

Extent to which Learners' Computer Level Literacy Influence Utilisation of Online Library Services by Distance Learners at the University of Nairobi, Kenya

Gor Ochieng Peter

Department of Curriculum, Instruction and Media, Rongo University, Kenya

*Corresponding author: Gor Ochieng Peter

| Received: 15.03.2019 | Accepted: 25.03.2019 | Published: 30.04.2019

DOI:[10.21276/jaep.2019.3.4.1](https://doi.org/10.21276/jaep.2019.3.4.1)

Abstract

The purpose of this study was to determine the influence of demographic and institutional factors on utilisation of online library services by distance learners of the University of Nairobi. Specifically, the study aimed at achieving an objectives: viz. assess the extent to which learners' computer literacy influences utilisation of online library services. The study was anchored on the positivist research paradigm. Descriptive survey and correlation research designs were adopted for this study. Data were collected using self-administered questionnaires and interview schedules. The target population consisted of 1671 learners in the School of Open and Distance Learning and 14 librarians found in the University of Nairobi namely Kikuyu Campus, Chiromo Campus and the main library Campus (The Jomo Kenyatta Memorial Library). The sample size was 312 respondents. A pre-test study was conducted using 31 learners and 1 librarian. This constituted 10% of the study sample. The researcher tested for the inter-item reliability of the instruments using Cronbach's Alpha and results ranged from 52.5%-95.8% for learners' questionnaires while that of librarians recorded 69.8%. Data analysis were done using frequency counts, the mean and standard deviation while hypothesis was tested using multiple linear regression analysis; one way analysis of variance at 0.05 level of significance. The key finding indicated a significant relationship. The finding indicated no significant relationship between computer literacy and utilisation of online library services at ($r = 0.234$, $R^2 = 0.055$, $n=259$, $p < 0.05$). However, one factor, learners' computer literacy had no influence on utilisation of online library services. The study recommends that all distance learners irrespective of their gender and age should be enlightened to use online library services provided by the University of Nairobi. The outcome of this study may act as basis for policy formulation for both the University of Nairobi and the government of Kenya regarding Distance Learning Programmes. Further research may be carried out to ensure that these demographic and institutional factors are tested in other study samples found in other public universities in Kenya.

Keywords: Computer Literacy Utilisation Online Distance Learners Kenya.

Copyright @ 2019: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and sources are credited.

INTRODUCTION

Distance learning has gained popularity in the recent times among universities in the world. This is due to the fact that universities are able to control the number of learners enrolling for the regular programmes [1]. Effective implementation of distance learning programme calls for utilisation of library resources and services, audio-visual media and application of information communication technology [2]. These resources and services are important because they can be used to communicate to learners in distance locations and at the same time enhancing effective coordination of sessions with groups or individual learners. Similarly, learners have the opportunity of getting information from print media and online library services while out of session [2]. This is to ensure that

distant learners are adequately equipped with the right course content and examination techniques. Distance learners are called upon to make maximum utilisation of study centres to enable them read and search for information online [3].

The library is thus the focal point of any centre of learning because it facilitates reading, inquiry and independent study by providing relevant support services and resources for teaching and learning [4]. The library usually contains information services in different forms such as print media, electronic media and the Internet hence these services are important in supporting distance learning programmes. Most researchers in distance learning point out that digital library is an important component of distance learning programmes [5].

Research by Ganiyu [6] observes that University learners patronise their university libraries to search and retrieve relevant and up-to-date information in electronic or online format for effective teaching, learning and research purposes. The study further describes university library patrons as; undergraduate learners, postgraduate learners, researchers, information professionals, staff and other users from outside the university who intend to use the university library. Distance learners are expected to read further beyond class instructions to collect and retrieve information for class work, assignments, seminars term papers, dissertations, theses and projects and this information could be retrieved from online library resources [6].

Online library services have emerged as an important component of research process for distance learners [7]. This is because once the learners have conducted basic research such as consulting lecturers or checking at references in their reading lists they turn to online literature to initiate their research process. Notably, online library resources and e-resources have become areas of interest in higher education. As a result of this development, university libraries worldwide have embraced regular application of Internet resources, search engines and use of e-mail services as part of their normal communication process [8, 7].

The use of online database is usually faster than searching for the information in the print format more so when looking for the information in the archives. Online library services are more direct especially when one wishes to apply combinations of words to search for several files at ago, a task that can be achieved more easily than when using printed materials [4]. Online resources can also be downloaded, printed and search outcomes saved for future reference and at the same time flexible and can be updated more often than printed tools. Distance learners have the opportunity of accessing online library services from their distant locations away from the university library through the dial-up access [9, 4, 7].

The other advantages of employing online library resources and services consist of; regular accessibility to online resources, the users have got the opportunity of operating from any location, availability of information in one place, numerous resources can be provided and finally, it creates room for easy access to information [4, 7]. Learners' usage of online library services is informed by the fact that these services enhance the quality of the research work by enabling them to take less time in doing research while taking more time in the writing of their research papers. An online library service also increases learner's ability to obtain more services, a diversity of services, and more current and up-to-date services [10].

The advent of online technology has made it possible for universities to come up with different ways of re-structuring their collections and information services in order to embrace the new developments. In responding to the new developments, university libraries have adopted the use of online information services, Information and Communication Technology (ICT) to meet the various demands of library users. Distance learners in spite of their demographic characteristics such as age, gender and religion are encouraged to explore the use of online library resources and services in order to supplement their academic activities [11, 6, 12, 7].

The application of ICT in education is becoming a major contemplation as developing countries concentrate on improving the quality of education. In Africa, for example, Aiona [13] conducted a study in four main institutions offering distance learning programmes namely, the Open University of Tanzania (OUT), University of Nairobi (UoN), University of South Africa (UNISA) as well as the University of Botswana (UoB). The purpose of the study was to find out the availability of library and information support services for distance learners in those institutions. The findings revealed that there were no library support services in the said universities except for UNISA, which had embraced the most current information technology in providing services to distance learners; thus, library collection could be readily accessed through the Internet [13].

A little earlier, Kavulya [14] examined library services provision for distance learning among selected universities in Kenya, including Kenyatta University (KU), Africa Virtual University (AVU) as well as the United States International University – Africa (USIU-A), all based in Nairobi, Kenya. The findings revealed that, the learning as well as information services available in the institutions' libraries were inadequate and limited; thus, could not be accessed easily by distance learners. However, at AVU, the use of modern technology had taken root since both the catalogue and digital library were available in the Internet to all learners and other library users. Notably, AVU provided digital library in the form of e-journals-books and above all, online archives. On its part, USIU-A, had also made available its 6,000 electronic journals with full text on the Internet to its users [14].

Demographics and institutional factors usually offer important clues as to what factors promote distance learners' utilisation of online library services. For example, Islam [11] conducted research on effects of demographic factors on e-learning effectiveness in Malaysian institutions of higher learning and found that learners' gender and level of education are key elements of e-learning programmes in education. The findings further revealed that learners with broad educational backgrounds had wider knowledge on

application of technology and its merits in realising excellent academic achievement because this category of learners are equipped with the latest technological innovations and are up to date with computer usage and applications. Similarly, learners ought to be more computer literate in order to enhance exploration of the Internet and update their level of understanding in information through e-learning [11].

Similarly, Okiki and Asina [15] assessed factors influencing use of electronic information sources among postgraduate learners in six Nigerian universities, including University of Ibadan, University of Lagos, Onabisi Onabanjo University, Ogun State; Federal University of Technology, Akure University of Agriculture and Lagos State University, the findings showed a positive correlation between utilisation of electronic information and the key concepts, which included learners' background characteristics and institutional factors [15].

Various studies have examined the influence of institutional factors on the utilisation of online library and information sources among learners in institutions of higher learning, including distance learners. For instance, Alisona, Kiyngib and Baziraake [16] reported a significant correlation between utilisation of medical e-resources and poor Internet connectivity; while Owusu-Ansah & Bubuama [7] identified slow access to Internet facilities as a key institutional factor constraining utilisation of online library services by distance learners at the University of Ghana. Other institutional factors influencing utilisation of online library services include inadequate number of functional computers in relation to the number of learners [16]; as well as inadequacy of ICT infrastructural facilities included shortage of computers, lack of affordable online access by learners, as well as absence of in-depth ICT skills and information searching skills among library staff [17]. The utilisation of online information sources is also affected by frequent power outages, inadequate assistance by library staff, lack of user support systems, as well as lack of subscriptions to some databases [18, 16].

In Kenya, the ICT Sector Policy Guidelines notes that "inadequate implementation of ICT policies, regulatory intensions to support rapid development, deployment of ICT infrastructure, limited support for research and inadequate support to ICT support are some of the key challenges facing ICT in Kenya" [19]. Still in Kenya, a study conducted by Githinji [20] on factors influencing University of Nairobi Master of Education degree learners' access and utilisation of ICT facilities, reported a low utilisation of scholarly electronic publications among postgraduate learners, particularly due to inadequate awareness about the availability of e-resources.

Despite enormous efforts made by various institutions to place information and communication as a key component of university teaching and learning, it emerges that both learners and faculty members are unable to make use of online resources and services. While this is usually attributed to diversity of operational deficits on the part of learners, faculty and universities, Githinji [20] underscores the need for more research aimed at unearthing underlying factors that contribute to this kind scenario in Kenyan institutions of higher learning. It was in this context that the current study was an attempt to critically analyse the influence of demographic and institutional factors on utilisation of online library services by learners enrolled in the distance learning programme of the University of Nairobi.

Statement of the Problem

Distance learners just like on-campus learners are entitled to information in all formats other than paper or print media [21]. The study further reiterates that despite this position, some distance learners lack exposure to computers while others possess poor attitude towards Information Communication Technology. The records and statistics available at the University of Nairobi library reference section at the time of conducting this study indicated that, only about 22% of distance learners had visited the online library sites while majority of them 78% relied on print based materials in the other library section [22]. This could probably explain complaints raised by lecturers, that during presentation of their term papers and assignments, majority of distance learners do not use electronic resources to support their academic work despite the fact that the University of Nairobi library subscribe to a number of these services [20].

The University of Nairobi established an infrastructural ICT Centre in March 2002 which was tasked with responsibility of offering quality and cost effective Communication Technology that meet the changing learning, teaching, research and management requirements of the University. Currently, the registration of courses and selection of degrees, journals and books as well as abstracts from the University are all online [23, 20]. Despite this positive move, the University is faced with serious challenges that ranges from ; lack of online courses, some basic facilities like computers are lacking in the Extra-Mural centres and still, some of the staff and learners who are supposed to use to use ICT and online library services have limited knowledge of accessing these facilities and services.

This implies that about the 3,406 learners who were enrolled in the School of Open and Distance Learning during the April Intake for the 2013/2014 academic year were disadvantaged in accessing ICT facilities and online library services provided by the University thus hampering their effective utilisation of these services for learning purposes [10]. Demographic

and Institutional factors are often critical in giving clues as to what factors constitute to learners failure to embrace the use of ICT infrastructure and online library services [10, 20]. It is in this context that this study set out to investigate the influence of demographic and institutional factors on utilisation of online library services at the University of Nairobi.

Learners' Computer Literacy and Utilisation of online Library Services

A computer is electronic equipment designed for storage, organisation and searching for information, working out mathematical problems and also controlling other machines [24]. Using the computer calls for training people to acquire computer. Computer-based global information system comprise of many networks that are interconnected. Each network may link up to tens, hundreds, or even thousands of computers thus providing the sharing of information from one computer to another. It also connects computer resources such as powerful supercomputers in order to access information. In this regard, learners need to undergo training to enable them acquire the necessary skills and knowledge about computer operations [25, 26].

Researchers in library science have recommended the possible benefits of computer literacy on accessing and retrieving information online. For example, computer self-efficacy has been cited as one of the qualities that increase one's ability to use computers. This ability is grounded in Social Cognitive Theory that puts it as a predictor to utilisation of ICT. The theory posits that, "people with higher levels of confidence in using computers in general are more likely to find the digital library easy to use. University authorities; therefore, have been encouraged to organise training programmes on different computer software to enhance familiarity with computing technologies among library users" [27, 28].

In a study by Tayler and Hastings [29] on factors influencing virtual patron satisfaction with online library resources and services in Florida, the findings revealed that online users were more satisfied in performing computer related tasks. For example, persons with wide computer knowledge were able to perform several computer related tasks and at the same time were more willing to be involved in the utilisation of online library services. The findings were in agreement with other related studies on computer experience and use of digital information systems. For instance, in a study by Koohang [30] on learners' perception towards use of the digital library in weekly web-based distance learning in Britain, the results indicated that there was a positive correlation between computer experience and student satisfaction with online library services.

In a similar study by Koohang and Ondracek [31] on users view about the usability of digital libraries in Britain, the findings indicated that computer experience enhanced effective utilisation of online library services. Conversely, the results are in contrast to Blackman [32] who carried out a study on perceptions and attitudes regarding library services available to learners enrolled in online degree programmes. The findings indicated that there was no significant difference between computer experience and learners satisfaction with digital library. In a similar study by Metzger, Flanagan and Zwarun [33] on college student web-use, user perception of information credibility and verification behaviour, the results revealed that there was heavy reliance on the web by college learners for both general and academic information and there were higher chances that this would increase with time. The report further stated that college learners tend to believe information from the Internet than do people from a more general adult population [34].

Sheard and Lynch [35] conducted a study on accommodating learner diversity in web-based learning environment; the findings points out that different learners respond in different ways to online library utilisation depending on their previous experience or knowledge in computer. The result further reiterates that there was no single format that can meet the diverse needs of all learners. This explains as to why there are constant challenges facing online learning. Therefore, cases of learners' familiarity with the learning environment and the need to improve their skills and confidence in Internet applications and information technology are common phenomena.

Canon and Grant [36] conducted a study on utilisation of an interactive website to educate about cultural diversity and societal oppression, the results of the study strongly indicated that there was a positive relationship between using a web forum and learners learning. For instance, the use of the web can encourage dialogue among learners as well as between learners and their lecturers thus supporting learning activities in a safe environment. This calls for designing the technology infrastructures for institutions of higher learning in order to provide quality education for learners and faculty members [37].

The work of Demb, Erickson and Hawkins [38] in a study on learners' reaction to campus-made laptops computer initiative in London, reported that "laptop computer was an essential part of college learning for learners for typing papers, accessing the Internet, presentations, storing information and searching for references leading to significant differences in learners' study habit as well as their academic and social lives.

E- readiness survey of Kenyan Universities [39] pointed out that although all university are connected to the national fibre backbone network Universities are not investing sufficiently in their internal campus backbone and wireless network infrastructure that will make it easy for students to use their laptop, computers and smart phones to help learners with classroom assignments, e-mail messages and individual researches or projects for the course. The above study also indicated that learners' perception of the success of faculty in integrating the laptop computer to their academic success is tightly correlated with their perception of the success of the faculty in integrating the structure of classroom activities [39].

In another study by Sam, Othman and Nordin [40] on computer self-efficiency, computer anxiety and attitudes towards the Internet among undergraduates in Animas, the findings revealed that higher education demands improved academic resources and services not just for professional growth and development but also for preparation for real life experience in the actual work environment where they will be required to apply such knowledge. In another study by Ojo and Akande [41] on learners' access, usage and awareness of electronic information resources at University College Hospital of Ibadan Nigeria, the results of the study indicated that lack of information retrieval skills among undergraduate medical learners hampered their use of resources in the Internet; thus, making level of usage of resources very low.

While several studies have been done on influence of information literacy on utilisation of online library services, this area has not been adequately studied in Kenya. It was therefore, this gap that this study intended to fill.

METHODOLOGY

The research paradigm employed in this study is the positivist approach. Positivism emerged as a paradigm in the 19th Century with Auguste Comte's rejection of metaphysics and assertion that only scientific knowledge can reveal the truth about reality. The positivist paradigm asserts that real events can be observed empirically and explained with logical analysis. The study adopted descriptive survey design. Orodho [42] defines descriptive survey as a method of collecting information by interviewing or administering questionnaire to sample of individuals.

The study targeted learners enrolled for Bachelor of Education Arts (B.Ed Arts) and Bachelor of Education Science (B.Ed Science), in the School of Open and Distance Learning (ODL) of the University of Nairobi. Learners who were in their third year of study during the April intake of 2013/2014 academic year were selected for the study. This group level was chosen owing to the length of time they had taken at the University thus would provide the relevant and

necessary information required by the researcher. Records from the two programmes indicated that B.Ed Arts had a total of 1,578 learners out of which 848 were males and 730 were females. The programme of B.Ed Science had 93 learners, which included 58 males and 35 females.

Table-1: Population of third year learners (April intake 2013/2014) and librarians

Category	Male	Female	Total
B.Ed (Arts)	848	730	1578
B.Ed (Science)	58	35	93
Librarians	09	05	14
Total	915	770	1685

The sample size for this study was determined by using the following formula, which was developed and advanced by Krejcie and Morgan [43], as cited in Isaac and Michael [44].

Table-2: Sample size of third year learners (April intake 2013/2014) and librarians

Category	Male	Female	Total
B.Ed Arts	121	103	224
B.Ed Science	47	27	74
Librarians	09	05	14
Total	177	135	312

Source: ODL (2014)

The researcher used two set of questionnaires to collect data from the respondents. One set of questionnaire was developed for learners while another set of questionnaire was developed for librarians. The researcher gave preference to use of questionnaire because it eliminates bias on the side of the researcher and the respondents while the interview schedule was used to corroborate responses received from questionnaires [45].

Face validity, according to Kalai [46] refers to subjective judgement that the test appear to cover the relevant content. It also refers to subjective judgement of assessors about what the instrument appears to be measuring on the face value. The researcher applied expert judgement to arrive at the face value of the instruments. Finally, in order to determine the validity of the whole document, a Kaiser Meyer Olkin (KMO) formula test of validity was applied. A KMO test of validity provided a figure of 0.806. This implied that the sampled data was highly valid since the threshold is normally 0.5. The researcher applied expert knowledge in selecting essential questions to be included in the interview schedule. The reliability of the full instrument was obtained using Cronbach's Alpha coefficient. This refers to a measure of internal consistency of set items in a group. It is thus considered to be a measure of skilled reliability of an instrument. Cronbach's Alpha Coefficient was used to measure inter-item reliability of the questionnaires. Each item of the questionnaire,

measuring the same characteristics was treated as a mini instrument on its own.

The results from Table 2 shows that Cronbach's Alpha for section B of the instrument was 0.523 (52.3 %) with an F-value of 35.609 out of the seven (7) items. In section C of the instrument Cronbach's Alpha was 0.749 (74.9%) while the F value was 15.809 out of the seven (7) items.

Authority to conduct research was obtained from National Commission for Science, Technology and Innovation (NACOSTI) before setting out for data collection. The researcher also reported to the Director of Open, Distance and eLearning (ODEL) Campus for clearance. The researcher obtained permission from the Dean, ODL to conduct research. Simple random sampling was used to gather information from respondents. In this regard, the researcher used pieces of papers written "Yes" for the number of learners required for the study sample and "No" for the remaining portion. These papers were thoroughly mixed and shuffled in a container for learners to pick to ensure that each learner had an equal chance of being selected.

First, questionnaires were personally administered to the respondents with information to the respondents that filling in the questionnaire instrument was voluntary and that the purpose of the study was purely to identify ways of improving online library utilisation in distance learning. Second, respondents were assured of utmost confidentiality of the information and that its purpose was for the study only. Confidentiality was assured through the use of captive audience to enhance direct contact with the

respondents. An opening note was addressed to all the respondents to confirm this commitment.

RESULTS AND DISCUSSIONS

Learners' computer literacy and utilisation of online library services

The objective of this study was to assess the extent to which learners' computer literacy influenced utilisation of online library services at the University of Nairobi. In order to accomplish this task, respondents were asked to indicate the extent to which learners' computer literacy influenced utilisation of online library services at the institution. In carrying out this investigation, the 7 items in the instrument that contained statements about computer literacy were scored on a five level rating scale which were; to a very great extent, to a great extent, not sure, less extent and not at all. Respondents were expected to express their attitude towards each of the items in the various subtitles by selecting only one response. The scores ranged from a continuum from 7 to 35 indicating the lowest and the highest usage of online library service respectively. The results are presented in the preceding sections.

Learners' Computer Literacy and Utilisation of online Digital Repository

The study sought to investigate the influence learners' computer literacy on utilisation of online digital repository. In order to accomplish this task, respondents were asked to indicate the extent to which learners' computer literacy influenced utilisation of online digital repository. The results are displayed in Table-3.

Table-3: Learners' computer literacy and utilization of online digital repository

Computer literacy influence my usage digital repository	Frequency (f)	Percentage %	Cumulative percent
Not at all	68	26.1	26.1
Less extent	77	29.8	55.9
Not sure	72	28.0	83.9
Great extent	21	8.1	91.9
Very great extent	21	8.1	100.0
Total	259	100.0	
Mean	2.42		

The data in Table-3 indicates that 68 (26.1%) and 77 (29.8%) respondents scored in for not at all and less extent, respectively. This was followed by 72 (28.0%) respondents who were not sure. Similarly, only 21 (8.1%) respondents scored for great extent while 21 (8.1%) respondents scored in the very great extent. A closer look at the analysis further reveals that majority of the respondents 145 (55.9%) did not support the opinion that learners' computer literacy influenced utilisation of online digital repository. The implication of this result is that learners' computer literacy had less influence on utilisation of online digital repository. It may also imply that majority of the learners, as was

reported by Sheard and Lynch [35] do not possess computer knowledge; hence, they cannot access online digital repository.

Learners' Computer Literacy and Utilisation of online Newspapers

The study also intended to investigate influence of learners' computer literacy on utilisation of online newspapers. In carrying out this investigation, respondents were asked to indicate the extent to which learners' computer literacy influenced utilisation of online newspapers. The data generated is presented in Table-4.

Table-4: Learners' Computer Literacy and Utilisation of online Newspapers

Computer literacy influence my usage online newspapers	Frequency (f)	Percentage %	Cumulative percent
Not at all	53	20.5	20.5
Less extent	84	32.3	52.8
Not sure	69	26.7	79.5
Great extent	34	13.0	92.5
Very great extent	19	7.5	100.0
Total	259	100.0	
Mean	2.54		

As shown in Table-4 the results indicated that 53 (20.5%) respondents scored for not at all while 84 (32.3%) respondents scored for less extent. Another 69 (26.7%) respondents said they were not sure. Similarly, 34 (13.0%) and 19 (7.5%) respondents indicated great extent and very great extent, respectively. A clear observation of the results reveals that majority 137 (52.8%) respondents were against the view that learners' computer literacy influenced utilisation of online newspapers. The implication of this finding is that there less influence of learners' age on utilisation of

online newspapers. The mean score worked out was 2.54.

Learners' Computer Literacy and Utilisation of online Public Access Catalogue

The study sought to investigate the influence of learners' computer literacy on utilisation of OPAC. In responding to this investigation, respondents were asked to indicate the extent to which learners' computer literacy influenced utilisation of OPAC. The results are shown in Table-5.

Table-5: Computer Literacy and Utilisation of online Public Access Catalogue

As a result of computer literacy am able to use online public access catalogue	Frequency (f)	Percentage %	Cumulative percent
Not at all	71	27.3	27.3
Less extent	40	15.5	42.9
Not sure	48	18.6	61.5
Great extent	44	16.8	78.3
Very great extent	56	21.7	100.0
Total	259	100.0	
Mean	2.90		

As shown in Table-5, the results indicates that 71 (27.3%) and 40 (15.5%) respondents did not support the opinion that learners' computer literacy influenced utilisation of OPAC. However, 44 (16.8%) and 56 (21.7%) were in the agreement that learners' computer literacy influence utilisation of OPAC while 48 (18.6%) respondents were not sure. The implication of this finding is that there was little difference between those who are against the opinion and those who are supporting the allegation. The implication of this result seems to suggest that learners' computer literacy supports utilisation of OPAC. This outcome alludes to Aiona [13] and can be attributed to the fact that this

service is free of charge and open for access to many library users.

Learners' Computer Literacy and Utilisation of online Electronic Books

The study also explored the influence of learners' computer literacy on utilisation of online electronic books. In order to accomplish this task, respondents were asked to indicate the extent to which learners' computer literacy influenced utilisation of online electronic books. The results are summarised in Table-6.

Table-6: Learners' computer literacy and utilisation of online electronic books

As a result of computer literacy able to use online electronic books	Frequency (f)	Percentage %	Cumulative percent
Not at all	61	23.6	23.6
Less extent	79	30.4	50.0
Not sure	55	21.1	75.2
Great extent	22	10.6	85.7
Very great extent	37	14.3	100.0
Total	259	100.0	
Mean	2.61		

On the basis of data shown in Table-6, it emerges that 61 (23.6%) and 79 (30.4%) respondents scored in the Not at all and less extent level respectively. The information in Table 4.31 also reveal that 22 (10.6%) and 37 (14.3%) respondents scored in the great extent and very great extent, respectively while 55(21.1%) said they were not sure. The data gives the impression that majority 140 (54%) respondents did not support the view that learners' computer literacy influence utilisation of online electronic books compared to only, 59 (24.9%) respondents supporting the opinion. The implication of this finding is that there was less influence of learners' computer literacy on

utilisation of online electronic books among the distance learning standards at the University of Nairobi.

Learners' Computer Literacy and Utilisation of online Electronic Journals

The study was interested in establishing influence of learners' computer literacy on utilisation of online electronic journals. In carrying out this investigation, respondents were asked to indicate the extent to which learners' computer literacy influenced utilisation of online electronic journals. The results are shown in Table-7.

Table-7: Learners' Computer Literacy and Utilisation of online Electronic Journals

As a result of computer literacy am able to use online electronic journals	Frequency (f)	Percentage %	Cumulative percent
Not at all	71	27.3	27.3
Less extent	56	21.7	49.1
Not sure	64	24.8	73.9
Great extent	31	11.8	85.7
Very great extent	37	14.3	100.0
Total	259	100.0	
Mean	2.63		

According to the results obtained in Table-7 71 (27.3%) and 56 (21.7%) respondents scored in the not at all and less extent levels. However, another 64 (24.8%) respondents stated that they were not sure. Similarly, 31(11.8%) and 37(14.3%) respondents indicated great extent and very great extent, respectively. The impression of this result is that majority 127 (49%) respondents did not agree with the opinion that learners' computer literacy influenced utilisation of online electronic journals while only 68 (26.1%) supported the view. The implication of this result is that there was less influence of student

computer literacy on utilisation of online electronic journals. The mean score computed was 2.63.

Learners' Computer Literacy and Utilisation of online Database

The study also investigated the influence of learners' computer literacy on utilisation of online database. In order to achieve this goal, respondents were required to indicate the extent to which learners' computer literacy influenced utilisation of online database. The results are shown in Table-8.

Table-8: Learners' computer literacy and utilisation of online database

As a result of computer literacy am able to use online electronic database	Frequency (f)	Percentage %	Cumulative percent
Not at all	69	26.7	26.7
Less extent	66	25.5	52.2
Not sure	68	22.4	74.5
Great extent	31	11.8	86.3
Very great extent	25	13.7	100.0
Total	259	100.0	
Mean	2.53		

The data in Table-8 reveals that, majority 69 (26.7%) and 66 (25.5%) respondents scored in the level of not at all and less extent, respectively. Likewise another 31 (11.8%) and 25 (13.7%) respondents scored in the great extent and very great extent levels, respectively. However, 68 (22.4%) said they were not sure. This gives the impression similar to Tayler and Hastings [29] that there was less influence of learners' computer literacy on utilisation of online database. The mean score was calculated at 2.53.

Learners' Computer Literacy and Utilisation of online Research Papers

The study sought to investigate the influence of learners' computer literacy on utilisation of online research papers. In order to realise this investigation, respondents were asked to indicate the extent to which learners' computer literacy influenced utilisation of online research papers. The results are shown in Table-9.

Table-9: Learners' Computer Literacy and Utilisation of online Research Papers

As a result of computer literacy am able to use online research papers	Frequency (f)	Percentage %	Cumulative percent
Not at all	79	30.4	30.4
Less extent	48	18.6	49.1
Not sure	73	28.0	77.0
Great extent	18	6.8	83.9
Very great extent	41	16.1	100.0
Total	259	100.0	
Mean	2.47		

Data shown in Table-9 shows that, 79 (30.4%) and 48 (18.6%) respondents scored for not at all and less extent levels respectively. Likewise another 73 (28.7%) respondents indicated that they were not sure. However, 18 (6.8%) and 41 (16%) respondents scored in the great extent that very great extent, respectively. The results further reveal that majority 127 (49%) respondents did not support the view that learners' computer literacy influenced utilisation of online research papers while only 59 (22.9%) respondents supported the opinion. The implication of this finding is that learners' computer literacy had less influence on utilisation of online research papers. The mean score was computed at 2.47.

Mean scores on learners' computer literacy and utilisation of online library services

The study further investigated mean scores on influence of learners' computer literacy on utilisation of online library services. In carrying out this investigation, scores of means on different online library services were computed and compared. Further, mean of means was also calculated to act as a basis for making any meaningful conclusions. Any online library service that scored above the mean of means was considered high while those that scored below the mean of means were treated as low. The results are summarised in Table-10.

Table-10: Mean scores on learners' computer literacy and utilisation of online library services

Level library source	Mean	Std. dev.
Online digital repository	2.42	1.210
Online newspapers	2.54	1.460
Online public access (OPAC)	2.90	1.381
Electronic books	2.61	1.416
Electronic journals	2.63	1.449
Online database	2.53	1.4721
Online Research Papers	2.47	1.519
Total Mean	18.1	
Base Mean	2.59	

The results of data analysis from Table-10 shows that OPAC scored the highest mean of 2.90, followed by, online electronic journals and online electronic books at a mean of 2.63 and 2.61 respectively. On the other hand, online newspapers recorded a mean of 2.54 followed by online database at a mean of 2.53 while online research papers and online digital repository registered means of 2.47 and 2.42 respectively. Comparing the mean scores with the mean of means which was 2.59, it was possible to conclude that online public access catalogue (2.90), and online electronic journals (2.63) were highly influenced by learners' computer literacy. Similarly, other services that fell below the mean of means such as online electronic books (2.54), online database (2.53), online research papers (2.47) and online digital repository (2.42) were lowly influenced by learners' computer literacy. It is also evident to conclude that OPAC is the service that recorded the highest influence from learners' computer literacy. This finding concurs with

the interview finding, for example, one librarian from Chiromo library revealed;

"Computer is increasingly becoming the major note book, textbook, dictionary and storage facility for information for learners in quality institution of higher learning and noted that universities that fails to utilise the benefits of digital aged computer assisted learning, web connectivity and networked learning, cannot offer quality education and pointed out that distance learners lacked information competencies required for effective utilisation of online library services offered by the University of Nairobi."

The relationship between learners' computer literacy and utilisation of online library services (as measured by mean score) was also investigated using multiple linear regression analysis. The null hypothesis stated as follows:

H₀ There is no significant relationship between learners' computer literacy and utilisation of online

library services at the University of Nairobi.

The results are summarised in Table-11.

Table-11: Regression analysis on learners' computer literacy and utilisation of online library services

Model	R	R ²	Adj. R ²	Std error of estimate	R square change	F change	df1	df2	Sig. change
1	0.234	0.055	-0.009	1.222	0.055	0.854	10	12	0.578

The results displayed in Table-11 indicate that the coefficient correlation $r = 0.234$ is a weaker positive relationship between independent and dependent variable. The R^2 is the coefficient of the determination which is $R^2 = 0.055$ implying that there was a small positive linear correlation. The significance of change also referred to as p -value is $p=0.578$. The value is pegged on the study limit at 0.5 or 95 percent degree of confidence interval. Since p -value $0.578 > 0.05$, the null hypothesis was accepted and conclusion made that there was no significant relationship between learners' computer literacy and utilisation of online library services at the University of Nairobi. This outcome however, contradicts perceptions as expressed by the librarians who had indicated a stronger relationship

between learners' computer literacy and use of online library services with a mean score of 4.09.

The findings further contradicts the results of an earlier study by Tayler and Hastings [29] who conducted a study on factors influencing virtual patrons satisfaction with online library resources and services in Florida, which alluded to the fact that computer experience with several computer related task correlated positively with learners satisfaction with the library online services. Further investigation was done using ANOVA to test how the regression model statistically significantly predicts the outcome variable (the significant relationship between the dependent and independent variable). Table-12 presents the results.

Table-12: Analysis of Variance

Model	Sum of square	df	Mean square	f	sig
Regression	12.755	10	1.275	0.854	0.578
Residual	220.981	148	1.493		
Total	233.736	158			

The ANOVA Table-12 shows that F value statistics is 0.854 meaning 85.4 percent of model fits the linear line hence has been explained thus the model fits interpretation.

Variation in Utilisation of online Library Services and Learners' Computer Literacy

In relation to learners' computer literacy, the results in Table 4.38 show that of the 259 respondents 101 (39.0%) utilised online library services to a great extent, while 70 (27.0%) did so to a very great extent. Those who utilised online library services to a less extent were 42 (16.2%), while 19 (7.3%) never used it at all. Cumulative results show that up to 171 (66.0%) learners reported above average utilisation of online library services, in relation to computer literacy. Again, based on the level of computer literacy, among learners who rated their literacy level as above average, 43

(45.7%), utilised online library services to a great extent, 31 (33.0%) indicated a very great extent, while 10 (10.6%) utilised online library services to a less extent. Among learners who rated their computer literacy level as below average, the results show that 11 (22.4%) utilised online library services to a great extent, 8 (16.3%) utilised the services to a very great extent, 15 (30.6%) indicated less extent, while 9 (18.4%) never used the services at all. Cumulatively, 74 (78.7%) learners with above average computer literacy against 19 (38.8%) learners with below average literacy level reported above average utilisation of online library services. Based on this, the analysis obtained a computed F (4,2) statistic of 25.338, with a p -value of 0.003, which suggests up to 99% chance that there was significant variation among learners with above average, average and below average computer literacy levels, regarding utilisation of online library services.

Table-13: Cross-tabulation of Utilisation of online Library Services and Computer Literacy

Aggregate perception on utilisation of online library services	Above average		Average		Below average		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Very great extent	31	33.0	31	26.7	8	16.3	70	27.0
Great extent	43	45.7	47	40.5	11	22.4	101	39.0
Not sure	9	9.6	12	10.3	6	12.2	27	10.4
Less extent	10	10.6	17	14.7	15	30.6	42	16.2
Not at all	1	1.1	9	7.8	9	18.4	19	7.3
Total	94	100.0	116	100.0	49	100.0	259	100.0

The analysis further revealed that learners with above average computer literacy level had about 5.8 times the odds of utilising online library services as their colleagues with below average computer literacy levels (p -value = 0.009, β = 1.773, odds ratio = 5.888, 95% C.I. = 4.682-7.406). Those who rated their literacy level as average were about 4.3 times as likely to utilise online library services as their colleagues with below average literacy level (p -value = 0.010, β = 1.457, odds ratio = 4.293, 95% C.I. = 3.289-5.604). In both cases, the variation in the odds of utilising online library services was statistically significant at 99% and 95% confidence levels, respectively. The results suggest that computer literacy level was a key factor influencing utilisation of online library services at the University of Nairobi. The higher the computer literacy level, the higher the odds of learners utilising online library services. These findings are similar to those reported by Koochang [30], as well as Koochang and Ondracek [31], whose analysis yielded a positive correlation between computer experience and student satisfaction with online library services. However, the results of this study are inconsistent with those reported by Blackman [32].

CONCLUSIONS

This study concluded that there was no significant relationship between learners' computer literacy and utilisation of online library services. This result showed that learners' computer literacy did not have a significant influence on their use of online library services.

RECOMMENDATION

The university of Nairobi administration should come up with measures of improving user education through online library orientation, induction and instruction. This will enhance effective utilisation of online library services by learners enrolled in the distance learning programme.

REFERENCES

1. Farahani, G. O. (2003). Existence and Importance of Online Interaction. A PhD Dissertation submitted to the Faculty of the Virginia Polytechnic Institute and State University, Virginia, USA.
2. Naidu, S. (2006). *E-learning: A guidebook of principles, procedures and practices*. Commonwealth Educational Media Centre for Asia (CEMCA).
3. Sacchanand, C. (2002). Information literacy instruction to distance students in higher education: Librarians' key role. 68th IFLA Council and General Conference August 18-24, 2002. Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?>
4. Candela, L., Athanasopoulos, G., Castelli, D., El Raheb, K., Innocenti, P., Ioannidis, Y., Katifori, A., Nika, A., Vullo, G., & Ross, S. (2011). Coordination action on digital library interoperability, best practices and modelling foundation. Brussels: European Union.
5. Caspers, J., Fritts, J., & Gover, H. (2001). Beyond the rhetoric: a study of the impact of the ACRL guidelines for distance learning library services on selected distance learning programs in higher education. *Journal of Library Administration*, 31(3-4), 127-148.
6. Quadri, G. O. (2013). Influence of demographic factors on use of online library resources by undergraduate students in two private Nigerian university libraries. *Library Philosophy and Practice*, 0_1.
7. Owusu-Ansah, S., & Bubuama, C. K. (2015). Accessing academic library services by distance learners. *Library Philosophy and Practice* (e-journal), 1347.
8. Kindilchie, A. I., & Samarraie, I. F. (2008). Interaction and impact of electronic information resources on Qatar University Faculty. *Libri*, 58(4), 281-293.
9. Dadzie, P. S. (2005). Electronic resources: access and usage at Ashesi University College. *Campus-Wide Information Systems*, 22(5), 290-297.
10. Mwatela, W. M. (2013). Factors influencing utilization of library services and resources: The Case of University of Nairobi Mombasa Campus Library. *Unpublished MA Thesis. Mombasa: University of Nairobi*.
11. Islam, M. A. (2011). Effects of demographics factors on e-learning effectiveness in a higher learning institution in Malaysia. *International Educational Studies*, 4(1), 4-7.
12. Nkamnebe, E. C., Udem, O. K., & Nkamnebe, C. B. (2014). Evaluation of the use of university library resources and services by the students of Paul University, Awka, Anambra state, Nigeria. *Library Philosophy and practice*, 0_1.
13. Aina, L. O. (2008). Library and Information Services Support for distant education programme. *African Universities: proposal for future development. Nigerian Libraries*, 41, 1-11.
14. Kavulya, J. M. (2004). Challenges in the provision of library services for distance Education: A case study of selected universities in Kenya. *African Journal of Library Archive and Information Science*, 14(1), 15-28.
15. Okiki, O. C. & Asina, S. M. (2011). Use of Electronic information sources by postgraduate students in Nigeria: Influencing factors. *Library Philosophy and Practice*, 4-6.
16. Alison, K. A., Kiyangi, G. W., & Baziraake, B. B. (2012). Factors affecting utilization of electronic health information resources in universities in Uganda. *Annals of Library and Information Studies*, 59, 90-96.
17. Watts, C., & Ibegbulam, I. (2006). Access to electronic healthcare information resources in

- developing countries: Experiences from the Medical Library, College of Medicine, University of Nigeria. *IFLA journal*, 32(1), 54-61.
18. Molefi, F. (2008). Context: A paper presented at the Distance Education Workshop for Setswana Part Time Writers, DNFE.
 19. Republic of Kenya. (2013). The information and communication technology sector (amendment) policy guidance. Nairobi: Government Printers.
 20. Githinji, R. M. (2014). Factors influencing University of Nairobi degree students' access and utilisation of information communication and technology facilities. Unpublished M.Ed Thesis submitted to the University of Nairobi.
 21. Nyamboga, C. M., Ongondo, M. A., & Ongus, R. W. (2004). Experiences in the use of the internet at Egerton University Library, Njoro-Kenya. *DESIDOC Journal of Library & Information Technology*, 24(5).
 22. Jomo Kenyatta Memorial Library. (2015). Details of Request for online Library Services by Distance learners at the University of Nairobi Library: Nairobi Kenya: University of Nairobi.
 23. Poniman, A., & Lumban-tobing, P. (2004). Developing the National Land Resource Database for Supporting Spatial Land Use Planning.
 24. Merriam Webster Collegiate Dictionary (15thed.) (2003). Springfield, M. A: Merriam Webster.
 25. Ackerman, E. (1996). Tools for reaching: the worldwide web and web browser. Retrieved from www.mwc.edu/falalad/w.w.w.teaching-html on 2/7/2014.
 26. Kashorda, M., & Waema, T. (2014). E-Readiness survey of Kenyan Universities (2013) report. Nairobi: Kenya Education Network.
 27. Compeau, D., Higgins, C. A., & Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS quarterly*, 145-158.
 28. Gor, P. O. (2014). Demographic And Institutional Factors Influencing Utilisation Of Online Library Services By Distance Learners In The University Of Nairobi, Kenya.
 29. Tyler, K., & Hastings, N. B. (2011). Factors influencing virtual patron satisfaction with online library resources and services. *Journal of Educators Online*, 8(2), n2.
 30. Koohang, A. (2004). Students' perceptions toward the use of the digital library in weekly web- based distance learning assignments portion of a hybrid programme. *British Journal of Educational Technology*, 35(5), 617-626.
 31. Koohang, A., & Ondracek, J. (2005). Users' views about the usability of digital libraries. *British Journal of Educational Technology*, 36(3), 407-423.
 32. Blackman, R. F. (2003). A study of the perceptions and attitudes regarding library services available to students enrolled in online degree programs.
 33. Metzger, M. J., Flanagin, A. J., & Zwarun, L. (2003). College student Web use, perceptions of information credibility, and verification behavior. *Computers & Education*, 41(3), 271-290.
 34. Mbugua, J. (2013). Determinants of Educational Managers' support for Distance Mode of Delivery: A case of Western Region Kenya. Paper presented at Open and Distance Learning Conference, College of Education and External Studies, University of Nairobi.
 35. Sheard, J., & Lynch, J. (2003). Accommodating learner diversity in web-based learning environments: Imperatives for future developments. *International Journal of Computer Processing of Oriental Languages*, 16(4), 243-260.
 36. Van Soest, D., Canon, R., & Grant, D. (2000). Using an interactive website to educate about cultural diversity and societal oppression. *Journal of Social Work Education*, 36(3), 463-479.
 37. Nyerere, J.K.A; Gravenir, F.Q. & Mse, G. S. (2009). Open, Distance and e-Learning in Kenya. *International Review of Research in ODL*, 13 (3): 185-205.
 38. Demb, A., Erickson, D., & Hawkins-Wilding, S. (2004). The laptop alternative: Student reactions and strategic implications. *Computers & Education*, 43(4), 383-401.
 39. E-Readiness survey of Kenyan Universities report. (2013). Nairobi: Kenya Education Network.
 40. Sam, H. K., Othman, A. E. A., & Nordin, Z. S. (2005). Computer self-efficacy, computer anxiety, and attitudes toward the Internet: A study among undergraduates in Unimas. *Journal of Educational Technology & Society*, 8(4), 205-219.
 41. Ojo, R. A., & Akande, S. O. (2005). Students access, usage and awareness of electronic information resources at University College, Hospital University of Ibadan, Nigeria. *Lagos Journal of Library and Information Science*, 11(2), 151-165.
 42. Orodho, A. J. (2003). Essentials of educational and social sciences research methods. Nairobi: Masola Publishers.
 43. Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
 44. Isaac, S., & Michael, W. B. (1981). Handbook in research and evaluation. San Diego: EdITS Publishers.
 45. Kombo, D. K., & Tromp, A. (2006). Proposal and thesis writing. Makuyu: DonBosco Printing Press.
 46. Kalai, A. T., & Sastry, R. (2009, June). The Isotron Algorithm: High-Dimensional Isotonic Regression. In *COLT*.