

FROM UNEQUAL ACCESS TO DIFFERENTIATED USE: A SURVEY ON DIGITAL INEQUALITY

Bishir Bala¹; Abubakar Tijjani Ibrahim²; Kabiru Idris Muhammad³ and Murtala Sani⁴

¹Nigerian Television Authority, Katsina.

² Department of Arts and Humanities, School of General Studies, Kano State Polytechnic.

³ Department of Arts and Humanities, School of General Studies, Kano State Polytechnic.

⁴ Department of Arts and Humanities, School of General Studies, Kano State Polytechnic.

ABSTRACT

In exploring many of the divides that constitute the digital divide, this study examines the influence of gender in the Internet usage patterns of students of tertiary institutions in Katsina State-Nigeria. Using stratified proportionate sampling, 377 respondents were chosen as the sample size of the study. Questionnaire was used to collect data from the respondents of the study which was subsequently analyzed using the SPSS software. Findings of the study reveal that the students are heavy Internet users (with usage rate of up to 98.13%). It also discovers several differences in the students' internet usage patterns. It reveals that male students (58.82%) use the Internet more than female students (41.18%). Findings of the study further indicate that female respondents mainly use the Internet for social networking while male students primarily use it for academic related purposes. It found that the gender differences in the students' Internet usage patterns are as a result of disparities in income, age, and educational attainment. The study recommends among other things, that a similar study be conducted on students of other tertiary institutions to see how the findings can be similar or different to this one.

Keywords: Internet usage, gender digital divide, students of tertiary institutions

INTRODUCTION

In the history of humankind, few technologies have resulted in such widespread social, economic and political change within a very short period of time as the Internet. Growing nearly 900 per cent from 400 million in 2000 to 3.5 billion users today, the Internet has revolutionized the media of mass communication (Global Internet Report, 2017).

The Internet is a vast global network of networked computers that connects hundreds of millions of people from around the world and provides them with quick access to information and knowledge. Also referred to as the network of networks, the Internet is a virtual world of information, communication, entertainment and commerce, with text, pictures and sound (Hafner & Lyon, 1996). More than anything else, the Internet has transformed the lives of billions of people – it represents a gateway to new ideas and opportunities, a means of empowerment, a driving force for innovation, and increasingly, sustainable growth (Broadband Commission for Digital Development, 2013). Even more interesting, access to the Internet enables the exercise of fundamental human rights such as freedom of expression and even helps eradicate poverty. For instance, research shows that for every ten people who gain access to the Internet, about one person gets lifted out of poverty and one new job gets created (Zuckerberg, 2015).

The Internet began in the 1960s when ARPANET (Advanced Research Project Agency Network), an experimental computer network established by the United States Department of Defense was set up to build a system that would decentralize communication network (Colley & Matlby, 2008). By the late 1980s, the Internet was being used by many governments and educational institutions (Harry, 1998). In the early 1990s public use of the Internet increased dramatically and since then, it continues to grow extensively in its availability, connectivity and geographic distribution.

Due to the several advantages the Internet offers to the process of teaching and learning, it is now being widely used by students of higher education. This is because the Internet provides quick and easy access to a wide variety of scholarly publications. Consequently, the Internet has become an important source of knowledge for students in institutions of higher learning in many societies around the world. In fact, several studies have established the fact that the most conspicuous users of the Internet are adolescents, particularly students of higher education (Ofodu, 2012; Khausar & Zobia, 2006; Omotayo, 2006).

Rai (2014) concurs with the above view and posits that the Internet has become a way of life for students of higher education. He argues that for most of them, it has become a means through which they get information about their studies and complete a wide variety of projects. Prensky (2001, p. 4) vividly captures this scenario by describing modern day students of higher education as “digital natives” for as he says “they are living their entire lives surrounded and immersed within the digital media” whether at home, on campus or on the go.

However, despite this excessive and exponential growth in Internet access and usage among students of higher education, and the increasingly recognized role of the Internet in

promoting development, it is becoming clear that Internet access and usage are unevenly distributed among males and females, based on unequal access to technologies and knowledge skills needed to drive optimal benefit from using them (see for example Funmilayo, 2013; Li, & Kirkup 2007). Supporting this view, Bujala (2012), Wong & Hanafi (2007) and Ono & Zavodny (2003) note that gender is the most frequently observed dimension of inequality in Internet usage.

This phenomenon of unequal access to and use of the Internet has been typically coined as the “digital divide”. According to Lucky & Achebe (2013), the term “digital divide” was initially used to refer to the disparity that exists in access to computers and related technology. The term was later redefined to include the gender and socio-economic gap between communities that have access to the Internet and those who do not have (OECD, 2001). In a nutshell, digital divide is the term used to describe the patterns of unequal access to and use of information and communication technologies, such as computers and the Internet, whether based on income, race, ethnicity, gender, age and/or geographical location that surfaced in the mid-1990s (Mossberger, Tolbert & Stansbury, 2003). Against this backdrop, this study investigates the influence of gender in the Internet usage patterns of students of tertiary institutions in Katsina State.

RESEARCH QUESTIONS

The main aim of this study is to examine the influence of gender in the Internet usage patterns of students of tertiary institutions in Katsina State. Specifically, the study raises the following questions:

- i. What is the extent of Internet access among students of tertiary institutions in Katsina State?
- ii. What gender differences exist among students of tertiary institutions in Katsina State in how they use the Internet?
- iii. What are the reasons for the gender differences in the Internet usage patterns of students of tertiary institutions in Katsina State?

THE CONCEPT OF DIGITAL DIVIDE: AN OVERVIEW

Several scholars have given different definitions of the concept of digital divide. Mehra (2002) defines it simply as the troubling gap between those who use computers and the Internet and those who do not. According to Kruger (2004), digital divide is the term that is used to characterize the gap between information haves and have-nots. Annan (2001, p. 45) puts this disparity into focus, particularly with regards to Internet accessibility around the world in the following lines:

Today, there are almost as many [Internet] hosts in France as in all of Latin America and the Caribbean, and there are more hosts in Australia, Japan and New Zealand than in all the other countries in an Asian Pacific Region combined. Perhaps most telling, there are more hosts in New York than in all of Africa.

The exact origin of the digital divide is unclear, but it became popular after National Telecommunications and Information Administration (NTIA) used the term to describe differences in computer and Internet access in its 1998 report titled *Falling through the Net: A Survey of the "Have Nots" in Rural and Urban America* which revealed inequalities in access to personal computers and the Internet among the American population (Mossberger, Tolbert & Stansbury, 2003).

Since it came into popular parlance and scholarly literature in the 1990s, the term "digital divide" has been used to refer to a wide variety of inequalities, including differential access to, contact with, and use of ICTs across nations as well as between social and demographic groups within individual countries (Willis & Tranter, 2006).

EMPIRICAL REVIEW

Studies related to digital divide in Internet usage have continued to trigger an unprecedented interest to mass media researchers in recent years. In fact, such studies have become something like a growth industry, with an enormous output of publications. For instance, Thanuskodi (2013), an associate professor and head of Library and Information Science Department, Alagappa University, Karaikudi, India, examined gender differences in Internet usage pattern of male and female students of the Alagappa University. Results of his study suggested that the students are not predominantly divided by gender when it comes to Internet usage. This is because results of his study showed that both genders were found to have equal access to the Internet, although differences were noticed in terms of the purposes for which the students use the Internet.

In a study titled "Gender Assessment of Computer and Internet Usage among Student-Teachers in Ekiti Tertiary Institutions", Adebo, Adekunmi, and Daramola, (2013) examined the use of computer and Internet resources among 240 student-teachers randomly selected from the Ekiti State University and College of Education, Ikere. After analyzing the data collected using survey questionnaires, authors of the study reported that irrespective of gender, the students of Ekiti State University, have more access to, and make more frequent use of Internet resources than their counterpart at the College of Education, Ikere. Overall, the study indicated that male students make use of the available Internet resources more than female students.

Funmilayo, (2013) investigated gender differences in the use of academic resources in FUTA University library. After collecting data from 600 randomly selected respondents over the period of six months, results of the study showed gender differences in age, marital status, internet access, and use of advisory services in the library. Men within the age of 30-56 years used library resources than women of the same age; higher percentage of married men used library facilities more than married women. Also young and mature men utilized internet facilities, e-books and reference books more than women. There is no significant difference in the use of textbooks and library loans by both genders. However, most women utilized advisory services compared to men. Fiction and nonfiction magazines such as Tell were patronized more by women than men. To bridge the gap between men and women

differences in the use of academic resources, the study recommended that women should be acquainted with internet facilities to move with the current information and communication technology wave.

Similarly Bujala, (2012) in her analysis of the results of the Polish Internet Project conducted in 2011, found gender differences both in the intensity of Internet usage and the purposes for which it is used. She reported that women spend less time online, have shorter experience online and express less openness towards online relationships or services. In the analysis, Bujala observed that the main difference in the kinds of activities undertaken online concerns entertainment with majority of men engaging much more often in activities such as playing games, listening to music or the radio, watching films or looking for humorous content than women do. However, Bujala posited that the gender differences are not “dramatic, indicating the small size of the ‘gender gap’ among Polish Internet users” (p. 49).

After measuring the differences in men’s and women’s Internet usage patterns in the United States, Bimber (2000) discovered the existence of gender gap in their usage habits. He concluded that women, compared to their male counterparts, are substantially less likely to be frequent Internet users, equally likely to be infrequent users and more likely to be intermediate users. Bimber further observed that the gender gap in access to and use of the Internet is as a result of socio-economic and other gender specific factors.

On a final note, most recent studies, especially from the more digitally advanced, western countries, (e.g. Hu, et al, 2014; Thayer, 2013, etc.) show a reduction in the differences between males and females with regard to computer and Internet usage, with some authors even announcing that the once stark gender gap with respect to the Internet and related new media technologies has vanished. These new findings have made the gender patterns in the adoption and use of new technologies “more complicated, and suggests the dynamic nature of the relationship between gender and Internet usage (Bujala, 2012, p. 50)”.

THEORETICAL FRAMEWORK

The study is hinged on two theoretical framework namely uses and gratifications theory and the individual differences theory of gender and information technology.

The uses and gratifications theory assumes that media audiences are aware of and can articulate their reasons for consuming various media content and that the effect of a given message is highly unlikely to be the same for everyone. The driving mechanism of the theory, as Sparks (2012, p. 358) puts it, “is need gratification”.

The theory’s fundamental assumption is that people deliberately use media for particular purposes. Prior to this proposition, communication scholars were of the belief that media audiences were passive targets waiting to be struck by the media’s magic bullet (Sparks, 2012). In other words, the theory views media audiences as active, rather than passive receivers of media messages, who make conscious decisions about what type of media and media content to expose themselves to (Obijiofor & Hanusch, 2013).

The individual differences theory of gender and information technology on the other hand views women and men as individuals who possess different technical talents and inclinations and respond to the social shaping of gender in unique and particular ways that vary across cultures (Trauth, 2006).

The theory is composed of three essential constructs, which according to Trauth (2002), explain individual's decisions to have access to and use information and communication tools such as the Internet. The three constructs are *the individual identity construct*, which entails personal demographic data such as gender, age, ethnicity, socio-economic status, etc. The *individual influence construct* which includes personal characteristics, (e.g. experiences with computing/Internet, etc.) and the *environmental influence construct* which consists of cultural attitudes and values (e.g. attitude towards information technologies such as the Internet, the country in which one lives, etc.). The theory posits that these constructs account for the differences among males and females in the way they experience and respond to issues related to information technology, such as the Internet (Trauth, Quesenberry, & Morgan, 2004).

METHODOLOGY

The study employed descriptive survey method which enabled the researcher to describe the differences in the Internet usage patterns of the students of tertiary institutions in Katsina based on gender. The population of the study comprised all the regular students of the three selected state-government owned tertiary institutions in the Katsina State namely Umaru Musa Yar'Adua University, Katsina (UMYU), Hassan Usman Katsina Polytechnic (HUKP), and Isah Kaita College of Education, Dutsin-ma (IKCOE). These institutions were conveniently selected based on the fact that they are the largest and most diverse tertiary institutions in Katsina, consisting of students from virtually every part of the State. Using stratified proportionate sampling, 144 students were selected from UMYU, 95 from HUKP and 138 from IKCOE thus forming a total of 377 respondents. These sample size was chosen based on the Krejcie and Morgan (1970) table of sample size. The demographic characteristics of the respondents revealed 220 as males and 154 as females, reflecting the proportion of male to female students in Nigerian tertiary institutions (Adeyemi & Akpotu, 2014). The questionnaire administered to the respondents of the study was divided into two sections. Section A deals with the demographic data of the respondents such as age and gender. Section B deals with Internet usage patterns of the students. Descriptive statistics of percentages, and frequency counts were used for data analysis with the Software Package for Social Sciences (SPSS). Out of the 377 questionnaires administered, 374 were returned giving a response rate of 99%.

RESULTS AND DISCUSSIONS

Table 1: Respondents Internet Usage & Frequency of the Usage

Internet Usage	Frequency	Percentage	Usage Frequency	Frequency	Percentage
Yes	367	98.13	Daily	178	48.50
			Twice a week	33	8.99
No	7	1.87	Thrice a week	68	18.53
			Sometimes	29	7.90
			Quite often	59	16.08
Total	374	100	Total	367	100

Table 1 depicts the responses of the respondents in the sample on whether they use the Internet or otherwise as well as the Internet usage frequency. With regards to the students' responses on whether they are Internet users or otherwise, the table shows that out of the 374 students who duly competed and returned the questionnaires given to them, as many as 367 respondents, representing 98.13%, make use of the Internet, which is a precondition for answering the rest of the questions in the questionnaire used in this study. Only 7 of the respondents, representing a mere 1.87% reported not using the Internet. This finding supports several studies (e.g. Khausar & Zobia, 2006; Omotayo, 2006; Ofodu, 2012, Bala 2013, etc.) conducted on students' Internet usage which contend that Internet usage is more prevalent among younger, more educated people, particularly students of higher institutions.

As the findings of this study indicate, majority of the students of tertiary institutions in Katsina fall within the age range of 17 – 24 years and these are the group whom Prensky (2001, p. 4) aptly describes as “digital natives” for they are, as he says, “living their entire lives surrounded and immersed within the digital media” such as computers, tablets and smart phones, whether on campus, at home or on the go. Therefore, it is not in any way surprising that majority of them make use of the Internet.

With regards to the frequency at which the students use the Internet, the table shows that 178 of the respondents, representing 48.50% say they use the Internet on daily basis, while 33 of the respondents, representing 8.99% say they do that twice a week. Those who say they use the Internet thrice a week are 68, representing 18.53%, while those who do so sometimes are 29, representing 7.90%. Finally, those who say they use the Internet quite often are 59, representing 16.08%. This finding shows that slightly less than half of the respondents use the Internet daily. This relative low percentage of daily Internet usage may be connected to the problems/constraints that students often cite while using the Internet such as higher Internet subscription rate, constant breakdown of Internet services in their institutions and epileptic power supply.

Table 2: Gender Wise Respondents' Internet Usage

Internet Usage	Gender of Respondents	Frequency	Percentage
Yes	Male	216	58.86
	Female	151	41.14
Sub-total		367	100
No	Male	4	57.14
	Female	3	42.86
Sub-total		7	100
Grand total		374	100

Table 2 shows the respondents' Internet usage across their gender distribution. The table indicates that among the 367 respondents who say they use the Internet, 216, representing 58.86% are males, while 151 of them, representing 41.14% are females. The table also shows that among the 7 respondents that say they do not use the Internet, 4 of them, representing 57.14% are males and the remaining 3, representing 42.86% are females. This finding reveals that both male and female students make very high use of the Internet taking into account the fact that of the 220 male respondents in the study's sample, only 4 students say they don't use the Internet which translates into saying that the remaining 216 do so. Similarly, out of the 154 female students in the sample, only 3 say they don't make use of the Internet which means the remaining 151 do so. However, despite this high use of the Internet among both genders, the figures show that more male students use the Internet compared to their female counterparts. This finding is in agreement with what obtains in the bulk of the literature on gender digital divide which demonstrates that more males engage in Internet use than females (e.g. Swarry, Gillwald, Morrell & Khan, 2012; Helsper, 2010, etc.).

Table 3: Gender Wise Responses on the Respondents Purposes of Using the Internet

Purpose of Internet Use	Males		Females	
	Frequency	Percentage	Frequency	Percentage
Social networking	31	14.35	40	26.49
Education/research	68	31.48	27	17.89
Entertainment	23	10.65	20	13.25
Playing online games	21	9.72	11	7.30
Online shopping	7	3.24	5	3.31
Fashion related information	18	8.33	30	19.87
Health related information	12	5.56	2	1.32
Internet banking	6	2.78	2	1.32
Sending/receiving e-mails	30	13.89	14	9.27
Total	216	100	151	100

Table 3 shows the students' responses on the purposes for which they use the Internet across their gender. The figures generally indicate that there are differences in the purposes for which male and female respondents use the Internet. The table reveals that female respondents use the Internet more than male respondents for social networking (26.49% versus 14.35%), whereas male respondents use the Internet more than female respondents for education/research purposes (31.48% versus 17.89%). The figures in the table also show that female respondents use the Internet more than male respondents for entertainment (13.25% versus 10.65%) while male respondents use the Internet more than their female counterparts for playing online games (9.72% versus 7.30%). Similarly, the table indicates that female respondents use the Internet more than males for online shopping (3.31% versus 3.24%) and in seeking for fashion related information (19.87% versus 8.33%). Furthermore, the data also reveals that male respondents use the Internet more than females in seeking health related information (5.56% versus 1.32%) and in using Internet banking (2.78% versus 1.32%). Finally, the table shows that male respondents use e-mail services more than female respondents (13.89% versus 9.27%). When the figures for the two samples are compared, it can be evidently inferred that social networking is the most frequently used feature of the Internet by female respondents with a usage rate of 26.49% while 31.48% of male students indicated that their most frequent use of the Internet is for academic related purposes.

Table 4: Respondents' Internet Usage According to Age

Age Range	Males		Females	
	Frequency	Percentage	Frequency	Percentage
17 – 20 years	80	37.04	32	21.19
21 – 24 years	99	45.83	62	41.06
25 – 28 years	33	15.27	51	33.78
28 years and above	4	1.86	6	3.97
Total	216	100	151	100

Table 4 shows the respondents' Internet usage across their age. It indicates that of the 216 males who say they use the Internet, 80 of them, representing 37.04% are within 17 – 20 years of age while 99, representing 45.83% of the sample are within 21 – 24 years old. The figures indicate further that 33 male respondents, representing 15.27% belong to the age range of 25 – 28 years while 4 of the male respondents, representing a mere 1.86% are 28 years old and above. This is not the same with the female respondents, as 32 of them, representing 21.19% fall within the age range of 17 – 20 years; 62 of them representing 41.06% within the range of 21 – 24 years old and 51, representing 33.78% of the female respondents' sample within the age range of 25 – 28 years old. Finally, the table shows that 6 of the female respondents who indicated using the Internet, representing 3.97% are within the age range of 28 years and above. When the data for the two genders are compared, we can evidently observe that majority of male respondents fall within the age range of 17 – 24 years old while majority of their female counterparts belong to the age range of 24 and above. The presence of more male respondents within the teenage age group of 17 – 24 years explains why they make more use of the Internet than their female counterparts who happen to fall within the more advanced age group of 24 years and above. This is because Internet usage is found to be more prevalent among adolescent groups of mostly 18 – 24 years of age (Prensky, 2001 & Bala, 2013). This finding lends credence to that of Correa (2010) which found that the segment 18 – 24 years old are the most connected group among Internet users.

Table 5: Respondents' Internet Usage According to Program of Study

Respondents' Programs	Males		Females	
	Frequency	Percentage	Frequency	Percentage
Degree/HND	97	44.91	53	35.10
NCE	87	40.28	47	31.13
Diploma	32	14.81	51	33.77
Total	216	100	151	100

Table 5 reveals the respondents' Internet usage across their program of study. The table shows that of the 216 male respondents who indicated that they use the Internet 44.91% are studying for Degree/HND; 40.28 for NCE and 14.81 for Diploma. This is not the same with the female respondents as 35.10% of them who said they use the Internet are studying for Degree/HND; 31.13 and 33.77% for NCE and Diploma respectively. When the data for the two samples are compared, we can clearly see that there are considerably more male respondents who are studying for Degree/HND and NCE than there are female respondents. We can also see that there are more female respondents in the Diploma program than there are male respondents. In general, figures in the table demonstrate that there are considerably more male respondents who are studying for higher educational qualifications than there are female respondents (85.19% versus 64.90%). This is another reason that explains why male respondents in this study make more use of the Internet compared to females. This is because a person's level of education is positively correlated with Internet usage (Banerjee & Hodge, 2007). In other words, the higher the educational status of a person, the more likely he is to make more use of the Internet. This finding is congruent with that of Hoffman, Novak, & Schlosser (2001) which found that increasing levels of education correspond to an increased likelihood of computer access and Internet use. To further buttress this point, Howard, Rainie, & Jones's (2001) study found that 46% of Internet users with a high school diploma or less are online during the typical day, compared to 62% of those with college or graduate degrees. Howard and his colleague assert that a person's level of education strongly predicts the probability that he or she will use the Internet for financial, political, government information, or other purposes.

Table 6: Respondents' Distribution According to Monthly Income

Income Range	Males		Females	
	Frequency	Percentage	Frequency	Percentage
₦1,000 – 3,000	48	22.22	52	34.44
₦4,000 – 6,000	42	19.44	61	40.39
₦7,000 – 9,000	77	35.65	18	11.92
₦10,000 and above	49	22.69	20	13.25
Total	216	100	151	100

Table 6 reveals the respondents' monthly income across their gender. The table shows that 22.22% and 19.44% of male respondents earn a monthly income of between ₦1,000 – 3,000 and ₦4,000 – 6,000 respectively. The figures also show that 77 of the male respondents, representing 35.65% say they earn between ₦7,000 – 9,000 each month while 49 of the respondents, and representing 22.69% indicate that their average monthly income starts at ₦10,000 and above. This is not the same with the female respondents as 52 of them, representing 34.44% say that they earn between ₦1,000 – 3000 each month while 61, representing 4.39% indicate that they earn a monthly income of between ₦4,000 – 6,000. Those who reveal that they earn an average of ₦7,000 – 9,000 and ₦10,000 and above are 11.92% and 13.25% respectively.

In general, the figures in the table indicate that male respondents earn considerably higher income compared to females. This is perhaps because often times, male students tend to be in-service staff of companies, organizations and/or government agencies. This finding therefore helps explain the reason why male respondents in this study access and use the Internet differently from females. This is because income, like education, is positively associated with Internet usage (Lim, & Meier, 2011). In other words, higher income groups use the Internet more than lower income groups. According to Novak and Hoffman (1998), income explains Internet usage. These scholars suggest that for household incomes under \$40,000, whites are more likely than blacks to use the Internet, but for household incomes of \$40,000 or more, a greater proportion of African Americans own a home computer and browse the Internet. They conclude that increasing levels of household income correspond to an increased likelihood of owning a home computer and Internet use, regardless of race. Novak & Hoffman suggest that 50% of those with Internet access living in households with annual income of less than \$30,000 are online during a typical day, whereas 61% of those with Internet access in households earning more than \$75,000 log on during a typical day.

This finding is also in tandem with that of Intel (2015) whose analysis demonstrates that the reason for gender gap in Internet usage relates to fact that females, unlike their male

counterparts, are more concentrated among lower income groups and lower education levels, or more generally at the base of the pyramid.

Based on the foregoing, it can be safely argued that this study provides insight on gender digital divide with regards to Internet usage among students of tertiary institutions in Katsina State. The study shows that the students are heavy Internet users with usage rate of up to 98.13%. It also discovers that more male students (58.86%) use the Internet more than female students (41.14%). It further shows that male students primarily use the Internet for academic related purposes, while their female counterparts mainly use it for social networking. It also indicates that disparities in age, educational attainment and income are some of the reasons behind the gender differences in the Internet usage patterns of the students.

IMPLICATIONS OF THE STUDY

This study provides valuable insights to the management of the selected tertiary institutions in Katsina State taking into cognizance the huge amount of resources they invested in providing Internet facilities to their students. The study would be able to inform where changes are needed to optimize the use of Internet resources in the institutions.

Secondly, this study proves a valuable asset to policymakers for it provides them with empirical data on gender gaps in Internet access and usage. Such data will enable the policymakers assess the successes or otherwise of government initiatives on the use of ICTs and to target programs designed to reduce “digital divide” among the appropriate socioeconomic and demographic groups.

Finally, this study helps provide an understanding of Internet usage patterns among genders. This is because findings of the study provide an insight into male and female Internet usage habits which is very useful to businesses and employment entities especially those that deal with online activities. This is important because such businesses need to understand the differences between genders in relation to Internet usage. Understanding the differences will help such entities develop effective online marketing and/or advertising strategies that would target the appropriate audience.

CONCLUSIONS

This study sought to examine the influence of gender in the Internet usage patterns of students of tertiary institutions in Katsina State-Nigeria. Findings of the study support much of the literature on students’ Internet usage as regards the proportion of students who say they use the Internet. It also supports the bulk of the literature on gender digital divide as regards the preponderance of male respondents over female respondents with regards to Internet usage as reflected in the study of Intel (2015) and Li & Kirkup (2007) etc.

A number of important conclusions can be drawn from the results presented in this study. Theoretically, the uses and gratifications theory views media audiences as active consumers of media contents, who make conscious decisions about what type of media and media contents to expose themselves to. Consequently, results from this study can be explained

within the uses and gratifications theory. For example, the students' use of the Internet for social networking, academic related tasks and other sundry uses highlights the importance of the Internet as an important communication channel among the students, using which they gratify their several needs.

Similarly, other aspects of this study highlight the relevance of the individual differences theory of gender and information technology in explaining the gender disparities identified among the students in their Internet usage patterns. For instance, disparities in the students' ages, educational attainment and income levels, which falls under the theory's *individual influence construct*, are factors that help explain the gender differences in the students' Internet usage pattern. As table 4 indicates, male students have more experience with the Internet than the female counterparts.

RECOMMENDATION FOR FUTURE STUDIES

The results of this study were based on a relatively small, selected sample of Internet users, and a fairly homogeneous sample of students of tertiary institutions. It is certainly possible that different patterns may have emerged had different samples been selected. To more fully understand the influence of gender in Internet usage, future studies should ascertain gender effects in connection with other individual differences (e.g., education, race and geographic location) because gender differences in both attitudes toward the Internet and usage patterns usually stem from interactions among these and other variables. It will be interesting to see if and how the trends observed in this study change as the Internet becomes even more accessible and popular among people.

REFERENCES

- Adebo, G.M., Adekunmi, A.O., & Daramola, C.F. (2013). Gender Assessment of Computer and Internet Usage among Student Teachers in Ekiti Tertiary Institutions. *Journal of Education and Practice*. Vol. 4 (23), p. 119 – 128.
- Adeyemi, K. & Akpotu, N. (2014). Gender Analysis of Student Enrolment in Nigerian Tertiary Institutions. *Higher Education*. Vol. 36, p. 361 – 378.
- Annan, K. (2001). Message to World Telecommunication Day. *The Guardian* (pp. 43-44) Tuesday, May 22.
- Bala, B. (2013). Assessment of the Impact of Internet Usage on Students' Academic Performance in Bayero University, Kano. Unpublished Bachelor's Project Submitted to the Department of Mass Communications, Bayero University, Kano.
- Banerjee, S. & Hodge, A. (2007). Internet Usage: A within Race Analysis. *Gender & Class Journal*. Vol. 14 (3-4), p. 228 – 246.
- Bimber, B. (2000). Measuring the Gender Gap on the Internet. *Social Science Quarterly*. Vol. 81 (3), p. 1 – 11.
- Bujala, A. (2012). Gender Differences in Internet Usage. *Folia Sociologica*. Vol. 43, p.49 – 67.
- Broadband Commission for Digital Development. (2013). *Doubling Digital Opportunities: Enhancing the Inclusion of Women and Girls in the Information Society*. Geneva: ITU/UNESCO
- Colley, A. & Maltby, J. (2008). Impact of the Internet on Our Lives: Male and Female Personal Perspectives. *Computers in Human Behaviour*. Vol. 24 (5), p. 2005 – 2013.
- Funmilayo, D.C. (2013). Gender Differences in the Use of Academic Resources: The Case of FUTA Library. *International journal of Library and Information Science*. Vol. 5 (8), p. 256 – 216.
- Global Internet Report. (2015). Mobile Evolution and Development of the Internet. A Report Published by the Internet Society.
- Hafner, K. & Lyon, M. (1996). *Where Wizards Stay Up Late: The Origins of the Internet*. New York: Simons & Schuster.
- Harry, H. (1998). *The Internet*. Michigan: Lucent Books.
- Helsper, E. (2010). Gendered Internet Use across Generations and Life Stages. *Communication Research*. Vol. 37 (3), p. 352 – 374.
- Hoffman, D., Novak, T., & Schlosser, A. (2001). The Evolution of the Digital Divide: Examining the Relationship of Race to Internet Access and Usage over Time. In B. Compaine (Ed.), *The Digital Divide*, (pp. 47-97). Cambridge, MA: MIT Press.
- Howard, P., Rainie, L., & Jones, S. (2001). Days and Nights on the Internet. *American Behavioral Scientist*. Vol. 45 (3), p. 383 – 404.
- Hu, T., Zhang, P., Zhang X., Dai, H. (2014). Gender Differences in Internet Use: A Logistic Regression Analysis. San Francisco: AMCIS Proceedings Paper.
- Intel (2015). Women and the Web: Bridging the Internet Gap and Creating New Global Opportunities in Low and Middle-Income Countries. Policy Report Prepared by Intel Corporation.

- Khausar, S. & Zobia, B. (2006). Effects of Excessive Use of the Internet on Undergraduate Students in Pakistan. *Cyber Psychology and Behavior*. Vol. 9 (3), p. 239 – 307.
- Krejcie, R.V. & Morgan, D.W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*. Vol. 30, p. 607 – 210.
- Kruger, L.G. (2004). Identity Construction and Self-presentation on Personal Homepages: Emancipatory Potentials and Reality Constraints. In: D. Guantlett. & R. Horsley. (Eds.), *Web Studies* (pp: 53-68). Oxford: Oxford University Press.
- Li, N. & Kirkup, G. (2007). Gender and Cultural Differences in Internet Use: A Study of China and UK. *Computers and Education*. Vol. 48, p. 301 – 317.
- Lim, K. & Meier, E. B. (2011). Different but Similar: Computer Use Patterns Between Young Korean Males and Females. *Educational Technology Research Development*. Vol. 59 (4), p. 575 – 592.
- Lucky, A.T. & Achebe, N.E.E. (2013). The Effect of Digital Divide on Information Accessibility among Undergraduate Students of Ahmadu Bello University, Zaria. *Research Journal of Information Technology*. Vol. 5 (1), p. 1 – 10.
- Mehra, B., 2002. Broadband Internet Access and the Digital Divide. Assistance Program Updates June 2004, American Society for Information Sciences Bulletin.
- Mossberger, K., Tolbert, C.J., & Stansbury, M. (2003). *Virtual Inequality: Beyond the Digital Divide*. Washington D.C: Georgetown University Press.
- Novak, T. & Hoffman, D. (1998). Bridging the Racial Divide: The Impact of Race on Computer Access and Internet Use. Vanderbilt University Working Paper February.
- Obijiofor, L. & Hanusch, F. (2013). Students' Perception and Use of the Internet as a News Channel. *Covenant Journal of Communication*. Vol. 1 (maiden edition), p. 1 – 17.
- OECD. (2001). *Understanding the Digital Divide*. France: OECD Publications.
- Ofodu, G.O. (2012). Impact of Information and Communications Technologies on Language Learning of Undergraduates. *Journal of International Education Research*. Vol. 4 (1), p 99 – 108.
- Omotayo, B.O. (2006). A Survey of Internet Access and Usage among Undergraduates in an African University. *The International Information and Library Review*. Vol. 38 (4), p. 215 – 224.
- Ono, H. & Zavodny, M. (2003). Gender and the Internet. *Social Science Quarterly*. Vol. 4, p. 1 – 20.
- Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon*. Vol. 9 (5), p. 1–6.
- Rai, S. (2014). An Exploration of Trend in Internet Usage and Perception of Information Credibility among Indian Postgraduate Students. *Asian Journal of Economics and Empirical Research*. Vol. 1 (1), P. 24 – 28.
- Sparks, G. (2012). Uses and Gratifications of Elihu Katz. In E. Griffin (Ed.), *A First Look at Communication Theory* (pp. 357 – 365). (8thedn). New York: McGraw-Hill.
- Swarray, M.D., Gillwald, A., Morrell, A., & Khan, S. (2012). Lifting the Veil on ICT Gender Indicators in Africa. Research ICT Africa and University of Cape Town Policy Paper 13.
- Thanuskodi, S. (2013). Gender Differences in Internet Usage among College Students: A Comparative Study. *E-journal of Library Philosophy and Practice*.

- Thayer, S.E. (2013). Online Communication Preferences across Age, Gender, and Duration of Internet Use. *Cyberpsychology & Behavior*. Vol. 9 (4), p. 17 -23.
- Trauth, E.M. (2006). Theorizing Gender and Information Technology Research. *Idea Group Inc.* p. 1154 – 1159.
- Trauth, E. M., Quesenberry, J. L., & Morgan, A. J. (2004). Understanding the Under Representation of Women in IT: Towards a Theory of Individual Differences. In M. Tanniru & Weisband, S. (Eds.), *Proceedings of the 2004 ACM SIGMIS Conference on Computer Personal Research* (pp. 114-119). New York: ACM Press.
- Willis, S. & Tranter, B. (2006). Beyond the Digital Divide: Internet Diffusion and Inequality in Australia. *Journal of Sociology*. Vol. 42(1), p. 43–59.