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AN ASSESSMENT OF ADOPTION OF E-LIBRARY USES IN NIGERIAN UNIVERSITIES FOR RESEARCH AND ECONOMIC DEVELOPMENT: A STUDY ON RAMAT LIBRARY, UNIVERSITY OF MAIDUGURI, BORNO STATE – NIGERIA

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Abstract
The study aimed at assessing the adoption of e-library and looked at whether it has enhanced research and economic development in the Ramat library of the University and to examine whether students are patronizing the library or not. The objectives of the study are to; assess whether the university has adopted the use of e-library, examine whether e-library has enhanced research and economic development; identify challenges encountered during the adoption of e-library, and investigates whether the e-library can be accessed anywhere in the University and beyond. The study adopted the use of surveys research design, where structured questionnaire was used to elucidate data from the respondents. 200 copies of the questionnaire were administered to respondents. The research has found that there were challenges in patronizing e-library, those that are not computer literate found it difficult to access e-library information, while some older people believed in managing the resources available within their reach in the old library system; some said it is cost effective, while others attributed the challenges to power failure etc. In conclusion, despite some challenges militating against the use of e-library, it was suggested that the use of ICT in library setting is of great significance and should be maintained since we are in the digital era. It was also found that students have benefited immensely from the e- library in conducting research and has generated revenue for the library in the University through sells of tickets for login into the system.

Keywords: Assessment, Adoption, E-library, Economic Development, Tertiary Institutions

Introduction

The use of semi-automated device in libraries, took place in the United State of America (USA) in 1936 when one Ralph Parker used Punch Cards at the Universities of Texas, Ndagana, (2000), where the use of modern technology in libraries became widespread in the 1960s. In most recent times, the story could have changed as almost all libraries in the world are now using the social network technology to access library information, than what could be obtainable in the past. According to research, the use of e-book could be traced back to 1940s when Van Dam coined the term electronic book, which was index Thomisticus, a heavily annotated electronic index to the work of Thomas Aquinas, prepared by Roberto Busa, (Nomeh, 2012) cited in Ezekiel, (2012).

Etymologically, the basic objective of establishing libraries and other information in organizations in modern digital societies is to enable the e-library users respond to the information needs of the communities where they reside. Furthermore, for the information hubs to function well, there should be a deliberate drive to train and retrain the library professionals who can be able to provide the needed information resources and services to meet up the requirement to attain economic development needs of individuals, communities and the governments at large. It is only through this process that the Nigerian society can guarantee library and information services to all Nigerians, irrespective of location, age, religion, political and ethic affiliations; as pointed by Abdulsalami, Okezieand & Agbo (2013). Irrespective of any type of institutions, big or small, e-library ought to be available at the grass-root to enable progress towards the paperless society, in order to assist students both at the grass-root level and in tertiary institutions of higher learning in Nigeria; the use of e-library has served as an eye opener to the users in every country of the world, Nigeria inclusive.

The advent of Internet technology has ushered in the use of Information and Communication Technology, which is now the dominant paradigm in Communication around the world. However, Information Technology (IT) has become vital and an integral part of every business plan, that is, from multi-national corporations who maintain the Mainframe systems and databases, MacKechnie (2019).

Library in university is one of the facilities that is very important in most, if not all, organizations globally, because it supports the teaching and learning processes both directly and indirectly. It is a storehouse of knowledge where both printed and recorded materials in various media such as books, magazines, letters, news, films, computers, etc. Furthermore, in most recent times, digital library is the result of the technological development which has influenced the educational field of academic endeavours, Perdana &Prasojo (2019). They posit that Digital library which is also called the e-library has widely been applied in most Universities around the world and it is an ICT based library management system where users of library services can find information in digital format and it is a transformation in the education sector to migrate into e-learning, e-books, and a host of others, which are more scientific in nature.

Bhatia, (2023) stated that in recent times of the digital age, the traditional library is no longer the only option for students seeking information to knowledge, because of

emerging technology in the library that brought about the e-library which has transformed the way students access information, making it easier and quicker, cost effective and more convenient to find and retrieve than ever before.

The advent of digital technology has revolutionized the way information is stored, managed, and accessed, making the librarian's job easier and more efficient even to the users. Libraries have embraced technological advancements and adapted their practices to meet the changing needs of users in the digital age of technology whereby, digital library collection in most recent times, refers to a vast repository of information and resources that are stored and accessed electronically, unlike the traditional libraries with physical books and documents, e-books, scholarly articles, research papers, multimedia files, databases, digital archives, and much more have changed the face of library today, LISEDUNETWORK, (2023).

Currently, the library is using the Integrated Library Management Software to perform the various routine activities in the section of the e-library. According to Tella and Oladeji (2017), the Integrated Library Software (ILS) in every University is an automated library system that is capable of serving and managing the operations of many libraries, and a great achievement in every library setting around the world. In choosing the library software, library professionals must base their decision not only on the performance and efficiency of the software system, but also the ability of the software to enhance the productivity of the library itself in the *Perceived Usefulness* (PU) which is assumed to be free from challenges in terms of *perceived-ease of use* (PEOU), of system quality, information qualities, service qualities, user delivery, satisfaction and free from challenges that might be encountered. Infrastructural challenges of the unconducive environment for learning, research and development has now been reduced and made information available for the library users whether they are within the library premises or not.

Statement of the Problem

The adoption of e-library has tremendously advanced research activities and academic excellence in universities, thereby providing relevant information resources to its numerous users. E-library has also promoted efficiency in delivery of information parsimoniously to all users and it has enabled researchers to source for materials for research using e-library network which has strengthened research and collaboration between and/or among its users and plays a significant role in sourcing materials and dissemination of information.

In spite of this, the adoption of electronic library is still facing a lot of challenges in accessing and retrieval of e-materials as they grossly up set effective research activities which can be associated to lack of constant power supply for the smooth running of the e-library section of the organization. These challenges can be seen as a national phenomenon, since there is inadequate power distribution to most organizations across the country, preventing active participation in working together with other groups to meet up the digital global standard, thereby depriving e-library the capability to link up

several libraries, archives, museums, and information organizations, for information sharing and disseminations, (Chen, 1986; Chen 1990), respectively.

Now, the question of digital divide has not yet been eliminated by this innovation completely in the library system coupled with the inadequate power source and erratic power supply. In looking at some of the challenges in the adoption of e-library, it seems therefore the infrastructure put in place is not yet in its solid footing for conducive e-library research, to boost the economic development. What then can be done to achieve steady power source to enable the e-library to achieve its full realization and adoption that can withstand the test of time in the university.

Objectives of the Research

The objectives of this study are to:

1. Assess whether the university has adopted the use of e-library,
2. Examine whether e-library has enhanced research and economic development;
3. Assess whether the e-library can be accessed anywhere in the University and beyond.
4. Identify challenges encountered during the adoption of e-library, and
5. Whether e-library can be accessed anywhere in the University.

Review of Related Literature

Theoretical Framework

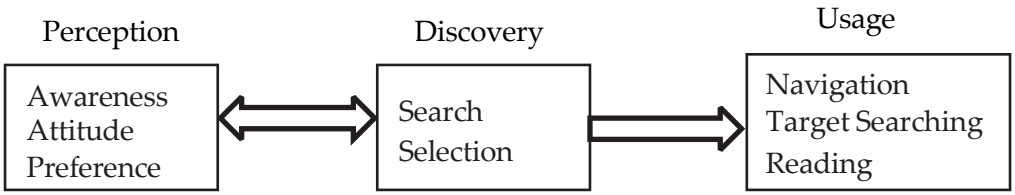
This study is anchored on the E-Book Theory of User Experience (E-BUE) and the Technology Acceptance Model (TAM) which are also closely related to each other, hence, these groups of theories are used to guide the study, Tao., et al (2017) &Davis (1989), respectively.

Theory of User Experience

The theory of E-book User Experience was propounded by Tao, Z. et al, (2017), the theory postulated that the knowledge of information and communication Technology (ICT) does not exist in vacuum but enables user to search, select and navigate on the internet and access e-resources, such as, e-books, e-magazine, e-journals, e-newspaper, e-materials, etc., for academic purposes or activities. Tao, Z. et al, (ibid) further explained that user experience involves a person's perception, attitude, behaviour, emotion and even interaction with a particular group, system, or services over time and globally to touch every point in time.

In experiencing e-books, one should be conversant with the entire process such as, perceiving e-books as useful information resources and to discover e-books from library collections with ICT knowledge and can to be able to use e-books in different context.

The diagram below explains what is required of the e-book user experience to possess



Source: Tao, Z. et al,

Technology Acceptance Model (TAM)

The Technology Acceptance Model was propounded by Davis (1989), according him, the technology acceptance model (TAM) is an information system theory that models how users come to accept and use technology. The *actual system* that the users use is the end-point where people use the technology to achieve what they wanted to do. However, the use of *Behavioral intention* is a factor that leads people to use the technology and this behavioral intention (BI) is influenced by the *attitude* (A- down through the end user) which was seen to be the general impression of the technology. The model suggests that whenever the user(s) are presented with a new technology, a number of factors influence their decision about how, when, and where they will use it. However, there are three (3) fundamental issues worth recognition, thus;

First, *Perceived usefulness* (PU), this according to Fred Davis is the degree to which a person believes that using a particular system would enhance his or her job performance". It means that someone must perceive the technology to be useful for what they wanted it for.

Second, *Perceived ease-of-use* (PEOU), he further posits that, the degree to which a person believes that using a particular system would be free from effort" (Davis 1989). This means that if the technology is easy to use, then the barrier is conquered. However, anything that is not flexible and the interface is complicated is of no use but one must have a positive attitude towards it, talk-less of embracing such technology.

Thirdly, the *External variables*, this can be something such as "the social influence which is one of the significant factors that determine the attitude of every user of the technology." When these things are put in place, people will have their behaviour, attitude and intention to use the technology. Furthermore, people must perceive change depending on age and gender because everyone is different in the way he/she perceives and accepts changes that occur around them.

Technology Acceptance Model (TAM) is also related to the objectives of this study because it aims at modelling how users come to accept and use a technology Strength and weaknesses of the theories

The TAM according to scholars has been continuously studied and expanded— the two major upgrades being the TAM 2 (Venkatesh & Davis 2000 & Venkatesh 2000) that is its weakness, and the strength of the theory is that it has unified theory of acceptance and use of technology and are more related with the Technology

acceptance model, Venkatesh et al. (2003). However, TAM 3 has also been proposed in the context of e-commerce with an inclusion of the effects of trust and perceived risk on system use.

Empirical Review

According to Bitrus et al (2020), in recent times, the use of modern technology in library patronage has been a subject of interest among the e-library users, where it serves in every institution of higher learning as a gateway to a wide variety of information resources that help the users in their studies, research and economic development as well as pursuance of scholarship in various tertiary institutions, globally. The e-library in the University of Maiduguri has received a new look and changed the analog pattern of information sourcing and dissemination, whereby, it becomes a useful tool in assisting the library users in navigating through the library contents, and source for materials available on the internet instantaneously.

In the implementation of e-library around the world, scholars explained that efforts have been made not only in the United States of America, but also in many institutions around the world, in fact more efforts are still underway in some countries like the developing countries of the world, TefkoSaracevic and Lisa Covi (2000), and in creating effective digital libraries in every institutions of higher learning. This they said has posed serious challenges for existing traditional library globally. Terry (1996) pointed out that, the integration of digital media into traditional collections will not be straight forward like previous new media, because of its unique nature of digital information where readers who are more acquainted or hungry for hard bounded books will still turn to the book stores and the physical library to source for books and other materials, while cheaper e-books change consumer behavior to suggest that electronic books still have a better future than the traditional books in the old libraries archive.

The University e-library has fifty-six (56) databases of which some are subscribed, while others are open access and are free e-book websites, links other e-library to other institutions within and outside the country. The E-library was officially declared opened on 26th of February, 2013, University Librarian documentation on e-library, (2013).

Adoption of e-library

According to Andaleeb (2001), academic library fosters information literacy and provides resources to the library users. The growth of online learning and information dissemination through the use of ICT has paved ways and assisted immensely in accommodating most materials in the virtual library world, whereas, providing more access to digital resources online (Johnson, Trabelsi, &Fabbro, 2008) cited in Katherine T. and Nancy B.H. (2011). Research also shows that online learning has evolved into the digital or virtual componenttothe academic library (Moyo, 2004). The online facilities provide the libraries with numerous materials of great significance in every fields of academic endeavor. These consist of (a) references (b) electronic journals and magazines, (c) electronic-books, (d) Computer databases, (e) online library cataloging, (f) inter library

loan facilities, (g) book delivery, (h) instant or quick search, and Internet links (Blackman,2003; DeRosa, Cantrell, Hawk, &Wilson, 2006; Moyo,2004; Song, 2004) in Katherine, T. and Nancy B.H. (2011). Scholars have discovered that majority of students globally prefer to access library resources online than that of the traditional (old) physical library (Brandt, 2008).

Enohoro (2009), looks at the importance of Internet which offers a rapid growing collection of information in different forms such as medicine, arts, social sciences, such economic and finance, etc., the use of internet technology enables one from his computer system and other personal digital assistance (PDA) to exchange information with other persons on another system anywhere they find themselves in the world. He further posits that, the e-technology is like a road that travelers use to travel through different locations in the country.

Challenges in the adoption of the e-library

In some institutions of higher learning like University of Maiduguri, Nigeria, where the full realization of e-library are yet to be adopted, the library services may be allowed to operate concurrently with the traditional library system, to enable borrowing of materials other than books, thus; pamphlets, periodicals, maps, videotapes, films, animations etc. Aina (2004), stated that this will enable those who are not computer literate to use what they know other than what they don't know how it is use.

The analog era of library patronage was so difficult, although it was a road followed in a very narrow way that contributed immensely to the growth and development of knowledge and brought about what we call ICT today. Now in the early twenty-first century, that road was tapped into the digital technology, either leading, who knows where it will lead us to, Weiner, (2020). This is an era that most of the information brokers find it difficult to gather, store, process, and disseminate information to heterogeneous users of the library resources.

Poor power source outage could easily put many out of businesses is seen as a great bureaucratic bottleneck in the education sector where authors and publishers produce books for primary, secondary and tertiary institutions for sale; this shows that most of the books we have in our libraries are old books that could hardly be relevant to today's studies in most tertiary institutions in Nigeria, and the world at large. The adoption of e-library has no doubt bridged the challenges of old and outdated books in the library where it could be accessed by a common man who could read and write on his handheld device to educate himself on the happenings around vicinity and the world at large.

Research Methodology

The research methodology is a component of research process defining the method through which data are collected, processed and presented, and how such data are also analyzed. Purposive sampling technique which is said to be a non-probability

sampling selected based on the characteristics of a population and the objective of the study, Ashley Crossman (2018).

The research is a descriptive survey research design involving the students of the University. The population of the research is the registered students of 2021/2022 totaling 45,179. However, this is in support of Karlinger (1986), who stated that when samples are carefully drawn, a sample of 600 to 700 respondents can give an apparent picture of characteristics of a population of about 100,000.

The study purposively selected 200 students out of 45,179, based on the criteria that all use the e-library of the Ramat Library in the University.

The instrument used for data collection was a self-developed questionnaire, administered to the respondents to elicit information on the topic of discussion: Ethical Consideration was used, which states "the responsibility of the researchers to inform the participants about their rights to privacy and confidentiality, hence, the data generated for this research was analyzed using descriptive statistics (frequency counts, total number of respondents and percentages). That is = (f/n) x 100 to give a clear understanding about the raw data collected.

Data Analysis and Presentation

Table 1: Sex of Respondents

Sex	Respondents	Percent
Male	125	62.5
Female	75	37.5
Total	**200**	**100**

Source: Field Survey, 2022

Table one shows that there are more male respondents that female respondents. The male respondents are 125(62.5%) while their female counterpart which stood at 75(37.5).

Table 2: Adoption of e-library facilities

Assessment on whether the university library has adopted the use of e-library	**Responses**	**Frequency**	**Percentage (%)**
	Yes	185	92.5
	No	15	7.5
Total		**200**	**100**

Source: Field Survey, 2022

Table 2: shows the percentages of the respondents, who responded 'Yes', that University has adopted the use of e-library with the highest number which of 185(92.5%), while those who say 'No' were 15(7.5%) respondents. Research revealed that those who said 'Yes', that e-library has been adopted was the majority.

Table 3: Availability of materials in the e-library?

Assess whether students are getting adequate e-library materials.	**Responses**	**Frequency**	**Percentage (%)**
	Yes	175	87.5
	No	25	12.5
Total		**200**	**100**

Source: Field Survey, 2022

Table 3 shows that 175(87.5%) students responded 'Yes' that they are getting adequate materials in the e-library for their use, while 25(12.5%) responded 'No', because they find it difficult to access materials on computer.

Table 4: Challenges encountered in e-library

Assess some of the challenges encountered in the e-library section		**Frequency**	**Percentage (%)**
(a)	Network problem	45	22.5
(b)	Power Source	85	42.5
(c)	The Computer System is Slow	15	7.5
(d)	Lack of knowledge on the use of e-library	40	20
(e)	Age Barrier – Eye problems	15	7.5
	Total	**200**	**100**

Source: Field Survey, 2022

Table 4 shows those who responded to the challenges of e-library are as follows; 45(22.5%) responded that there were some network challenges, while 85(42.5%) responded that there was Power source problems, while 15(7.5%) responded that the Computer Systems were slow. Furthermore, those who responded that they are not computer literate stood at 40(20%), while those who responded to Age Barrier-(Eye sight problem) stood at 15(7.5%). However, those who attributed their problems to power source are on the high side, which shows that major of challenges encountered in the e-library is power source problem.

Table 5: Rang of accessibility of the e-library in the University

Whether the e-library can be accessed		**Frequency**	**Percentage (%)**
in any branch of the library	Yes	185	92.5
	No	15	7.5
Total		**200**	**100**

Source: Field Survey, 2022

Table 5 shows that 185(92.5%) responded 'Yes' that that e-library can be accessed in any branch or anywhere provided that one is logged in on the website of the library, while those who say 'No' stood at 15(7.5%), and this could be seen as a result of lack of knowledge on the usage of the computer system. This segment revealed that those who said 'Yes'185(92.5%) of respondents were on the high side. Therefore it is believed that the e-library can be assessed anywhere.

Discussion of Findings

The findings of this research on the above topic was analyzed in table form, to give us a clear information about the students who responded to the questionnaire administered. Table 1 **shows the sex of the respondents, which males are found to be on the high side with scores 125(62.5%), while the females are 75(37.5%).**

The second findings shows who responded 'Yes' to the question whether the University has adopted the use of e-library are on high side and are the majority with score of 185(92.5%), while those who said 'No' stood 15(7.5%).

The third findings shows that 175(87.5%) responded 'Yes' are the majority to the question whether there are availabilities of materials, than those responded "No" with score of 54(54%*).*

The fourth findings that the major challenges of e-library in the university, stood at 85(42.5%), indicating that the power source problem is the major challenges.

The fifth findings which is the last responded *'Yes' that e-library can be accessed anywhere are on the high side with a score 185(92.5%).* The findings conclude that the e-library has been adopted and that there were availability of materials for students.

Recommendations

The study recommends the following:

1. The University of Maiduguri e-library has adopted the use of e-library, hence students should patronize and utilize it for research and enhancing economic development within the university and beyond and to run it concurrently with the old traditional system.
2. Since there are availabilities of materials in the e-library, the users should not jeopardize the effort of the university, but to encourage it and familiarize themselves with the system.
3. Despite the fact that there are some challenges of power source, the e-library section should provide a Solar System, to solve such problems once and for all, for students to have conducive environment for learning.
4. The University of Maiduguri, should train their staff members, who are not computer literate so that they can assist the students in finding information of great importance in the e-library section.
5. In the ICT world, every student is encouraged to be computer literate so as to enjoy such facilities for their research in the e-library section, and advancement in the economic development globally.

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