

Research article

The Relevance of Electronic Library in Promoting Quality Research and Enhancing High Academic Performance among Undergraduate Students in Nigeria's Universities

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ABSTRACT

This study, the Relevance of Electronic Library in Promoting Quality, Research and Enhancing High Academic Performance among Undergraduate students in Osun State University was carried out in Osun State, Nigeria. In carrying out research, survey Research design was adopted. The target population comprises of all level 400 students in Osogbo and Ipetu-Ijesa campuses but because of time and the cost implications, 200 level 400 students and 25 University lecturers, from eight departments from both campuses were purposively selected. Two Research instruments which were self-constructed were used to collect the data. These include Uniosun library students' Questionnaires (Unilsq) and Uniosun library lecturer's questionnaire (Unileq). The main statistical method used to answer research questions is one-way analysis of variance (ANOVA), Calculated at 0.05 level of significance. It was found that, the Uniosun has embraced electronic resources. The proper internet connectivity for advance utilization of the resources is still developing, provision for inter-library services and external connectivity among higher

institutions of learning in Nigeria is still on course, ICT library is a good venture to be embarked upon etc. based on these findings, it is recommended that: there should be increase wireless points to allow the users to use the internet and the LAN from other part of the library. Concerted efforts should be encouraged and enhanced. Minor challenges notwithstanding, electronic library should be seen as indelible infrastructure that will promote intellectual property and encourage cross fertilization of knowledge and skill across human races .

Keywords: ICT, electronic mail, digital library, research, virtual library.

1.0 Introduction

The university library has a prominent role to play in supporting higher education to fulfill objective of its parent institutions. Student in higher education are to be provided with the facilities necessary for the mastering the subject matter, techniques, skills, habits of thought and method of working in their chosen field. Classroom instruction alone will not provide all the opportunity needed for attaining all those complex educational objectives. It is here that libraries come to help student. The university is a collection of sources services and the building in which it is housed. It provides access to various resources in order to support teaching, learning and research activities [24].

According to [11] evaluation of quality of library services can be achieve by taking feedback from the users. The role of a university library is to meet the research and information needs of its community. University libraries in the developed world provide the users with local and remote access to collections in various kinds of formats. This is not the case in developing countries like Ghana and Nigeria.

The discovery of "Quantum mirage" in the year 2000 has revolutionalized the world academy than any other innovation in human history, one of the bye-products of "quantum mirage" is the incorporation of information and communication Technology to all levels of education- a condition that has promoted mental-horizon of the learners and teachers globally. Wikipedia defines library as "a collection of information, source, resources, books and services, and the structure in which it is housed. It is organized for use and maintained by public body, and institution or a private individual. The term can mean the collection, the building that houses such a collection or both. As a result of advancement in technology, libraries are now managing and housing more than just books.

Library makes use of Information and Communication Technology ICT for better services and satisfying district user's needs, libraries have been transformed into digital and virtual libraries where books, journals, and magazines have been changed into electronic-books (e-books), e-journals and e-zines. This has increased global dimension of information, skills and knowledge.

Libraries have been able to transform its operations due to the advancement in technology. Some of these transformation include cost of materials in soft copy is much cheaper and delivery time is almost instant immediately payment is done unlike the previous system when one has to wait for months to receive printed

materials paid for. Among the most recent development in information technology includes electronic information source and this could be regarded as one of the most powerful tools ever invented in human history.

[10] Defines digital library as a library in which collection are stored in digital format (as opposed to print, micro form, or other media) and accessible by computers, stressing further on the functionality usability and accessibility of digital library, which include:

- i. access to large amount of information to users wherever they are and whenever they need it
- ii. Expedite the systematic development of procedures to collect, store, and organize information in digital form
- iii. Promote efficient delivery of information economically to all users
- iv. Encourage cooperative efforts in research resources, computing and communication network
- v. Strengthen communication and collaboration between and among educational institutions
- vi. Take leadership role in the generation and dissemination of knowledge

The advantages of digital libraries include nearly unlimited storage space at a much lower cost, reallocate funds from some staff, collection, maintenance, and additional books, active role in addressing problem of the society, encouragement of collaborative research, virtual classroom teaching and learning etc. the specific emphasis on practicing-oriented research and field-based training is aimed at contributing towards poverty reduction in order to accelerate national development has been the pre-occupation electronic information and digital libraries.

1.2 Statement of the Problem

More than any other innovations in human history, information communication and technology ICT have changed the mental horizon of human races in virtually all sectors of economy and knowledge building in particular. Electronic network constitute the infrastructure which provides scientists and researchers with new access to data, information and software in cyberspace, allows them to share and control learners virtual classroom and campus. It encouraged collaborative research works among geographically- dispersed researchers, e-mail over the internet enables researchers to overcome many barriers. Through ICT, a virtual research teams can be formed and link a variety of researchers for individual and collective contribution to the growth of security and multidimensional contribution of ICT to scientific research and knowledge explosion. Many developing countries (including Nigeria) are still lagging behind to invest meaningfully into sources of intellectual development of the nation. Therefore, the study sought to investigate and proffer solution to the relevance of electronic library in promoting quality research and enhancing high academic performance among undergraduate students in Nigeria.

1.3 Research Questions

Based on the above-stated problem, the under listed research questions were posed to answer some questions

1. What is the current utilization level of the electronic control unit in UNIOSUN library
2. Has the UNIOSUN library engaged in inter-library networking as obtained in advanced countries?
3. How adequate are the networking facilities in UNIOSUN Library?

1.4 Significance of the Study

This is an empirical research; its outcomes will benefit many stakeholders in various ways.

1. University's students will benefit from the outcome of the study since student will have their time reduce in carrying out research work and enable them to access research materials. In addition they will be exposed to the standard requirement needed to update their knowledge and skills as well as their research culture to be promoted to standard level.
2. Lecturers of all categories will benefit from the outcome of the study since students would only be directed to use materials that will be beneficial to the course of study which will reduce the lecturers' workload. At the same time the lecturer would be able to update their instructional strategy in assessing and implementing world required pedagogy.
3. Other researchers from colleges of medicine, Science Engineering and Technology, Management and Social Science, Education, Agriculture, Law and Humanities will tremendously benefit from this study by exposing them to inter-disciplinary research and collaborative learning, a condition that will promote cohesion and unity of purpose among the university's campuses.
4. Other stakeholders such as post-graduate students, non-academic staff, short-term visitors, university's visiting scholar, and teaching personnel's resource –personnel from outside can rely on the material for further studies and to broaden their knowledge.

1.5 Purpose of the study

- a. The purpose of this study is to investigate the current status of electronic resources and its usage in promoting quality research and enhancing high academic performance among undergraduate students in Nigeria's Universities.
- b. To examine the quality and quantity of the UNIOSUN's library resources with the view of making those resources promoting skills and knowledge as ingredients of nation's building
- c. To compare and contrast the available electronic resources in UNIOSUN library with other advanced countries university so as to bridge the gap between UNIOSUN and other universities libraries in Nigeria and rest of Africa.

1.6 Limitation of the study

- a. The focus of this study is limited to only level 400 students who have spend minimum of six semester in a university system. Other campuses final year student (apart from ipetu-ijesha and osogbo were not included in this study). Furthermore other universities that are not owned and financed by Osun state government or that are not controlled and financed by Osun state government are not included in this study.

2.0 Review of Related Literature

Librarians sees the library more in terms of provisions of an access to quality service than just a physical place. Technology and automation have also change the way people perceive libraries. Fewer and fewer professors and students go to the library. They access the internet to collect information instead of using the library to the traditional ways [1]. As a result, the roles of libraries and the librarians is also changing. Librarians themselves has been re-evaluating their roles as reflected in many discussions and papers. They emphasize the provision of good library service as more important to the users, than mere physical library building.

Technological innovations that had emanated from quantum, [14] which formed the foundation of mobile telecommunication and wireless information has been transformed mental horizon on human races to an enviable levels more than any other innovations in human history, information and communication technology has changed the scope and focus of academia into a convenient and purposively venture. Knowledge and exposition is encouraged, collaboration research promoted, internal library service enhance and virtue classes and well as distance teachers and student who are geographically separated but virtually connected are all encouraged and has been source of exchange of knowledge and skills in human history.

Electronic library is among the by-product of information and communication technology (ICT) evolution. This perspective is evident in several studies conducted in many developing countries. [5], [15], [4], [20], [22].

2.1 Concept of ICT

ICT stands for information and communication Technology. It is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. These technologies include computers, the internet, broadcasting technologies (radio and television), and telephony. ICT have recently gained well of interest. In European countries the use of ICT in education and training has become a priority during the last two decades.

Electronic learning (e-learning) is commonly associated with higher education and corporate training. E-learning encompasses at all levels, both formal and informal that uses an information network- the internet, intranet (LAN) or extranet (WAN)- whether wholly or in-part, for course delivery, interaction, evaluation and or facilitation. Other prefers the term online learning; web-based learning is a subset of e-learning and refers to

learning using an internet mainly using a browser (such as chrome or Firefox or internet. It can also be viewed as learning through the use of electronic devices.

2.2 ICT and Collaborative Research

Collaborative writing, collecting and sharing information about a particular (graduation) topic, subject or technique. Such use of weblug can form a community network contact between students and teachers. It is also an avenue to link together many geographically-dispersed researchers who will be working on the same theme. the combination of high speed communications, open access protocols such as are used on the web , inexpensive but high quality scanners and other digitization devices, and pervasive support for multimedia have opened a new world of information to wide and diverse population.

These phenomena are having a significant impact on how the university communicates and teaches, how successful it is in distance education and research and how it collaborates with other sectors such as other higher education, institutions, business and industry, government and general public.

Summarily, it is well emphasized that ICT Contributes greatly in library automation which in the long run promote quality research among undergraduate and researchers. Foreign countries, especially European countries benefit greatly from library automation. The use of computer Assisted Instruction (CAI), e-mails, website, weblog and digital libraries has promoted quality research. Also the use of ipad, PDA, smart-phones and other electronic devices has enhanced the exposure of wide variety of information that could be used for quality research.

[23] examined postgraduate students' view on the role of university library services in facilitating their research with the resources. Data was collected randomly from four Malayian public universities.

The result showed that majority (90%) of the respondents acknowledged the role of university libraries in facilitating research and promoting academic performances, (72%) of the respondent satisfied with current library services. Some respondents suggested that library opening hours need to increased for effective using of library resources and services.

In Pakistan, [6], conducted a study on library use by students of the foundation university college of Liberal Arts and Sciences Rawalpindi. The data was collected through self-constructed questionnaire. Their findings shows that 47% of the respondent agreed with the statement that the "library had sufficient space for users". While 53% of the respondent disagreed with the statement, 56% agreed with the library staff's attitude regarding borrowing books while 44% of the respondent disagreed. Whereas 46% of the respondents indicated that Librarians assisted them in searching for there required information.

A study conducted by [5] reveled that most of the social sciences faculty member at Bahannddin Zakariya University Multan preffered to use textbooks and internet as the major sources of information. Most of them preferred print format rather than digital. Majority of the respondent were not satisfied with the subscription of

journal related to their field of interest. [14] conducted a study on the department libraries of the University Peshawar. Their study focused that most of the departmental library services were below standard, major issue were identified as lack of budget, inadequate information technology, infrastructural inadequate, administration parameters and poor physical facilities.

3.0 Methodology

3.1 Research Design

Research design adopted for this study is survey. Survey research according to [13] as cited in [16] is a situation where an item of events, population, or activities is studied in detail with a view to generalize the outcomes of sample population or universal population on the entire phenomena. In addition, purposive sampling is adopted to choose the sample population.

3.2 Population and Sample

The target population for this study comprises of all level 400 undergraduates students in Nigeria, However, because of time and cost implications, the sample is limited to level 400 undergraduate students in Osogbo and Ipetu-Ijesa Campus of Osun State University, Nigeria, 25 level 400 students were purposively selected from each of the departments of physics, chemistry, Biology, Mathematics, Statistics, Industrial Chemistry, science Technology and math education as well as Arts and social science Education respectively. Altogether 200 levels, 400 students of Osun State University, Osogbo and Ipetu-Ijesa Campus, constitute the sample for this study.

3.3 Instrumentation

Two main research instruments which were self-constructed, were used to collect information for this study, they are:

1. Uniosun library students questionnaire (unilsq) and
2. Uniosun library lecturer's questionnaire (unileq)

3.3.1 Reliability of the instrument

The two instruments after construction were trial-tested in another campus (Okuku), using test-retest method of reliability. The results obtained were 0.79 and 0.82 respectively. An indication that the instruments were strongly reliable to be used for this study.

3.3.2 Validity of the Instruments

The instruments, after construction and trial-testing, after construction with other similar instruments within the related study, it was found to be consistent and yielding predictable results.

3.5 Data Collection Procedure

The researchers personally approached the concerned students in both campuses. They were informed of the intention to purposively select them for that study. With the express permission from their respective heads of departments they fully cooperated and responded to the instrument. Lecturers equally responded to their questionnaires in that order. The instruments from the lecturers and students were collected back almost immediately to ensure 100% return.

3.5 Statistical Analysis Procedure

The data collected were subjected to statistical rigours such as measure of central tendency, measure of variability e.g. frequency count, percentage spread, mean, mode, median and standard deviation etc. The main statistical method used to answer the research questions are chi-square statistics and one-way analysis of variance (ANOVA).

4.0 Data Analysis and Discussion

4.1 ANALYSIS AND INTERPRETATION OF DATA

This section presents the analysis of data of data gathered from respondents' in order to elicit vital information about the research problems. These were done with the aid of statistical tools such as bar-charts, tables, calculation. In all a total of 200 student and 25 lecturers constitute the research respondents to this study.

Table 1: Staff Professionalism in Treating the Student without Discrimination

AGREE	DISAGREE
72 (61.7)	48(38.3)

Source, field survey 2015

On staff professionalism in treating the students fairly and without discrimination, 72 (61.7%) agreed that they have been treated without discrimination while 48 (38.3) % disagreed with the statement.

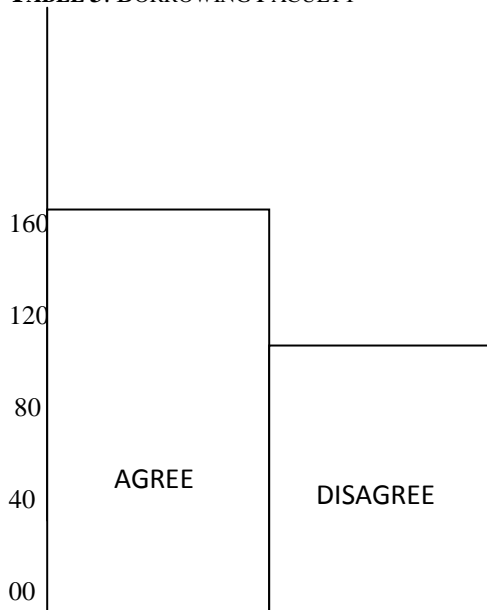
Table 2: Chi Square Tests

	VALUE	Df	Asymp.sia
Pearson chi-square	62.24	12	.000
LIKELIHOOD RATIO	69.16	12	.000
LINEAR –BY LINEAR ASSES	41.062	2	.000
NO. OF VALID CASES	200		

Source: - Field Survey 2015.

From table 2, a chi-square test was run to ensure if truly such a relationship exist and they are not by chance. From table 2 above, a 0.000 significant level proves that indeed such relationship exists and they are not by chance. It therefore reject the null hypothesis, it indicates that there is relationship between giving staff professional training and their treatment or predisposition towards library users (staff and students). It is deduced here that the university should give professional training to library staff so as to help library staff treat the users without discrimination and to help them develop better library policy.

TABLE 3: BORROWING FACULTY



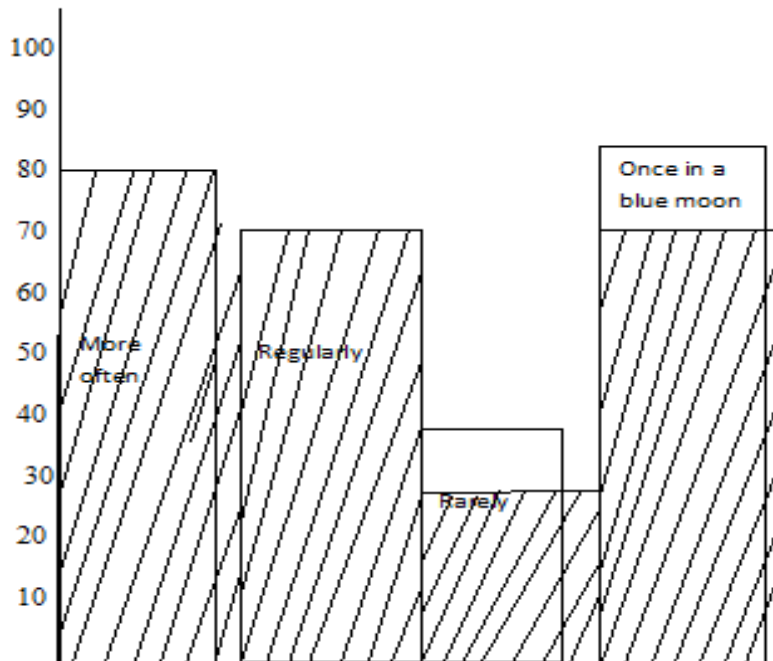
From Table 3, 160 (80%) of the respondents agreed that borrowing facilities are good and adequate whereas 40 (20%) disagreed. Further inquiry was made to access the reasons for the disagreement; the respondents posited that there is no sufficient resource on their research mandate. It implies that materials Uniosun library has not engaged itself in inter-library services to meet their varied intellectual's needs. This is in relationship with ICT and inter-library services where users can access or borrow books from other libraries across the country or elsewhere.

4.1 Research Questions 1

What is the current utilization level of the electronic control unit in Uniosun library?

Table 4

Current utilization of the Electronic Control Unit

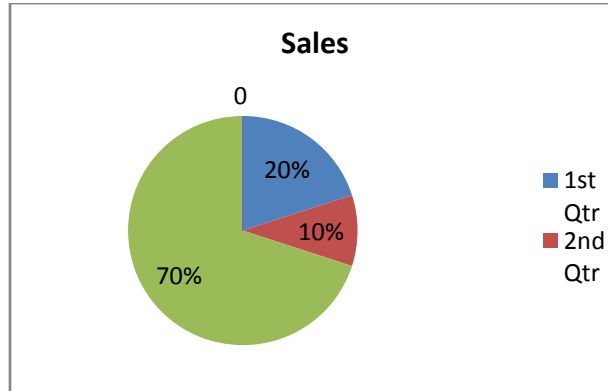


Source: field survey 2015

From table 4 above, 160 (80%) of the respondents claimed that they use electronic control unit more often, 130 (65%) said, they use it regularly, 40 (20%) said, they use electronic control unit rarely whereas 140 (70%) of them claimed that use library electronic unit once in a blue-moon. It has been observed that there is close usage between using library for project and for studies then the library being used for assignment purposes. This is because respondents affirmed that the materials in the library cannot solve quick and immediate problem as in the case of take-home assignment, however, they agreed that library is a perfect place for studies and a source of knowledge building. This is in line with one of research objectives which is to assess the level of development of virtual library project in libraries and to waste extent has it been utilized, other sub-objective of the study has to do with accessibility and affordability of those electronic materials among the undergraduate students' which is in line with the ICT and concepts of knowledge explosion.

4.2 Research question 2

Has UNIOSUN library engaged in inter-library networking as obtained in advanced countries? Figure 1



As could be deduced in figure 1 above 140(70%) of the respondents disagreed that suggestions to find book elsewhere are good, 40(20%) strongly disagree but 20(10%) agreed strongly. This is as a result of the library not engaging in inter-library services. The suggestion to find resources outside the UNIOSUN library could be effective through the use of ICT. [5] in their study of European schools to seek to measure the impact of ICT on students' outcomes. Open and distance learning is defined by the commonwealth of learning as a "a way of providing learning opportunities that is characterized by the separation of teacher and learner in time or place or both time and place. Learning that is certified in some ways by an institution or agency, the use of variety of media including print and electronic, two-way communications that allow learners and tutors to interact".

4.3 Research Question 3

How adequate are the networking facilities in UNIOSUN library?

Table 4

Agree	Disagree
30	170

Source: Field Survey 2015

As could be deduced from table 4 above, 170(85%) disagree that they use the electronic control unit to search for library resources whereas 30(15%) agreed that they use electronic control unit in their search for library materials. This shows that the networking facilities in UNIOSUN library are not adequate to be linked to all resources in the library and outside the UNIOSUN library. This is in line with ICT and Computer Assisted Instruction CAI where CAI is a self-learning technique usually offline /online involving interaction of the student with programmed instructional materials. CAI is an interactive instructional technique whereby a computer is used

to present instructional materials and monitor the learning that takes place. CAI uses a combination of text, graphics, and sound video in enhancing the learning process.

Table 5: ONE-WAY-ANOVA

Promotion of quality Research and Enhancing High Academic Performance

	Sum of squares	Df	Mean square	F.	Sig
Promoting Quality Research between groups	92.545	13	30.848	207.350	.000
Within groups	13.986	186	.149		
Total	106.531	199	24.601	238.955	.000
Enhancing high academic performance between groups	73.802	13	103		
Within groups	9.677	186			
Total	83.480	199			

From the table 5 above, within group tells us how many subjects are in each level of your factor between group – the between group row reports a test of whether there is a significant relationship between the dependent and the independent variables. A significant of 0.000 as shown in the relationship between the relevance of electronic library in promoting quality research and enhancing high academic performance, hence we agree that, automation has a significant relation on their work at the electronic control unit of UNIOSUN library.

4.4 Summary of findings are as follows:

- That UNIOSUN Library has invested in electronic library resources as an emerging alternative and supplement to the traditionally known print media. With these conditions in the offing Uniosun products have been exposed to the meaningful utilization of electronic library resources – a condition that can make their products meet world standard demand require of emerging intellectual mind.
- The university has set up an electronic resource-Centre that currently accommodates many computers. The libraries, are normally opened 8am to 5pm in Ipetu-Ijesa and 8am to 6pm Mondays to Saturdays in the respective Campuses. These are the conditions that could make the UNIOSUN product develop University reading culture which will enhance their potentialities as would be intellectual giant.

- UNIOSUN libraries have embraced electronic resources, a resources that can accelerate knowledge explosion and increase mental horizon of human races in a sub-sahara country
- UNIOSUN libraries are still developing with hope of meeting world standard soonest, with full commitment of the management team to develop intellectual property of yet unborn scholar who will benefit from the electronic resources in UNIOSUN library, sky is the limit for the present and future generation of scholars who will, as a matter of expediency, pass through the four walls of that university.

Reference

- [1] Albanese, Andrew and Oder Norman (2002), Web has changed campus library. *Library Journal* 127 (10), 20 – 22.
- [2] Allison (2010). Use of electronic library resources in academic libraries, *Cognitive Abilities and Information System Usability. Information Processing and Management* 30:177-191
- [3] Bilal (1994). *Research in school library media for the next decade and research Methods in the Social Sciences: A Selected Bibliography Prepared for Students of Library Science.* Urbana, Ill.
- [4] Bhatti, Rubina (2009), Interpersonal relationship: Students, Teacher and Librarians in University Libraries of Pakistan. *Library Review* 58(5), 362-371.
- [5] Bhatti, Rubina, Batool, Farwa and Malik Sobia (2013), Perverseness and purposes of library usage by LJS students at the Islamic University of Bahawalpur. *Library philosophy and practices* URL: <http://digitalcommons.uni.edu/libphiloprac/298>.
- [6] Bukari, M.T.A, Bukari M.M.A, Ranjha N, Ahmad, K and Naz, F (2010), Use of Library by the student of foundation university college of Liberia Arts and Sciences, Rawabindi, Pakistan. *Journal of Library and Information services* 11, 66-75.
- [7] Effa(1998). Undergraduate student's satisfaction with library services; Usage, Usability and User Support. Report of a discussion group convened at the DLF Forum on 2 April 2000. Version 1.1. Available at: <http://www.diglib.org/use/useframe.htm>
- [8] Evenhart (1990): Evaluating the school library media center, "Promise and Peril: Deeply Intertwined Roles of 21st Century Technology," presentation at the conference "earthware: a good world in 2050 . . . will computers help or hinder?" Carnegie Mellon University, Pittsburgh, Pa., October 19, 2000
- [9] Fiehin (2004). The Perceptions of Library Service Questionnaire PLSQ: The Development of a Reliable Instrument to Measure Student Perceptions of and Satisfaction with Quality of Service in an Academic Library. *New Review of Academic Librarianship* 1:139-154.

- [10] Herring, Sussan Davis (2001), Using the World Wide Web for research; Are faculty satisfied? The journal of Academic librarianship 27 (3), 213-219.
- [11] Hussian, Aktar and Abalkhail, Abdulwahab M. (2013), Determinant of Library use, Collections and Services Among the Students of Engineering: A case study of King Saud University Collection Building, 32 (3), 100-110.
- [12] Keenan and Johnson (2000). Electronic journal collections facilitating health information access at the university of Pretoria veterinary science library, College and Research Libraries 57(2):133.
- [13] Kerlinger and Lee (2000). Foundations' of behavioral research wardworth (Canada), Motives for consequences for leading internet book. As cited in Olaewe O.O 2012.
- [14] Khan, S and Bhattim R (2012), Application of social media in marketing of library and information services. A case study from Pakistan webology 9 (1).
- [15] Khan, Amjid and Ahmed Shamshad (2013), The impact of digital library resources on scholarly communication challenges and Opportunities for University Libraries in Pakistan library, High Tech News 30 (8).
- [16] Olaewe, O.O. 2012, Applied Scientific Research Methods for University Graduates(Iwo) Agboola Publications, 109 Bowen University Road, Iwo, Osun State.
- [17] Olaewe, O.O. 2010, Roles of Computer Allied Instruments and Statistical Analysis in Research Work: African Journal for Contemporary Issues in Education (CONTEMPOR) 5 (2), 77-82.
- [18] Olaewe, O.O. and Kareem A.E.A (2011), Adopting e –learning as an Effective Tool for Distance Education in Nigeria. International Research Review. 1 (2), 12-25.
- [19] Patel and Bhargawe (1995). Library and automation software packages used in Academic Libraries of Nepal 27(3):213-219.
- [20] Rehman, Shafiq, Ur shafique, Farzana and Mohammed, Khalid (2011), A survey of user perception and satisfaction with reference services in University libraries of Punjab. Library Philosophy and Practices URL:<http://digitalcommons.uni.edu/libphilprac/624>
- [21] Robinson (1991), The economics for libraries , WSU Libraries in the 21st Century. The Journal of Academic Librarianship 24(3):216-224.
- [22] Shan, Sidra and Shadeen Maqsood A (2013), Change Management in the Information age. Approaches of Academic library administration in Pakistan Universities' libraries, Library, Philosophy and Practice. URL: <http://digitalcommons.uni.edu/libphilprac/1037>.
- [23] Singh (1998). A working definition of digital library. Cataloging Production Standards in Academic Libraries. Technical Services Quarterly 16(3):43-67.

[24] Vishala, B.K and Bhandi, M.K. Advantages and Disadvantages of E-journal as Perceived by the Academicians of Universities of Kannatakar: A survey report. SRELS Journal of Information Management, 46(3), 229 – 228.