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Gender Differences and Use of Digital Resources in University Libraries in Nigeria

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Abstract

Gender inequalities and the use of digital resources (DR) were investigated among students at the University of Africa (UAT) in Bayelsa State and the Ignatius Ajuru University of Education (IAUE) in Rivers State, Nigeria. The research was directed by two research questions and one hypothesis. Descriptive and inferential statistics were used by the researchers. The study's population comprised 6,500 students from the two universities and the sample size was based on the total number of students who used the digital libraries during the 2020/2021 academic year. The sample size was generated from the students' registration list in the digital libraries. The questionnaire was the instrument used for data collection. Yamane sample size formula was used to determine the sample size which is 696. Data were analysed with frequency counts, simple percentages, and Statistical Product and Service Solutions (SPSS) version 23 was used to generate the mean, and standard deviation, while Chi-Square was used to test the hypothesis at a 0.05 significant level. The results found that the male students used digital resources more than female students. Data were analysed with frequency counts, simple percentages, and Statistical Product and Service Solutions (SPSS) version 23 was used to generate the mean, and standard deviation, while Chi-Square was used to test the hypothesis at a 0.05 significant level. The results found that the male students used digital resources more than female students and the students he questionnaire was the instrument used for data collection, and the Taro Yamane sample size formula was used to determine the sample size which is 696. Data were analysed with frequency counts, simple percentages, and Statistical Product and Service Solutions (SPSS) version 23 was used to generate the mean, and standard deviation, while Chi-Square was used to test the hypothesis at a 0.05 significant level. The results found that the male students used digital resources more than female students and the sample had positive perceptions of the effects of using digital resources. Further analysis using Chi-Square revealed that there is a statistically significant difference in the use of digital resources by gender in the study. The researchers concluded that university libraries should create more awareness and continue to expand and encourage female students to use digital resources to favorably compete with male students to enhance learning outcomes. The libraries should also organise training on how to use digital resources focusing more on female students.

Keywords: *Gender differences, Digital resources, Use, University libraries, Bayelsa and Rivers States, Nigeria.*

Introduction

University libraries are information centres that provide materials to assist their parent body's learning, and research goals. The university library is regarded as the most important resource centre because it provides relevant and current resources for faculty members' research and teaching, as well as for students learning and their general interests. Due to the rapid growth of electronic publishing, library collections that previously comprised printed items are rapidly changing. The majority of university libraries have expanded their collections to incorporate digital resources, giving students access to global resources for learning and research (Ebijuwa, 2018). Because it provides students with much-needed comfort, ease, and timely information for studying, completing academic tasks, and conducting research, digital resources have become a vital aspect of library collections (Mawere and Sai, 2017).

Digital resources (DR) are those that can only be accessed through the use of Internet-connected devices. It also refers to materials that are available in an electronic version. Websites, databases, e-books, e-reports, online course content, and educational films are just a few examples. Digital resources are widely accessible via computers and handheld mobile devices, and they cover a wide range of topics (Ebijuwa, 2018). Digital resources are effective research tools that can help students learn more deeply and improve their academic performance. They are handier than print resources because they allow users access to materials that might otherwise be unavailable to them owing to geographical restrictions, financial constraints, or other factors (Lo et al., 2017; Anunobi and Okoye, 2008). Students can access digital content from anywhere, and they can use the same resources at the same time. Various university libraries, without a doubt, invest heavily in the provision of digital materials and associated computer-based technology to support students' learning and research activities. Both male and female students are required to use these resources equally.

Gender refers to the social characteristics and opportunities that come with being a man or a woman. Gender, according to Moser (2011), is a socially created relationship between men and women that should be at the centre of development efforts. Gender disparities in higher education, technology use, employment, and societal roles, among other things, have been a topic of public debate. Gender is a common topic of study in technology-related research, with known disparities between boys and girls in terms of engagement style and frequency and length of use of digital resources (McFarlane et al., 2002; McFarlane, et al., 2000). According to Sobieraj and Krämer (2019), research on technology use and acceptability has revealed that women and men use technology differently and have distinct self-perceptions about it. Women and men interact with technology in different ways, according to studies, with women having fewer capacities and displaying less enthusiasm for using computers than males (Hargittai and Shaw, 2015; Van Deursen et al., 2015; Imhof et al., 2007). Gender role beliefs, according to which women are supposed to be less interested in and less competent in using technology than males, have been proposed as possible explanations for these inequalities (Morahan-Martin and Schumacher, 2007).

Many studies have examined the topic of gender inequalities among students' attitudes towards library resources, and gender has been highlighted as one of the factors influencing students' attitudes towards digital resources and information-seeking methods. Gender is connected with the use of digital resources, according to Manda and Mukangara (2007), with male students being more likely to use digital resources than female students. Waldman (2003) noted that gender is a relevant factor in the use of electronic databases, and the ability to use a computer system is one of the factors that influence students' use of digital resources. He claimed that students who are unfamiliar with computer systems will have a tough time using the digital resources available to them. Female library users have substantially lower skills and use of computer self-efficacy (CSE) than their male counterparts, and consequently employ technology at a far lower rate (Venkatesh and Karahanna, 2014).

One of the repeating themes in the low use of digital resources, according to Tella and Mutula (2008), is a lack of appropriate competencies, with females being more affected than males. Jenson (1999) found that women's lack of computer

experience was a significant factor in shaping their attitudes and fears about computers. This could be due to gender roles imposed by various cultures, which have led many women to believe that technology and its application are only for men. If this is correct and the trend continues, male students will continue to outnumber female students in the usage of digital resources for academic, research, and other purposes.

The use of digital resources, on the other hand, is gender-neutral, as both male and female students require it for learning and research purposes. As a result, both genders are required to learn the necessary skills to effectively use digital resources to improve their academic performance. Because of the potential benefits and the availability and capabilities of modern technology for enabling their use, a significant amount of money has been invested in purchasing and storing various types of digital resources in university libraries (Goncalves et al., 2007; Kennedy, 2004; Miller-Francisco, 2003). This has resulted in the growth of digital resources and the creation of digital libraries (Raza and Nath, 2007; Santos et al., 2007; Kahl and Williams, 2006; Koh and Kim, 2004). As a result, a greater knowledge of gender disparities in the use of these key resources is required. This aids the library in better comprehending the needs and expectations of users when it comes to using digital resources (Deng, 2010). Specific strategies and policies for improving the use of digital resources can be developed as a result of this understanding. It is on this note, therefore, that this study investigated gender differences and the use of digital resources in university libraries in Nigeria.

Objectives of the Study

The main objective of this study is to examine gender differences and the use of digital resources in university libraries in UAT and IAUE, Nigeria. The specific objectives are:

- To determine gender differences in the use of digital resources
- To ascertain the students' perceptions of the effects of using digital resources

Research Question

- What are the gender differences in the use of digital resources?
- What are the students' perceptions of the effects of using digital resources**?**

Hypothesis

- There is no significant difference between gender and the use of digital resources**.**

Literature Review

Several studies have been conducted on gender differences and the use of digital resources. Some of the research in this area has yielded mixed results. Based on their conclusions, these studies can be divided into two groups. The first group of studies confirms that gender is connected with the use of digital resources, with male students using digital resources the more. On the other hand, the second stream of research suggests that female students used digital resources more than males. A review of some of these investigations is offered in this section.

For instance, Bassi and Camble (2011) did a study on gender inequalities in the use of digital resources at university libraries in Adamawa State, Nigeria. The study population comprised 5,269 students, and 1,053 students were used as samples. The data collected were analysed using descriptive and inferential statistics (t-test), and the study found that there is a statistical difference in the use of digital resources between male and female students, with male students using digital resources more than female students. There have been similar findings in other studies. For example, Buba et al. (2018) examined gender inequalities in the use of digital resources by undergraduate students in university libraries in Jigawa State, Nigeria. The study employed analytical survey research, with a sample of 380 drawn from a population of 1,905 registered undergraduate students in the libraries. The findings of the study revealed that male and female undergraduate students use digital resources differently, with male students using them more than female students . In another study by Ebijuwa (2018) on gender differences in the use of digital resources by students at a few private Nigerian universities. The study used a descriptive survey design with a population of 4,452 undergraduate students, and data was collected using a questionnaire, Cross Tab

Analysis (Pearson Chi-Square), and a T-test were used to analyse it. The result of the analysis revealed that gender had a substantial impact on students' use of digital resources. Bassi and Camble (2011) did a study on gender inequalities in the use of digital resources at university libraries in Adamawa State, Nigeria. The population of the study comprised 5,269 registered library users with a sample size of 1,053 students. The study discovered a statistical difference in attitudes regarding the use of digital resources between male and female students, as the male students used digital resources more than female students and the female students had more trouble locating information online. Ahmad and Muneebulla (2016), in their study on gender differences in the use and awareness of digital resources, found that male students have better computer experience than female students.

However, some studies have found that female students used digital resources more than males. In a study by Deng (2010) on the new patterns and trends in the use of digital resources in higher education in Australia. The online survey was done at a university with approximately 57,000 students, and the study found that females (55.7%) used digital resources more than males (44.3%). In a similar study, Hohlfeld et al. (2013) examined gender disparities in Information and Communication Technology (ICT) literacy among 1513 students from Florida public schools. The results of the t-test statistical analyses show that females had a considerable advantage in all areas. In perception measures of frequency of computer use, perceived ICT skills, and attitudes towards computers, females had higher factor scores. Furthermore, female students scored much higher on the student tool for technology literacy, a performance-based evaluation, in all six sections. These findings contradict several empirical research studies that show males outperform females in ICT skills and have a more positive attitude towards computers. In contrast, Bamidele and Adekanmbi (2019) discovered that there is no basis for gender differential in the use of digital sources because the gender gap in the use of digital resources appears to be insignificant among undergraduates at a few universities in southwest Nigeria. Ogunbodede and Oribhabor (2022) did a study on digital resource use and academic performance of undergraduate students at the University of Africa, Toru-Orua, Bayelsa State, Nigeria. The finding revealed that the students mostly used Internet resources and had a positive perception of the impacts of digital resource use.

However, some of the reviewed studies are similar to ours in the sense that they all studied gender differences and the use of digital resources. The studies are also similar to our study because they all investigated undergraduate students. The studies are, however, different from our study because they all used the questionnaire as the instrument for data collection while our study generated data from the students' registration lists in the digital libraries. The studies are also different from our study because most of the studies used Cross Tab Analysis (Pearson Chi-Square), and T-test to test the hypotheses, while our study used Chi-Square (non-parametric) to test the hypothesis. The sample size of our study is also larger than each of the reviewed studies. As a result, all the reviewed studies created a gap by using the questionnaire to elicit responses from the respondents, which may produce dishonest answers. My study, however, fills this gap because the data was generated from the registration lists of actual users of digital resources in the two digital libraries, which is not based on the opinions of users. This study, therefore, extends the scholarly conversation and agrees with other authors who indicated that there is a statistically significant difference in the use of digital resources by gender.

Methodology

The study employed both descriptive and inferential statistics. In the 2020/2021 academic session, the study's population comprised 1500 and 5000 students from the University of Africa (UAT) in Bayelsa State and the Ignatius Ajuru University of Education (IAUE) in Rivers State. The sample size was based on the total number of students who used the digital libraries during the 2020/2021 academic year. The sample size for Research Question 1 was calculated based on the student registration lists in the digital libraries. For Research Question 2, the questionnaire was the instrument used for data collection, and the Taro Yamane sample size formula was used to determine the sample size, which is 696. The response to each of the items was weighted on a 4-point Likert-type scoring scale. The respondents

were free to choose Strongly Agree (SA) = 4 points, Agree (A) = 3 points, Disagree (D) = 2 points, and Strongly Disagree (SD) = 1 point. From the scale, a criterion score of 2.5 was adopted. The criterion score was obtained as follows: Criterion score = (4+3+2+1)/4 = 2.5. For Research Question 2, a mean response of less than 2.5 was classified as "negative perceptions," while a mean response of 2.5 or more was classified as "positive perceptions. Data were analysed with frequency counts, and simple percentages, and Statistical Product and Service Solutions (SPSS) version 23 was used to generate the mean, and standard deviation, while Chi-Square was used to test the hypothesis at the 0.05 level of significance. The results are presented in the tables below.

Results

The findings of the study are presented in the following tables with explanations.

Research Question 1:

What are the gender differences in the use of digital resources in IJAT and IAUE?

Table 1: Gender Differences and Use of Digital Resources in the University of Africa

Rows	Gender	Frequency	Gender	Frequency	Total
Row 1	Male (UAT)	1546 (69%)	Female (UAT)	710 (31%)	2256
Row 2	Male (IAUE)	1784 (64%)	Female (IAUE)	986 (36%)	2770
	Total	**3330**	**Total**	**1696**	**5026**

Table 1(Row 1) shows that 1546 (69%) of the students were male while 710 (31%) were females. Table 1 (Row 2) shows that 1784 (64%) of the students were male while 986 (36%) were female. This implies that the male students mostly used digital resources in the two university libraries during the 2020/2021 academic session.

Research Question 2:

What are students' perceptions of the effects of using digital resources?

Table 2: Students' Perceptions of the Effects of Digital Resources' Use

S/N	Perceptions of Students	SA	A	D	SD	Mean	Standard Deviation
1.	My use of DR influences my performance in the examination	397	263	24	12	3.5	0.65
2.	My use of DR increased my research productivity	402	264	30	–	3.5	0.57
3.	My use of DR influences my performance in the in-class test	355	325	9	7	3.4	0.57
4.	My use of DR assists me with current literature	242	416	25	30	3.2	0.61
5.	My use of DR has improved my level of literature search	262	379	55	–	3.2	0.60
6.	My use of DR influences my performance in seminar writing and presentation	204	360	113	19	3.0	0.74
7.	My use of DR influences my performance on an in-class assignment	163	373	145	15	2.9	0.72
	Grand Mean					**3.2**	**0.63**

Table 2 shows the students' perceptions of the effects of using digital resources. The Table shows that items 1–7 have mean values that are above the criterion mean of (2.5). More so, the grand mean (3.2) is greater than the criterion mean (2.5), which implies that all the respondents have positive perceptions of the effects of using digital resources.

Hypothesis:

There is no significant difference between gender and the use of digital resources.

Table 3: Differences between gender and use of digital resources

Variable	Observed N	Expected N	Chi-Square Value	Df	p-value	Remark
Male	3330	2513.0	531.228	1	0.000	Significant
Female	1696	2513.0				

$\alpha = 0.05$

Table 3 shows the difference between male and female students' use of digital resources in UAT and IAUE. The table shows a p-value of 0.000. Testing the hypothesis at 0.05, the p-value is less than the alpha value of 0.05. This means that the null hypothesis is rejected. Therefore, there is a statistically significant difference between male and female students' use of digital resources at UAT and IAUE.

Discussion of Findings

Research question one revealed that in both universities, male undergraduate students largely accessed digital resources more than their female counterparts. Manda and Mukangara (2007) stated that gender is connected with the use of digital resources, with male students being more likely to use digital resources than female students. Waldman (2003) noted that the ability to use a computer system is one of the factors that influence students' use of digital resources and that female library users have substantially lower skills and use of computer self-efficacy than their male counterparts, and consequently employ technology at a far lower rate (Venkatesh and Karahanna, 2014). As a result, it can be claimed that male students have a high degree of digital literacy and are comfortable with computers, the Internet, and the use of digital resources. The finding is in agreement with that of Buba et al. (2018), who found that male and female undergraduate students use digital resources differently, with male students using them more than female students. Research question two established that students have positive perceptions of the effects of using digital resources. Students believed that using digital resources influenced their performance in the examination, in-class test, and assisted them with current literature, among others. According to Pardada et al. (2019), younger users who are more computer knowledgeable tend to have more positive attitudes regarding digital reading because they typically have the necessary expertise and knowledge of digital texts. This finding conforms to Ogunbodede and Oribhabor (2022), who found that students' had a positive perception of the usefulness of digital resources. The test of the hypothesis also revealed that there is a statistically significant difference between male and female students' use of digital resources in the study. This finding is in agreement with that of Ahmed (2015) and Ebijuwa (2018), among others, who indicated that there is a statistically significant difference in the use of digital resources by gender. The outcomes of this study suggest that gender differences still exist in the use of digital resources.

Conclusion and Recommendations

The study's findings show that male undergraduate students in the two institutions used digital resources more than female students; students have positive

perceptions of the effects of using digital resources; further analysis using chi-square also revealed that there is a statistically significant difference in the use of digital resources by gender in the two university digital libraries. The researchers concluded that the university libraries should create more awareness and continue to encourage female students to use digital resources to favourably compete with male students and enhance learning outcomes. The libraries should also continue to expand access to digital resources and organise training on how to use digital resources, focusing more on the needs of female students.

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