



Library Science

Elixir Library Sci. 103 (2017) 45611-45624

Elixir
ISSN: 2229-712X

Innovative challenges that influence service delivery in library and knowledge management centres: A case study of technical university of Mombasa

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ARTICLE INFO

Article history:

Received: 23 December 2016;

Received in revised form:

23 January 2017;

Accepted: 10 February 2017;

Keywords

Innovation of technology,
Academic libraries,
knowledge management
centres.

ABSTRACT

Innovation of technology changes the way of information delivery and information behavior. Thus, academic libraries are challenged to adapt to the changes in their working environment and take proactive actions to prove their value through excellent quality service delivery. The emergence of technology makes information available for all people. Academic libraries are no longer in their dominant position as information provider in higher institutions. Academic libraries are challenged by the impact of technology to shift their traditional role as information provider to new role as services provider supporting teaching, learning and research. The shift of role of academic libraries brings a great number of challenges and problems to academic libraries in various ways. This paper investigates the challenges that influence service delivery in library and knowledge management centres: A case Study of Technical University of Mombasa. The specific objectives of the study will be: To identify innovations adopted by the university in enhancing service delivery, To determine the effect of librarians' competence on service delivery and to establish the effect innovation based challenges on service delivery in Technical University of Mombasa. The study employed qualitative and quantitative research designs.

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Introduction

The target population of this study comprised of library staff of Technical University of Mombasa. The study census and purposive sampling techniques. The sample size for the study comprised of ten respondents. The main data collection tool was questionnaire. Collected data was analyzed descriptively using Statistical Package for Social Sciences (SPSS 23) and presented using tables, graphs and pie charts. The study findings showed that library innovation at Technical University of Mombasa Library included: online library, use of social media, institutional repository, home page and examination bank among others. These library innovations created a feedback platform from the library users on fines, book requests and renewals, ensured faster dissemination of information on any upcoming library events like orientation for new students, 24 hour access to library resources thus enhancing service delivery and improving customer satisfaction. The study concluded that library innovations affected service delivery. Majority of the respondents experienced innovation based challenges namely: poor internet connectivity which causes low response rate during day time due to higher access rate of internet and low usage of electronic resources due to love of social sites, occasional system failures and computer illiteracy among the librarians as well as the students. The effects of innovative based challenges on service delivery were: slow down library operations, lower user confidence in the effectiveness of library innovations, user dissatisfaction and low staff morale.

Librarians were competent in using library innovations to enhance service delivery since they had adequate and prerequisite professional training and education as well as relevant work experience. Technical University of Mombasa ensured innovation competence among librarians through in-job training when necessary, spirit of teamwork among others. The study concluded that librarians' competence affected service delivery in Technical University of Mombasa. In order to improve service delivery using the library innovations, the study recommended: Training users and librarians on the use of the current innovations as well as other internet and computer based applications.

1.1 Background to the Study

It is a known fact that libraries have witnessed significant changes in recent years. This change which is brought about by information and communication technologies has impacted on the mode of providing information services. The traditional methods of information dissemination have given way to electronic means of communication. While the developments and application of ICT in library operations have improved and facilitated the dissemination of information and access, it has equally provided new roles in information provision, dissemination and transfer. The librarian no longer plays a passive role rather he assumes an active role. He is no longer a custodian of books but the gate way to a myriad of information sources.

Haber (2011) posits that while providing books was a standalone function for libraries throughout the last few centuries, their offerings have evolved with the digital age to

meet the changing needs of their patrons. Academic libraries are not divorced from this technology revolution. As information providers, they are constantly under pressure to provide relevant sources of information to their immediate communities. Technology enables change and technology enforces change. According to Bales (1999), librarians, staff and patrons must make a number of adjustments as a result of any library automation project, whether it is an original implementation or a migration.

One key area is the relationship between people and technology. People have to change the way they behave and think to work effectively in an automated environment. This means that academic libraries are compelled to incorporate digital sources in order to remain at the fore of information provision and dissemination. Nowadays, students and faculty have developed greater preference for electronic information than manually driven systems. The increased availability of digital information has caused students to find alternative means of study and research with the aid of laptops and cell phones. Digital technology has reduced the importance and usage of libraries in developing countries. Ugah (2007) asserts that the acquisition of information online using PC's such as laptops and palmtops and even phones is proving to be detrimental to academic libraries in terms of patronage.

Kenya's higher education is composed of both public and private universities. University education in Kenya is regulated by Commission for University Education (CUE); a body mandated by the Kenyan government to regulate the establishment of and ensure quality of higher education. It is a requirement by this Commission that any university in Kenya must have a quality university library that is run by qualified staff. The Commission has set rules and standards for establishment of university libraries in Kenya. One of the requirements is that university libraries must engage in collaborations and resource sharing activities (CUE, 2007) for enhancement of resources and services to library users.

Additionally, CUE requires that budget allocation for library collection development activities be 10% of the universities operational budget (CUE, 2007). However, many universities do not adhere to this with some allocating less than 2%. Rosenberg, (2008) and Kavulya, (2003) observe that financial support for libraries by parent institutions in Kenya has been very minimal which has affected collection development practices in these libraries. This has hampered collection development activities and service delivery in university libraries in Kenya.

Kasalu and Ojiambo (2015) stated that ICTs have created a heightened demand for efficiency in library service delivery. This has forced university libraries to realign services to the needs and expectations of users needs. ICTs have also opened opportunities for university libraries to cooperate for resource sharing and access to remote information resources. ICTs have created an increased demand for more funding for university libraries, escalation of prices of information resources and reduced patronage of libraries by users. Unfortunately, universities in Africa have not been able to adequately meet the increased demand for more funding for libraries. This forces these libraries to seek collaborations with other institutions locally and internationally for resource sharing and document delivery in order to meet the increased demand by users for effective service delivery.

Technological innovation is not well grounded in academic libraries in Kenya but few academic libraries have integrated the necessary technology such as: USIU Library,

CUEA Library among others (Makori, 2009). Therefore there is need for academic libraries in Kenya to integrate ICT solutions into their mainstream information products and services. These solutions include integrated information systems, digital information systems, computing, radio frequency identification, local area and wide area networks. Although traditionally libraries have been the most important of the university facilities in supporting advanced scholarship, today, perhaps as never before fundamental questions are being raised concerning their nature and purpose as institutions (Kavulya,2003). In spite of the recognition that libraries play a key role in development and success of higher education, in many parts of the developing world there is a near total collapse of university library and information services.

1.2 Problem Statement

Physical library is usually associated with limitation of space in contrast to the growing amount of print materials and the emerging needs for learning common and IT facilities by users. However, innovation of technology changes the way of information delivery and information behavior. Thus, academic libraries are challenged to adapt to the changes in their working environment and take proactive actions to prove their value through excellent quality service delivery. The emergence of technology makes information available for all people. Academic libraries are no longer in their dominant position as information provider in higher institutions. Academic libraries are challenged by the impact of technology to shift their traditional role as information provider to new role as services provider supporting teaching, learning and research.

The recent past has seen many universities in Kenya constructing/refurbishing their libraries. The trend has been going on in both public and private universities starting with the United States International University (USIU), Catholic University of Eastern Africa(CUEA), KCA University and Kenyatta University among many others. The observed trend in these new library buildings is the provision of ICT facilities including computer section, internet ports, online public access catalogue

(OPAC) section among others. The observed increase in electronic publication is necessitated by the emergence of the modern ICT (Ani et al, 2005).

In an effort to ensure that libraries remain forecast in their objectives in this era of ICT development, CHE recommended that library shall adopt and maintain new information communication technologies as they develop and that every University Library shall embrace the new opportunities created by Information and Communication Technology (ICT) used in teaching, learning and research. It was also recommended that libraries shall facilitate the provision of virtual services, such as web pages, internet searching and using technology for electronic connectivity. The library building must provide space adequate for print and IT based resources and that it shall incorporate ICT needs as an integral part of the design concept including trunking and cabling and wireless connectivity.

The shift of role of academic libraries brings a great number of challenges and problems to academic libraries in various ways. This paper investigated the innovative challenges that influence service delivery in library and knowledge management centers: A case Study of Technical University of Mombasa.

1.3 Objectives of the Study

1.3.1 Broad Objective

To investigate innovative challenges that influence service delivery in library and knowledge management canters: A case study of Technical University of Mombasa.

1.3.2 Specific Objectives

The specific objectives of the study were:

- i) To identify innovations adopted by the university library in enhancing service delivery in Technical University of Mombasa.
- ii) To determine the effect of librarians' competence on service delivery in Technical University of Mombasa.
- iii) To establish the effect innovation based challenges on service delivery in Technical University of Mombasa.

1.4 Research Questions

The study was guided by the following research questions:

- i) What innovations has the university library adopted in enhancing service delivery in Technical University of Mombasa?
- ii) What are the effects of librarians' competence on service delivery in Technical University of Mombasa?
- iii) What are the effects of innovation based challenges on service delivery in Technical University of Mombasa?

1.5 Hypothesis of the Study

The hypotheses of the study were:

Ho₁: Library innovations do not affect service delivery in Technical University of Mombasa.

Ho₂: Librarians' competences do not affect service delivery in Technical University of Mombasa.

Ho₃: Innovation based challenges do not affect service delivery in Technical University of Mombasa.

1.6 Significance of the Study

The findings of the study will inform the decision making and formulation of sound policies that will have positive effect on the library innovation on service delivery.

The findings of the study will highlight the innovative challenges that affect effective service delivery in the university libraries. This will enable universities to develop better strategies that will lead to efficient and effective service in the universities thus, leading to user satisfaction. The findings of the study will provide a valuable addition to the existing body of knowledge on the subject of library innovation and service delivery.

1.7 Scope of the Study

This study investigated innovative challenges and their influence on service delivery in library and knowledge management canters: A case study of Technical University of Mombasa. The scope of the study was guided by the specific variables of the study namely: library innovations, librarians' competence on service delivery and the effect of innovation based challenges on service delivery in Technical University of Mombasa. The study targeted the library staff at Technical University of Mombasa. The study was undertaken between the months of September and October 2016.

1.8 Assumptions of the Study

This study was based on the assumptions that employees selected for the study provided sincere information, the sample chosen was large enough to meet the minimum requirements for making inferences and the sample chosen was a representative of the completely targeted population. Finally, the study assumed that the identification of the challenges and suggested solutions if adopted would help the library management to improve service delivery.

1.9 Limitations of the Study

The limitations of this study were: some respondents were unwilling to respond to questionnaires provided for fear of victimization. The researcher assured respondents of utmost confidentiality of the information provided. Having the library staff as the targeted population made it hard for the respondents to fill in the questionnaires in time. The researcher therefore, collected data when the respondents had closed business of the day. This led to a slight delay in obtaining the required responses for data analysis in time. Finally, research findings may not reflect the status of the whole country and therefore the findings have to be generalized to other areas with caution.

Literature Review

2.1 Introduction

This chapter presents the theoretical Framework of the study, conceptual framework, empirical review and critique of the existing literature as well as the research gap that the study intends to fill.

2.2 Theoretical Review

2.2.1 Assimilation-Contrast Theory

The study will be guided by assimilation-contrast theory. Assimilation-contrast theory was introduced by Anderson (1973) in the context of post-exposure product/service performance based on Sherif and Hovland's (1961) discussion of assimilation and contrast effect. Assimilation-contrast theory suggests that if performance is within a customer's latitude (range) of acceptance, even though it may fall short of expectation, the discrepancy will be disregarded – assimilation will operate and the performance will be deemed as acceptable. If performance falls within the latitude of rejection, contrast will prevail and the difference will be exaggerated, the produce/service deemed unacceptable.

The assimilation-contrast theory has been proposed as yet another way to explain the relationships among the variables in the disconfirmation model. This theory is a combination of both the assimilation and the contrast theories. "This paradigm posits that satisfaction is a function of the magnitude of the discrepancy between expected and perceived performance. As with assimilation theory, the consumers will tend to assimilate or adjust differences in perceptions about product performance to bring it in line with prior expectations but only if the discrepancy is relatively small.

Assimilation-contrast theory illustrates that both the assimilation and the contrast theory paradigms have applicability in the study of customer satisfaction. Particularly for this study, assimilation-Contrast theory suggests that if the performance of the library is within the users' range of acceptance, even though it may fall short of expectation the discrepancy will be disregarded. However, if the library performance falls within the latitude of rejection no matter how close to expectation, contrast will prevail and the difference will be exaggerated, the services will be deemed unacceptable by the users.

2.3 Conceptual Framework

A conceptual framework is a model of how one theorized or made logical sense of the relationship among the several factors relevant to the problems being studied. This research sought to determine the relationships between independent variables and dependent variable. The dependent variable was service delivery in libraries while the independent variables were library innovations, librarians' competence and innovative challenges. Figure 2.1 illustrates the conceptual framework of the study.

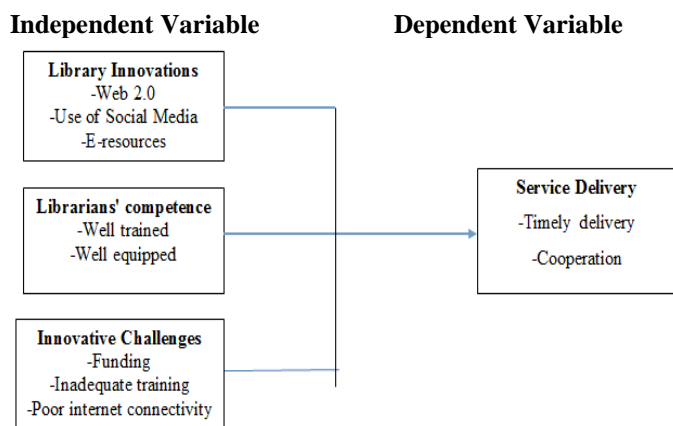


Figure 2.1. Conceptual Framework

2.3.1 Library Innovations

In the knowledge age, change not stability is a given. Knowledge age workers need to be able to locate, assess and represent new information quickly. They need to communicate this to others. They need to be adaptable, creative and innovative and be able to understand things as a system or big picture level. In the 21st century academic library, the emergence of ICT has redefined the library's role. Print materials are no longer sufficient to store information. CD-ROM databases, electronic document delivery, automated cataloguing, circulation systems and online information retrieval (OPAC) have become the order of the day. Eguavoen (2011) admits that the advent of the internet, digitization and the ability to access library and research materials from remote locations have also created dramatic changes by the end of the 20th century.

Ramzan (2004) asserts that developments like expert systems, wireless networks, virtual collections, interactive Web interfaces, virtual reference services, and personal Web portals bring about greater changes since the start of the new millennium. Moghaddam (2009) is of the view that as information technologies, information systems and information networks have been developing. This century has also witnessed a dramatic change in users' information seeking pattern. Byamugisha (2010) adds that the patrons' expectations for a distance service delivery across library services have increased; patrons have come to expect a wide variety of automated push and or pull services from libraries and from a distance. Academic libraries in the 21st century are gradually changing to fit into their clients' information seeking patterns. The situation has brought about the establishment of digital libraries to compliment traditional ones. This is evidenced in the attempt to digitize library resources to cater for the information needs of new generation users that is, the 21st century library users who exhibit much dexterity in using new sources and new technologies.

Libraries are caught midstream between print versus a digital setup. Future libraries will evolve from present libraries through specific corrections and improvements introduced into the existing structure and framework. The library of the future is unlikely to be a physical entity as we know it but would probably be a Web portal providing access to information (Smith 2005). Due to inappropriate resources and integration of ICTs, libraries are not utilized fully by the users and if the services being offered are not what users need, then, not surprisingly, users will ignore these offerings but with the integration of ICTs both at the back and front end would enhance users potential and more young people could turn their attention to libraries (Gould and Gomez, 2010).

To improve libraries, we should begin by trying to identify and understand the problems intended to be solved. Different types of libraries have evolved in response to different kinds of problems. The evolution of libraries is likely to last for a long period of time. According to Banerjee (1996), libraries will be in ceaseless transition, and the library environment will be perpetually changing and that this situation will place considerable demands on staff, requiring a vast range of knowledge as well as a high degree of flexibility. The advent and use of ICT has made it possible for remote libraries to access the huge databases of big libraries in developed countries for the purpose of adopting or adapting their bibliographic data for their own library use; and indeed the online catalogues have transformed the landscape of cataloguing and classification (Adekele, 2010).

Several authors Hellen (2007) and Makori (2009) have indicated that academic libraries are currently operating in a new technological environment and that they need to adapt to it. Otiye (2004) adds that one of the major challenges that libraries and the library profession will face in the new millennium is how to cope with electronic and paperless literature however, academic libraries in Kenya need to integrate technological solutions into mainstream information products. Academic libraries have no choice but utilize ICT in their functions as Omoniwa (2001) hypothesized that in the twenty-first century, globalization of information and the adoption of information technology will be the hallmark of great libraries.

If libraries are to function effectively in the present age, the manual processes or methods will have to give way to information and communication technologies (ICT) and a computer driven environment (Orolunsola, 2009). ICTs have had a far reaching impact on library and information institutions and services worldwide (Abdelrahman, 2009). A study by Haneefa (2007) indicated that libraries and Information Centre's have been employing ICT and electronic information resources and services to satisfy the diverse information needs of their users. Intense efforts have been made by various libraries in employing ICTs in their various operations with information retrieval systems are being designed to suit the needs of end users as well as to simplify the process. The ICTs as used in academic libraries attempts to deliver numerous applications such as wide-area network applications, local area networks, online information services (the Internet), online databases, library databases, CD-ROMs, online access catalogues, retrieval networks, digital online archives, mainframe computers, microcomputer labs, and other digital content services (Ghuloum and Ahmed, 2011).

2.3.2 Librarians' Competence

As the traditional custodian of information, librarians in the 21st century need to be aware of these significant changes and as such employ their technological knowhow and intellectual masterpiece in order to retain the leading role of the academic libraries in supporting teaching, learning and research. This means that the 21st century librarian will have to be armed with competent skills that will enhance the provision of effective library services to meet client's changing information needs. Literature abound on the competencies and skills needed for the 21st century library professional. Odero-Musakali and Mutula (2007) stated that the future of universities greatly hinges on their ability to embrace and leverage the potentials of these emerging technologies at all levels of their business activities and strategies.

The organization culture, library leadership and trained library personnel play a pivotal role in determining the role and status of academic libraries. Several authors (Sife, 2008; Minishi-Majanja, 2007; Odero-Musakali & Mutual, 2007) have identified that lack of trained personnel and negative attitude of university management on IT as major factors that impede effective adoption of ICT in university libraries. Kamba, (2011) acknowledges the existence of crunch trained and experienced technical personnel who manage, control, and maintain available ICT resources in academic libraries. Emanuel and Sife (2008) add that many libraries have inadequate qualified ICT personnel with most traditional librarians having low ICT skills and sometimes have technology phobia. Lack of trained personnel and negative attitude of university management on IT are important factors that also militate against effective adoption of ICT in university libraries (Ani, 2005). Without adequate supply of appropriately trained and skilled personnel, the ability to provide quality information services may be inhibited.

Tennant (1999) identifies important personal traits: the capacity to learn constantly and quickly; flexibility; innate skepticism; propensity to take risks; abiding public service perspective; good interpersonal skills; skill at enabling and fostering change; and capacity for and desire to work independently. Omekwu (2003), mentions basic knowledge of computers and their capabilities; Competency with search engines; internet facilities; e-mail; internet navigator tools, web browsers and web file formats; database software; internet development and management know-how. Also, some of the 21st century skills according to Krishnan (2011) include communication and collaboration, creativity and innovation, critical thinking and problem solving, media literacy, ICT literacy, flexibility and adaptability.

The success or failure of any organization depends to a large extent on the human capacity. The librarian of the 21st century is changing with the changing environment which is a consequent of ICT. Moghaddam (2009) notes that one of the vital elements of success and dynamism is specialized human resources viz librarians. LaRue (2012) firmly believes that the library's most powerful asset is its professional staff. According to him, librarians have the power to change lives and build community- but to do this, they have to leave their desks, leave their buildings and show the community what a powerful tool they are.

Tanawade (2011) observed that it is time to publicize ourselves, our professionalism, and the skills we have to offer. From the foregoing, the librarian of the 21st century is no longer one that sits behind the reference desk answering mere reference questions but rather an active marketer who sells the library's products and services to his community at every opportunity. He packages current information sources and delivers on point. This strategy serves as his bait to attract clients and by doing so; he according to Tanawade (2011) —fixes the idea in their minds that the library is source of incalculable value."

2.3.3 Challenges in Service Delivery

While new technologies have added value to library services by presenting new modes of collecting, storing, retrieving and providing information, they have also brought new challenges and aggravated some of the challenges that faced libraries before (Emmanuel and Sife, 2008). Ghuloum and Ahmed (2011) have indicated that several factors such as financial factors, technological factors, human factors and cultural factors may be a barrier in ensuring utilization of

ICTs. These have included such factors as a lack of sufficient funds to support the purchase of the technology, lack of qualified library professionals, lack of motivation and need among librarians to adopt ICT in their daily operations (Ani, 2005; Starr, 2001).

Challenges to Effective Information Service Delivery in academic libraries include:

a) Lack of competency

Some librarians in Nigeria are not competent to take on the challenging role of the 21st century information service delivery. They are averse to technology and perceive the application of computers to library work as an aberration. This being the case, they are reluctant to embrace new technology. Tanawade (2011) asserts that many librarians lack confidence in the face of increasing information technology. This slows service delivery and retards productivity. Hayati and Jowkar (2008) opine that the most problematic factors which slow down the adoption of information technologies stem from unfamiliarity of academic librarians and users with computers and searching databases.

b) Lack of technology literacy

Some professional librarians lack the requisite technological literacy needed for a 21st century library service. Technological literacy can be viewed as the ability to responsibly use appropriate technology to communicate, solve problems, access, manage, integrate, evaluate, design and create information to improve learning in all subject areas and acquire lifelong knowledge and skills in the 21st century. Edem (2008), states that the major challenge facing the 21st century library is not underfunding but the poor performance of librarians and information professionals in the developing countries as a result of poor ICT skills. Lack of basic skills in the use of information technology has become a clog to better library services. Anyira (2011) adds that librarians without a well developed ICT skill cannot render effective library services, thus, lack of skills among librarians constitute a major obstacle to service delivery in the 21st century.

c) Poor internet connectivity

In a digital library, the internet plays a primary role in digital information but equitable access to the internet in Nigerian academic libraries is yet to be realized. The existing internet connections for most people are slow. Olabude (2007) states that there are many constraints that led to the poor internet development in Africa, one of this is the initial capital outlay to install internet facilities. This is because almost all the African countries are experiencing huge debts and foreign exchange required to purchase the facilities are lacking. Chigbu and Dim (2012) further asserts that there is no efficient telecommunication and power supply base to serve as spring board for the development of internet services in Africa. Where they are available, the expensive nature of the services is another huge factor.

d) Inadequate power supply

The Nigerian power situation is in deplorable condition. There is constant power outage which has frustrated effective provision of information services. Most libraries rely on alternative source of electricity such as power generating machines to function. However, these machines are fraught with problems of maintenance, high cost of diesel and petrol. The resultant effect has been the provision of epileptic services. According to Adepetun (2012), the pangs of power supply crisis in the country have found expression in the expenditure profile, as most organizations expend huge amount of money providing alternative power supply. These

alternatives include generators, solar system, green technology, turbine gas among others. The library as an organization is not divorced from this anomaly. Effective information service delivery cannot thrive in this type of scenario.

e) Poor funding

Money is the tendon that attaches the academic library to effective information service provision. Money is needed for the acquisition of information and communication technology equipment, for internet subscriptions, staff training, emolument and maintenance. The strength of a library lies in its information resources both print and online. Funds are needed to cater for a whole range of services in the library of the 21st century yet government subventions in the education sector are not adequate. Nwalo (2000), states that problems inhibiting IT applications by African libraries include apathy and inadequate government funding. Funding is essential to excellent library services.

Academic libraries just like other departments in institutions of higher learning require sufficient funds in order to acquire modern ICT facilities such as computers, servers, scanners, photocopiers, software as well as buy/subscribe to online/offline resources such as e-journals, e-books and digital books among other resources. Amutabi (2009) pointed out that with the dwindling financial donor support situation it is unlikely that things will improve much. Kamba (2011) pointed out that libraries which became fully automated in the 1990s but could not afford to migrate, find their current software very limiting and unless one could afford to migrate onto new and updated systems, the early start could be a disadvantage. He adds that the fully automated libraries are those that either started late with donor assistance or have secured funds to migrate to up-to-date systems.

f) Technological Factors

Inadequate technological infrastructure to support the integration of ICTs in the library functions has been cited by several authors as one of the major challenge that academic libraries face. Kamba (2011) noted that ICT is not very well spread and utilized in African institutions of higher learning, mainly because of poor communication network, limited access to ICT hardware and software. This refers to issues as poor or lack of ICT policy, low internet connectivity, inadequate supply of electricity, inadequate number of PCs, etc (Minishi-Majanja, 2007). A study by Rosenberg (2005) showed that 85 per cent of the libraries provide less than one computer for every 100 students and 36 per cent provide less than one computer for every 500 students. Despite the poor students computer ratio, Kamba (2011) added that there is a serious neglect of ICT resources acquired over a period of years, which need upgrading or are out of usage and this increases the complexity of managing the ICT resources.

The study of Chisenga on the application of ICT in libraries, found that, although most librarians had Internet connectivity, almost none were offering web-based information services to their users. Minishi-Majanja (2005) indicated that the telecommunication services are the root cause of these problems in terms of, low bandwidth, technical faults and other network configuration problem. Frequent power outage has also been identified by several authors (Siddike et al, 2011; Ani et al 2005; Magara, 2002) as an impediment towards ICT adoption and utilization.

g) Cultural Factors

Socio-cultural aspects like cultural values, regional priorities, institutional relations, political dynamics, and

educational background influence the perception of potential user groups, and therefore have an impact on the adoption and use of the technology (Hagenaars, 2007). Amutabi (2009) stated that the lack of computer culture in public universities impedes rapid diffusion of the new technologies. He adds that many university officials started their careers in the age of typewriter, before the wide-scale introduction of computer technology at universities and find it very hard to fathom many things in ICT.

In their study, Gould and Gomez (2010) found out that in most countries, libraries are still being regarded as a place to study or store books thus many users doubt whether it is a 'cool' place to go, and whether it responds to their needs, such as providing current information. Many people still think that computers can only be found in cyber cafes and computer labs but not inside libraries. There is need for library management and library personnel to change this notion in order to encourage more users to visit the library and utilize ICT resources.

2.3.4 Service Delivery

The 21st century librarian is an information warehouse, one with a desperate zeal to impact positively on his environment. He is at home with modern technological infrastructure. According to Ikhemuemhe (2005), if librarians are to continue to make substantial contributions as information disseminators, they will have to understand and exploit ICT infrastructure and emerging technologies in delivering services to their clientele. In repositioning the academic library for effective information service delivery, the roles of the 21st century librarian will include the following:

Advocacy

In the current dispensation, users no longer seek information in the library. The reverse has become the case where the library goes out to render information services to users. To achieve this, the librarian has to look out for opportunities to connect and interact with his varied users. He therefore employs his interpersonal skills strategies to connect with administrators, faculty and students. During meetings, he can brief faculty on current publications and their terms of accessibility. By this, acts as a strong advocate for the library which is a vital organ of the university.

Use of social media

The library is in the business of connecting people with information. Web 2.0 technologies have brought new roles for library professionals. Web 2.0 tools such as face book, twitter, blogs, online groups which are also known as social media have made it possible for people to actually connect to one another through the internet. Khan and Bhatti (2012) put it thus; social media provides more opportunity to reach your community, target specific audiences, and give them a chance to interact with your library. By using social media, libraries can engage their clients on issues of interest and enable them make inputs especially as it affects library services. This can improve the library's image.

Service Delivery Mobile phones: Mobile devices like cell phones have improved communication and enhanced the way information is being created, delivered and accessed. The 21st century librarian can provide effective library services through mobile telephones like the GSM (Global Systems for Mobile Communication). In support of teaching and research, the use of SMS (Short Message Services) can be employed to answer reference queries, and alert users on new arrivals and upcoming events in the university calendar e.g public holidays, university matriculation, lecture free week etc. This

could be flashed through a facility called —broadcast where one text message is sent to all the library contacts listed in the address book on the mobile phone at once. (Iwhiwhu, Ruteyan & Eghwubare, 2010).

Information packaging

Packaging of information in various formats has become the norm in the digital era. This has created new opportunities for the library to provide value added services in the academic environment. Users of the 21st century are at home with electronic sources of information which permit multiple use of a material by different users at the same time. To exploit this advantage, the librarian can develop and preserve research output of his institution through digitizing projects, theses and dissertations. In collaboration with the university ICT center, an institutional repository can be created to host these projects on the universities' website. While their visibility is guaranteed on the website, their access and retrieval remains the sole responsibility of the library.

Reference Service

Reference service is the assistance given to a user in search of information in a library. In the Nigerian situation, many users shy away from the catalogue because they do not know how to use it. Some are oblivious of the importance of a catalogue in the retrieval process. Their inability to locate the needed information could cause frustration and apathy to library use. Reference service is the core of librarianship and should not be relegated. Ibegbulam (2000) observes that reference services no longer center on one-on-one service delivered face-to-face in the library. The quality of a good reference service depends on the competency and skill of the reference librarian.

Partnership

Librarians in the 21st century can partner with academic units to teach their students information literacy skills so that they can become effective users of information. Ashoor (2000) posits that developing information literacy skills should be the main goal of the library's instructional programs. Information literacy is the set of skills needed to find, retrieve, analyze and use information. Information literacy equips students with the critical skills necessary to become independent lifelong learners. It includes the technological skills needed to use the modern library as a gateway to information. Libraries inform as well as empower users to become resourceful.

2.4 Critique of Existing Literature

Kavulya (2003) argues that the provision of library services in Kenyan public universities is characterized by extremely inadequate resources in terms of funds, information materials, equipment and staff. Private university libraries experience these problems albeit to a lesser degree. Although there is widespread opinion among students, lecturers as well as university administrators that university libraries play a critical role in the teaching, research, and learning activities, there is also awareness that university libraries in Kenya, especially those in public universities are not effectively providing services which has limited their role in research and learning in the university. Finally, modern information and communication technology is being incorporated in the management of university libraries in Kenya.

However, this trend has been hindered by first, lack of funds to purchase equipment such as computers and set up networks, secondly by lack of skilled personnel in information technology, and finally by poor telecommunications infrastructure in the country. There is therefore need for adoption of strategic planning in all areas of library

management and to remain viable sources of information, university libraries in Kenya have to make use modern information and communication technology. This will enable university libraries to facilitate better access to local and global information for example through electronic and internet media (Kavulya, 2003).

Mong'are (2014) stated that the quest for higher education in Kenya has compelled universities to redesign their academic programmes and develop different modes of study such as work-based, vocational and part-time. As universities introduce these modes of study, libraries are also obliged to redesign their information resources and services to effectively serve users enrolled in these programmes. However, little is known of how university libraries are prepared to provide services to these groups of learners. The study established that Jomo Kenyatta Memorial Library had a regulatory framework governing the provision of library and information services to all readers and not specific to part-time postgraduate students. The study also found out that several factors including accessibility, personal experience, and relevance, and reliability, ease of use, familiarity, cost and format were important in determining the part-time postgraduate students' efforts to pursue information. Equally the study further revealed that challenges including inadequate funds to design specific services that would sufficiently meet the needs of part-time postgraduate students, inadequate literacy skills among the students, lack of expertise, inadequate staff and lack of understanding of the part-time postgraduate students' information needs were encountered in the provision of library and information services to part-time postgraduate students (Mongare, 2014). The study recommends that universities should integrate information literacy in their academic programmes, review library policies, carry out user surveys, and embed librarians in postgraduate students' environment. The findings of this study are significant as they contribute to knowledge pertaining to planning and designing of library and information services in universities.

2.5 Research Gap

As shown above, several researchers have studied the factors and challenges that hinder adequate service delivery in Kenyan institutions of higher learning (Kavulya, 2003; Mong'are, 2014; Makori, 2009; Kasula and Ojiambo, 2015). However, none of them assessed the innovative challenges that influence service delivery in library and knowledge management centers: A case study of Technical University of Mombasa.

Research methodology

3.1 Introduction

This chapter describes the procedures that the researcher followed in conducting the study. It highlights the methods that were used in collecting data to meet the objectives of the study. This section, therefore, defines the research design, the population of the study, sample and sampling techniques used, the sample size, data collection tools and procedures that were applied in the study, data analysis as well as ethical issues.

3.2 Research Design

A research design is a plan indicating how the problem of the investigation will be solved (Orodho and Kombo, 2003). According to Cooper and Schindler (2011), research design is a plan that guides the time scope and gives a practical guideline for the activities that should be implemented in the research process to answer the research question. The research designs employed in this study were qualitative and quantitative. These designs were most appropriate because

they allowed the researcher to collect data using both close-ended and open ended questions.

According to Mugenda & Mugenda (2003) qualitative research involves designs, techniques and measures that do not produce discrete numerical data while quantitative research involves designs, techniques and measures that produce discrete numerical or quantifiable data. More often the qualitative data are in form of words rather than numbers and methods used in collecting qualitative data are observation, participant observation and interview method. In quantitative research, random sampling is done to ensure representative of the sample.

3.3 Target Population

Ducombe and Boateng (2009) defined a target population as the sum of all the elements about which the researcher intends to make assumptions. In line with this, the target population of the study included all the ten library staff of Technical University of Mombasa only. This was an appropriate target population because they are the ones charged with the responsibility of delivering services in the university library.

3.4 Sampling Techniques

The study employed non probability sampling techniques namely census and purposive sampling techniques. Census was the most appropriate sampling technique because of the small number of the study participants defined in the sampling frame which creates the need to be inclusive. Purposive sampling was also suitable because the research sought for specific information which only the library staff had knowledge on.

3.5 Sample Size

A sample is a subset where every item in population has the same probability of being in the sample (Susan, 2010). Thus, the sample size of the study will comprised of all the ten study participants defined in the sampling frame.

3.5 Data Collection Instrument

Semi-structured questionnaire was the main data collection instrument. A questionnaire is a tool that gathers data from a large sample (Orodho & Kombo, 2006). The questions in the questionnaire contained both open-ended and closed-ended questions. Each item in questionnaire was developed to address a specific objective. The researcher preferred the use of questionnaires as a data collection tool as they are cheap and easy to administer since the researcher does not need to be physically present when the respondents are filling the questionnaire hence providing the respondents with a free conducive atmosphere. The questionnaire was divided into section A which addresses the demographic characteristics of the respondents and section B which addressed each objective separately.

3.7 Data Collection Procedure

A cover letter explaining the purpose of the study was attached to the questionnaire. The researcher used drop and pick method in administering the questionnaire.

3.8 Validity and Reliability

3.8.1 Validity

To ensure the validity of data collection tool, the study employed content validity to ensure quality control. Content validity focuses on the extent to which the content of the instrument corresponds to the substance of the theoretical concept it is designed to measure (Amin, 2005).

3.8.2 Reliability

Cooper and Schindler (2011) defined reliability as a measure of how consistent the results from a test are. The

research instruments used in this study are only said to be reliable if they can measure a variable accurately and consistently and obtain the same results under the same conditions over a period of time. To test the reliability of the instrument, Cronbach's alpha coefficient was computed for each of the study variables. The aim of this test was to ascertain the internal consistency of the items. Items are considered reliability if they yield a reliability of 0.70 and above according to Fraenkel and Wallen (2000).

3.9 Data Analysis and Presentation

This study used descriptive and inferential statistics. Once data was collected, it was edited and verified for errors, completeness and consistency of data. It was then coded, entered and analyzed descriptively using IBM Statistical Package for Social Sciences (SPSS 23). Chi-square test was used to test the hypothesis of the study. Analyzed data was presented descriptively using tables, graphs and pie charts.

3.10 Ethical Issues

Ethics obligate the researcher to inform the participants about all the objectives and other elements of the study that may influence them to opt out of it (Cooper & Schindler, 2011). In the same vein, the researcher explained the purpose of the study as well as the fact that they did not have to take part in it or answer all the questions asked in the questionnaire; this encapsulated informed consent. The study recognized that the respondents might have issues with confidentiality and concealment of identity and in this regard, the researcher ensured that the collected information remained confidential. Information prejudicial to the persons who gave it was handled with extra care and not revealed in any manner that may injure the providers. The design of the instruments was left to the discretion of the respondent the choice to provide their name and address.

Presentation and discussion of findings

4.1 Introduction

This chapter contains presentation and interpretation of the data collected in the study. The first section presents the response rate and the demographic characteristics of the respondents. The second section presents the findings of the study based on the objectives that the study sought to achieve.

4.2 Reliability Test

Reliability analysis is used for measuring the internal consistency of the items of the questionnaire used for data collection by the researcher. The overall Cronbach's Alpha coefficient (α) for the questionnaire was found to be 0.784. This reliability value was higher than 0.7000 reported to be minimum accepted coefficient. Thence, these results imply that the questionnaire that was used to collect data was reliable. Table 4.1 below shows the findings of the study.

Table 4.1. Reliability

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.784	.789	10

4.3 Presentation of Findings

4.3.1 Library Innovations

The study sought to identify whether the library of Technical University of Mombasa had any library innovations. All the respondents, 100 percent stated that the library of Technical University of Mombasa had several library innovations. The respondents were further asked to stated the library innovations that their library had. The findings of the

study revealed that majority of the respondents stated use of social media pages particularly Facebook to enhance communication between the library and its users. Twenty six percent of them stated Examination bank which stored electronic past papers and 24 percent of them stated Online or Wi-Fi enabled library which stored and allowed access to online books and journal as well as institutional repository namely conference papers and abstracts of post graduate theses while 20% of them stated library home page where updates on new occurrences were posted. Figure 4.1 illustrates the findings of the study.

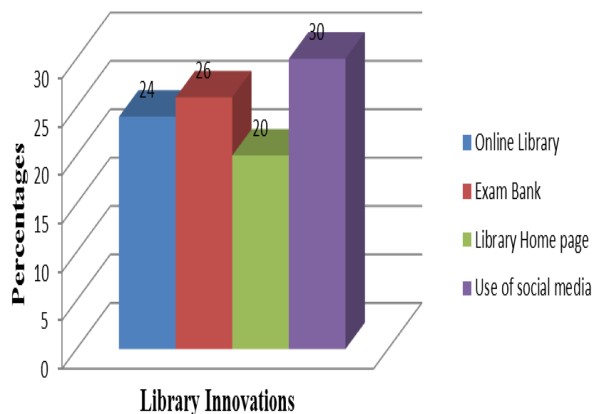


Figure 4.1. Library Innovations.

The respondents were further asked how these library innovations have enhanced service delivery at the Technical University of Mombasa Library. The findings of the study showed that 30 percent of the respondents stated that these library innovations created a feedback platform from the library users on fines, book requests and renewals, another 30 percent of them stated faster dissemination of information on any upcoming library events like orientation for new students. Twenty percent of the respondents stated that the library innovations ensured 24 hour access to library resources thus improving customer satisfaction while another 20 percent of them stated that the library innovations allowed users to access online past papers and other institutional repository. Table 4.2 summarizes the findings of the study.

Table 4.2. Effect of Library Innovations

Effect	Frequency	Percentages
Feedback from users	3	30
Enables user to access past exam papers	2	20
Faster dissemination of information	3	30
24 hour access to library resources	2	20

4.3.2 Innovative Challenges

The study sought to establish whether the respondents experienced any innovation based challenges when using any of the above mentioned library innovations. Majority of the respondents 60% stated that indeed that experienced innovation based challenges when using some of the above mentioned library innovation while 40% of them held a contrary opinion. Figure 4.2 presents the findings of the study.

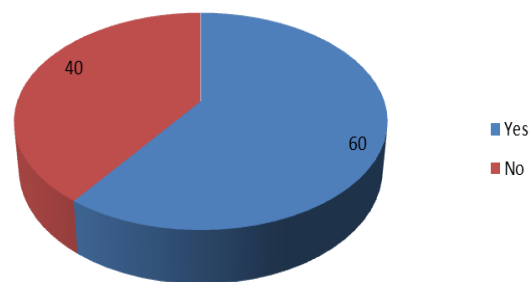


Figure 4.2. Proportion of Respondents Experiencing Challenges.

The respondents who stated that they were experiencing innovation based challenges were further asked to state those challenges. Majority of the respondents 30 percent stated poor internet connectivity which causes low response rate during day time due to higher access rate of internet and low usage of electronic resources due to love of social sites while 20 percent of them stated occasional system failures and computer illiteracy among the librarians as well as the students. Figure 4.3 presents the findings of the study.

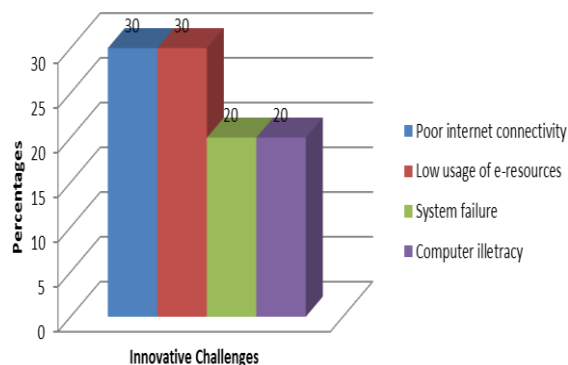


Figure 4.3. Innovative based Challenges.

The study sought to establish the effects of innovative based challenges on service delivery at the Technical University of Mombasa Library. Majority of the respondents 40 percent stated slowed down library operations, 10 percent of them lowered user confidence in the effectiveness of library innovations, 20 percent of them stated user dissatisfaction while 30 percent of them stated low staff morale. Figure 4.4 summarizes the findings of the study.

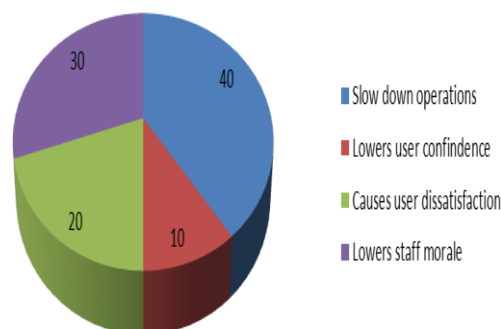


Figure 4.4. Effect on Challenges on Service Delivery.

4.3.2 Librarians' Competence

The study sought to establish the education level of the respondents. Majority of the respondents 50% stated

that they had attained diploma education, 30% of them had attained bachelors degree while only 20% of them had attained masters degree. Figure 4.5 illustrates the findings of the study.

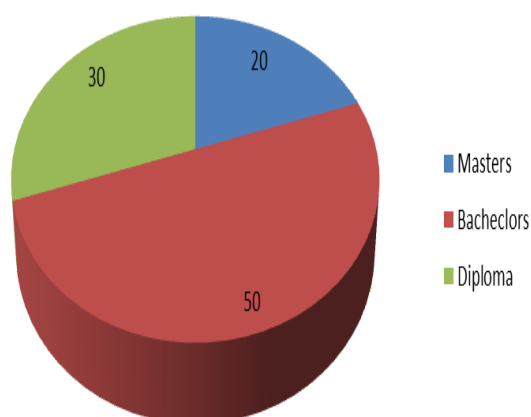


Figure 4.5. Education Level of the Respondents.

The respondents were further asked to state whether librarians were competent in using the said innovations to enhance service delivery at the Technical University of Mombasa Library. All the respondents 100 percent stated that librarians were competent in using the said innovations to enhance service delivery. The respondents were further asked to state the reasons for their answer. Majority of them 60% stated that the librarians had adequate and prerequisite professional training and education while 40% of them stated that they had the relevant work experience. Figure 4.6 summarizes the findings of the study.

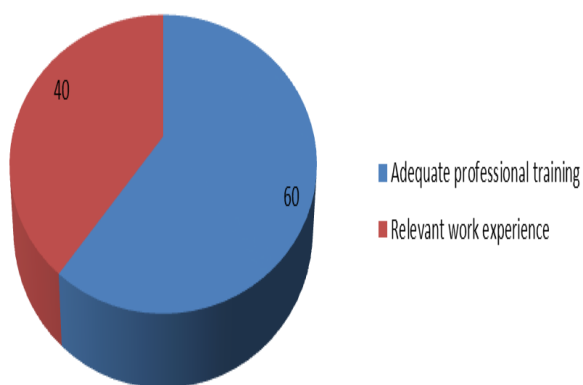


Figure 4.6. Reason for Competence of Librarians.

The study sought to establish the ways in which Technical University of Mombasa ensured innovation competence among librarians. Majority of the respondents 40% stated in-job training when necessary, 30% of them stated the spirit of teamwork, 10% of them stated value addition through recognition of librarians' competence while 20 percent stated job promotions. Figure 4.7 summarizes the findings of the study.

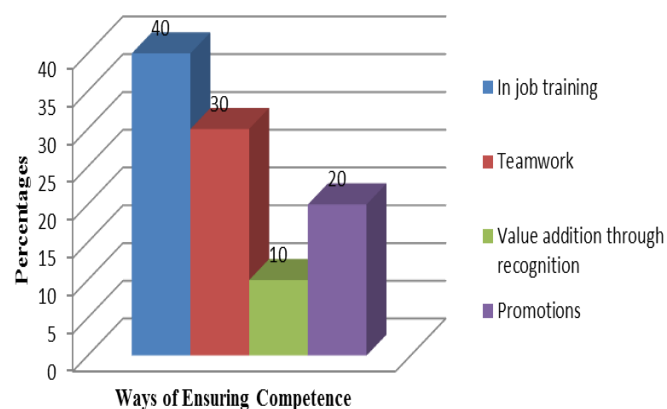


Figure 4.7. Ways of Ensuring Innovation-based Competence.

4.4 Hypothesis Testing

Hypothesis One

Ho₁: Library innovations do not affect service delivery in Technical University of Mombasa.

From table 4.3(a), Chi-square goodness of fit test was computed at 95% (error 0.05). The chi-square value was found to 42.361 at one degrees of freedom. The P-value was found to be .000 < 0.05. The null hypothesis was therefore rejected while the alternative hypothesis was accepted. The study further concluded that library innovations affected service delivery in Technical University of Mombasa.

Table 4.3 a. Chi-square Test

	Library Innovations
Chi-Square	42.361 ^a
Df	1
Asymp. Sig.	.000

Hypothesis Two

Ho₂: Librarians' competence do not affect service delivery in Technical University of Mombasa.

From table 4.3(b), Chi-square goodness of fit test was computed at 95% (error 0.05). The chi-square value was found to 5.149 at one degrees of freedom. The P-value was found to be .023 < 0.05. The null hypothesis was therefore rejected while the alternative hypothesis was accepted. The study further concluded that librarians' competence affected service delivery in Technical University of Mombasa.

Table 4.3 b. Chi-square Test

	Librarians' Competence
Chi-Square	5.149 ^a
Df	1
Asymp. Sig.	.023

Hypothesis Three

Ho₃: Innovation based challenges do not affect service delivery in Technical University of Mombasa.

From table 4.3(a), Chi-square goodness of fit test was computed at 95% (error 0.05). The chi-square value was found to 3.034 at one degrees of freedom. The P-value was found to be .002 < 0.05. The null hypothesis was therefore rejected while the alternative hypothesis was accepted. The study further concluded that innovation based challenges affected service delivery in Technical University of Mombasa.

Table 4.3 c. Chi-square Test

	Innovation-based Challenges
Chi-Square	3.034 ^a
Df	1
Asymp. Sig.	.002

4.4 Discussion of Findings

4.4.1 Effect of Library Innovation on Service Delivery

The study observed that the new library innovation including computer section, internet ports, online public access catalogue (OPAC) section, online library, use of social media, institutional repository, home page and examination bank among others. This findings of the study concur with the findings of Makori (2009) that found out that academic libraries in Kenya ICT solutions into their mainstream information products and services. These solutions include integrated information systems, digital information systems, computing, radio frequency identification, local area and wide area networks. Ramzan (2004) asserts that developments like expert systems, wireless networks, virtual collections, interactive Web interfaces, virtual reference services, and personal Web portals bring about greater changes since the start of the new millennium. Similar findings were echoed by Moghaddam (2009).

The first hypothesis of the study was tested and the chi-square value was found to 42.361 at one degrees of freedom. The P-value was found to be .000 <0.05. The null hypothesis was therefore rejected while the alternative hypothesis was accepted. The study further concluded that library innovations affected service delivery in Technical University of Mombasa. The study revealed that library innovations created a feedback platform from the library users on fines, book requests and renewals, ensured faster dissemination of information on any upcoming library events like orientation for new students, 24 hour access to library resources thus enhancing service delivery and improving customer satisfaction. these findings are in agreement with the findings of Kasalu and Ojiambo (2015) that stated that ICTs have created a heightened demand for efficiency in library service delivery. This has forced university libraries to realign services to the needs and expectations of users needs.

4.4.2 Effect of Innovation-based Challenges on Service Delivery

Majority of the respondents 60 percent stated that they experienced innovation based challenges when using some of the above mentioned library innovation. These challenges included: poor internet connectivity which causes low response rate during day time due to higher access rate of internet (30 percent) and low usage of electronic resources due to love of social sites (30 percent), occasional system failures (20 percent) and computer illiteracy among the librarians as well as the students (20 percent).

The third hypothesis of the study was tested and the chi-square value was found to 3.034 at one degrees of freedom. The P-value was found to be .002 <0.05. The null hypothesis was therefore rejected while the alternative hypothesis was accepted. The study further concluded that innovation based challenges affected service delivery in Technical University of Mombasa. The effects of innovative based challenges on service delivery at the Technical University of Mombasa Library: slow down library operations (40 percent), lower user confidence in the effectiveness of library innovations (20 percent), user dissatisfaction (20 percent) and low staff morale (20 percent).

The findings of the study are in agreement with the findings of several authors (Sife, 2008; Minishi-Majanja, 2007; Odero-Musakali & Mutual, 2007) have identified that lack of trained personnel and negative attitude of university management on IT as major factors that impede effective adoption of ICT in university libraries.

Emanuel and Sife (2008) add that many libraries have inadequate qualified ICT personnel with most traditional librarians having low ICT skills and sometimes have technology phobia.

4.4.3 Effect of Librarians' Competence on Service Delivery

Majority of the respondents 50% stated that they had attained diploma education, 30% of them had attained bachelors degree while only 20% of them had attained masters degree. Librarians were competent in using library innovations to enhance service delivery since they had adequate and prerequisite professional training and education as well as relevant work experience. Technical University of Mombasa ensured innovation competence among librarians through in-job training when necessary (40 percent), spirit of teamwork (30 percent), value addition through recognition of librarians' competence (10 percent) and job promotions (20 percent).

The second hypothesis of the study was tested and the chi-square value was found to 5.149 at one degrees of freedom. The P-value was found to be .023 <0.05. The null hypothesis was therefore rejected while the alternative hypothesis was accepted. The study further concluded that librarians' competence affected service delivery in Technical University of Mombasa. Ani (2005) found out that librarian competence determine the quality of service delivered as well as customer satisfaction. These sentiments were shared by Kamba (2011) and Minishi-Majanja (2007) too.

Conclusion and recommendations

5.1 Introduction

This chapter presents the conclusion and recommendations of the study based on the objectives that the study sought to meet.

5.2 Conclusion

The study concluded that library innovation at Technical University of Mombasa Library included: online library, use of social media, institutional repository, home page and examination bank among others. The study revealed that library innovations created a feedback platform from the library users on fines, book requests and renewals, ensured faster dissemination of information on any upcoming library events like orientation for new students, 24 hour access to library resources thus enhancing service delivery and improving customer satisfaction. The study further concluded that library innovations affected service delivery in Technical University of Mombasa.

Majority of the respondents experienced innovation based challenges when using some of the above mentioned library innovation. These challenges included: poor internet connectivity which causes low response rate during day time due to higher access rate of internet and low usage of electronic resources due to love of social sites, occasional system failures and computer illiteracy among the librarians as well as the students. The effects of innovative based challenges on service delivery at the Technical University of Mombasa Library: slow down library operations, lower user confidence in the effectiveness of library innovations, user dissatisfaction and low staff morale.

Librarians were competent in using library innovations to enhance service delivery since they had adequate and prerequisite professional training and education as well as relevant work experience. Technical University of Mombasa ensured innovation competence among librarians through in-job training when necessary, spirit of teamwork, value addition through recognition of librarians' competence and job promotions. The study further concluded that librarians'

competence affected service delivery in Technical University of Mombasa.

5.3 Recommendations

In order to improve service delivery using the library innovations, the study recommended:

- i) Training users and librarians on the use of the current innovations as well as other internet and computer based applications.
- ii) The librarians should be encouraged to be computer savvy and improve their level of competence in the library innovations.

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Appendices

Appendix I: Introductory Letter

Dear Respondent,

Re: Request To Conduct Research

My name is Stella Migide Madete. I am carrying out a study on "Innovative challenges that influence service delivery in library and knowledge management centers: A case study of Technical University of Mombasa. The results of the report will be used solely for academic purposes and will be treated with utmost confidence.

Thank you in advance,

Yours faithfully,

Stella Migide Madete

Appendix II: Questionnaire

1.a) Have you adopted any innovations in the university library to enhance service delivery?

Yes () No ()

b) If yes, kindly state them.

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2. How have the above innovations enhanced service delivery?

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3. a) Do you face any challenge in using any of these innovations?

Yes () No ()

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b) If yes, kindly state them.

4. How do these challenges affect service delivery in the university library?

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5. Do you think the librarians are competent in using the said innovations to enhance service delivery? Give a reason for your answer?

Yes () No ()

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6. How does the university ensure innovation competence among librarians?

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7. What do you think should be done to enhance service delivery using these innovations in the library?

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