

Adoption of Technology Acceptance Model in Technical Universities Libraries: Implication to Higher Education in Ghana

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Abstract

The research is on the adoption of Technology acceptance model in technical universities libraries: Implication to higher institutions education in Ghana. It revealed the concept of the Technology acceptance model theory that related to the study. Descriptive research was used for the research with a sample of 20 librarians within the technical universities landscape. Findings showed that 90percent of the respondents revealed that their students do not have access to online digital resources like open public access catalogues (OPAC), e-books, e- journals and other electronic databases. Network problems; Server slowness and frequent breakdown of digital resources. The implications to technical higher education are that students that utilize less of Technology in knowledge acquisitions will lag in their research, learning and assignment process in this digital age. The research recommends that GTEC should enforce the implementation of the ten to fifteen percent of each Technical University's expenditure on Library's Technology infrastructure.

Keywords: Higher Education, Library, Technology Acceptance, Teaching and Learning, Technical Universities

Introduction

Academic libraries in Africa have begun to integrate technology into their operations over the last decade [1]. This acts as a tool for development and progress, particularly in a situation where attention is directed to academic materials and methods of digitizing and storing them to boost higher education beneficiaries [2]. University libraries, as the core of the university, are integrally involved in this development. This is because university libraries hold the intellectual contents of their respective institutions.

Academic libraries serve to provide appropriate content and resources in a variety of formats to fulfil the information demands of users. A university library's goal is to serve students and research-

ers at all levels; thus, librarians must be prepared to purchase and make available relevant databases for teaching, learning, and research for university communities and their surroundings [3]. Devi and Singh went on to say that the information explosion and information technology revolution that resulted in the birth of the digital information era made a variety of library resources available to clients.

Digital libraries have resources preserved and made available electronically, as well as library services, and routinely made available over the internet, so users can access electronic content remotely. As the name suggests, electronic Library is a service that makes libraries available on the internet and be accessed wherever there is

availability of internet, as a result, libraries are attempting to adapt their operations to the technological environment. With the advent of technology, libraries are no longer solely responsible for the provision of e-resources, but rather for the establishment of services that ease access to available. Librarians' work now includes library digitalization, according to the most libraries are active in digitization [4].

Digitization makes library resources more accessible [5]. Through technology, library collections and information are made available to everybody rather than just a small group of scholars, and users can search for collections globally and thoroughly in the smallest amount of time. Furthermore, decreasing distances to access hard copies of library resources allows multiple people to access the same material at the same time without restriction. In effect, there is an obvious shift from the traditional collection development and services approaches to technological trends in library and information and documentation services.

Problem Statement

Technical universities of Ghana were converted from polytechnics to universities by the act of parliament act 962 in 2016. These polytechnic institutions were providing hands-on skills for students that needed the technical know-how to enter the job market while others set up their small businesses. However, with the conversion to universities, student enrolment figures have increased astronomically and that has also affected the demand for information and knowledge acquisitions in the form of Technology within the Technical universities. The current day University students demand from higher Education providers better, faster, and easier access to information resources such as databases, electronic journal (e-journal), electronic book (e-book) alerting services, special collections, CD-ROM, online reference tools, as these enhance the quality of teaching and learning and research within the higher education landscape. How much of these information technologies have been accepted into the Libraries of the Technical Universities in Ghana? This research sought to investigate the number of information technologies that have been accepted into the technical university libraries using the TAM model, which has great implications for higher education development and delivery globally.

Objective

The objective of this research is to investigate the amount of adoption of the Technology Acceptance Model in Technical Universities Libraries in Ghana.

Research Question

How much of the Technology acceptance model has been adopted into the libraries of Technical universities in Ghana?

Significance of The Research

The significance of this research lies in the fact that the findings would whip the appetite of the Technical universities' education providers in Ghana on the current day provision of technological resources in academic libraries necessary for higher education seekers especially, to help expand access, increase usability and effectiveness of Library resources. It will also help to establish new ways for technical universities in using information for enhanced productivity in their endeavours. The application of the concept

of Technology acceptance into library functions and services will invariably change the connotation of what an academic library stands for in Technical universities in Ghana.

Literature Review

The theory is Technology Acceptance Model (TAM) was propounded by [6]. The Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use technology. The model suggests that when users are presented with new technology, several factors influence their decision about how and when they will use it. These factors are behavioural intentions, attitude and perceived usefulness of the system, perceived ease of use of the system, individual intention and facilitating or organization condition.

Technology Acceptance Model (TAM) is the most influential extension of Ajzen and Fishbein's Theory of Reasoned Action (TRA) in the literature. He hypothesized that the attitude of a user toward a system was a major determinant of whether the user will use or reject the system. The attitude of the user, in turn, was considered to be influenced by two major beliefs: perceived usefulness and perceived ease of use having a direct influence on perceived usefulness as shown in Davis's original TAM model figure below.

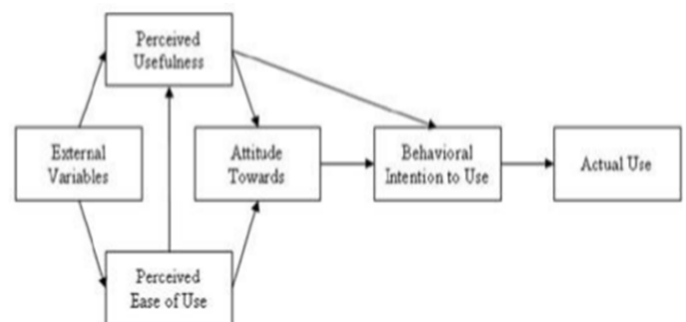


Figure 1: Original Technology Acceptance Model (TAM) (Davis, 1989).

The relevance of Davis's TAM theory to this paper "Adoption of Technology Acceptance Model in Technical Universities Libraries: Implication to Higher Education in Ghana" Lies in the fact that Davis' Perceived usefulness (PU) element as defined above is relevant to the study because students believe that using computer system connected them to local database or Internet. Phones and other electronic devices to search for information electronically enhance their academic activities than the traditional ways of providing libraries' resources. That students' access to information to do assignments and research is faster with the use of technology.

Perceived ease-of-use (PEOU) is another element in the theory that is relevant to the study. The ability of students to accept and use electronic machine devices will ease their usefulness of digital Information Resources (DIRs) and learning becomes easier for them as well as influences their academic activities in their daily life. That is, efforts to search for information in traditional library ways are reduced automatically with the use of technology. The researcher adopted this theory because of its relationship to the problem under investigation.

Use of Technology in Information Resources

It is a known fact in this technological era that any student at the higher level who intends to better achieve and go further in academics should have the ability to explore the Technological environment. Stated that students' ability to find and retrieve information effectively is a transferable skill useful for their future life as well as enabling the positive and successful use of technological resources while at school [7]. Students' use of information systems can be in the form of communicating or posting information or material by way of electronic mail, bulletin boards, the world wide web, or other such electronic tools [8].

Digital information resources serve as a motivating factor to students as it provides the opportunity to transmit, acquire or download, process and disseminate information on a subject of interest. Digital information resources offer today's students greater opportunities that are quite different from their predecessors [9]. Other uses according to the authors include the fact that "digital information resources are often faster than consulting print indexes, especially when searching retrospectively, and they are straightforward when wishing to use a combination of keywords. They open up the possibility of searching multiple files at one time, a feat accomplished more easily than when using printed equivalents. It could be said that "improved data transmission facilities will go a long way to reduce the incessant hardship faced by students in the acquisition and generation of data which serves as the basis for research and academic performance improvement [10]. This is because the use of digital information by students of today enhances their performance in academic activities.

Furthermore, revealed that the academic community has accepted that electronic information resources have an impact on their work [10]. However, services currently available to academic staff and students are not being used to their full potential and some are hardly being used at all. When drawing inference from Bandura's position, asserted that "students with high self-efficacy regarding computers would also be more likely to explore new technologies, software or databases [11]. Additionally, they would be more likely, for example, to explore a library's website and find that the library has specialized resources, and they might even try some searches on those resources without, or with less, prompting from professors or librarians and without necessary taking library workshops." General user opinion towards the use of electronic information resources, in particular, CD-ROM, has been positive, with students enjoying using these sources and finding relatively few problems while using them.

Methodology

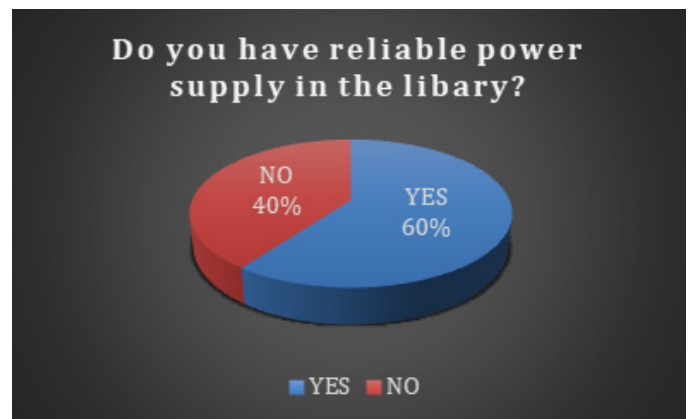
This study adopted a descriptive survey research design. The study was conducted in the ten Technical University Libraries in Ghana. The sample for the study comprised twenty (20) librarians and their deputies were drawn from ten technical universities. The purposive sampling technique was used to select the ten government technical universities which were previously regionally-based within the ten regions of Ghana. In addition to this, these technical universities were converted from polytechnics to universities from 2016 onwards, and might as a necessity be in the

position to follow the trend of technology in the dispensation of libraries deliveries as it is in the present-day higher education gives in the world. A structured questionnaire was used as the instrument for data collection, descriptive statistics were used to analyse the data and presented based on the research questions that guided the study. In addition to the questionnaire data collected, the ten main librarians of each technical University have purposely interviewed for in-depth knowledge on each University's uniqueness in their library's functions. Documents analysis also played a major role as secondary data in this fact-finding research.

Analysis of Data

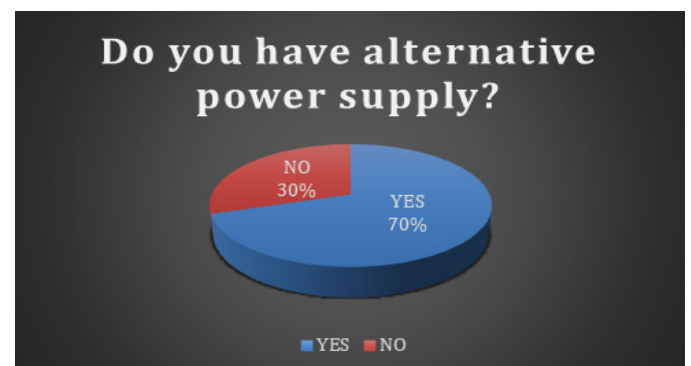
Technology thrives with a constant power supply and there was, therefore, the need to find out the stability of power in these universities.

Figure 1: Do You Have a Reliable Power Supply in The Library?



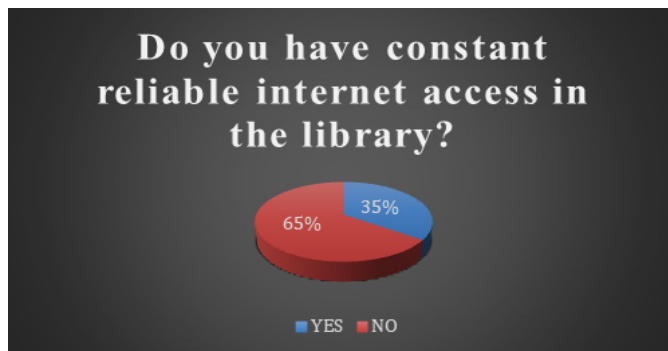
From the figure above, 60% of the respondents of the total number of librarians and their immediate deputies said the power supply in their various libraries was reliable, while 40% of respondents said no, the power supply in their libraries were not reliable.

Figure 2: Do You Have an Alternative Power Supply?



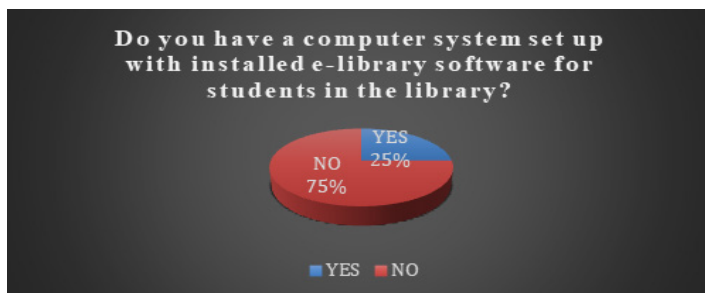
From figure 2, it can be seen 70% of respondents said indeed they have an alternative power supply in their various libraries, while 30% of respondents said no, they do not have alternative power supply.

Figure 3: Do You Have Constant Reliable Internet Access in The Library?



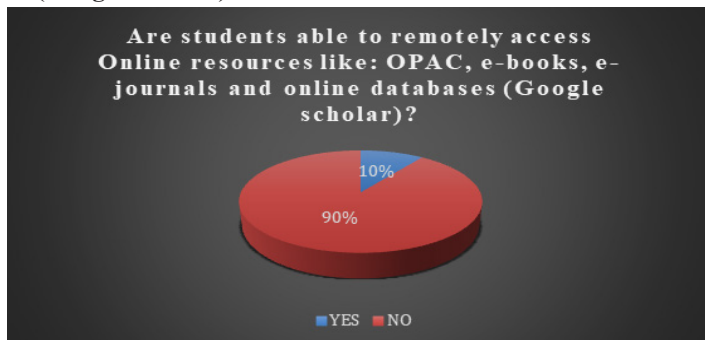
From figure 3, it can be seen 65% of the respondents said they do not have reliable internet access in their various libraries, while 35% of respondents said they have reliable internet access in their libraries.

Figure 4: Do You Have a Computer System Set Up with Installed E-Library Software for Students in The Library?



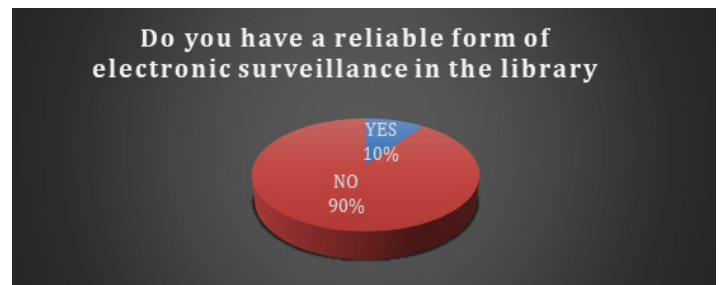
From figure 4, it can be seen 75% of the respondents said they do not have a computer system set up with installed e-library software in their various libraries, while 25% of the respondents said they have a computer system set up with installed e-library software in their libraries.

Figure 5: Are Students Able to Remotely Access Online Resources Like Opac, E-Books, E-Journals and Online Databases (Google Scholar)?



From figure 5, it can be seen 90% of the respondents said students cannot access online resources like OPAC, e-books, e-journals, and online databases, while the remaining 10% respondents said students can remotely access online resources like OPAC, e-books, e-journals and online databases.

Figure 6: Do You Have a Reliable Form of Electronic Surveillance in The Library?



From figure 6, it can be seen 90% of the respondents said they do not have a reliable form of electronic surveillance in their library, while 10% of the respondents said they have a reliable form of electronic surveillance in their libraries.

Findings

1. It was observed from the documentary analysis which formed the secondary data, that all the technical university libraries in Ghana relied on the Electricity Company of Ghana (ECG), and Northern Electricity Distribution Company (NEDCO) for their electricity distribution for power supply. A significant majority of technical university libraries in Ghana who had a reliable power supply were provided by Northern Electricity Distribution Company (NEDCO), while those whose electricity was from the Electricity Company of Ghana (ECG) have some of power challenges. With only a significant minority of the technical university libraries who did not have an alternative power supply. Some of the reasons for not having an alternative power supply in their libraries by the librarians and the immediate deputies was because their power (electricity) supply was very reliable and the libraries did not see the essence of getting an alternative power supply. Two of the technical universities' libraries had solar panels to harness the energy from the sun and then convert it to electricity for connectivity at the libraries anytime the power provider went off.
2. It was also seen that 65% of the Technical Universities libraries do not have internet connectivity to serve students. The documentary analysis showed some of the reasons for this non availability of internet connection included the high cost involved in initial purchasing and installation of the internet, and also unstable network provision by the Internet Service Providers (ISP) in the country.
3. It was also observed that a significant majority of the respondents said their libraries do not have computers system set up with installed Electronic-Library software for students in their libraries and the reason for this was mostly as a result of the high cost involved in acquiring computers, internet, software and their installations. This led to quite a 90 percent of the respondents revealing that their students do not have accessibility to online resources like Online public access catalogues (OPAC), e-books, e-journals and online databases of the libraries.
4. And lastly, it was discovered that a significant majority of the respondents said they did not have a reliable form of electronic surveillance in their libraries to monitor the proceedings and safety of the library materials remotely.

Implications to Higher Institutions in Ghana and Conclusion

These findings imply that most of the Technical universities institutions do not move with current trends of digitization, since little of the Technology acceptance model has been accepted in technical universities higher Education systems in Ghana.

The implication is that since these students utilize less or non-digital information resources, the students will lag behind in their research, learning and assignment process in this digital age. The students cannot compare themselves with other institutions of higher learning that have adopted to a very high technology extent in knowledge acquisitions and applications. The University libraries where the students use less Technology could also be regarded as traditional library because they have not incorporated full digital infrastructures and equipment for digital information resources which should be utilized by students in their studies, and therefore less of higher Education knowledge is acquired. This affects the confidence level of their product and students become technology phobia at their initial Employment.

This research concludes that there is a little negligence on the part of the technical universities' higher education providers, and supervisors to look into the challenges face by technical universities libraries in Ghana to embrace digital information resources of the technology for assignment and learning, and research by students and the University community. Since less of Technology acceptance has been adopted into the operating systems of Technical universities libraries.

Recommendations

These technological gadgets and their attendant's infrastructure including databases and subscription are financially challenging. However, higher Education providers of Technical Education Ghana should make sure there is consistency in their effort of development in the Technical universities' libraries.

GTEC should enforce its regulation where by between ten to fifteen percent of each Technical University's expenditure should be used by the libraries. When this provision is done, the supervisory body should ensure the enforcement of Technology infrastructure, and their usage into the library's operations.

Technical universities libraries should provide each student with online platforms and links into the students University portal individually since each student must be able to access Library through the student University portal. This is necessary since students' ability to find and retrieve information is a transferable skill for the job market.

Technical universities must move with the acceptance level of Technology to enhance teaching and learning, and research atmosphere of students. Since Technology is the way to go in terms of knowledge acquisitions and utilisation.

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