



The Demographic Factors of E-Information Resources among Undergraduate Students in Selected Universities

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ABSTRACT This study focused on demographic factors as determinants of utilization of e-information resources among undergraduate students in University of Fort Hare and Rhodes University. The study utilized the Likert scale, which allows respondents to select a choice that best demonstrates their level of agreement with a given statement, and out of the 377 questionnaire copies distributed, 266 copies were returned, giving a response rate of 70.6 percent. The results were analyzed using the Statistical Package of the social Sciences (SPSS Version 32). The results revealed that more males, who were within the age bracket of 21 to 30 years old accessed and utilized electronic resources through the residences than their female counterparts. Additionally, Chi-square test of independence was also performed to survey the level of correlation between age and access to E-resources, and the result further revealed that age has no influence on access of respondents to electronic resources through cybercafé.

INTRODUCTION

E-information resources of undergraduate students can be affected by demographic factors (for example, gender, age, and language), which is in line with the finding of this study. Demographic variables are physiognomies of the human population. It can also be seen as statistical socio-economic characteristics or variables of a population. Several studies have been carried out to investigate how age and gender determine ICT literacy skills of students. Markauskaite et al. (2009), stated that recent research on male and female differences researches showed that males made more regular uses of internet facilities, they perform more competitively in e-learning functions, in addition to facing different challenges in their utilization of ICT than their female colleagues. Furthermore, the acquisition of internet skills and knowledge by most students is acquired through hands-on self-teaching exercises. It was discovered that the utilization of e-information resources by the students was to perform different tasks. Burger et al. (2011) disclosed that females were more limited in their search skills for online information,

unlike men who were more competent and comfortable with the utilization of e-information resources, thereby making more use of varied set of internet applications. Margaryan et al. (2011) reported that male students were more regular and longer users of computers. From the foregoing, more males felt competent in computer skills than females. Younger generations develop interest in computer usage. For instance, Tsourela and Roumeliotis (2015) discovered substantial age dissimilarities on ICT tasks, as evaluated by the older adults who make some correct choices over protracted time in order to make more quality decisions than younger adults. In the same vein, Quadri (2013) stated that one variable which has been found to relate comfort with computers e-resources utilization is age. Younger users developed using computers, and they are carried away with the state-of-the-art functionalities of computer.

Research Problem

Universities all over the world make available a wide variety of electronic resources for use to the undergraduates, researchers, academic and non-academic staff in their respective institutions. Undergraduate students in the selected universities in Eastern Cape are affected by some demographic factors towards the use

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of electronic resources. It was discovered from literature that the males were more comfortable with the use of electronic resources than the females. It is on this basis that this research sought to investigate the demographic factors of e-information resources among undergraduate students in the University of Fort Hare (UFH) and Rhodes University (RU).

Study Objective

To investigate the demographic factors of e-information resources among undergraduate students in the University of Fort Hare (UFH) and Rhodes University (RU).

Literature Review

Technology is the branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment, drawing upon such subjects as industrial arts, engineering, applied science, and pure science. According to Mai (2016), electronic information has gradually become a major resource in every university library, and that was why Ji et al. (2014) opined that electronic resources are now used more often than print resources. The emergence of electronic information resources, simply referred to as electronic resources, has tremendously transformed information handling and management in academic environments and in University libraries in particular. Gray (2013) noted that through the use of electronic resources, researchers and students now have access to global information resources, particularly the Internet for their scholarly intercourse. The death of current and up-to-date information for research in University libraries is attributed to poor levels of developing electronic information resources Tuckman and Harper (2012). According to Gakibayo and Okello-Obura (2013), electronic information resources are information resources provided in electronic form, and these include resources available on the Internet such as e-books, e-journals, online database, CD-ROM databases and other computer-based electronic networks, among others. This rapid emergence and development of electronic information technologies therefore makes it possible to envision radically

different ways of organizing the collections and services in the institutions. According to Islam (2011), the level of education, program of study, age and gender were found to be significant in the effectiveness of digital library and electronic learning.

However the most pronounced is gender, and refers to the socially constructed roles, behaviors, activities and attributes that a given society considers appropriate for men and women. Gender difference in web use is found in the online applications whereby male college students were more likely to be found than their female counterparts. Male students tends to use the Internet for recreational purposes (for example, playing games online, visiting adult-only sites, gambling, accessing news groups and discussion forums, staying abreast of news developments, and seeking information for personal use), while females were more likely to use the Internet to talk to family and friends (Tosun 2012). These findings appear to reinforce the widespread assumption that men prefer to use the web for information gathering and entertainment and women prefer to use the Internet for communication (Jansen et al. 2013). A study by Lee and Huang (2014) on gender differences in computer literacy reported that students with higher computer literacy were more inclined to access and make use of library facilities. They further reported that differences exist between female and male undergraduate students at the University of Botswana with regard to computer literacy. In the same vein, it is found that women tend to experience more difficulty in finding information online than men, and Venkatesh et al. (2012) revealed a high preference for the internet as the first source of information among men. Men also put more stress on non-paid electronic resources as opposed to women's more frequent use of licensed resources. Haferkamp et al.'s (2012) studies reveal that gender differences exist in the use of Internet between men and women.

The issue of gender gap in technology usage is gaining ground and attracting the attention of academic-researchers. Ani (2013) succinctly noted that gender difference towards computer/electronic resources affects individual's interest, attitude towards computers and its use. As a matter of fact, if gender is related to computer anxiety and, then the issue of gender

is so relevant in this epoch when considering students' proficiency level in computer usage. Ahmed (2015) revealed that male and female students differ significantly in attitudes towards computer applications which later affect their job opportunities after graduation.

Findings of Ritzhaupt et al. (2013), revealed that gender is associated with the use of electronic information resources and male postgraduate students were more likely to use electronic information resources than female students. Gender is a relevant factor in examining use of electronic sources. Quadri (2013) also found that females tended to experience more difficulty finding information online, to feel competent and comfortable using the internet, to use the internet less frequently than males and to make use of a less varied set of internet application, though found a similar result in studying faculty members; while males tend to have greater computing skills than females.

Age and year of obtaining highest educational qualifications were also important factors in establishing computers skills. An overview and analysis of recent research studies using the University of Tennessee, Knoxville as a case study posits that there is some evidence that younger users are more enthusiastic adopters of digital resources than the older users. Younger users rely on electronic resources more heavily and rate themselves more expert in using them than older users. Age is a variable which have been found to correlate with computers and use of online library resources.

Furthermore, age could be another factor that affects electronic resources use among the student in universities. Age is the length of time that a person or thing that lived or existed. Age has been found to correlate with the use of electronic resources. Bakkabulindi (2011) in his study stated the existence of a high correlation between age and the use of electronic resources. The finding concurred with theoreticians such as Jung et al. (2012), who observe that age is an important correlate of use of innovations, with consumer innovators tending to be younger than late adopters. In conclusion, aged and ageing teachers, senior administrators and students needed extra encouragement and/ or special training with respect to electronic resources and ICT, which assistance relevant stakeholders such

as Top Management and Directorate of ICT Support (DICTS) are called upon to offer.

Age has been found to correlate with electronic resources use. According to Okiki and Asiru (2011), younger generations are brought up with computers. It also found that there were significant age differences on the computer task, younger adults make quick decisions with the aid of computers compared to the older adults that make few correct decisions taking longer time than younger adult. Dalhem et al. (2014), in his description of the electronic-learning users, asserted that middle-aged people account for the great part of the educational approach's audience with 80 percent of the polled respondents belonging to the lower that 45 years age bracket. An implication of student status in electronic-learning is that full-time students who spend more time acquainting with the system naturally have the edge over its part-time students.

Islam (2011) concluded that, age and gender were found to be significant in the effectiveness of electronic resources use among the university students. VanDeursen and VanDijk (2014) indicated a significant relationship between age and use of the library's electronic resources. Notably, older students tended to use electronic resources less than younger students. The younger students seemed more comfortable adopting new technology. Walther et al. (2012) in their studies also confirmed that age is one of the factors that affect electronic resources use. Lee and Coughlin (2015) were of the opinion that people who quickly adopt new technologies tend to be younger than those who are late or adopters of the new technologies. Lian and Yen (2014) in their study of age, computer experience and computer attitudes among teenagers found that there was positive attitude in younger group of ages eleven to twelve years than the older group of fifteen to sixteen years.

In a study on Internet use among people aged sixteen (16) years and above in the United States of America, it was postulated that people within 16 and 24 years were characterized as using the Internet at a high rate than the older ones (Tess 2013). Similarly, Yang and Wu (2012) in their study on some factors that affect the utilization of learning and their influence on the achievements of second year undergraduates of psychology in a university in the United Kingdom

reported that the number of hits, length of access, and use of the bulletin board was related to age, with older students using Web CT more than others. Vines et al. (2014) also discovered a negative relationship between age and the use of e-mail.

METHODOLOGY

This study focused on demographic factors as determinants of utilization of e-information resources among undergraduate students in University of Fort Hare and Rhodes University. In carrying out this research, a total of 377 copies of the questionnaire were randomly distributed to undergraduate students in all the faculties of both institutions (260 in UFH and 117 copies in RU respectively), out of which 266 were returned. Further, this research utilized the five-point Likert scale in the measurement, evaluation and assessment of the questionnaire items relating to attitudes and perceptions of undergraduate students in relation to electronic resources use. The study utilized the Likert scale, which allows respondents to select a choice that best demonstrates their level of agreement with a given statement, and out of the 377 questionnaire copies distributed, 266 copies were returned, giving a response rate of 70.6 percent. The results were analyzed using the Statistical Package of the social Sciences (SPSS Version 32).

RESULTS AND DISCUSSION

The results of this study begins with the analysis of the demographic factors of gender, language and age. Table 1 depicts the gender distribution of the respondents.

Table 1: Gender distribution of the respondents

<i>Gender</i>	<i>Frequency</i>	<i>Percentage (%)</i>
Male	159	59.8
Female	107	40.2
Total	266	100.0

Source: Author, 2019

Generally, gender is an essential element that determines accessibility and e-resource utilization of respondents to electronic resources through the home and from other sources. Table

1 revealed that 159 (59.8% of the respondents) were males, while the remaining numbers, that is, 107 (40.2%) were females. The analysis of this study revealed that more males, who were within the active e-resource using age bracket of 21 to 30 years old access and utilize electronic resources through the residences than their female counterparts. This result is in conformity with Quadri (2013). This age bracket is followed in terms of access and use of e-resources through residences by the respondents that were 20 years and below.

Language as a Determinant on Electronic Resources Use

From this fieldwork, it was deduced that most of the surveyed UFH and RU respondents were Xhosas, and because they were the majority, this doesn't have influence on their electronic resources utilization. This is because English language is the main language of communication in the selected higher education institutions. In a study conducted by Lillis and Curry (2013), they revealed that the language of communication was English for 62 (51.4%) of the respondents; only 35 (28.1%) utilized Arabic and 27 (21.6%) of the respondents could effectively communicate in both languages. Also, it was discovered that out of the surveyed students, the Xhosas were the majority, having a sum of 217 (81.6%), English were 36(13.6%), Zulus were 13(4.8%), other nationals (such as Nigerians, Ghanaians, Ugandans and Kenyans) were 6 (2.5%), and Afrikaans were 4(1.7%).

Age as Determinant of Electronic Resources Use

Age is one variable that is essential in the utilization of e-information resources. From the study, it was observed that the younger undergraduate students were in the majority in the utilization of e-information resources. Other empirical studies conducted that supports the findings of this research include Gakibayo and Okello-Obura (2013). Also, the analysis of indicates that the age range of the respondents were between 21-30years old (119-55.1%), 70(32.4%) of them were 20 years and below, 31-40 years age

range were 22 (10.2%), and 5 (2.3%) were above 40 years of age. In the course of this study, it was discovered that the 21 to 30 age group was highest in electronic resources use. The reason adduced for this phenomenon is due to the fact that most of the undergraduate students who were proficient in the use of electronic resources fall in this age category. Other empirical studies conducted support the findings of this research include a study by Adeleke and Emeahara (2016).

Accessibility to Electronic Resources

The findings presented in this chapter and subsequent chapters support this argument. The electronic resources is mainly accessed by undergraduate students at the residences, and as many as 133 or 54.7 percent of the respondents make use of the Wi-Fi connectivity provided by the universities, while 84 or 34.6 percent of the respondents have access for the utilization of e-information resources from the institutional library. In addition, access to electronic resources by the respondents through cybercafé and other sources was 10 (14.5%), home 32 (13.2%), office 17 (7.0%), university computer laboratories 12 (5%). The undergraduate students were asked questions regarding their accessibility to electronic resources by the researchers. Consequently, these questions provided insight to the various locations of access of the respondents to electronic resources. These locations of access to electronic resources include cybercafé, university library, university computer laboratory, offices, residence and home.

From the results of Table 2, it is evident that most of the undergraduate students 133(54.7%) accessed the electronic resources from their res-

Table 2: Access to electronic resources

(a) Cyber café	10	(14.5%)
(b) University library	84	(34.6%)
(c) University computer lab	12	(5%)
(d) Office	17	(7.0%)
(e) Residence	133	(54.7%)
(f) Home	32	(13.2%)
(g) Other (Please specify)	6	(2.5%)

Source: Author, 2019

idences. This high number is due to the provision of accessible Wi-Fi at their various halls of residences. Also, 84(34.6%) of the surveyed students accessed electronic resources through the university library, while 17 (7.0%) had access to e-resources through their offices. In addition, access to cybercafé and other sources were 10 (14.5%) and 6 (2.5%) respectively. Thus, it is imperative to discuss the frequency of accessibility on e-resources use among the respondents from different locations, as discussed below.

Frequency of Accessibility on Electronic Resources Use among Undergraduate Students from Different Locations

The respondents were asked to provide information regarding the questionnaire on how often they access electronic resources. From the foregoing, different options were indicated for the respondents to choose from.

Table 3 analyzed how often the undergraduate students engage in the utilization of e-information resources in the universities. Most undergraduate students utilize the e-information resources at their residences always, 75 (41.2%). It was also discovered that about 4 (2.3%) of the respondents made use of the cybercafés, university library, 31(15.1%), 43 (20.5%) respondents used the computer laboratory, 13 (7.8%)

Table 3: Frequency of access to electronic resources from different locations

Locations	Never	Almost never	Occasionally/sometimes	Almost every time	Every time
Cyber café	92 (52.6%)	29 (16.6%)	45 (25.7%)	5 (2.9%)	4 (2.3%)
University library	14 (6.8%)	17 (8.3%)	82 (40%)	61 (29.8%)	31 (15.1%)
University computer lab	14 (6.7%)	7 (3.3%)	70 (33.3%)	76 (36.2%)	43 (20.5%)
Office	95 (57.2%)	24 (14.5%)	22 (13.3%)	12 (7.2%)	13 (7.8%)
Residence	23 (12.6%)	13 (7.1%)	29 (15.9%)	42 (23.1%)	75 (41.2%)
Home	42 (26.4%)	18 (11.3%)	34 (21.4%)	32 (20.1%)	33 (20.8%)
Other (Please specify)	29 (65.9%)	1 (2.3%)	7 (15.9%)	3 (6.8%)	4 (9.1%)

Source: Author, 2019

respondents make use of the office, home (33, 20.8%) and others were 4(9.1%). Also, in the course of the in-depth research interview, most of the interviewees make use of their residences to access electronic resources. These findings agree with results from previous studies where the electronic resources was mostly accessed from residences. Other empirical studies conducted that supports the findings of this research include Ansari and Zuberi (2010) and Orsu (2017).

Demographic Factors as Determinants to Access Electronic Resources Use Among Undergraduate Students

In the course of this this investigation, the description of the participant (the undergraduates) from the universities include age, gender, race, language, marital status, as well as access to electronic resources through various locations. Numerous research findings in respect of undergraduate students' access to electronic resources discovered that: accessibility to electronic resources contributes to students' academic development. Students who have access to digital resources at home for academic purposes demonstrate improved scores in their academic pursuit (Livingstone 2012). The demographic factors that affect access to electronic resources include age, gender, religion were discussed.

Age on Access to Electronic Resources through Cybercafé

Table 4 analyzed the age of respondents and their accessibility to digital resources through the cybercafé. The results states that the respondents that use e-resources through the cybercafé were ages 20 and below (3.8%), ages 21-30 (7.5%), ages 31-40 (5.7%) and above 40 years (1.9%). The figures for the respondents who do

not use electronic resources through the cybercafé were stated as 20 years and below (30.2%), 21-30 years (56.6%), 31-40 years (9.4%), and above 40 years (3.8%). Also, in the course of the in-depth research interview, it was discovered that less than 20 percent. The findings on age and access to e-resources through cybercafé is hereby analyzed in Table 4.

Test to Determine Age and Access to Electronic Resources through Cybercafé

A Chi-square test was accomplished to scrutinize the relation between age and accessibility to e-resources (Table 5). A small p-value (typically < 0.05) designates strong indication against the null hypothesis, so you reject the null hypothesis. A large p-value (> 0.05) shows weak indication against the null hypothesis, so you fail to reject the null hypothesis, that is, χ^2 (3, $N=53$) = 7.82. In Table 5, the Pearson Chi-square (p- value) produced was .294, which is understood to mean that it is not important. Therefore, the clarification is that age has no effect on accessibility of respondents to electronic resources through cybercafé.

Table 5: Chi-square results to determine age and utilization of e-resources through cybercafé

Chi-square tests	Value	df	Sig. Asymp. (2-sided)
Pearson Chi-square	7.816 ^a	3	.050
Likelihood ratio	6.216	3	.102
Linear-by-linear association	4.262	1	.039
N of valid cases	53		

The result of the surveyed undergraduate students, respondents that were within the ages of 21-30 shows that they were the most active population regarding the use of electronic resources. Next to them were those that were 20 years and below. Other empirical studies have analyzed the impact of age on access to elec-

Table 4: Analysis of age and access to electronic resources through cybercafé

	20 years and below	21-30 years	31-40 years	40 + years
I access electronic resources through Cyber café	3.8%	7.5%	5.7%	1.9%
I do not access electronic resources through Cyber café	30.2%	56.6%	9.4%	3.8%

tronic resources through the cybercafé, and these include Ayele and Sreenivasarao (2013) and Quadri (2013).

It is evident that at every time occasionally and sometimes respectively, it is observed that more males use electronic resources through the university than their female counterparts. Also, more females have never used electronic resource through the university library than the males.

Language and Access on Electronic Resources through the University Library

Table 6 analyses the language of respondents and utilization of e-information resources through the university library. The results state that the respondents involved in the utilization of e-information resources through the university library were English (15.1%), Afrikaans (1.1%), Xhosa (76.3%), Zulu (6.5%) and others (1.1%). The figures for the respondents who do not use electronic resources through the university library were stated as English (15.6%), Afrikaans (0.8%), Xhosa (75%), Zulu (0.8%) and others (0.8%).

Test to Determine Language and Access to Electronic Resources through the University Library

The researchers sought to know if there was any relationship between the language of the respondents and their access to electronic resources through the university library. The results were tested using Chi-square method. In Table 7, the Pearson Chi-square (p-value) generated was .789, which is interpreted to mean that it is highly significant. Therefore, the interpretation is that language has high influence regarding respondents to electronic resources through the university library.

Chi-square Results to Determine Impact of Language on Access to E-Resources through the University Library

The Chi-square test of independence was performed to examine the relationship between language and access to e-resources through the university library (Table 7). A small p-value (typically < 0.05) designates strong indication against the null hypothesis, so you reject the null hypothesis. A large p-value (> 0.05) shows weak indication against the null hypothesis, that is, $\chi^2 (3, N=53) = 7.82$. In Table 7, the Pearson Chi-square (p-value) produced was .294, which is understood to mean that it is not important. Therefore, the clarification is that age has no effect on accessibility of respondents, that is, $\chi^2 (4, N=128) = 1.71$. In Table 7, the Pearson Chi-square (p-value) generated was 1.71, which is interpreted to mean that it is not significant. Therefore, the interpretation is that language has no influence on access of respondents to electronic resources through university library.

Table 7: Chi-square test to determine the impact on access to e-resources through the university library

Chi-square tests	Value	df	Sig. Asymp. (2-sided)
Pearson Chi-square	1.712 ^a	4	.789
Likelihood ratio	2.177	4	.703
Linear-by-linear association	.000	1	.987
N of valid cases	128		

Impact of Language and Access to Electronic Resources through the Computer Laboratory

The language of respondents and their utilization of e-information resources through the computer laboratory were analyzed in Table 8. The results states that the respondents who use e-resources through the university library were English (12.6%), Afrikaans (1.3%), Xhosa

Table 6: Analysis of language and electronic resources use through university library

	English	Afrikaans	Xhosa	Zulu	Others
I access electronic resources through University Library	15.1%	1.1%	76.3%	6.5%	1.1%
I do not access electronic resources through University Library	15.6%	0.8%	75.0%	7.8%	0.8%

Source: Author, 2019

(64.2%) , Zulu (4.4%) and others (1.3%). The figures for the respondents who do not use electronic resources through the university library were stated as English (1.9%), Afrikaans (0.0%), Xhosa (13.2%), Zulu (1.3%) and others (0.0%).

Test to Determine Language and Access to Electronic Resources Use through the Computer Laboratory

The performance of the Chi-square test was used to decipher if there was any relationship between the language of the respondents and their access to electronic resources through the computer laboratory (Table 9). The results were tested using Chi-square method, using formula $\chi^2 (4, N=159) = 1.24$. In Table 9, the Pearson Chi-square (p- value) generated was 1.24, which is interpreted to mean that it is highly significant. Therefore, the interpretation is that language has high influence regarding respondents' use of electronic resources through the computer laboratory.

Table 9: Chi-square results to determine language and access to e-resources use through the computer laboratory

<i>Chi-square tests</i>	<i>Value</i>	<i>df</i>	<i>Sig.</i>
		<i>Asymp. (2-sided)</i>	
Pearson Chi-square	1.240 ^a	4	.872
Likelihood ratio	1.878	4	.758
Linear-by-linear association	.209	1	.648
N of valid cases	159		

The result illustrates that the male respondents access electronic resources more than the females. This is the trend every time, sometimes and almost every time. Other empirical studies conducted which support the findings of this research include studies by Nwezeh (2010) and Park and Kim (2010).

Table 8: Analysis on determinant of language and access to electronic resources through the computer laboratory

	<i>English</i>	<i>Afrikaans</i>	<i>Xhosa</i>	<i>Zulu</i>	<i>Others</i>
I access electronic resources through the Computer Laboratory	12.6%	1.3%	64.2%	4.4%	1.3%
I do not access electronic resources through the Computer Laboratory	1.9%	0.0%	13.2%	1.3%	0.0%

Source: Author, 2019

Gender and Access to Electronic Resources through the University Offices

Table 10 analyses the gender of respondents and access to electronic resources through the university offices. The results states that the male and female respondents that use e-resources through the university offices were 21.3 percent and 6.6 percent respectively, while male and female respondents that use e-resources through the university offices were 44.3 percent and 27.9 percent respectively.

Table 10: Analysis on determinant of gender and access to electronic resources through the university offices

<i>Access to e-resources through university offices</i>	<i>Male</i>	<i>Female</i>
I access electronic resources through the university offices	21.3%	6.6%
I do not access electronic resources through the university offices	44.3%	27.9%

Test to Determine Gender and Access to Electronic Resources Use through the University Offices

In a bid to determine if there was any relationship between gender of the respondents and access to electronic resources through the university offices, the results were tested using Chi-square method. In Table 11, the Pearson Chi-square (p- value) generated was 1.24, using formula $\chi^2 = (1, N=61) = 1.24$ which is interpreted to mean that it is not significant. Therefore, the interpretation is that gender has no influence regarding use of respondents to electronic resources through the university offices.

It has been observed that every time, occasionally and sometimes respectively, it is ob-

Table 11: Chi-square results to determine gender on e-resources use through the university offices

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-square	1.240 ^a	1	.266		
Continuity correction ^b	.661	1	.416		
Likelihood ratio	1.292	1	.256		
Fisher's exact test				.371	.210
Linear-by-linear association	1.219	1	.269		
N of valid cases	61				

served that more males use electronic resources through the university than their female counterparts. Other empirical studies conducted that supports the findings of this research include Daramola (2016).

Analysis to Determine Age and Access to Electronic Resources Use Through the University Offices

Table 12 analyses the age of respondents and access to electronic resources through the university offices. The results state that the respondents who use e-resources through the university offices were: 20 years and below (3.5%), 21-30 years (12.3%), 31-40 years (8.8%), above 40 years (5.3%). The figures for the respondents who do not access electronic resources through the university offices were stated as 20 years and below (22.8%), 21-30 years (42.1%), 31-40 years (3.5%), above 40 years (1.8%).

Test to Determine Age and Access to Electronic Resources through the University Offices

The researchers sought to know if there was any relationship between the age of the respondents and access to electronic resources through the university offices (Table 13). The results were tested using Chi-square method. In Table 13, the Pearson Chi-square (p-value) gen-

erated was 12.42, using formula $\chi^2 = (3, N=57) = 12.42$ which is interpreted to mean that it is not significant. Therefore, the interpretation is that age has no influence regarding access of respondents to electronic resources through the university offices.

Table 13: Chi-square results to determine age on access to e-resources through the university offices

Chi-square tests	Value	df	Sig. Asymp. (2-sided)
Pearson Chi-square	12.416 ^a	3	.006
Likelihood ratio	11.696	3	.009
Linear-by-linear association	10.006	1	.002
N of valid cases	57		

The results indicate that respondents who were 21-30 years of age were preponderantly the major users, and they access electronic resources through the university offices. Next to that category were the respondents who were between 31 and 40 years old, and these group are believed to be working-class students who have influence in using university offices to use e-resources.

Analysis to Determine Gender and Access to Electronic Resources through Residence of Respondents

Table 14 analyses the gender of respondents and their access to electronic resources through residence of respondents. The results states that

Table 12: Age and access to electronic resources through office

	20 years and below	21-30 years	31-40 years	40 + years
I access electronic resources through Office	3.5%	12.3%	8.8%	5.3%
I do not access electronic resources through Office	22.8%	42.1%	3.5%	1.8%

Source: Author, 2019

the male and female respondents who use e-resources through the university offices were 59.5 percent and 40.5 percent respectively, while male and female respondents that use e-resources through residence were 65.5 percent and 34.5 percent respectively.

Table 14: Gender and access to e-resources use through residence

<i>Access to e-resources through university offices</i>	<i>Male</i>	<i>Female</i>
I access electronic resources through residence of respondents	59.5%	40.5%
I do not access electronic resources through residence of respondents	65.5%	34.5%

Source: Author, 2019

Test to Determine Gender and Access to Electronic Resources Use through Residence of Respondents

This study also investigated if there was any relationship (or otherwise) between the gender of respondents and access to electronic resources through the residence of respondents (Table 15). The results were tested using Chi-square method. In Table 15, the Pearson Chi-square (p-value) generated was .569, which is interpreted to mean that the rate of significance is high. Therefore, the interpretation is that gender is a determinant regarding respondents' utilization of e-information resources through the student respondents' residences.

Table 15: Chi-square results to determine gender and access to e-resources use through residence of respondents

Pearson Chi-square	.569
No. of valid cases	108

From the analysis of this study, it was discovered that every time, occasionally and sometimes respectively, more males use electronic resources through the residences than their female counterparts. Also, it was discovered that there is a very close margin between the males and female respondents who never use e-resources from their residence. This situation is peculiar to residences that accommodate both male and female students who were mainly off-campus.

Analysis to Determine Age and Access to Electronic Resources Use Through Residence of Respondents

Table 16 analyses the age of respondents and access to electronic resources use through residence of respondents. The results states that the respondents who use e-resources through the university offices were: 20 years and below (36.8%), 21-30 years (57.9%), 31-40 years (2.6%), above 40 years (2.6%). The figures for the respondents who do not use electronic resources through the university offices were stated as 20 years and below (35.7%), 21-30 years (53.6%), 31-40 years (7.1%), above 40 years (3.6%).

Test to Determine Age and Access to Electronic Resources through Residence of Respondents

The researchers thought it expedient to determine if there was any relationship (or otherwise) between the age of respondents and access to electronic resources through the residence of respondents. The results were tested using Chi-square method. In Table 17, the Pearson Chi-square (p-value) generated was 8.29 using formula $\chi^2 = (4, N=122) = 8.29$, which is interpreted to mean that the rate of significance is

Table 16: Age and use of electronic resources through residence of respondents

	<i>20 years and below</i>	<i>21-30 years</i>	<i>31-40 years</i>	<i>40 + years</i>
I access electronic resources through residence of respondents	36.8%	57.9%	2.6%	2.6%
I do not access electronic resources through residence of respondents	35.7%	53.6%	7.1%	3.6%

Source: Author, 2019

high. Therefore, the interpretation is that age is a determinant regarding access of respondents to electronic resources through the respondents' residences.

Table 17: Chi-square results to determine age and access to e-resources through residence of respondents

<i>Chi-square tests</i>	<i>Value</i>	<i>df</i>	<i>Sig.</i>
		<i>Asymp. (2-sided)</i>	
Pearson Chi-square	8.286 ^a	4	.082
Likelihood ratio	9.534	4	.049
Linear-by-linear association	.011	1	.917
N of valid cases	122		

The analysis of this study revealed that more males, who were within the active e-resource using age bracket of 21 to 30 years old access electronic resources through the residences than their female counterparts. This age bracket is followed in terms of use of e-resources through residences by the respondents who were 20 years and below. Also, it was discovered that there is a close margin between the males and female respondents who never use e-resources from their residence. An empirical study conducted by Ajuwon (2015) in this regard reveals the influence of age on access to electronic resources use.

Analysis of Language and Access to Electronic Resources Use Through the Residence of Respondents

Table 18 analyses the language of respondents and access to electronic resources through the residence of respondents. The results states that the respondents who use e-resources through the university library were English (13.1%), Afrikaans (2.4%), Xhosa

(77.4%) , Zulu (2.4%) and others (4.8%). The figures for the respondents who do not use electronic resources through the university library were stated as English (15.8%), Afrikaans (0.0%), Xhosa (71.1%), Zulu (13.2%) and others (0.0%).

Test to Determine Language and Access to Electronic Resources through Residence of Respondents

The researchers thought it expedient to determine if there was any relationship (or otherwise) between the language of respondents and access to electronic resources through the residence of respondents. The results were tested using Chi-square method. In Table 19, the Pearson Chi-square (p- value) generated was 8.29, using formula $\chi^2 = (4, N=122) = 8.29$, which is interpreted to mean that the rate of significance is negligible. Therefore, the interpretation is that language is not a determinant regarding respondents' use of electronic resources through the respondents' residences.

Table 19: Chi-square results to determine language and access to e-resources use through residence of respondents

<i>Chi-square tests</i>	<i>Value</i>	<i>df</i>	<i>Sig.</i>
		<i>Asymp. (2-sided)</i>	
Pearson Chi-square	8.286 ^a	4	.082
Likelihood ratio	9.534	4	.049
Linear-by-linear association	.011	1	.917
N of valid cases	122		

Analysis to Determine Gender and Access to Electronic Resources Use from Home of Respondents

In the course of this study, the researchers sought to investigate if gender was a determinant of access to e-resources from home of re-

Table 18: Analysis on determinant of language and access to electronic resources through residence

	<i>English</i>	<i>Afrikaans</i>	<i>Xhosa</i>	<i>Zulu</i>	<i>Others</i>
I access electronic resources through the residence of respondents	13.1%	2.4%	77.4%	2.4%	4.8%
I do not access electronic resources through the residence of respondents	15.8%	0.0%	71.1%	13.2%	0.0%

Source: Author, 2019

spondents. In a bid to unpack this research question, the Table 20 analyses the gender of respondents and their access to electronic resources from home. The results state that the male and female respondents who use e-resources through the university offices were 56.7 percent and 43.3 percent respectively, while male and female respondents who use e-resources through residence were 65.2 percent and 34.8 percent respectively.

Table 20: Gender as determinant and access to e-resources use from home

<i>Access to e-resources through university offices</i>	<i>Male</i>	<i>Female</i>
I access electronic resources from home of respondents	56.7%	43.3%
I do not access electronic resources from home of respondents	65.2%	34.8%

Source: Author, 2019

Test to Determine Gender and Access to Electronic Resources Use from Home of Respondents

This study also investigated if there was any relationship (or otherwise) between the gender of respondents and access to electronic resources

from the residence of respondents. The results were tested using Chi-square method. In Table 21, the Pearson Chi-square (p-value) generated was .563, using formula $\chi^2 = (N=76) = .563$, which is interpreted to mean that the rate of significance is high. Therefore, the interpretation is that gender is a determinant regarding access of respondents to electronic resources through home of respondents.

From the analysis of this study, it was discovered that more males use electronic resources through the residences than their female counterparts.

Analysis to Determine Age and Access to Electronic Resources Use from Home of Respondents

Table 22 analyses the age of respondents and access to electronic resources from home of respondents. The results states that the respondents who use e-resources through the university offices were: 20 years and below (26.7%), 21-30 years (53.3%), 31-40 years (13.3%), above 40 years (6.7%). The figures for the respondents who do not access electronic resources through the university offices were stated as 20 years and below (33.3%), 21-30 years (59.5%), 31-40 years (2.4%), above 40 years (4.8%).

Table 21: Chi-square results to determine gender on e-resources use from home of respondents

	<i>Value</i>	<i>df</i>	<i>Asymp. Sig. (2-sided)</i>	<i>Exact Sig. (2-sided)</i>
Pearson Chi-square	.563 ^a	1	.453	
Continuity correction ^b	.259	1	.611	
Likelihood ratio	.560	1	.454	
Fisher's exact test				.478
Linear-by-linear association	.555	1	.456	
N of valid cases	76			

Table 22: Age and access to electronic resources through residence of respondents

	<i>20 years and below</i>	<i>21-30 years</i>	<i>31-40 years</i>	<i>40 + years</i>
I access electronic resources through residence of respondents	26.7%	53.3%	13.3%	6.7%
I do not access electronic resources through residence of respondents	33.3%	59.5%	2.4%	4.8%

Source: Author, 2019

Test to Determine Age and Access to Electronic Resources Use through Home of Respondents

The researchers thought it expedient to determine if there was any relationship (or otherwise) between the age of respondents and access to electronic resources through the residence of respondents. The results were tested using Chi-square method. In Table 23, the Pearson Chi-square (p- value) generated was 1.54, using formula $\chi^2 = (2, N=54) = 1.54$, which is interpreted to mean that it is not significant. Therefore, the interpretation is that age is not a determinant regarding respondents' access to electronic resources through the respondents' homes.

Table 23: Chi-square results to determine age and access to e-resources use from home of respondents

<i>Chi-square tests</i>	<i>Value</i>	<i>df</i>	<i>Sig.</i>
		<i>Asymp. (2-sided)</i>	
Pearson Chi-square	1.543 ^a	2	.462
Likelihood ratio	1.964	2	.375
Linear-by-linear association	.223	1	.636
N of valid cases	54		

Analysis on Determinant of Language and Access to Electronic Resources Use from Home of Respondents

Table 24 analyses the language of respondents and access to electronic resources through the residence of respondents. The results states that the respondents who use e-resources from the home of respondents were English (28.1%), Xhosa (68.8%), Zulu (.0%), others (3.1%). The figures for the respondents who do not use electronic resources from the home of respondents were stated as English (15.8%), Xhosa (0.0%), Zulu (71.1%), and others (13.2%).

Table 24: Analysis on determinant of language and access to electronic resources use from home of respondents

	<i>English</i>	<i>Xhosa</i>	<i>Zulu</i>	<i>Others</i>
I access electronic resources through the home of respondents	28.1%	68.8%	.0%	3.1%
I do not access electronic resources through the home of respondents	15.8%	0.0%	71.1%	13.2%

Source: Author, 2019

Test to Determine Language and Access to Electronic Resources Use from Home of Respondents

The researchers thought it expedient to determine if there was any relationship (or otherwise) between the language of respondents and access to electronic resources from home of respondents. The results were tested using Chi-square method. In the Table 25, the Pearson Chi-square (p- value) generated was 13.41, using formula $\chi^2 = (6, N=66) = 13.41$, which is interpreted to mean that the rate of significance is negligible. Therefore, the interpretation is that language is not a determinant regarding respondents' access to electronic resources from the home of respondents.

Table 25: Chi-square results to determine language on e-resources use from home of respondents

<i>Chi-square tests</i>	<i>Value</i>	<i>df</i>	<i>Sig.</i>
		<i>Asymp. (2-sided)</i>	
Pearson Chi-square	13.407 ^a	6	.037
Likelihood Ratio	8.642	6	.195
Linear-by-Linear Association	.373	1	.542
N of Valid Cases	66		

Analysis to Determine Gender and Access to Electronic Resources Use from Other Sources

Table 26 analyses the gender of respondents and their use of electronic resources from other

Table 26: Gender as determinant and access to e-resources use from other sources

<i>Access to e-resources from other sources</i>	<i>Male</i>	<i>Female</i>
I access electronic resources from Other Sources.	80.0%	20.0%
I do not access electronic resources from Other Sources.	58.3%	41.7%

Source: Author, 2019

sources. The results states that the male and female respondents who use e-resources from other sources were 80.0 percent and 20.0 percent respectively, while male and female respondents who access e-resources from other sources were 58.3 percent and 41.7 percent respectively. Other empirical studies on influence of gender on electronic resources use from other sources include study by Nwezeh (2010).

Test to Determine Gender and Access to Electronic Resources Use from Other Sources

This study also investigated if there was any relationship (or otherwise) between the gender of respondents and access to electronic resources from other sources of respondents. The results were tested using Chi-square method. In Table 27, the Pearson Chi-square (p-value) generated was 1.54, using formula $\chi^2 = (2, N=54) = 1.54$, which is interpreted to mean that the rate of significance is high. Therefore, the interpretation is that gender is a determinant regarding respondents' access to electronic resources from other sources. These other sources were mainly from the subscription of data bundles for internet browsing from mobile telecommunication network service providers such as MTN, Vodacom, Cell-C, etc. Other empirical studies conducted that support the findings of this research include study by Daramola (2016).

Table 27: Chi-square results to determine gender and access to e-resources use from other sources

<i>Chi-square tests</i>	<i>Value</i>	<i>df</i>	<i>Sig. Asymp. (2-sided)</i>
Pearson Chi-Square	1.543 ^a	2	.462
Likelihood Ratio	1.964	2	.375
Linear-by-Linear Association	.223	1	.636
N of Valid Cases	54		

Table 28: Age and use of electronic from other sources

<i>Access to electronic resources from other sources</i>	<i>20 years and below</i>	<i>21-30 years</i>	<i>31-40 years</i>	<i>40 + years</i>
I access electronic resources from other sources	40.0%	20.0%	40.0%	.0%
I do not access electronic resources from other sources	31.8%	59.1%	4.5%	4.5%

Source: Author, 2019

Analysis to Determine Age and Access to Electronic Resources Use from Other Sources

Table 28 analyses the age of respondents and access to electronic resources from other sources of respondents. The results states that the respondents who use e-resources from other sources were: 20 years and below (40.0%), 21-30 years (20.0%), 31-40 years (40.0%), above 40 years (.0%). The figures for the respondents who do not use electronic resources from other sources were stated as 20 years and below (31.8%), 21-30 years (59.1%), 31-40 years (4.5%), above 40 years (4.5%).

Test to Determine Age and Access to Electronic Resources Use from Other Sources

The researchers thought it expedient to determine if there was any relationship (or otherwise) between the age of respondents and access to electronic resources through the residence of respondents. The results were tested using Chi-square method. In Table 29, the Pearson Chi-square (p-value) generated was 13.41, using formula $\chi^2 = (6, N=66) = 13.41$, which is interpreted to mean that it is not significant. Therefore, the interpretation is that age is not a determinant regarding respondents' use of electronic resources from other sources.

Table 29: Chi-square results to determine age and access to e-resources use from other sources

<i>Chi-square tests</i>	<i>Value</i>	<i>df</i>	<i>Sig. Asymp. (2-sided)</i>
Pearson Chi-square	13.407 ^a	6	.037
Likelihood ratio	8.642	6	.195
Linear-by-linear association	.373	1	.542
N of valid cases	66		

Analysis on Language and Access to Electronic Resources from Other Sources

Table 30 analyses the language of respondents and access to electronic resources from

Table 30: Analysis on determinant of language and access to electronic resources use from other sources

	<i>English</i>	<i>Xhosa</i>	<i>Zulu</i>	<i>Others</i>
I access electronic resources from other sources.	33.3%	50.0%	.0%	16.7%
I do not access electronic resources from other sources.	11.9%	76.3%	11.9%	.0%

Source: Author, 2019

other sources. The results states that the respondents who access e-resources from the home of respondents were English (33.3%), Xhosa (50.0%), Zulu (.0%), others (16.7%). The figures for the respondents who do not use electronic resources from other sources of respondents were stated as English (11.9%), Xhosa (76.3%), Zulu (11.9%), and others (.0%).

Test to Determine Language and Access to Electronic Resources Use from Other Sources

The researchers thought it expedient to determine if there was any relationship (or otherwise) between the language of respondents and access to electronic resources from other sources. The results were tested using Chi-square method. In Table 31, the Pearson Chi-square (p-value) generated was 13.41, using formula $\chi^2 = (6, N=66) = 13.41$, which is interpreted to mean that the rate of significance is negligible. Therefore, the interpretation is that language is not a determinant regarding respondents' access to electronic resources from other sources, such as internet bundle from GSM network providers.

Table 31: Chi-square results to determine language and access to e-resources use from other sources

<i>Chi-square tests</i>	<i>Value</i>	<i>df</i>	<i>Sig.</i>
		<i>Asymp. (2-sided)</i>	
Pearson Chi-square	13.407 ^a	6	.037
Likelihood ratio	8.642	6	.195
Linear-by-linear association	.373	1	.542
N of valid cases	66		

CONCLUSION

The paper observes that there are some factors which are influencing the electronic information use of university students, in which age and gender serves as the most significant of

them all. This helped to discuss about the influence of these factors (age and gender) on electronic resources use among university students. The paper shows that despite the fact that there were enough literature reviews on factors affecting the use of electronic resources by students, yet the students were still lagging behind in embracing the use of the electronic resources for their research, course related, non-course related etc. The study shows that freely available electronic information resources were underutilized by the university students. So, ICT training is recommended to optimize use of digital resources.

RECOMMENDATIONS

To harness these resources, intergovernmental and non-governmental organizations must play a key role in the provision of e-information resources, in-addition, there must be training or workshop on perceptions and attitude of female on the use of electronic resources for their development and in order to avoid barriers in the aspect of age'. The paper also recommends that such a framework is required to achieve optimal productivity and leveraging of resources in interdisciplinary scientific research, as well as having broad utility across the natural social sciences. An emerging solution to the development of electronic resources use, which allows university students to make better use of existing computing resources by providing them with a single, transparent, aggregated source of computing power.

REFERENCES

- Adeleke DS, Emeahara EN 2016. Relationship Between Information Literacy and Use of Electronic Information Resources by Postgraduate Students of the University of Ibadan. Library Philosophy and Practice (E-Journal), 1381. From <<http://digitalcommons>>

- mons. unl.edu/libphilprac/1381> (Retrieved on 6 July 2018).
- Ahmed HM 2015. Gender differences in students' utilization of electronic information resources in Ramat Library, University of Maiduguri, Nigeria. *Information Impact: Journal of Information and Knowledge Management*, 6(1): 61-71.
- Ajuwon GA 2015. Internet Accessibility and Use of Online Health Information Resources by Doctors in Training Healthcare Institutions in Nigeria. From <http://ir.library.ui.edu.ng/handle/123456789/4657.> (Retrieved on 22 April 2018).
- Ani OE 2013. *Accessibility and Utilization of Electronic Information Resources for Research and its Effect on Productivity of Academic Staff in Selected Nigerian Universities Between 2005 and 2012*. Doctoral Dissertation. Pretoria: University of South Africa. <http://hdl.handle.net/10500/13057>
- Ansari MN, Zuberi BA 2010. Use of Electronic Resources Among Academics at the University of Karachi. *Library Philosophy and Practice (E-Journal)*, 385. From <<http://digitalcommons.unl.edu/libphilprac/385>> (Retrieved on 10 May 2018).
- Ayele AA, Sreenivasarao V 2013. A case study of acceptance and use of electronic library services in universities based on SO-UTAUT model. *International Journal of Innovative Research in Computer and Communication Engineering*, 1(4): 903-911.
- Bakkabulindi FEK 2011. Individual characteristics as correlates of use of ICT in Makerere University. *International Journal of Computing and ICT Research*, 5(2): 38-45.
- Burger CJ, Creamer EG, Meszaros PS 2011. *Reconfiguring the Firewall: Recruiting Women to Information Technology Across Cultures and Continents*. New York, USA: AK Peters/CRC Press, Taylor and Francis.
- Dalheme WA, Saleh N, Kaminski J, Bassendowski S, Okunji P, Hill M 2014. The impact of eLearning on nurses' professional knowledge and practice in HMC. *Canadian Journal of Nursing Informatics*, 9(3-4): 1-14.
- Daramola CF 2016. Perception and utilization of electronic resources by undergraduate students: The case of the Federal University of Technology Library, Akure. *American Journal of Educational Research*, 4(5): 366-370.
- Friemel TN 2016. The digital divide has grown old: Determinants of a digital divide among seniors. *New Media and Society*, 18(2): 313-331.
- Gakibayo A, Okello-Obura C 2013. Electronic Information Resources Utilization by Students in Mbarara University Library. *Library Philosophy and Practice (E-Journal)*, 869. From <<http://digitalcommons.unl.edu/libphilprac/869>> (Retrieved on 29 October 2018).
- Gray DE 2013. *Doing Research in the Real World*. Sage.
- Haferkamp N, Eimler SC, Papadakis AM, Kruck JV 2012. Men are from Mars, women are from Venus? Examining gender differences in self-presentation on social networking sites. *Cyberpsychology, Behavior, and Social Networking*, 15(2): 91-98.
- Islam M 2011. Effect of demographic factors on e-learning effectiveness in a higher learning Institution in Malaysia. *International Education Studies*, 4(1): 112-121.
- Jansen BJ, Moore K, Carman S 2013. Evaluating the performance of demographic targeting using gender in sponsored search. *Information Processing and Management*, 49(1): 286-302.
- Ji SW, Michaels S, Waterman D 2014. Print vs. electronic readings in college courses: Cost-efficiency and perceived learning. *The Internet and Higher Education*, 21: 17-24.
- Jung J, Chan-Olmsted S, Park B, Kim Y 2012. Factors affecting e-book reader awareness, interest, and intention to use. *New Media and Society*, 14(2): 204-224.
- Lee CL, Huang MK 2014. The influence of computer literacy and computer anxiety on computer self-efficacy: The moderating effect of gender. *Cyber Psychology, Behavior, and Social Networking*, 17(3): 172-180.
- Lee C, Coughlin JF 2015. Perspective: Older adults' adoption of technology: An integrated approach to identifying determinants and barriers. *Journal of Product Innovation Management*, 32(5): 747-759.
- Lian JW, Yen DC 2014. Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior*, 37: 133-143.
- Lillis T, Curry MJ 2013. *Academic Writing in a Global Context: The Politics and Practices of Publishing in English*. Routledge.
- Livingstone S 2012. Critical reflections on the benefits of ICT in education. *Oxford Review of Education*, 38(1): 9-24.
- Mai JE 2016. *Looking for Information: A Survey of Research on Information Seeking, Needs, and Behavior*. Emerald Group Publishing, Howard House, Wagon Lane, BD 16, United Kingdom.
- Markauskaite L, Aditomo A, Hellmers L 2009. *Co-developing e-Research Infrastructure: Technology Enhanced Research Practices, Attitudes and Requirements*. Australia: The University of Sydney and INTERSECT Australia Ltd.
- Margaryan A, Littlejohn A, Vojt G 2011. Are digital natives a myth or reality? University students' use of digital technologies. *Computers and Education*, 56(2): 429-440.
- Nwezeh CM 2010. The Use of ICT in Nigerian Universities: A Case Study of Obafemi Awolowo University, Ile-Ife. *Library Philosophy and Practice (e-journal)*, 494. From <<http://digitalcommons.unl.edu/libphilprac/494>> (Retrieved on 29 October 2018).
- Okiki OC, Asiru SA 2011. Use of Electronic Information Sources by Postgraduate Students in Nigeria: Influencing Factors. *Library Philosophy and Practice (e-journal)*, 500. From <<http://digitalcommons.unl.edu/libphilprac/500>> (Retrieved on 8 July 2018).
- Orsu EN 2017. Challenges of Utilization of Online Information Resources by Undergraduate Students: Implications for Information Services. *Library Philosophy and Practice (E-Journal)*, 1668. From <ht-

- tps://digitalcommons.unl.edu/libphilprac/1668> (Retrieved on 5 June 2018).
- Park J, Kim BI 2010. The school bus routing problem: A review. *European Journal of Operational Research*, 202(2): 311-319.
- Quadri GO 2013. Influence of Demographic Factors on Use of Online Library Resources by Undergraduate Students in Two Private Nigerian University Libraries. Library Philosophy and Practice (e-journal). 976. From <http://digitalcommons.unl.edu/libphilprac/976> (Retrieved on 11 March 2018).
- Ritzhaupt AD, Liu F, Dawson K, Barron AE 2013. Differences in student information and communication technology literacy based on socio-economic status, ethnicity, and gender: Evidence of a digital divide in Florida schools. *Journal of Research on Technology in Education*, 45(4): 291-307.
- Tess PA 2013. The role of social media in higher education classes (real and virtual)-A literature review. *Computers in Human Behavior*, 29(5): A60-A68.
- Tosun LP 2012. Motives for Facebook use and expressing "true self" on the Internet. *Computers in Human Behavior*, 28(4): 1510-1517.
- Tsourela M, Roumeliotis M 2015. The moderating role of technology readiness, gender, and sex in consumer acceptance and actual use of Technology-based services. *The Journal of High Technology Management Research*, 26(2): 124-136.
- Tuckman BW, Harper BE 2012. *Conducting Educational Research*. Forbes Boulevard, Maryland, USA: Rowman and Littlefield Publishers.
- VanDeursen AJ, VanDijk JA 2014. The digital divide shifts to differences in usage. *New Media and Society*, 16(3): 507-526.
- Venkatesh V, Thong JY, Xu X 2012. Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1): 157-178.
- Vines TH, Albert AY, Andrew RL, Débarre F, Bock DG, Franklin MT, Rennison DJ 2014. The availability of research data declines rapidly with article age. *Current Biology*, 24(1): 94-97.
- Walther B, Morgenstern M, Hanewinkel R 2012. Co-occurrence of addictive behaviours: Personality factors related to substance use, gambling and computer gaming. *European Addiction Research*, 18(4): 167-174.
- Yang YTC, Wu WCI 2012. Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: A year-long experimental study. *Computers and Education*, 59(2): 339-352.

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