

Full Length Research Paper

Gender differences in information retrieval skills and use of electronic resources among information professionals in South–western Nigeria

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Accepted 11 June, 2013

The study investigated the gender differences in information retrieval skills and use of electronic resources based on a sample of 175 information professionals surveyed in academic libraries in South - western Nigeria. The sample was selected from a population of 250 information professionals using a simple random sampling technique. Data for the study were collected by using structured questionnaire. Descriptive statistics of frequency counts, simple percentages and inferential statistics of t-test and correlation analysis were used for data analysis. The findings did not reveal that gender differences exist between male and female information professionals on the basis of acquisition of information retrieval skills. Similarly, there was no statistically significant difference in respondents' use of electronic resources. However, the study showed that male professionals revealed a slightly higher mean score on their use of electronic resources. The paper discussed implications of these results on staff's development and capacity building in library and information centres with respect to ICT skills acquisition especially in a gender -sensitive environment.

Key words: Information retrieval, skills acquisition, use of electronic resources, information professionals, South western Nigeria.

INTRODUCTION

Information and communication technology is pervasive in every area of human activities. It has become a potent force in the transformation of social, economic, and political life, globally. It affects the way we think, live, communicate and share information. Information professionals in academic libraries are regarded as the gatekeepers of knowledge. In most cases, they are expected to impart information literacy skills to library users' community especially the faculty members who basically are researchers. Their information delivery capacity is the function of availability of the resources and their competence in the use of the resources even now that many libraries in Nigeria are currently experiencing a

transition from print to electronic collections. As provision of access to electronic information is becoming increasingly popular in academic libraries, it is necessary to have a better understanding of the information retrieval skills of information professionals and their use of e-resources. Electronic resources utilised by information professionals in Nigerian academic libraries include the non paper – based electronic information formats like CD-ROM , the Internet, and all web –based resources which offer a variety of reference and literary sources. These electronic resources provide off-line and online access to information, by CD-ROM databases, Internet, as well as online databases. Examples are: CD ROM

databases, OPAC, E-JOURNALS, E-BOOKS, OARE, EBSCOHOST, JSTOR, DOAJ, AJOL, etc. Generally, these resources can be accessed on the World Wide Web, over the library network and from stand alone terminals.

LITERATURE REVIEW

Gender, as a possible factor influencing the use of electronic information resources and ICT, has been widely identified in the literature. Yet, Steinerova and Susol (2007) have noted that research on gender differences still remains open. The literature is also replete with studies on human information behaviour which shows tendencies of men and women to manifest differences in their characteristics when using digital resources. In spite of this, studies on gender based differences among Nigerian Information Professionals as pertaining to use of electronic resources appear to be little or non-existent.

A better understanding of the concept of gender could be gained in social psychological literature where the physical, mental and social differences of men and women have been discussed. Furthermore, findings of some empirical studies have shown that differences could manifest in the patterns of male and female use of ICT and electronic resources. For example, Fisher et al. (2005)'s studies have shown that research of human information behaviour addresses questions of different cultural and social contexts, work tasks, domains, or information grounds. Losh (2003)'s and Fallows (2005)'s studies reveal that gender differences exist in the use of Internet between men and women. The longitudinal study of Pew Internet and American life project reported by Fallows (2005) has shown that women appreciate especially the communicative features of the Internet, while men are more likely to use online transactions, get information, play games and use entertainment. Similarly, Steinerova and Susol (2007) assert that gender as a cultural and social construction of a personality can be manifested in qualities and behaviour of men and women. Lending credence to this assertion, they have reported that women use the Internet slightly less than men; they show higher proportion of rare use and non use of electronic resources and a lower proportion of frequent use. However, the study by Alshankity and Alshawi (2008) which examined the gender differences in Internet usage among faculty members in Saudi Arabia did not see a significant gender difference in the overall Internet usage.

The gender differences in the use of electronic resources observed between male and female also reflect in the use of computer technology. For example, Enochsson (2005) has shown that the socio-cultural background of gender still leaves women with more computer anxiety and feelings of lower self-efficiency. In

line with these findings, Tella and Mutulu (2008) noted that one of the recurring themes in underutilization of ICTs is the lack of relevant competences with females often cited as more affected than males. Similarly, Jenson (1999) reported computer inexperience for female use as an important factor in determining their attitude and anxieties towards computers.

Information professionals in academic libraries are gatekeepers of information. Apart from their widely acknowledged role of information service delivery, they are supposed to promote the use of the library electronic resources by designing and organizing training programmes for the library patrons. Thong et al. (2002) express the same feeling by their remark that, 'given the growth of digital libraries in recent years, it is important for practitioners and researchers to understand what can be done to increase usage and make digital libraries more effective'.

Training the faculty members the use of electronic resources should not be gender biased. Both male and female information professionals should be competent enough to participate in skill acquisition trainings organized for the faculty members and demonstrate proficiency in the use of the electronic resources subscribed to by the library. This will provide a platform for them to interact with the patrons and identify their areas of need in the information seeking process. In this regard, Schilling (2012) asserted that library-based training allows librarians-educators to interact with students, promote information literacy skills development, encourage the use of appropriate resources, and alleviate library anxiety. The same idea reinforced in Andaleeb and Simmonds (1998) and Ren (2000) noted that students who meet with academic librarians or participate in library trainings display more positive attitudes about libraries, and are more confident about their abilities to conduct research and use information tools. How would this be possible if female and male information professionals lack the literacy skills and competency for using the electronic resources? Schilling (2012) also emphasized this fact in his assertion that regardless of what method is used to deliver instruction, however, the goal remains for librarian-educators to develop relevant, curriculum-integrated 'point-of-need' information skills training and educational tools.

Developing information technology skills and competency in using electronic resources transcends gender boundary as both sexes need skills to navigate the information landscape. Although there are studies in the literature that report gender differences in attitude, usage level, and experiences in the use of ICT and electronic resources by different professionals, there appears to be no or scanty empirical research carried out to establish this assertion especially on information professionals in South-western Nigeria. This study is therefore significant because it will generate a better understanding of gender equality or disparities in the context of acquisition

of information retrieval skills and use of electronic resources among information professionals in academic libraries in South-western Nigeria. Findings of the study will also inform and influence policy formulation targeted at staff training, development and capacity building in Nigerian academic libraries. The findings also have significant implications for information dissemination services and systems in Nigerian academic libraries, especially in South-western Nigeria.

The general objective of the study is to establish the differences, if any, that exist between male and female information professionals based on information retrieval skills and use of electronic resources. The specific objectives are to:

- i. find out difference in the use of electronic resources between male and female information professionals in academic libraries;
- ii. determine gender differences in information retrieval skills between male and female information professionals;
- iii. measure relationship, if any, between information retrieval skills and use of electronic resources of male and female information professionals in academic libraries in South-western Nigeria;

Hypotheses for the study were tested at 0.05 level of significance

H01. There is no significant gender difference in the use of electronic resources between male and female information professionals in academic libraries.

H02. There is no significant gender difference between male and female information professionals in acquisition of information retrieval skills.

H03. There is no significant relationship between information retrieval skills and use of electronic resources of male and female information professionals in academic libraries.

RESEARCH DESIGN

This study is a descriptive survey research of the ex-post facto type. It is aimed at eliciting information on gender differences between male and female information professionals in selected academic libraries in South-western Nigeria.

Population and sampling technique

The study population comprised 250 information professionals (Library and Information Science Professionals) in academic libraries in South-western Nigeria. The simple random sampling technique was used to select a sample size of 175 of the information professionals from selected academic libraries representing 70% of the population.

Research instrument

Gender differences in information retrieval skills and use of

electronic resources questionnaire tagged GDIUER scale were the main research instrument used for data collection. The questionnaire was divided into four sections. Section A deals with personal data of the respondents. These include: age, gender, educational qualification, length of service, and professional status. Section B of the questionnaire deals with availability of the electronic resources. It is a 12-item scale developed by the researcher. The respondents responded on a four-point Likert type scale (4 = Readily Available, 3 = Available, 2 = Occasionally Available, 1 = Not Available). The reliability coefficient is 0.69. Section C of the questionnaire is the Information Retrieval Skills of Electronic Resources. It is a 8-item scale designed to elicit information on the information retrieval skills of the information professionals. The response format ranged from 5 = Very Good to 1 = Very Poor. The reliability coefficient is 0.91 using cronbach - alpha method. Section D deals with Frequency of Use of Electronic Resources. The response format ranged from Daily = 6 to Never = 1. The reliability coefficient is 0.95 using cronbach - alpha method. Data collection for the study lasted for four weeks. Descriptive statistics of percentages, means, frequency and inferential statistics such as correlation analysis, and students' t-test were used for data analysis with Software Package for Social Sciences (SPSS)

Data collection procedure

Data were collected by administration of 175 copies of questionnaire to randomly selected information professionals in academic libraries in South-western Nigeria through professional colleagues working in the selected academic libraries. Out of the copies distributed, 150 copies were returned giving a response rate of 85.7%.

Data Analysis

The data collected were analyzed based on the research hypotheses.

Demographic characteristics of the respondents

The data analyzed showed that 84 (56.0%) were males while 66 (44.0%) were females. This implies that there are more males than females that participated in the research by responding to the questionnaire administered. Out of the 175 respondents, 51 (34.0%) had librarianship as their subject background; 40(26.7%) had Arts; 27(18.0%) had Sciences; 17(11.3%) had education as their subject background. Majority of the respondents 62 (41.3%) had spent 1–5 years in service; 27(18.0%) had spent 6–10 years, 20 (13.3%) had spent 11–15 years. The remaining 41 (27.3%) had spent above 20 years in the library service.

Testing hypotheses

H01 states that: There is no significant gender difference in the use of electronic resources between male and female information professionals in academic libraries. T-test analysis was computed. Table 1 shows the findings.

Table 1 shows that there is no statistically significant difference in the use of electronic resources of male and female information professionals sampled in the study ($t=1.46, df=148$; $p>0.05$ level of significance). However, male professionals showed a slightly higher mean score of 40.44 on their use of electronic resources as shown in Table 1. The null hypothesis is therefore not rejected. H02 states that: There is no significant gender difference between male and female information professionals in acquisition of information retrieval skills. T-test analysis was computed. Table 2

Table 1. T – test comparison of the use of electronic resources of male and female information professionals.

Gender	N	X	SD	t.cal	t.critical	DF	P	Remarks
Male	84	40.44	16.79	1.46	1.96	148	.148	N.S
Female	66	36.79	13.70					

Not significant at $P > 0.05$.

Table 2. T – test comparison of information retrieval skills of male and female information professionals.

Gender	N	X	SD	t.cal	t. crit.	DF	P	Remarks
Male	84	29.82	5.19	.592	1.96	148	.555	N.S
Female	66	29.29	5.84					

Not significant at 0.05 level of significance

Table 3. Relationship between information retrieval skills and use of electronic resources.

Variable	N	X	SD	r	P	Remarks
Information retrieval skills	150	29.59	5.47			
Use of electronic resources	150	38.83	15.32	0.53	0.000	Sig.

Correlation is significant at 0.05 level of significance.

shows the comparison between the information retrieval skills of male and female information professionals.

Table 2 shows the finding that there is no significant gender difference between male and female information professionals in acquisition of information retrieval skills ($t=0.592, df=148; p>0.05$). The hypothesis is thus not rejected.

H03 states that: There is no significant relationship between information retrieval skills and use of electronic resources of male and female information professionals in academic libraries.

Table 3 presents the summary of test of significance of relationship between information retrieval skills acquisition and use of electronic resources by both sexes.

Using Pearson correlation statistical analysis, as shown in Table 3, the mean score of information retrieval skills of male and female information professionals is ($X = 29.59, SD = 5.47$) while the mean score of their use of electronic resources is ($X = 38.83, SD = 15.32$). It is very glaring from Table 3 that there exists a positive significant correlation between information retrieval skills acquired by the two sexes and their use of electronic resources ($r = 0.531, P < 0.05$). The hypothesis is therefore rejected.

DISCUSSION OF FINDINGS

Several studies on gender issues especially studies on use of ICT, access to Internet, computer and Internet competencies based on gender have established gender inequalities. While some of the findings of this study upheld earlier findings, some findings are in sharp contrast to what is revealed in the literature of gender studies.

Firstly, it is clear from the findings of this study that

there was no statistically significant difference in the use of electronic resources on the basis of gender. However, male professionals showed a slightly higher mean score on their use of electronic resources. The findings of this study corroborate Alshankity and Alshowi (2008) which showed no significant difference in Internet usage among faculty members in Saudi Arabia. A much related finding is revealed in Igun (2010) who reported that there is no significant difference in the challenge encountered by librarians in South-south Zone of Nigeria in their utilization of ICT due to gender. However, this study's finding contradicts several findings in the literature which reveal gender – specific inequalities in the use of electronic resources like Internet. For example, Winker (n.d) reported that studies carried out in various contexts reach the unanimous conclusion that men use the Internet more frequently and for longer periods than women. Ikolo (2010)'s study on gender differences based on use of electronic resources revealed that the gender digital divide is manifested in the low number of female users of ICTs compared to men. But on the contrary, Ikolo and Okiy (2012) found that females use Internet more than males in their study on gender differences in computer literacy among medical students in selected Southern Nigerian universities. Also, Bassi and Camble(2011) reported that there exists a statistical difference between males and females in using electronic resources as females have more difficulty in finding information online than males. Bimber (2000)'s study on the use of Internet

has also shown that gender is a decisive factor for frequency of use.

Based on the findings of this study, there should be no basis for gender-specific division of labour, nor room for preserving gender roles. Equal opportunity in training should be given to male and female information professionals to develop skills in information use and retrieval.

This study also found that there was no significant gender difference between male and female professionals in information retrievals skills. This finding support Winker (n.d) that reported that there are no indications as yet of unequal skills between men and women in gender-neutral applications such as online research. According to him, in areas which are strongly attributed to one gender, initially perceived difference in skills can become entirely relative if the whole extent of usage is taken into account.

An important finding of this study is the significant positive correlation between the information professionals' information retrieval skills and their use of electronic resources. This finding supports the assertion of Waldman (2003) who reported that the faculty members use of electronic resources was influenced by such factors as computing skills of academics. Zin et al. (2000) also noted that knowledge, skill and competence with computer technology are now vital assets for all employees in institutions and organizations. This finding implies that the use of electronic resources by information professionals would improve as their acquisition of information retrieval skills improve. By this, their frequency of use of the resources would increase.

Implications of the findings for Nigerian Academic Libraries and Information Centres' Policy Formulation on staff training and capacity building

This study was motivated by the need to find out if gender differences that exist among professionals in the use of and access to ICT and electronic resources as widely revealed in the literature can be established among the male and female information professionals in South-western Nigeria. Specifically, the research was conducted to determine if there are gender differences in the use of electronic resources and information retrieval skills of male and female information professionals in South-western Nigeria.

The findings of this study have justified the common practice in Nigerian Library and Information Centres whereby gender as a variable is not always considered a significant factor and criterion in determining fitness for recruitment, opportunities for training, improved education and capacity building in an ICT environment. This study has provided empirical information that will support and justify the drive for gender equality and eliminate gender disparities that may want to raise its ugly head

in Nigerian academic libraries. This implies that there is no basis for gender stereotype as regards ICT policy formulation vis – a –vis staff training and development in our libraries and information centres.

Conclusion

From the findings of this study, it has become clear that there is no basis for gender stereotype in Nigerian Library and Information Centres. Both sexes (males and females) must be accorded the same priority in the scheme of things especially on issues related to opportunities for enhancement of capacity through ICT skill acquisition and training. This is because the tested hypotheses revealed that there were no significant gender differences in the use of electronic resources and acquisition of information retrieval skills among the two sexes.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations were proffered:

1. Equal and more opportunities should be provided to both sexes in form of training and education for information professionals to acquire knowledge and ICT skills so that they can be more effective in information service delivery.
2. Gender should not be a factor to consider at the point of determining the personnel for capacity building and development in Nigerian library and information centres.
3. Government and University management should make more relevant electronic resources available in academic libraries and encourage usage of the resources by removing all obstacles to accessibility.
4. All library and information science professionals should show more positive attitude toward ICT skill acquisition so as to improve their usage of electronic resources and also to become more relevant in the school ICT curriculum design and implementation.

REFERENCES

- Alshankity Z, Alshawi A (2008). Gender differences in internet usage among faculty members: The case of Saudi Arabia. The paper appears in: Hum. Syst. Int. conference. pp.27-37.
- Andaleeb SS, Simmond PL (1998). Explaining user satisfaction with academic libraries: Strategic Implications. Col. Res. Lib. 5(9&2):156-167.
- Bassi MD, Camble E (2011). Gender differences in use of electronic resources in University Libraries in Adamawa State, Nigeria. Available at <http://digitalcommons.unl.edu/cgi/viewpoint>.
- Bimber B (2000). Measuring the gender gap on the internet, Soc. Sci. Q. 81(3):868-876.
- Enochsson A (2005). A gender perspective on internet use: consequences for information seeking. Inform. Res. 10(4):237.

- Accessed from :<http://informationr.net/ir/10-4/paper237.html>.
- Fallows D (2005). How women and men use the internet. Washington, D.C.: Pew Internet and American Life Project. Available at <http://www.pewinternet.org/pdfs/pip-WomenandMen.pdf>.
- Fisher KE, Erdelez S, Mckechnie L (2005). Theories of information behaviour. Medford, N.J: Information Today.
- Igun SE (2010). Challenges posed to Nigerian University librarians by the utilization of information communication technology (ICT). Comkujikkmu.: J. Lib. Info. Sci. 12(1):9-20.
- Ikolo VE (2010). Gender digital divide and national ICT policies in Africa. In Adomi E.E. Handbook of research in library and information science. London: IGI publications.
- Ikolo VE, Okiy RB (2012). Gender differences in computer literacy among clinical medical students in selected Southern Nigerian Universities. <http://www.webpages.uidaho.edu/Ombolin/ikolo>.
- Jenson J (1999). Girls ex-machine: A school-based study of gender culture and technology. A ph.D thesis, Simon Fraser University.
- Losh SC (2003). Gender and educational digital gaps: 1983-2000. IT and Soc. 1(5):56-71. Available at <http://www.stanford.edu/group/siqss/itandsociety/v01i05/v01i05a04.pdf>.
- Ren WH (2000). Library instruction and College student self-efficacy in electronic information searching. J. Acad. Lib. 26(5):323-328.
- Schilling K (2012) – Information retrieval skills development in electronic learning environments: the impact of training method on students' learning outcomes, information usage patterns, and attitudes. IADIS Int. J. WWW/Internet. 4(1):27-42.
- Susol J, Steinerova J (2007). User's information behaviour – a gender perspective. Infor. Res. 12(13). Available at <http://www.informationr.net/ir/12-13/paper320.html>.
- Tella A, Mutula SM (2008). Gender Differences in computer literacy among undergraduate students at the University of Botswana: Implications for library use. Malay. J. Lib. Info. Sci. 13(1):59-76.
- Thong J, Hon W, Tam K (2002). Understanding user acceptance of digital libraries: What are the roles of interface characteristics, organizational context, and individual differences. Int. J. Hum. Commun. Stud. 57(3):215-242.
- Waldman M (2003). Freshmen's use of library electronic resources and self efficacy. Info. Res. 8(2), paper no 150. Available at <http://information.W.1996.net/ir/82/paper150.html>.
- Winker G n.d. Internet research from a gender perspective. Searching for differentiated use patterns. http://www.tu_harburg.de/agentec/winkerker/pdf/InternetResearch.pdf.
- Zin NAM, Zaman HB, Judi HM, Mukti NA, Amin HM, Sahran S, Ahmad K, Ayob M, Abdulla S, Abdullah Z (2000). Gender, differentiated in computer literacy level among undergraduates students in university Kebangsaan Malaysia (UKM) The Electronic Journal on Information Systems in Developing Countries 1(3):1-8 Retrieved November 16, 2007 from <http://www.eiisd.org>.

QUESTIONNAIRE

Dear Respondent,

This questionnaire is designed to collect data on Librarians' Use of Electronic Resources. Kindly respond to the items by ticking the appropriate options. All responses will be used for research purposes.

Thank you

S.O. Akande

Section A: BIODATA

1. Name of Library-----
2. Gender: a. Male b. Female
3. Age: a. 21-25 b. 26-30 c. 31-35 d. 36-40 e.41-45 f.46 and above
4. Highest educational qualification. a. M.L.S b.M. Inf.Sci c. PGDip Lib Sci d. M.Ed e. M.A f. Ph.D g. Others
5. Subject background: a. Arts b. Sciences c. Librarianship d. Social Sciences e. Education f. Engineering g. Law h. medicine .
6. Length of service. a. 1-5 years b. 6-10 years c. 11-15 years d. 16-20 years e. 21-25 f. 26-30 g. 31and above
7. Professional status a. Assistant Librarian b. Librarian II c. Librarian I d. Senior Librarian e. Principal Librarian f. Deputy University Librarian g. University Librarian .

SECTION B:AVAILABILITY OF KEY ELECTRONIC RESOURCES IN LIBRARIANSHIP

8. Please indicate the extent to which relevant information in Librarianship in these electronic resources are available for your use by a tick.

E-RESOURCES	Readily Available	Available	Occasionally Available	Not Available
CD-ROM databases				
Electronic Catalogue(OPAC)				
E- Journals				
E-books				
OARE				
EBSCOHOST				
JSTOR				
INTERNET				
DOAJ				
AJOL				
Wilson Web Omnifile				
Wikipedia				

9. To what extent are the electronic resources in librarianship available for your use?

- a. Very well
- b. Well
- c. To some degree
- d. Badly
- e. Not at all

10. What are the factors influencing your use of electronic resources?

- a. Ease of access
- b. Usefulness
- c. Ease of use
- d. Reliability
- e. Quick response time
- f. Physical comfort
- g. Access to a wide range of information

11. What do you consider as barriers to your effective use of electronic resources?

- a. Lack of information retrieval skills [] b. Difficulty in finding relevant information [] c. Slow access period [] d. Lack of access to internet []
 e. Frequent power outage [] f. Cost of access to Internet too high []
 g. Lack of relevant electronic resources in Librarianship []

SECTION C: INFORMATION RETRIEVAL SKILLS

12. Please rate your knowledge of the following skills as: 5 Very good; 4 Good; 3 Averages; 2 Poor; 1 Very poor.

S/N	Skills	Very good	Good	Average	Poor	Very poor
1.	Use of Boolean Operators(OR, AND, NOT)					
2.	Access of On-line databases					
3.	Scanning images					
4.	Download files from On-line databases					
5.	Copying information into your storage device like flash drive					
6.	Burning information into CD'S					
7.	Searching the electronic catalogue(OPAC) through the author, title and shelf searches					
8.	Use of search engines like Google Scholar, Yahoo,Alta Vista etc					

SECTION D: USE OF ELECTRONIC RESOURCES

13. Please indicate your frequency of using these electronic resources and databases when searching for information in Librarianship for research purposes.

E-Resources/databases	Daily	Twice a week	Once a week	Twice a month	Occasionally	Never
1. CD- ROM databases in Librarianship						
2. Internet						
3. Electronic Catalogue						
4. E-Books						
5. E-Journals						
6. AJOL						
7. OARE						
8. Wikipedia						
9. EBSCOHOST						
10. JSTOR						
11. Wilson Web Omnifile						
12. DOAJ						
13. ERIC						
14. Others						

14. Where do you usually use the electronic resources?

- a. Library [] b. University ICT Centre [] c. Cybercafe [] d. At home []