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## **Determining the Differences in Gender Usage of Computers in Nigeria (Pp. 301-314)**

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### **Abstract**

*The study was aimed at determining the gender differences in computer usage among students in Nigeria. The study was a survey and was conducted using forty male and forty female business education students from the four tertiary institutions in Anambra State. Three research questions and three null hypotheses tested at 0.05 level of significance were developed to guide the study. Data collected using a well structured questionnaire were analyzed using simple percentage, mean ratings and inferential t-test statistics. The results of the study revealed among other things that more female students made use of computer than males. However, both male and female students make regular visits to websites for academic information. The study also revealed that female students preferred educational and programming computer related jobs to hi-technical and field computer jobs which male students preferred most. However male and female students have high preference for managerial related computer jobs and show less interest in*

*low position computer related jobs. It was recommended that every individual should be computer literate because time will come when it would become impossible for one to secure a good job if one is not computer literate.*

## **Introduction**

The entire world has gone global. The way we talk, communicate (either oral or written) have completely changed. What is behind these changes is the influx of computer development. The eighteenth and nineteenth centuries were periods of analog computers. Today, we are in the digital age with lap top computers, notebook computers, mobile telephones, the mini computers etc. today it takes one less than six seconds to send messages to people using search – light energy via e-mail. In short, we have today more communication media- the facsimile, fax, text messages, e-mails than ever before in human history.

Computer, according to Ikeadim (2008) is a versatile electronic tool that enables its user to perform a wide range of tasks quickly, easily and effectively. As a device for information systems, the computer creates, stores, retrieves and transfers vital information in today's education, business and economic activities that permeate many aspects of our lives. Stair and Stair (2002) maintain that computer and systems technology have redefined the structure of business organizations - the way we do businesses, the type of jobs we hold, and the nature of work itself.

In his own remark, Ayo (2001), stresses that information technology industry is grappling with how to shed its image as a group of geeks and nerds order to attract the bright young people needed to fill thousands of job openings in the labour market. Computer jobs indicated in the job index include business application programmer, Chief Information Officer (CIO), Chief Technology Officer (CTO), Computer Facilities Planner (CFP), Computer Operations Management (COM) etc.

This therefore indicates that whatever one does today must reflect current situation. Oladipo (2006) stresses that the use of computer is no longer a means to an end but an end itself. Azuka (2005) and Umezulike (2008) also maintain that the use of computer protocols (precisely internet) has turned out to be the world's most powerful communication and global partnership for developmental tool. People, especially the youths, now use it as their favourite channel for researching, business transactions, and consummation of relationships. Azuka (2005) went further to stress that the more

experienced students are in utilizing the computer facilities, the more they are powerful in editing mechanisms and word processing. Hence, youths use computers in planning their essays and making structural revisions that would have been more painfully done visiting the libraries. Even the adults have become so engrossed with the web. They spend a whole day browsing and searching for information. Yates (2009) maintains that one with global telephone can reach any destination within a second.

Going further, Yates (2009) stresses that technologies of writing has changed our written and understanding of language in journals, textbooks, e-mails etc. Rapid changes in interaction and technology as indicated by Yates include: social networking (Web 2.0), collaborative and competitive gaming, public and private institutional personal push, location doing identify etc.

Seeing the apparent manner information and communication technologies are creeping into every sphere of human endeavours, it becomes inevitable that every individual must be computer literate. Every individual must have the ability to communicate using computers in order to function well in their jobs, educational endeavours and whatever field one finds oneself in the society. Yates (2009) submissions show that the possibility of Obama winning the presidential seat of United States of American was his abilities to use new media of texting messages to friends, relations, the publics etc. through on-line processes.

Luck (1999) in his view maintains that the knowledge and use of computers makes students autonomous in learning. With the new technology, students are better positioned to make valued judgments about their progress and to monitor their own learning needs. Furthermore, students are offered access to a wide repertoire of higher order knowledge, accessible representations, and rich contexts that facilitate the activation of relevant knowledge (Perkinson, 2005). In fact, new technology has actually changed the way we entertain ourselves, bring in line huge transactional audience, long tale economies, downloading of music through international websites etc.

In the area of teaching and learning, the teacher as an educationist, researcher, as well as an academia, should make academics viable through on-line education. Hence, Goggle scholar website provides easy access to every student as many on-line books, journals, articles etc. as possible.

Today, there are more mobile phones than the number of people. A person can have up to four mobile sets with different networks. Almost everyone

makes use of the mobile phone. Mobile phones have even made people to stop the use of diaries because every information is stored in the set with even reminders.

The current changes in the communications industry have called the attention of many researchers to determine which of the gender groups most frequently make use of modern technologies in attending to their daily needs.

A study by Yates (2009) shows that women write text messages more than men. The ratio of telephone usage among women and men stood at 75:68. His study shows that men's messages tend to be very short and functional but that of women are very lengthy with many mixed words. Leon and Leon (1999) in their study on computer job opportunities observed that women have been very successful in the computer field. The entry of women into the computer field is easy because of the demand. Hence, opportunities exist more for women as data entry operators to learn and train programmers, and advance in the business world. A study by the American Association of Women in the mid 1990s revealed that women held only one fifth of the hi-technology jobs with the number of computer related jobs awarded to women. In fact, less than 30% of all computer related degrees were awarded to women. Stair and Stair (2002) attribute the poor number of women taking up computer related jobs to their perception that computer jobs are boring and lonely rather than their ability to succeed in mathematics and the sciences.

Other factors that may have been working against women taking up computer careers/jobs according to Stair and Stair (2002) include:

- perceived discrimination against single women, working mothers or older women
- stress while working in a rapidly changing industry.
- ending balancing work with family life.

Since the afore empirical reviews concern the gender usage of computer facilities and employment in computer related jobs in United Kingdom and United States of America which are developed countries, the researchers therefore deemed it fit to carry out a related study in Nigeria, a developing country.

### **Purpose of the Study**

The main objective of this study was to determine if there is any difference in the usage of computers by male and female students in tertiary institutions. Specifically, the study sought to find out, if male and female students in tertiary institutions differed:

1. In their usage of computer systems in school.
2. In surfing the website for academic information
3. In making computer related career choices.

### **Research Questions:**

The following research questions guided the study:

1. To what extent do male and female students differ in the use of computers in school?
2. To what extent do male and female students differ in the use of Internet websites for academic information?
3. What computer related careers are desired most by male and female students?

### **Research Hypotheses**

The following research hypotheses were postulated to guide the study:

1. There is no significant difference in the rate male and female students make use of computers in school.
2. There is no significant difference in the use of the internet websites by male and female students for academic information.
3. Significance difference does not exist in the choice of computer related careers/jobs among male and female students in tertiary institutions in Nigeria.

### **Method**

Survey research design was used for the study. The study was carried out in tertiary institutions in Anambra State of Nigeria using male and female students who are enlisted for business education. The institutions offering business education are four in number, namely: Nnamdi Azikiwe University, Awka; Nwafor Orizu College of Education, Nsugbe; Federal College of Education Technical (T), Umunze and Madonna University, Okija.

The population of the study was made up of 150 final year NCE students and 160 final year degree students drawn from the four tertiary institutions offering business education in Anambra State of Nigeria.

Stratified sampling technique was adopted in selecting ten male and ten female students from each of the institutions under study. This gave a sample size of 80 respondents.

A structured questionnaire was the major instrument used for data collection.

Eighty copies of the questionnaire were delivered personally by the researchers to the respondents. Copies of the instrument distributed were collected the same day to ensure a 100% return rate.

The data collected from the respondents were analyzed using simple percentage for research questions 1 and 2 while mean ratings is use for research question 3 for easy interpretations. Items that fall below 50% or 3.0 were taken to be unacceptable while those that ranged from 50% or 3.0 and above were found to be acceptable.

In testing the hypotheses, t-test statistics was used. If the calculated t-value was less than t-critical (table) value at 0.05 level of significance, the hypothesis was accepted. If however the t-calculated value was greater than t-table value, the hypothesis was rejected. Where the t-calculated value equals the t-critical value, the hypothesis is said to be perfect and also acceptable.

### **Results of the Study**

**Research Question 1:** *To what extent do male and female students differ in the use of computer in schools?*

Table 1 shows that 24 or 60% of the male students made daily use of computers in their schools while 16 or 40% of the males students reluctantly made use of computers. Also, 34 or 85% of the female students frequently made use of computers while 6 or 15% of the female students sometimes made use of computers in their schools.

It can be seen from the table that more female students make daily use of computers.

**Research Questions 2:** *To what extent do male and female students differ in the use of the internet websites for academic information?*

The ratings of male and female students in Table 2 are almost the same as far as visiting the websites is concerned. A total of 36 or 90% males and 34 or

85% females indicated their interest in regular visits to computer websites for academic information. On the other hand, only 4 or 10% males and 6 or 15% females do not have interest in visiting the websites. This shows that male and female students do not differ in their visits to computer websites for academic information.

**Research Question 3:** *What computer related careers are desired by male and female students?*

Table 3 shows that women preferred secretarial and instructional aspects of computer related jobs and show less interest in technical and field works/jobs; while males prefer more of technical and field related jobs and showed less interest to secretarial and instructional jobs. However, both male and female students have the same high and low interest in managerial and low position computer related jobs respectively.

**Hypothesis 1:** *There is no significant difference in the rate male and female students make use of computers in school.*

Table 4 indicates that the t-calculated value was 4.23 while t-critical value was 1.96 at 0.05 significance level. As the t-calculated value was greater than t-critical value, the null hypothesis is rejected. The t-test analysis shows that great difference exist between male and female students' mean ratings regarding how often they use computer in school.

**Hypothesis 2:** *There is no significant difference in the use of the internet websites by male and female students for academic information.*

Table 5 indicates that the t-test value was 0.625 while t-critical value was 1.96 at 0.05 significance level. As the t-calculated value was less than t-critical value, the null hypothesis is accepted. The t-test analysis proved that there is no significant difference between the male and female students ratings of their regular visits to computer websites.

**Hypothesis 3:** *Significant difference do not exist in the choice of computer related careers/jobs among male and female students in tertiary institutions in Nigeria.*

Table 6 shows that the t-calculated value was 1.81 while the t-critical value was 1.96 at 0.05 level of significance. As t-calculated value was less than the t-critical value, the null hypothesis is accepted. This shows that no significant

difference existed between male and female students in choosing computer related careers.

### **Discussions of the Findings**

The study has revealed that more female students made use of computers in their schools. This was in line with the views of Leon and Leon (1999) who stated that women have been very successful in computer field. This is true because computer operations involve more secretarial, and clerical skills and almost every establishment preferred more females than males to do secretarial and clerical works. (See Table 1)

Table 2 provides information on research question two regarding the extent male and female students made use of the websites for academic information. The study revealed that there was equality in the internet usage between male and female business education students. This goes contrary to Yates (2009) submission that more females write text messages (which are in form of visiting websites) than males. The reason for this equality in visits to the websites by male and female business education students as disclosed in the study might be as a result of the students' search for data for their assignments and research works. Similarly, almost every student today sends and receives mails through e-mail services. Students even stay a whole day chatting with friends as well as sending mails to their penpals.

The study also revealed that female students indicated more interest in secretarial, programming and educational computer related jobs and showed little interest in technical and field related computer jobs. Males were seen to be more interested in technical and field related computer jobs. This is in line with the study by the American Association of Women in the mid 1990s which revealed that women held only one fifth or below 30% of the hi-technology jobs. Stair and Stair (2002) maintain that women were scared from hi-technology computer related jobs because they saw them (computer jobs) to be boring and lonely. However, this present study revealed that both male and female business education students in Nigeria showed high interest in managerial computer related jobs. The researchers' belief is because everyone wants to be at the head of affairs. On the other hand, no one wants to be servant to others. Thus, it was revealed from the study that the respondents showed less interest in taking up low position aspect of computer related jobs.

Concerning the test of hypotheses, it was revealed that a great difference existed in the rate male and female business education students made use of

computers in their schools. This is an open evidence as more females are seen in offices performing computer operations and other related secretarial and programming services.

The study also revealed that no significance difference existed in the use of internet websites by male and female students for academic information. The result highlights true position of things as both male and female students do a lot of browsing in order to seek solutions for assignments, carry out research work, send e-mails, transact businesses, chat with friends, connect pen friends etc. This was in line with the views of Azuka (2005) and Umuezulike (2008) that youths use computer websites as their favourite channel for researching, business transactions and consummation of relationships.

It was also revealed that both male and female business education students have high interest in choosing computer managerial jobs and less interest in low position computer jobs. This is true because women nowadays claim to have equal rights with men.

### **Conclusion**

Every individual is expected to be computer literate irrespective of ones age, educational background, business positions etc. This will enable one obtain quick information, solve and settle problems arising from education, economic and business engagements.

### **Recommendations**

The following recommendations were given:

1. Students who do not have interest in using the computer should be encouraged to build up the interest for their own good. This is because if one is not computer literate, a time comes when it would be impossible for one to secure good jobs.
2. Male students should be encouraged to take up computer instructional jobs as their absence in schools could result in increase in indiscipline and abuse of powers between students and instructors.
3. There is need to strictly monitor the rate at which students visit to internet websites. This is avoiding the abuse and part of the student. Such abuse may be engaging in dubious dealings, internet dating and pornography.

Table 1: Respondents responses as regards how often they use computers in their schools

Response Categories/Percentages

Gender	Very High Extent	(%)	High Extent	(%)	Low Extent	(%)	Very Low Extent	(%)
Males	14	35%	10	25%	14	35%	2	5%
Females	24	60%	10	25%	4	10%	2	5%

Table 2: Respondents' responses as regards the extent students differ in the use of internet websites for academic information.

Response Categories/Percentages

Gender	Very often	(%)	Often	(%)	Not often	(%)	Not very often	(%)
Males	26	65%	10	25%	4	10%	0	0%
Females	24	60%	10	25%	4	10%	2	5%

Table 3: Respondents' responses of their interest in choosing computer related careers/jobs.

		Male			Female		
		Fx	$\bar{X}$	Decision	FX	$\bar{X}$	Decision
1	Business Applications Programmer	128	3.20	A	124	3.10	A
2	Computer Information Officer (CIO)	132	3.30	A	136	3.40	A
3	Chief Technology Officer (CTO)	132	3.30	A	136	3.40	A
4	Computer Equipment Repairer	130	3.25	A	102	2.55	A
5	Computer Facilities Planner	134	3.35	A	132	3.30	A
6	Computer Engineer	136	3.40	A	132	3.30	A
7	Computer Engineer Associate	100	2.50	D	110	2.75	D
8	Computer Engineer Senior	140	3.50	A	124	3.10	A
9	Computer Graphics Programmer	134	3.35	A	120	3.00	A
10	Computer Instructor	112	2.80	D	144	3.60	A
11	Computer Operations	106	2.65	D	144	3.60	A

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	Manager						
12	Computer Operator	102	2.55	D	144	3.60	A
13	Computer Operator Lead	104	2.60	D	144	3.60	A
14	Computer Operator Trainee	106	2.65	D	144	3.60	A
15	Computer Programmer	122	3.05	A	136	3.40	A
16	Computer Consultant	140	3.50	A	124	3.10	A
17	Data Center Operator Manager	140	3.50	A	128	3.20	A
18	Date Communications Analyst	130	3.25	A	134	3.35	A
19	Data Communications Manager	136	3.40	A	140	3.50	A
20	Data Entry Operator	100	2.50	D	130	3.25	A
21	Data Entry Lead	112	2.80	D	124	3.10	A
22	Data Entry Trainee	104	2.60	D	144	3.60	A
23	Data Entry Supervisor	96	2.40	D	126	3.15	A
24	Data Processing Supervisor	120	3.00	A	126	3.15	A
25	Data Services Specialist	112	2.80	A	126	3.15	A
26	Data Storage Technician	128	3.20	A	96	2.40	D
27	Data Base Manager	128	3.20	A	126	3.15	A
28	Data Base Librarian	122	3.05	A	128	3.20	A
29	Data Base Programmer	122	3.05	A	128	3.20	A
30	Director of Mgt Information Systems	144	3.60	A	144	3.60	A
31	Computer Educator	84	2.10	D	144	3.60	A
32	Enterprise Resource Planning System	134	3.35	A	124	3.10	A
33	Entrepreneur Franchisee	130	3.25	A	124	3.10	A
34	Entrepreneur Independent	140	3.50	A	124	3.10	A
35	Field Service Manager	140	3.50	A	98	2.45	D
36	Fields Service Representative	124	3.10	A	96	2.40	D
37	Information Center Management	136	3.40	A	124	3.10	A
38	Information Manager	140	3.50	A	128	3.20	A
39	Information Services Executives	136	3.40	A	130	3.25	A
40	Information Systems Auditor	138	3.45	A	132	3.30	A
41	Mgt. Information Systems Analyst	138	3.45	A	132	3.30	A
42	Mgt. Information System Manager	138	3.45	A	132	3.30	A
43	Manager of Computer	138	3.45	A	132	3.30	A

	Operations						
44	Mgr. Of Operating Systems Programme	138	3.45	A	132	3.30	A
45	Marketing Manager	130	3.25	A	124	3.10	A
46	Managers of Operations	124	3.10	A	124	3.10	A
47	Marketing Representative	120	3.00	A	100	2.50	D
48	Network Administrator	140	3.50	A	132	3.30	A
49	Network Analyst	140	3.50	A	132	3.30	A
50	Network Engineer	140	3.50	A	132	3.30	A
51	Operating Systems Programmer	120	3.00	A	134	3.30	A
52	Peripheral Equipment Operator	130	3.25	A	98	2.45	D
53	Personal Computer Manager	138	3.45	A	136	3.40	A
54	Personal Computer Programmer	120	3.00	A	144	3.60	A
55	Production Control Clerk	80	2.00	D	120	3.00	A
56	Production Control Supervisor	126	3.15	A	120	3.00	A
57	Production Control Trainee	124	3.10	A	120	3.00	A
58	Programming Manager	124	3.10	A	138	3.45	A
59	Sales Representative	130	3.25	A	90	2.25	D
60	Service Manager	128	3.20	A	102	2.55	D
61	Software Engineer	134	3.35	A	120	3.00	A
62	Software Services Representative	134	3.35	A	120	3.00	A
63	Systems Analyst	138	3.45	A	122	3.05	A
64	Systems Analyst Junior	100	2.50	D	96	2.40	D
65	Systems Analyst Senior	128	3.20	A	120	3.00	A
66	Systems Analyst programmer	124	3.01	A	120	3.00	A
67	Systems Support Analyst	140	3.50	A	124	3.10	A
68	Systems Support Specialist	138	3.45	A	124	3.10	A
69	Web Master	138	3.45	A	128	3.20	A
70	Word Processor	120	3.00	A	138	3.45	A

Table 4: The t-test analysis of male and female students regarding their usage of computers in school

Gender	N	$\bar{X}$	$S^2$	Df	t-cal	t-crit	Level of sig.	Decision
Male Students	40	2.65	1.13	78	4.23	1.96	0.05	Reject
Female Students	40	3.75	0.20					

Table 5: t-test analysis of male and female students visits to the websites for academic information.

Gender	N	$\bar{X}$	$S^2$	Df	t-cal	t-crit	Level of sig.	Decision
Male Students	40	3.55	0.45	78	0.625	1.96	0.05	Accept
Female Students	40	3.40	0.74					

Table 6: t-test analysis of male and female students' choice of computer careers

Gender	N	$\bar{X}$	$S^2$	Df	t-cal	t-crit	Level of sig.	Decision
Male Students	40	3.11	1.15	78	1.81	1.96	0.05	Accept
Female Students	40	3.15	0.90					

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