areas and major towns within the state is a network of roads, and the State has three (3) National Senatorial District (South, North, and West). According to the National Population Commission of Nigeria, the estimated population of Nasarawa State as of 2024 is approximately 2.5 million people. Nasarawa State has seven universities which include the Federal University of Lafia, Nasarawa State University Keffi, Bingham University Auta Balefi, Ava Maria University, Piako. Mewar University Masaka, Phoenix University, Agwada, and the National Open University of Nigeria. These Universities also have functional libraries except for the National Open University of Nigeria. The study therefore covered the three universities in the State, the Federal University of Lafia, Nasarawa State University Keffi, Federal Polytechnic, Nasarawa and the College of Education, Akwanga. The reason for choosing Nasarawa state is premised on the ground that the state has the three Tertiary institutions needed to be studied. Secondly, the suitability of Nasarawa State for the study is that the researcher observed during academic activities that undergraduate students in institutions within the state seem to be imbalanced gender wise with reference to Electronic Information Resources (EIR) services provided in the institutions' libraries.

Population of the Study

The population of the study shall be 3,851 library registered 400-level undergraduates in two Universities and 300level students of college of Education, Akwanga. The population comprises 1,342 library registered students from the institutions, 1,711undergraduates and 798 undergraduates and from the two Universities. The 40O level undergraduate students will be used for the study

reason being that they have stayed long enough in the university to be conversant with the library operations and will be easily accessible for the study as they use the library often for their project/research work.

Sampling and Sample Size

The sample size of 372 registered library students in the three universities will be used for the study. This sample size for the undergraduates is determined using the Taro Yamane formula. To arrive at the sample, sampling will be done in multiple stages. In the first stage, the proportionate stratified random sampling will be used to select the sample from the three universities in the state to ensure that, an appropriate and proportionate population of the fourth-year students in the universities were included in the sample. By this method, 126 four hundred level registered library students will be selected in Federal University, Lafia,161 from Nasarawa State University, Keffi and 75 students from College of Education, Akwanga. Finally, the composition of students to be sampled will be done simple random sampling technique. By this method, the researcher will write 'As' and 'Bs' on different pieces of paper and put them in a basket. After thoroughly shaken the basket, the fourth-year students will be asked to pick the paper one after the other as they come to the library. Those who were picked among the students will be used to compose the sample for the study. This will be done to ensure that all the fourth-year registered library students are given an equal chance to be included in the sample.

Reliability of the Instrument

To ensure internal consistency of the instrument, the instrument will be trial tested on 40 four-hundred level students at Nasarawa State University, Keffi, who are not part of the study but possess similar characteristics to the subjects for the study. Data obtained from the trial testing will be subjected to reliability analysis using Cronbach Alpha method, to determine the internal consistency of the instrument. Cronbach Alpha is appropriate because it provides reliability estimates for instruments that take the form of a continuum where there are no wrong or right answers.

Validity and Reliability

Validity refers to how well a test measures what it is purported to measure. To uphold content validity, the study subjected its instruments to discussions with the supervisors who are professionals to ensure the instrument captured the relevant data to achieve the research objectives as well as answer the research question in the study. To avoid instrumentation as a threat to internal validity, the same research team was retained from pilot testing through the life cycle of the study to ensure uniform and consistent administration of questions. The instruments were also taken through pilot testing to improve the efficiency of the research instrument. Reliability deals with the quality of measurement thus it is the "consistency" or "repeatability" of the research measures. Mugenda (2008) states that reliability measures the degree to which a research instrument would yield the same result or data after repeated trials, and is influenced by random errors that may arise from coding, ambiguous instructions, interviewer and interviewee fatigue, and bias among others. Reliability will be done using the pilot test. In this study, reliability testing will be done by using the test-retest method. The questionnaires will be administered to selected four faculty in the Nasarawa State University, Keffi. The questionnaires were administered to the same faculty after 2 weeks.

$R = \sum (y\text{-}Y)(x\text{-}X)$

$R =$ Karl Pearson's coefficient of correlation

$Y =$ Values of the first test

$X =$ Values of the retest

$Y =$ Mean of the first test

$X =$ Mean of retest

$$\frac{}{\sqrt{\sum (y\text{-}Y)^2 \sum (x\text{-}X)^2}}$$

The researcher will obtain a research permit from the Director of Information and Library Studies, Nasarawa State University, Keffi. Rigorous training will then be conducted for the research assistants involving the informed consent process, how to conduct the interviews, data confidentiality, and research ethics. An introduction letter will be attached to the questionnaire to seek permission from respondents to be included in the study. Questionnaires will be administered directly to the respondents as the researcher did the monitoring and status

evaluation of the process. Interview schedules will be administered upon agreement.

Results Discussion of Findings

Based on the findings of the study, the following were discussed.

The first findings of the study revealed that the male undergraduate students had high percentage use of electronic resources like online databases, online public access catalogue, electronic journals and electronic books than their female counterparts except for the internet where utilization among both is 100%. This finding corroborates with that of Thanuskodi (2018) whose study on gender differences in Internet usage among institutions' students reported that, male students used electronic resources such as e-books, e-journals, e-newspapers, online public access catalogue and online databases more compared to their female counterparts. The finding also agreed with that of Ukachi (2013) who reported that the most obvious types of electronic information resources used are internet, E-books, E-journals, OPAC and Databases. As observed by the findings of this study however, the male students use electronic resources like online databases, online public access catalogue, electronic journals and electronic books more than their female counterparts except for the internet.

The second finding of the study revealed that there is no significant difference in the frequency of use of internet among undergraduate students in universities in Nasarawa State based on gender. From the finding, it can be seen that no gender gap exists in the use of the internet among the students. This finding corroborates with that of Ushie, Okworo and Job (2009) who reported that gender did not relate significantly with the use of internet services. The finding however disagrees with that of Steinerova and Sasol (2007) who reported that male students highly prefer the use of internet and other electronic information resources than female students. The finding further disagreed with that of Thanuskodi (2018) who reported a significant difference between male and female students use of internet resources. The finding of the present study as observed could be due to the fact that females now develop more zeal and impetus in their studies, work and responsibilities in new areas of their ventures which had hitherto been male dominated and hence their high use of the internet just as the male students.

The third finding of the study revealed that there is a significant difference in the frequency of use of online databases among undergraduate students in universities in Nasarawa State based on gender. From the finding, it was observed that a gender gap exists in the use of the online databases among the students as the male students use it often compared to that of their female counterparts where the frequency of use is rare. This finding corroborates with that of Gor, Mbwesa and Rambo (2016) whose study titled "determining gender as personal characteristic that influence utilization of online library services by distance students at the university reported that there was no significant relationship between student's gender and utilization of online library resources. The no significant relationship reported by Rambo and Mbwesa (2016) implied that a gender gap existed in the utilization of online library resources among the students and that majority of the male respondents considered using online library services daily, twice and once a week compared to that of their female counterparts. As observed in the present study, the gap that exists is that the male students use online databases often that their female counterparts in universities in Nasarawa State.

The fourth finding of the study revealed that there is a significant difference in the frequency of use of online public access catalogue among undergraduate students in universities in Nasarawa State based on gender. From the finding, it was observed that a gender gap exists in the use of the online public access catalogue among the students as the male students use it often compared to that of their female counterparts where the frequency of use is rare. This finding corroborate with that of Emiri (2015) whose study on influence of demographic factors on Use of Online Public Access Catalogue (OPAC) by Undergraduates in Selected University Libraries in Southern Nigeria reported that more females use the OPAC than their male counterparts. The finding also agrees with that of Ahmad (2022) whose study on gender differences in Students' utilization of electronic information resources reported a significant difference in students' utilization of information resources.

The fifth finding of the study revealed that there is a significant difference in the frequency of use of electronic journals among undergraduate students in universities in Nasarawa State based on gender. From the finding, it was observed that a gender gap exists in the use of electronic journals among the students as the male students use it often compared to that of their female counterparts

where the frequency of use is rare. This finding does not corroborate with that of Yahaya, A. I. (2018) who reported that gender has no significant difference on learners' use of electronic resources. It is important to note that the information resources reported by Yahaya, A. I. (2018) could be in form of electronic journals. As observed in the present study, the male students use electronic journals often than the female students.

The sixth finding of the study revealed that there is a significant difference in the frequency of use of electronic books among undergraduate students in universities in Nasarawa State based on gender. From the finding, it was observed that a gender gap exists in the use of electronic books among the students as the male students use it often compared to that of their female counterparts where the frequency of use is rare. This finding does not corroborate with that of Markauskaite (2006) who reported that no significant gap exists between the male and female level of utilization of electronic information resources. Electronic books as found in the present study could be seen as one of the electronic resources reported by Markauskaite (2006).

Finally, findings of the study revealed that the constraints that militates against students' use of electronic information resources in the Universities in Nasarawa State include lack of awareness, lack of information searching and retrieved skills, unorganized nature and proliferation of electronic information resources, insufficient time, paucity of electronic information resources access points, non-availability of desired electronic information resources, poor network and power failure. The finding agrees with that of Thanuskodi (2018) who reported challenges such as information overload, information pollution, financial barrier and internet illiteracy as constraints to use of electronic resources particularly among the female students. The findings also corroborate with that of Madhusudhan, M., & Nagabhushanam, V. (2012) who reported that the most common problem identified in the use of electronic resources are slow access speed, long time to view/download internet pages, difficulty to get the relevant information and difficulty to make use of e-resources effectively due to lack of proper IT knowledge.

Summary

The survey research design of correlation type will be adopted for this study. The multi-stage sampling techniques will be adopted to select the sample for the

study. A purposive selection of four (4) faculties/schools/colleges (Education, Humanities, Science, and Social Science) was carried out. Lastly, the proportionate random sampling technique using a 20% fraction will be used to select the respondents from the departments in the selected faculties/schools/colleges. Thus, a total of ---- out of ---- will be selected. A questionnaire will be used to collect data. Data collected will be analyzed using descriptive and inferential statistics. The hypothesis will be subjected to inferential statistics using Pearson Product Moment Correlation (PPMC) analysis.

Conclusion

Furthermore, the study finding corroborates with that of Ojokoh and Asaolu (2005) who explored internet access and usage by undergraduate students of the Federal University of Technology, Akure, Nigeria and reported inadequate computers with internet facilities for the use of the students besides inadequate access points inside the university campus. Similarly, the finding also corroborates with that of Adeleke and Emeahara (2016) who reported that interrupted power supply speed and capacity of computers, retrieval of records with high recall and low precision, retrieving records relevant to information need, lack of knowledge of search techniques to retrieve information effectively, non-possession of requisite IT skills and problems accessing the internet affect the use of electronic information resources.

Recommendations

1. Digital literacy training- Offer workshops or online tutorials to enhance female students' digital skills and confidence in using electronic resources.
2. Accessible platforms- Ensure library platforms and resources are mobile-friendly and compatible with various devices.
3. Remote access-Provide remote access to electronic resources to accommodate different learning styles and schedules.
4. Targeted resource curation- Curate electronic resources relevant to female students' interests and research needs.
5. Support services- Offer dedicated support services, such as research assistance or study groups, to facilitate effective use of electronic resources.

6. User feedback mechanisms- Establish mechanisms for female students to provide feedback on electronic resources and services to promote inclusivity.

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