

**AWARENESS AND UTILIZATION OF E-BOOK RESOURCES BY
UNDERGRADUATE STUDENTS: THE CASE OF PUBLIC UNIVERSITY
LIBRARIES IN KENYA**

BY

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DECLARATION

Declaration by the Candidate:

This thesis is my original work and has not been presented for a degree in any other university. No part of this thesis may be reproduced without the prior written permission of the author and/ or Moi University.

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DEDICATION

To the Glory of God and in memory of
my late parents Mr. Joram Njuguna Kimani and Mrs. Esther Muthoni Njuguna,
who did not live to see this glorious ending.

ABSTRACT

University libraries in Kenya have been providing e-books to users since 2003. Although the librarians have put much effort in creating awareness on the utilization of e-book resources by undergraduate students, statistics reveal low usage. This has been a cause for concern among the stakeholders who include the respective university management boards and librarians. This study, therefore, set out to investigate the utilization of e-book resources by undergraduate students in public university libraries in Kenya with a view to proposing a framework and appropriate strategies to enhance their use. The specific objectives of the study were to: examine the level of awareness of e-book resources by undergraduate students in public universities; analyse programs that facilitate awareness of e-book resources to undergraduate students; establish the factors that affect the use and non-use of e-book resources by undergraduate students; establish the perception of undergraduate students on e-book resources in comparison to other resources; ascertain the extent to which the e-book resources meet the expectations of undergraduate students; and propose a framework and recommendations of improving access and use of e-books by undergraduate students. The research was guided by the consumer behavioral theory by Engel, Kollat, and Blackwell Model of 1968 in mapping potential areas of intervention in awareness creation. The conceptual framework incorporated the 7ps marketing mix. Mixed methods including self-administered questionnaires, focus group discussions and face-to-face interviews were used in collecting data. Survey research design was used towards this end. Four public universities were purposively sampled from among thirty one public universities in Kenya. Third year undergraduate students were also purposively sampled from among undergraduate students. Non-probability sampling was employed for all respondents where the third year undergraduate students and lecturers were sampled through the use of quota sampling while for librarians in circulation and e-resources sections convenience sampling was used. Data was collected from third year undergraduate students, lecturers and librarians in the selected institutions. A questionnaire was distributed to three hundred third year students who were sampled from the population of undergraduates from four public universities. Further, focus group discussions were held with four groups of third years in respective universities. Face to face interviews were conducted with 20 lecturers and 12 librarians. Quantitative data was analyzed using descriptive statistics while qualitative data was analyzed thematically. The study found that most undergraduate students were not aware of e-book resources and therefore not clear on their benefits. Students preferred electronic information over and above print literature. To enhance use of e-books by undergraduate students there was need for redefined positioning of e-books. The study made several proposals which included among others: branding of e-books in the library; revised acquisition model; implementation of continuous monitoring and evaluation parameters; and restructuring of e-book awareness creation strategies using the proposed framework.

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ABBREVIATIONS AND ACRONYMS

The following is a list of abbreviations and acronyms alongside their meanings as used in the study.

ACRL: Association of College and Research Libraries (USA & Canada).

ACU: Association of Commonwealth Universities

CBA: Cost-Benefit Analysis

CD-ROM: Compact Disk Read Only Memory

CHE: Commission for Higher Education

COVID-19: Corona Virus Disease, 2019

CUE: Commission for University Education

DRM: Digital Rights Management

DVD: Digital Versatile Disk

EKB: Engel, Kollat, Blackwell Model

FGDs: Focus Group Discussions

HELB: Higher Education Loans Board

HTML: Hypertext Markup Language

ICT: Information Communications Technology

IL: Information Literacy

ILP: Information Literacy Programs

INASP: International Network for the Availability of Scientific Publications

ISO: International Organization for Standardization

KENET: Kenya Education Network

KLA: Kenya Library Association

KLISC: Kenya Library and Information Services Consortium

KUCCPS: Kenya Universities and Colleges Central Placement Service

LIS: Library and Information Studies

NACOSTI: National Council for Science, Technology and Innovation

OPAC: Online Public Access Catalogue

PBL: Problem Based Learning

PDF: Portable Document Format

PERI: Program for the Enhancement of Research Information

PULIB: Public Universities Legal Inspection Board

ROI: Return on Investment

SPSS: Statistical Package for Social Sciences

TAM: Technology Adoption Model

UoN: University of Nairobi

USLS: University Students Loan Scheme

VSAT: Very Small Aperture Terminal

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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter discusses conceptual and contextual setting of the study by providing the background information of public universities in Kenya; funding of public universities in Kenya; public university libraries in Kenya; funding of public university libraries in Kenya; electronic books (e-books) in university libraries in Kenya; undergraduate students in Kenya; statement of the problem; aim of the study; objectives of the study; research questions; assumptions of the study; significance of the study; scope and limitations of the study; definitions of operational terms; and structure of the thesis.

According to Lebert (2009) the first e-book was created in 1971 by Project Gutenberg which was creating electronic versions of literary works for world-wide dissemination. The internet became active in 1974 and began spreading globally in 1983 as a network for research centers and universities. In the 1990s the internet spread very quickly as it was boosted by the invention of the first Mosaic browser and the web. Digital publishing became main-stream in mid 1990s as more and more books were published with both electronic and print versions while some were published purely in electronic format. Lebert (2009) further observed that today there are millions of e-books available from diverse publishers. The initial intent for e-book publishing was to provide free access and duplication which was to be read by all with minimal cost. But these were short-lived due to rising issues of copyright. These have continued to obstruct maximum access to e-books as many are guided by various forms of Digital Rights Management (DRM). It was

observed by Slater (2010) that publishers were the main determinants of delivery and access to e-books.

Asunka (2013) observed that e-books required readers when they first appeared and these were quite expensive and therefore not common. Readers have continued to evolve to more affordable user friendly formats. Today, e-books can be accessed in PDF (Portable Document Format) downloads and in various other forms such as e-Pub and html (Hypertext Markup Language) through diverse electronic reading devices. These can also be downloaded and stored on portable storage devices such as CD-ROM (Compact Disk Read Only Memory), DVD (Digital Versatile Disk) or flash disks. Devices used to read e-books include tablets, smart phones, and all types of computers. O'Brien, Gasser and Palfrey (2012) observed that the invention of e-reader devices motivated the evolution of the e-book market in mid 2000s. Other drivers for the rapid growth of the e-book industry were technological, economic, social and legal.

The internet was first available in Kenya in 1993, while full internet access was established in 1995 (<https://www.internetworldstats.com/af/ke.htm>(2019)). Information resources were collectively accessible in public universities from 2003 following the establishment of the Kenya Library and Information Services Consortium (KLISC). KLISC was established for the purposes of negotiating bulk purchases of electronic information resources at affordable prices. INASP (International Network for the Availability of Scientific Publications) has been instrumental in negotiating for low cost online resources from a wide range of publishers, enhancing capacity for librarians, marketing of the resources, and training of users. INASP is an international development charity organization with partnerships in

Africa, Asia and Latin America to support institutions to produce, store and use research and knowledge. Since 2003 to 2013, INASP was responsible for negotiating with publishers for affordable and sustained access to online resources through its flagship project known as Program for the Enhancement of Research Information (PERI). The resources were then selected by the consortia for their research needs and within their limited budgets (INASP/KLISC, 2011). However, the bulk of electronic information resources are today mainly acquired by university libraries through KLISC.

1.2 Background Information

This section carries information on public universities in Kenya; funding of public universities in Kenya; public university libraries in Kenya; funding of public university libraries in Kenya; electronic books in university libraries in Kenya and undergraduate students in Kenya.

1.2.1 Public Universities in Kenya

Public universities in Kenya have their origins from the Royal Technical College which was established in 1956 in Kenya as an affiliate of the University of London to provide courses not availed in Makerere University College such as Engineering and Commerce. In 1957 it was renamed Royal College and started offering Degree Certificates of the University of London and in 1963 it became the University College of Nairobi. Together with Makerere and Dar es Salaam Colleges, they formed the University of East Africa. University of East Africa was established in 1963 as an independent external college of the University of London. The University College of Nairobi became the University of Nairobi

through an Act of Parliament in 1970 following the dissolution of the Federal University of East Africa (Mwiria, et.al., 2006; Otike, 2004).

The establishment of new public universities, which followed after the University of Nairobi, were founded on the tradition of mentorship and apprenticeship from established universities. All public universities in Kenya have been founded on this tradition except Moi University which was formed on the recommendation of the Presidential Working Party on the Second University in 1984. This was as a result of a need to increase capacity to absorb the ever increasing qualifying students. All other public universities were groomed by other universities, for example Kenyatta University College was an affiliate of University of Nairobi until 1985 when it became Kenyatta University; Jomo Kenyatta University of Science and Technology began as a University College of Kenyatta University. This explains why many public universities in Kenya have similar administrative cultures (Kavulya, 2004). The structural operations of both public and private universities are set by one umbrella body named the Commission for University Education (CUE) (University Education Act, 2012).

However, with the University Education Act of 2012, the above tradition is no longer necessary. New universities can make direct application for accreditation by CUE without having affiliation to any existing public university. This was based on a recommendation by the Public Universities Legal Inspection Board (PULIB) in 2006 for the creation of a legal framework that would give the then Commission for Higher Education (CHE) full mandate to carry out its role as the Quality Assurance Agency for higher education in addition to overseeing the establishment of private universities. All universities in Kenya, both public

and private, can only be established upon approval by this commission which was later renamed CUE. A national accreditation system was necessary as a means of guaranteeing quality in higher education and training (CHE, 2008).

1.2.2 Funding of Public Universities in Kenya

The quality of university education provided is dependent on financial capacity to support the development of infrastructure including information communication technologies, library and information resources, and payment of teaching, administrative and technical staff. Quality has been recognized as the result of sufficient infrastructure vis-à-vis student population, lecturers, professional staff and information technology (Kiamba, n.d.; Ooro, 2009). Information is a crucial resource in University education for teaching, learning and research. According to this study, the need for a dependable, supportive and well-resourced library is an undeniable reality. A well-resourced library also increases the potential for academic staff to use a variety of teaching and learning approaches, ranging from resource based to individualized learning all of which rely on sufficient funding.

Funding of public universities in Kenya has evolved over time from fully government sponsored to cost shared through fees collected and diverse forms of income generation programs. In the 1970s, education was fully funded by the government. Students were also given some stipend. This later changed in the 1990s to allocations for specific purposes such as accommodation and book allowances (Ooro, 2009). As the numbers of those seeking higher education increased, it became impossible for the government to extend grants and scholarships to all students and so in 1974, the University Students Loans Scheme (USLS) was introduced. This was run by the Ministry of Education. Funds

covered included tuition and living expenses. The Structural Adjustment Programs of the 1990s resulted in government reducing its financial support for Public Universities. In 1995, the Higher Education Loans Board (HELB) was set up by the government with a mandate to implement a sustainable revolving loaning system. Total budgetary allocations per capita have since been declining reflecting a situation where the increasing number of students is not commensurate with the available resources. Public Universities were, therefore, expected to initiate income generating projects to cater for the deficits (Ooro, 2009).

According to the Universities Act 2012, the funds of a public university were to comprise:

- Budgets, as provided by Parliament.
- Assets, as may accrue to or vested in the public university in the course of its powers or the performance of its functions under this Act or any other written law.
- All monies from any other source provided for or donated or lent to the public university.

1.2.3 Public University Libraries in Kenya

The functions of public university libraries are majorly guided by the Commission for University Education Standards and Guidelines (CUE, 2014). According to this Commission, University libraries should have a policy on Collection Development which incorporates the facilitation for provision and access to electronic information resources. It is expected that the guidelines are adequate for the provision of relevant and timely information resources to facilitate teaching, learning, research, and community service for all categories of its users. In providing information services, The Commission advises that

there should be full adoption of ICT in information management including the provision of competent professionals dedicated to the management of library ICT infrastructure. This researcher observes that this ensures that there are no gaps in information provision in all areas where demand may be placed including reference services, digitization, subscribed electronic resources and the information repository.

Otike and Barat (2021) observe that the university libraries are gradually becoming wall less. This is being achieved as libraries embrace the use of technology in service provision and in enabling access to information resources. This researcher observes that libraries are remodelling their spaces to accommodate new learning experiences. Hence libraries are no longer just available for print book custody but are actively engaged in knowledge generation as they facilitate the creation of learning spaces for discussions and other forms of multimedia interactions.

1.2.4 Funding of Public University Libraries in Kenya

There have been several commissions at different times that looked into university education in Kenya. They all cited financial inadequacy as the key challenge to efficient management of Kenyan universities in the face of increased student population (Kiamba, n.d). Research carried out by various entities such as Mbirithi (2013) and Mwiria, et al (2006) confirm that library resources in public universities are inadequate. Lack of enough books (print and electronic) has had a negative implication on teaching, learning, and on research and quality of education. Text books and library spaces are strained due to increased student population (Mbirithi, 2013). This calls for alternative solutions that may mitigate the effect of these shortcomings which majorly arise from inadequate funding.

Funding allocations for libraries is determined by individual institutions. The Commission for University Education (CUE) recommends the funding to be at least 10% of university budget (CUE, 2014). This has not been forthcoming for many university libraries and they are constantly called upon to justify why they should be given more funds. Hernon and Altman (2009) observed that academic libraries are funded to facilitate education and research. The quality of education in public universities is thereby negatively affected to a large extent due to the numbers of admitted students against limited available resources. Shortages of physical facilities for teaching and learning were identified as problems specific to public universities (Gudo, Olel, & Oanda, 2011).

Other avenues of income generation for funding libraries as identified by Otike and Barat (2021) include short courses on binding; managing of university bookshops; operating the university press and reprographic services; participation in grant competitions, and organizing conferences, seminars and consultancy services.

In order to operate within these challenges of limited budgets, university library electronic resources have been viewed as a panacea owing to the fact that this can be used on a virtual environment and hence are accessible to multiple users at the same time any time of the day, require minimum storage space, and are popular for the independent users. However, it was observed by was observed by INASP in partnership with KLISC that the provision of e-resources encounters a lot of challenges such as the need for ICT infrastructure with stable internet connectivity, computer terminals and bandwidth (INASP/ KLISC, 2011).

1.2.5 Electronic Books in Public University Libraries in Kenya

E-books are electronic versions of print books or a book publication made available in digital form consisting of text or images or both readable on a personal computer or other electronic devices. They are available in a variety of formats that can be downloaded in PDF, html, plain text and rich text formats (Hwang, Kim, Lee, & Kim; 2014).

E-books promise to provide solutions to challenges experienced by university libraries by providing alternative resources to evade delays experienced in the procurement of print books; freeing of space and through provision of virtual and unlimited access to more resources. Ease of access to varied information is hence expected to make teaching more fruitful through enhanced learning capabilities. Many university libraries have been adopting policies that prioritize e-books over print (Conyers, et.al, 2017). The trend that is gaining popularity with many libraries is to provide e-books to supplement and substitute print books. This researcher further observes that the management of print books is quite cumbersome compared to the management of e-books.

E-books are part of the wider electronic resources that include e-journals; in-house indexes; and institutional repositories. These are subscribed from online databases and open access sites (Omeluzor, Akibu & Akinwoye, 2016). University libraries in Kenya under the KLISC umbrella subscribe to e-resources from online databases and aggregators such as Pro-Quest E-book Central, EBSCO Host, Project MUSE and book chapters across several databases. Such e-books are available in a wide range of subject areas such as the arts, business, education, history, political science, law, literature and language, religion and philosophy, social sciences, science and technology.

Individual libraries may also link to open access collections. There are various modes of acquiring e-books: on a title-by-title basis; leasing; pay per view or user initiated; approval plans; databases; subscription of packages and massive packages purchased from single or multiple publishers (Allison, 2013; Ward, 2015). This study observes that e-books are vital teaching and learning information resources for students, hence appropriate management of the formats in which they are delivered is important.

Electronic information publishers are predominantly from abroad. Few local publishers have embraced educational e-book publishing. Consortia members can only acquire from selected publishers as they deem most relevant to programs offered in their universities. Procurement deals have continued to change over the years in price and resource packages. Since 2013 some publishers have withheld more resources from the blanket procurement. Some of the resources most helpful to users must be paid for separately.

Internet access by universities and research institutions in Kenya is facilitated by the Kenya Education Network (KENET). It is the gateway to advanced e-infrastructures for research that are available exclusively within the Research and Education Network anywhere in the world (KENET, 2017). Digital access in Kenya has greatly improved through increased bandwidth and fibre optic cables that connect the country to the rest of the world. It was observed by Chigbu, Njoku, Uzoagba, and Thomsett-Scott (2016) that the improvement of hand held devices has encouraged use of e-books. They further observed that future ease of access to e-books will increase across different platforms making libraries institutions of access rather than of ownership.

There are many benefits that are associated with and directly attributed to the availability of electronic information resources. Advantages that have made e-books popular with libraries and users include portability, access by multiple users at the same time, faster access, eco-friendly in terms of paper, time and space, remote access, can search multiple files simultaneously, capacity for frequent content updates, diversity of resources provided, provision of extensive links and additional related resources, easy dissemination and easy manipulation for sharing among many users, and global virtual access. Additional advantages include the fact that they will never be unavailable because they are on loan and are cheaper in comparison to print, have tools that allow users to make notes, highlight, apply sticky notes, and utilize the personal bookshelf (Abdullah & Gibb, 2008a.; Allison, 2013; Omeluzor, et.al; 2016; Quadri, 2013; Walters, 2018; Worden & Collison, 2011).

Investment in e-resources, which include e-books, has a direct impact on the productivity of an academic institution which ultimately enhances its reputation (Stewart & Newman, 2017). There is high improvement in research quality output due to enhanced information access and retrieval. Libraries are important in sharing expensive physical and human resources as well as in serving as physical knowledge spaces where there is convergence of study and exchange of ideas (Scupola, 2010). In order to address some of the information challenges, university libraries are increasingly adopting the utilization of e-books, which according to Czechowski (2011) enable users to access the most current editions and also ensure savings on costs.

However, in spite of the above benefits of using of e-books, several challenges have slowed down their full adoption by undergraduate students in public universities in Kenya. These

include: poor internet connectivity; lack of access to computers; lack of awareness of existing e-resources; lack of awareness of existing training programs on e-resources, lack of searching skills, and lack of affordable supportive facilities such as printers (INASP/KLISC, 2011). This researcher observes that notable progress has been made in addressing these challenges such as enabling off campus access to available e-resources, but limitations in certain aspects have continued to be experienced. These challenges include: increased student numbers; stagnant or reducing funds per student ratio; expensive information resources; dynamic information environment leading to lots of publications which are generated very regularly; and digital divide that results from unaffordable access to as much e-book resources as is desirable.

1.2.6 Undergraduate Students in Kenya

The typical age range of an undergraduate student in Kenya is 18 to 24, but there are exceptions of older age groups due to varied circumstances. This age group is referred to as digital natives in the developed world (Mizrachi, 2013). However, this researcher opines that the Kenyan ICT environment could only be referred to as digital after 2010 for the majority of the citizens. Prior to 2010 digital gadgets were rare and were only accessible by a small minority. The digital television gained ground in 2015. Whereas the same student would be referred to as a digital native in the west, this may not be the case in Kenya and several other African countries as has been observed in this study. The smart phone is the most dominant ICT gadget for this age group in and out of the university. In view of this reality the utilization of e-books and other e-resources is to be learnt from the basics and is yet to be the norm in institutions of higher learning despite the fact that undergraduate students think of themselves as ICT savvy. Undergraduate students' skills in access and

utilization of e-books need to be improved through training and experience. Stankevich (2017) observes that the utilization of advanced technologies is a status symbol for the current crop of university students and that they are highly influenced by what their peers think. They utilize content from various platforms and from different devices.

1.3 Statement of the Problem

The fact that e-books are ecofriendly, virtual and possess several other advantages has made them the best alternative to print books. This has become more pronounced especially now in the COVID-19 era. Additionally, they supplement and complement print information resources. However, research in different parts of Africa such as Uganda, Ghana and Nigeria shows that e-books are grossly underutilized especially by undergraduate students (Gakibayo, Odongo & Obura, 2013; Kwadzo, 2015; Omeluzor, et.al, 2016). Even where teaching of library literacy skills was done, it was observed that many students in the University of Benin (Nigeria) did not utilize the library as expected (Obasuyi & Odion, 2015). This research observes that there has not been any major study specifically on the utilization of e-books by undergraduate students in Kenya. Kiilu and Kiilu (2014) observed that only a third of the undergraduate student population effectively utilized library services including electronic resources in Kenya.

In view of the advantages associated with e-books, it is in the interest of stakeholders and the social environment occasioned by COVID-19, that the utilization of e-books is enhanced among the undergraduate students. However, the uptake of e-books in the library by undergraduate students in public universities has been quite slow and has encountered diverse hindrances. In spite of the fact that infrastructural needs have been done to a large

extent to ensure that the global digital divide is lowered, frustrations encountered in connectivity continue to be experienced. These obstructions continue to hurt the efforts towards encouraging undergraduate students' unlimited access to e-books.

The provision and utilization of e-books was expected to have far reaching impact on undergraduate students' learning in the universities. However, their slow uptake has hampered this realization. In addition, costs of buying print or electronic resources for university programs are not individually reachable by many undergraduate students. It is not realistic to expect that students would buy their own information resources for every course. Institutional support to access relevant resources is a life line to these undergraduate students. The provision of e-books, as other information resources, is largely facilitated by university libraries hence the study on the utilization of e-books in the library.

This low utilization of library e-books is probably most likely as a result of the challenges associated with the mix up of sources of relevant undergraduate content, information overload, limited access and inadequate supportive staff systems. The study observes that undergraduate information needs are for basic, foundational theories, concepts, and principles. Undergraduate students are novices who need assistance in identifying relevant resources. Their expertise and ability to discern, gauge, dissect, understand, distinguish and select competently the resources they should utilize is at its formative stages. Their mastery on evaluation of respective academic information to utilize is quite low hence their need for support and guidance in the selection of the basic information resources. This inevitably implies that their capacity to utilize library e-books without customization is overestimated.

Walters (2018) observed that journals are not appropriate as information resources for undergraduate students as they are less readable and demand prior knowledge of content and methods. The Association of College and Research Libraries (ACRL) (2013) also observed that strong emphasis by university libraries on research can intimidate undergraduate students. It advised that library services for undergraduate students should focus on introductory materials and general databases and instruction. Although the undergraduate students can utilize all kinds of materials, the library should provide services, resources, and instruction specifically designed to educate them and to enable them become self-sufficient researchers. The Association viewed the undergraduate students as beginners in acquiring research skills hence the need for carefully selected information resources. This research is, therefore, of the view that awareness creation programs for undergraduate students needs to take this into consideration. Focus on training should target e-books.

This research was concerned with e-books which primarily address information needs of undergraduate students in different phases of their academic programs. It endeavoured to find the relationship between the variables that contribute to access and utilization by undergraduate students by allowing them, as the majority of university library users, to audit the relevance, accessibility, sufficiency and convenience of e-books availed to them. Undergraduate students were also expected to identify the factors that influence their utilization of e-books. Findings exposed the weak links in positioning e-books for utilization by undergraduate students. This led to recommendations that would bridge identified gaps and ensure enhanced utilization of e-books by undergraduate students. The research was also expected to make contribution to the literature on utilization of e-books

by undergraduate students in Kenya. Literature in this regard was minimal. A similar study done by Nyambala (2015) for her Master's thesis was inclined to the growth in use of e-books by undergraduate students in two universities in Kenya in which she used a quantitative approach.

1.4 Aim of the Study

The aim of the study was to investigate the utilization of e-books by undergraduate students in public university libraries in Kenya with a view to proposing appropriate strategies to enhance their use.

1.5 Objectives of the Study

The specific objectives of this study were to:

1. Examine the level of awareness of e-book resources by undergraduate students in public universities in Kenya.
2. Analyze programs that facilitate awareness of e-book resources to undergraduate students.
3. Establish the factors that affect the use and non-use of e-book resources by undergraduate students.
4. Establish the perception of undergraduate students on e-book resources in comparison to other resources.
5. Ascertain the extent to which e-book resources meet the expectations of undergraduate students.
6. Propose a framework and recommendations of improving access and use of e-books by undergraduate students.

1.6 Research Questions

The study attempted to address the following questions:

1. To what extent are undergraduate students in public universities in Kenya aware of e-books?
2. How are the undergraduate students informed about the availability of e-books?
3. What factors influence the use of e-books by undergraduate students?
4. How do undergraduate students view e-books compared to other resources?
5. To what extent do e-books meet the expectations of undergraduate students?
6. What should be done to enhance use of e-books by undergraduate students?

1.7 Assumptions of the Study

The study was guided by the following assumptions:

1. Librarians assume that undergraduate students have adequate capacity to identify and evaluate information resources.
2. Undergraduate students have a preference for e-books arising from the observed obsession with ICT gadgets and that redesigned management of e-book information systems would draw high utilization.
3. Awareness programs alone are not sufficient to spur and sustain use of e-books by undergraduate students. This is assumed to be so based on the fact that ongoing awareness programs have not led to utilization of e-books in adequate levels.
4. Access channels to e-books by undergraduate students are cumbersome and therefore not appropriate. Complex access routes affect the popularity of e-books in comparison to other alternatives such as utilization of search engines.

1.8 Significance of the Study

The provision of e-books has been incorporated by university libraries among other information resources as a complementary means of facilitating teaching, learning and research. The need to design effective strategies for enhancing the utilization of e-books among undergraduate students was the motivation of this study. As a growing practice, the provision of e-books by university libraries should be adequately informed to ensure relevance and applicability. Significance of e-books for undergraduate students has heightened following COVID-19 outbreak as digital information resources are eco-friendly and easily manageable by individuals unlike print information resources which require sanitizing and / or quarantine for a period of time before the next user can handle them.

The study came up with recommendations that would boost the effectiveness of awareness creation as well as strategies for e-book packaging for enhanced utilization by undergraduate students. This was achieved through the objectives of the study which involved looking at awareness levels; how the awareness of e-books is advanced; the competencies of undergraduate students in the utilization of e-books; e-books' system design; staff competencies; internet and ICT infrastructure and how all these related together as ingredients towards effective utilization of e-books by undergraduate students.

The study was significant in providing insights regarding handling of e-books that would ensure more utilization than as it is currently. The current package plans were recommended for Kenya as a third world country along with other countries in Africa, Asia, and Latin America when challenges of the digital divide were severe. The transformed information landscape calls for a model that is cognisant of the information

needs of all cadres of users. Stakeholders who include university administrators would certainly embrace a strategy that would ensure sustained affordable provision of information resources for all the categories of users for quality university learning. Such a strategy would be inclusive of policy guidelines to compel lecturers to be involved in making relevant e-book references for their undergraduate students.

1.9 Scope and Limitations of the Study

The scope of the study and the limitations of the study are provided in the following discussion.

1.9.1 Scope of the Study

This study covered undergraduate students in their third year of study from diverse programs. The scope of this study was all public universities. This study sampled four public universities namely Egerton University, Jomo Kenyatta University of Science and Technology, Moi University and University of Nairobi. These being older universities with well-established libraries and with large student numbers were considered a good sample of the 31 chartered public universities in Kenya.

The study was confined to public university libraries in Kenya despite the fact that both public and private university libraries operated under the umbrella of KLISC. This is due to the fact that besides e-resources acquired corporately, individual universities can make additional purchases. Acquisitions and budgets of libraries in public universities are quite distinct from those of private universities. Funding of public universities is majorly drawn from the exchequer unlike the private universities which are majorly funded from other sources.

Utilization of e-books has two dimensions: the publishers' perspective and the users' perspective. This study was confined to the users' perspective due to the enormity of the study. The publishers' dynamics in providing access to e-books were beyond the scope of this research. The focus of this study was on how undergraduate students interacted with e-books in the library. The types of e-books accessible and their levels of utilization were also beyond the scope of this research.

1.9.2 Limitations of the Study

The impact associated to internet and ICT infrastructure on the utilization of e-books by undergraduate students and to non-infrastructure factors such as awareness creation was not easily distinguishable. Questionnaires were designed to address the concerns of undergraduate students in accessing and using e-books. In many universities the virtual environment was not well spread out thereby limiting the extent to which e-books could be used. This blurred the impact that other non- infrastructure factors such as packaging and lack of awareness may have had in determining utilization of e-books by undergraduate students in public university libraries. Most lecturers were not aware of library e-books and this severely limited the number of questions that they were able to respond to effectively. Hence recommendations made to librarians in awareness creation include mandatory awareness creation to lecturers. Literature specifically on utilization of e-books by undergraduate students was quite limited. Much of the literature was on e-resources and specifically literature on e-books in Kenya was not found even from potential sites such as in the information repositories of universities teaching information sciences. Hence, comparisons with other studies done in some objectives of the study such as in perception and expectations of undergraduate students on e-books were quite minimal.

1.10: Definition of Operational Terms

The definitions of operational terms that have been used in this study are given below. The meanings are derived from diverse sources and should be understood as defined in this list. These have been arranged in an alphabetical order.

Academic Library: The provision of access to print and electronic books and journals to users in an academic (college or university) environment from a designated physical location when required.

Access: This is the right or opportunity to utilize or benefit from content. It can also be defined as the act of a patron viewing an e-book (Hwang et al., 2014).

Aggregators: These are e-book intermediary distributors who sell access to e-book titles and copies of e-books often from multiple publishers.

Brand Loyalty: These are positive feeling towards a brand and dedication to buying the product or service repeatedly despite changes in the environment or competitor actions (Prasad & Jha, 2014).

Choice: The selection of an alternative to solve a problem.

Convenience: The aspect or quality of added advantage in utilization or access to something. It is anything that ensures ease in utilization or adds comfort in utilization while yielding a certain level of satisfaction. Made easy to obtain or utilize.

Customer Satisfaction: The degree to which a library has met the user needs and expectations.

Digital Divide: The gap between those who can access and benefit from ICTs and those who cannot due to insufficient infrastructure, affordability of hardware, lack of skill, and associated challenges (Murelli, 2002).

Digital information: This is information transmitted through electronic channels such as e-journals, e-books, OPAC (Online Public Access Catalogue), Information Repository and Web portals.

Digital Native: Persons born between 1990 and 1999.

Digital Rights Management (DRM): This is a software used by e-publishers and aggregators to place certain restrictions as laid out in the licence agreements to impose certain limitations on e-book content such as allowing for printing (Kahn & Underwood, 2016).

E-books also known as Electronic Books: An electronic book is the digital version of a print book or a book publication made available in digital form consisting of text or images or both readable on a personal computer or other electronic devices. They are available in a variety of formats that can be downloaded in PDF, html, plain text and rich text formats.

E-Customisation: This is the packaging of content for users by subject librarians via online creation of useful links for resources in a given subject thereby aligning resources directly to each course module. It is a form of embedded librarianship, a way to highlight to students the immediate relevance of the collection to their study needs.

E-Resources or Electronic Resources: This refers to materials that can only be accessed through a computer or digital device such as a smart phone. These may be accessed online or offline and include e-journals, e-books, full text databases, indexing and abstracting databases, reference databases, numeric and statistical databases, e-images, e-audio and e-visual resources.

Heuristics: These are ‘rules of thumb’ that are subconsciously applied to reduce the mental effort involved in decision making (Jansson- Boyd, 2010).

Information Literacy: This is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information (ACRL, 2000).

Information resources: This is the formal, informal, human, printed or electronic resources that contains information that can be accessed to meet a need (CUE, 2014).

Lecturers: The term as used in the study includes all university teaching cadres from the level of teaching assistant to professor.

Librarian: A term generally used by the university community to refer to staff deployed to work in the library. These may or may not be professional librarians.

Library: A collection of literary materials, films, compact disks kept in a defined room or rooms or building for reading, viewing, listening, study or reference. These may be read within or borrowed out (British Online Dictionary, 2020). These may also include reading, discussion and research spaces.

Library utilization: Access to any service given by the library such as circulation, reference, interlibrary loan, and reading space.

Marketing: This is a process which carries goods from producers to ultimate consumers. Marketing refers to those instruments through which information on products or services is transmitted to target clients.

Model: It is an overall framework for viewing reality. It tells what reality is like and the basic elements it contains (Silverman, 2010).

Open access: Open access makes scholarly literature freely available to read, download, copy, print, distribute or link with other articles on the internet. Readers may utilize open access without any legal, technical or financial barriers (Chigbu et al, 2016).

Package plans: This is a complete set of orders or package sourced through a single entity for which the buyer pays a stipulated price (www.dictionary.com, 2018).

Perception: The state of understanding a situation as influenced by the plethora of social, academic, peer, economic, cultural, religious, and other interactions. Perception gaps measure the disparity between the current state and the expected or desired state for a particular phenomenon.

Positioning: It is the means by which goods and services can be differentiated from one another and so give consumers a reason to buy. It involves the product attributes, design and how it is communicated (Baines, Fill & Page, 2011).

Rational: Ability to exercise reasoning in decision making when faced with competing alternatives. Rationality is seen as the push factor in deciding between two or more competing alternatives.

Theory: The body of generalizations and principles developed in association with practice in a field of activity and forming its content as intellectual discipline.

1.11 Structure of the Thesis

This thesis has been organized into six chapters all of which are building blocks with each chapter building on the previous one up-to the final conclusion of the research where recommendations have been given. Chapter one gives the introduction of what the research is all about by giving the background information to the study; statement of the problem;

aim; objectives; research questions; assumptions; significance; scope and limitations of the research; the definition of terms used in the entire research and the structure of the thesis.

Chapter two depicts the theoretical and conceptual frameworks used, and gives the literature reviewed. The literature reviewed is arranged thematically by the objectives of the study: awareness of library e-books by undergraduate students; programs offered by public university libraries to create e-book awareness; factors that influence use and non-use of library e-books; perception of undergraduate students on e-books in comparison with other resources; expectations of undergraduate students on e-books; suggestions for enhanced utilization of e-books; research gaps; and the chapter summary.

Chapter three is the research methodology in which the detailed process of data collection and analysis has been enumerated. It includes the steps that were incorporated in the research. These include: the introduction; research paradigm; research approaches; study population; sample and sampling techniques; data collection instruments; piloting and pre-testing of research instruments; validity and reliability of research instruments; ethical considerations in data collection; data collection procedure; data analysis and interpretation; and the chapter summary.

Chapter four gives the data presentation, analysis and interpretation of the findings. The analyses of the findings of the research were presented descriptively and through the use of tables and a figure. Presentation of findings was guided by the research questions which were categorized into seven major sub-themes. These included: introduction; data presentation and analysis; response rate; awareness of available e-books in the library; e-book awareness creation programs in place; factors affecting utilization of e-books;

perception of undergraduate students on the utilization of e-books in comparison to other resources; expectations of undergraduate students on e-books in the library; suggestions for enhanced utilization of e-books; and a chapter summary.

Chapter five discusses the findings from different categories of respondents through emerging themes from research questions advanced. It includes: introduction; awareness of e-books by undergraduate students; awareness programs in place; factors affecting utilization of e-books; perception of e-books compared to other resources; expectations of undergraduate students on access and utilization of e-books; suggestions made by respondents; and the chapter summary.

Chapter six is the last chapter which gives a summary of the findings. It also gives the conclusion of the research and makes proposals arrived at from the research findings. Proposals made were directed to University Librarians; Kenya Library and Information Services Consortium (KLISC); Kenya Library Association (KLA); and to University Management Boards. A model proposed for undergraduate students' e-book awareness creation and suggestions for further research have also been made in this chapter.

1.12 Chapter Summary

This chapter provided an overview of the entire research. It provided the background information, the statement of the problem, aim, objectives, research questions, assumptions of the study, significance of the study, scope of the study, limitations of the study, definition of operational terms used in the study, and the structure of the thesis.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers the theoretical and the conceptual frameworks on which the research was based and shows how they relate to this study. The theoretical framework that guided this research was the Engel, Kollat and Blackwell (EKB) Model of 1968. Literature reviewed is also covered in this chapter and was in the context of global studies in the utilization of e-books by undergraduate students. This provided understanding and insights by showing the experiences in other parts of the world in relation to the objectives of this study. Research gaps have been presented at the end of this chapter.

2.2 Theoretical Framework

Theories are a means by which expectations about the world or global trends are generated. These are often derived from what we perceive to have happened before. Hence they influence how we set about interactions with the world in anticipation for certain results. Theories explain the patterns to be found in human social life and can assist in understanding and offer guidance to practice. They are a way of making sense of an arising situation so as to allow us to modify habits or discard them altogether, replacing them with new ones as situations demand (Gill & Johnson, 2010). Theories guide research by determining what factors should be measured and the statistical relationships that should be sought for (Gill & Johnson, 2010). Theories show the key variables and how they are interrelated in leading to the final outcome by specifying their influence on the phenomenon of interest as well as provide the framework for the study. By explaining the meaning, nature and challenges of a phenomenon, knowledge and understanding is gained

leading to action that is informed and effective (Gill & Johnson, 2010; Ocholla & Roux, 2011).

Three theoretical frameworks were considered for this study including Technology Acceptance Model (TAM); Rational Choice Theory; and the Engel, Kollat and Blackwell (EKB) Model of 1968. The model chosen for this study was the Engel, Kollat and Blackwell (EKB) Model of 1968.

TAM includes five processes: awareness process; interest stage; evaluation stage; trial stage and adoption stage. Individuals are exposed to innovation but lack full information on the product. This is the situation in which undergraduate students find themselves in. They have sufficient exposure to the internet and online resources. But they lack knowledge on e-books. The awareness stage leads to the interest stage in which individuals become interested in the innovation and seek for more information concerning it. E-books are accessible through diverse channels and from different platforms. Undergraduate students need to be brought to a level where they are able to distinguish between different electronic information resources and develop an interest in using e-books. Librarians are actively involved in providing this knowledge through awareness programs.

This leads to the evaluation stage where the individuals mentally seek to apply the innovation to their situation by deciding to try it or not. Online resources are generally popular with undergraduate students. However, understanding, purposing and having reason to utilize e-books is still very much in its formative stages. Whereas undergraduate students may receive training on e-books, they may still be uncertain on whether to utilize them or not. At the evaluation stage undergraduate students may wonder why not just use

search engines for information irrespective of the source of information. In the study, undergraduate students are assumed to need assistance to acquire capacity to make decision for utilization of e-books through specific channels. If sufficient interest is not generated, this implies that the trial stage may be beyond reach. This is beyond the confines of TAM which assumes awareness of the technology which in this case are the e-books. Since access to all e-resources is inherently through the internet, this was the main point of departure with the research objectives whose focus is on library online e-books. TAM could not be applied selectively to library online e-books. Challenges experienced at this stage are limiting to the trial stage where individuals are expected to make full use of the innovation. This frustrates the adoption stage which cannot be achieved as trials have not been fully experimented. Though the concept of e-books may be new for many undergraduate students, the ICT mediums used are familiar tools of internet access and online engagement. TAM was therefore found not to be appropriate for this study.

Rational Choice Theory was also considered as a theoretical framework for this study. It is a framework for understanding social and economic behavior which was first developed in economics. It assumes that the sum of social behaviors is a result of the behavior of individual actors in choosing the most ideal option according to some consistent criteria (Becker, 1976). Rational choice is defined to mean the process of determining what options are available and then choosing the most ideal according to some consistent criteria by individuals and which when aggregated, creates group behavior.

Heckathorn, (2001) observes that in rational choice the concept of choice as an optimizing process is made explicit. He further gave a set of five actors that engage in different ways in qualifying decisions made through rational choice. These include:

- A set of actors that function as players in the system;
- The alternatives available to each actor;
- A set of outcomes that is feasible in the system given each actor's alternatives;
- The preferences of each actor over the set of feasible outcomes; and
- The expectations of actors regarding system parameters.

In an academic library system where the concern is for undergraduate students, the actors were the librarians in book selection and facilitation of access; the faculty in e-book selection and in undergraduate student motivation; the administration in budgetary allocations for information resources and required infrastructure; and the undergraduate user population. The demand by the Rational Choice theory for a set of actors with several alternatives for them meant that the focus on undergraduate students e-book needs was diminished and overshadowed by other actors. The many actors ultimately interfered with the core theme of the study and thereby Rational Choice model failed to be a sustainable framework for the research. The Rational Choice theory would have been more appropriate if the study was on allocation of resources where the decisions of multiple players are considered. But in the face of the undergraduate students' awareness and utilization of e-books, it was found unlikely to put the study into context. In rational choice, when faced with a decision to make, a person will prefer the prospect that offers the highest expected utility. Rationality in this study was disqualified by the lack of sufficient awareness. It is

not possible to make rational decisions where there is lack of sufficient information. The Rational Choice theory does not provide a mechanism for feedback which is well captured by the EKB model. The focus of the research on undergraduate students required a framework that focused on decision making while demonstrating the influencing factors that affected use of e-books. A consumer behavioural and decision theory was therefore preferred.

2.2.1 Engel, Kollat and Blackwell (EKB) Model

Consumer behaviour is a study of the processes involved in purchasing a product or service at individual, group or organizational levels. It explains consumer-buying decisions. Understanding product utilization influences how a product is positioned and how its consumption can be encouraged (Prasad & Jha, 2014).

Varshney and Gupta (2005) observed that the Engel, Kollat and Blackwell (EKB) consumer behavioural theory was originally developed in 1968 by Engel, Kollat and Blackwell but has undergone several revisions with inputs from different researchers. According to Berkman, Lindquist, and Sirgy (1996), Engel, Kollat, and Blackwell (EKB) Model is a comprehensive model of decision-making. It demonstrates that decision making for a purchase is a complex process which is influenced by several psychological and sociological factors. It maps out a five-stage decision process during which a range of internal and external variables continually interact to influence the final purchase. Each stage is defined by different factors. These stages and the respective defining factors are:

1. Input: content is determined by the stimuli and is marketer dominated; it may also result from feedback received from an external search.

2. Information processing: this takes place through exposure, attention, comprehension, yielding/ acceptance, and retention.
3. Decision process: made through problem recognition, search, alternative evaluation, choice and outcomes.
4. Decision process variables: this comprises of aspects such as beliefs, attitude, intention, motives, evaluation criteria, lifestyle, normative compliance and information influence.
5. External influences: such as cultural norms and values, reference group/ family, and other unanticipated circumstances.

The model is realistic in recognizing that several factors interact before the ultimate buying decision is made. It shows the various components involved in decision making and shows the multiple relationships and interactions among the components. It demonstrates that purchase decisions are complex and involve multiple variables all at the same time depending on the circumstances and the cost involved. This model is shown in Figure1.

1. Input

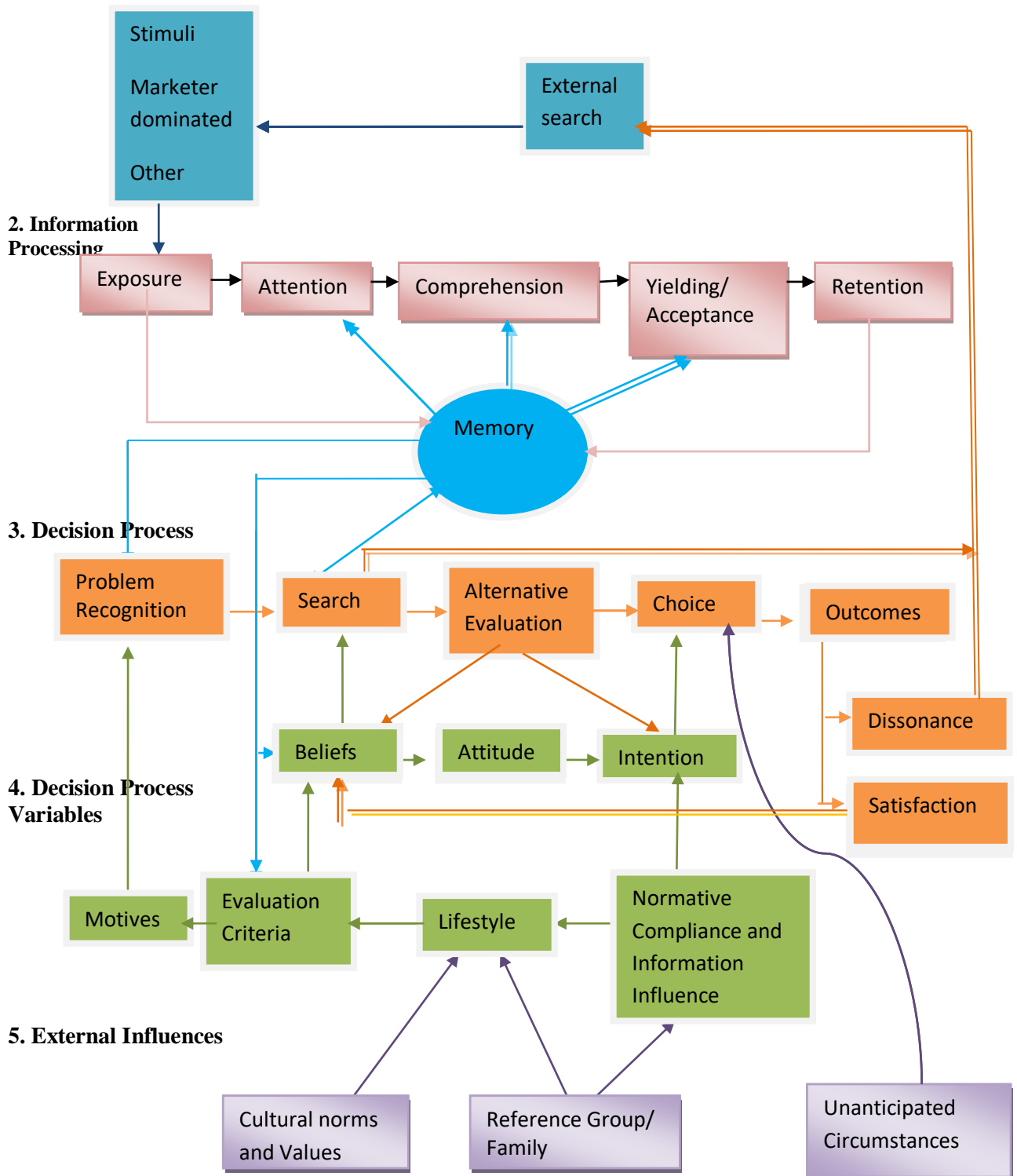


Figure 1: Engel, Kollat, & Blackwell (EKB) Model

Source: Berkman, et al. (1996). Consumer Behavior.

The first stage is *Input* which is given to potential clients by the marketer. It is mainly marketer driven and may be in form of advertisements, catalogues, and so on. The key aspects of the product that differentiate it from other similar products are highlighted here. The pitch of sales is determined by the input the marketer chooses to give.

The second stage is *Information processing* by the target audience. This occurs through exposure, attention, comprehension, yielding and retention for future use. Once this information is delivered and received in the mind, it then allows for processing. This process is accomplished through exposure to the product through hearing or learning. It stimulates awareness and alerts the potential user of the existence and value of the product. This stage is fully dependent on the input received. This is a mental activity largely driven by seeking to comprehend the product by evaluating the information received and seeking to test it before accepting that the product is useful. Once the potential client accepts the product as useful, its value is retained by the memory until the opportune time for its utilization arises in the future. Information received may also be discarded if it does not meet the client threshold. Discarded information will not be remembered if and when a need for its utilization arises. Hence input should be fully convincing, adaptable and easy to remember. This connects to the third stage which is decision process that begins with need recognition.

Decision process has five levels namely: problem recognition; information search; alternative evaluation; choice; and outcome. The process starts by recognizing a problem that can only be solved by making a purchase. When need arises, this is identified as problem recognition. The problem is awakened through individual experiences or

encounters with the immediate environment. This may be a problem that requires accessing information that may be available in diverse formats. Stimulus may be driven by a desire to excel in academics or gain understanding in a certain area. On the other hand, stimulus may be driven by the need to conform to the expectation of peers, lecturers or curriculum demands.

This leads to the search for relevant information through a mental memory scan or review of product information for solutions to fulfill the need. To make a relevant effective purchase, information search is made by scanning the information stored in the memory and review of product information. Information search may be determined by four factors namely personal; public; experiential; or commercial. Personal, public and experiential information have been identified to be the most influential in buying decisions. Personal information sources may include peers and lecturers. Commercial information is generally marketer driven such as the call to utilization of e-books which is largely driven through the awareness creation efforts of librarians. However, their influence for actual utilization is lower than the influence by peers and lecturers who play a legitimizing role. Librarians should therefore, recognize the role played by these reference groups or personal information sources.

Kotler and Keller (2012) observe that though much information is marketer driven, the most influential information is from personal, experiential or independent authorities. Such influences arise from motive, intention, attitude, experience, beliefs and reference groups. The external environmental aspects of social cultural dynamics impact on the decision process of the users. Librarians need to understand the level of influence wielded by the

influencing factors to strategize on market entry or expansion by including them in the awareness creation programs.

Berkman et al (1996) observed that alternative evaluation usually occurs simultaneously with information search. Information search also reveals alternatives or competing brands. A marketer must recognize other brands in the consumer choice set to effectively plan for marketing of their respective products since the process of information search also involves the evaluation of alternatives. Evaluation looks at several alternatives which may promise to have solutions to challenges encountered. The alternative likely to be chosen is one that has the sought after benefits. The evaluation of alternatives is influenced by beliefs and attitudes, intention and expectancy value which are in turn a result of influences from reference groups, the social and economic environment, and the positioning of the product. Marketers are advised to fit their products or services into existing beliefs and attitudes of their potential clientele. Librarians should know the expectations of undergraduate students on e-books for effective positioning. The access and utilization of e-books should possess certain advantages that place them above competing brands.

It is the marketers' responsibility to ensure that the product of interest successfully moves from awareness to consideration and then to choice set and finally to being actually chosen by the buyer (Kotler & Keller, 2012). From the total number of products existing to address the same need, there is an awareness set, from which a consideration set is made by the consumer. It is from this that the choice set is determined on the basis of selected criteria, and ultimately the choice is made on the basis of the brand promising the highest returns.

An example of possible successive elimination stages in choice of product are as shown in Figure 2.

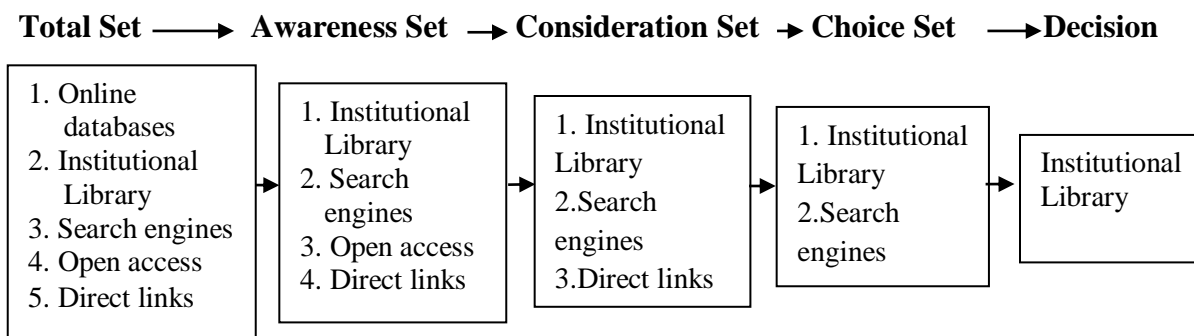


Figure 2: Possible Successive Elimination Stages

Adapted from: Kotler & Keller (2012). *Successive Sets Involved in Consumer Decision Making*.

To ensure that library online e-books brand fits into the choice bracket, the e-books should meet certain parameters in comparison to alternative solutions from the full set of products in the awareness set. Evaluation through elimination or certain considerations leads to a consideration set. This ultimately leads to making a choice of the product or service perceived to be the most appropriate for the need or the brand promising the highest level of satisfaction. The choice is made by buying or using the product the outcome of which is either satisfaction or dissatisfaction. Where satisfied, the client will use the same product following the same procedure when a similar need arises in future. However, Kotler and Keller, (2012) observed that once familiar with a product the procedure may not follow the same sequence, where users are experienced some levels might be skipped while others may be reversed. If not satisfied the product evaluation process is repeated but with the exclusion of the brand that failed to satisfy from the consideration set.

If the consumer is dissatisfied or does not make a repeat purchase, the marketers must decide whether the product was deficient or the consumer expectations were too high. Satisfied customers repeat a purchase when the need arises. Hence post-purchase behaviour is important in informing necessary adjustments for maximum customer satisfaction and retention. Satisfied customers are also likely to tell others about the product while dissatisfied customers complain to others (Kotler & Keller, 2012).

Chernev (2011) and Schwartz (2004) observed that research in the area of consumer psychology and behavioral economics showed that the assumption that consumers always benefited from having more options to choose from did not always hold and that in some cases consumers benefited from fewer, rather than more, options. Schwartz (2004) further observed that the abundance of choice available heightened the costs that one was likely to incur in terms of time, effort and opportunity costs. Reasons why this may happen includes information overload, decision overload, and higher consumer expectations. However, Schwartz (2004) also opined that more choices lead to better preference match, greater decision flexibility, greater opportunity to learn about the possible options, and reduced risk of missing a superior option. Larger product assortments lead to higher expectations, which firms might not be able to fill. This makes it harder to choose, and when it's hard to choose, the easier option is to not choose at all. Or, as viewed by Allison (2013), opt for any of the first to be seen and not necessarily the best. Hence, Chernev (2011) observed that it is better to have a well-considered, realistically sized assortment of products which is big enough that members have choices, and small enough to ensure that those choices do not overwhelm. An abundance of choices can complicate decision making, causing shoppers to be disoriented or postpone a purchase out of uncertainty. When the scope of choice is

broad, many may walk away unable to decide between products. Others when they make a choice are unlikely to be satisfied because they think what they did not choose may have been better choice. Most consumers can face seven to ten varieties within a product line before becoming overwhelmed in a typical superstore. Choice becomes less overwhelming when one is specific on what they want. From these, a smaller group of products is selected from which a final decision is made by the customer (Fill, 2002; Schwartz, 2004).

The model recognizes the need for constant feed-back and evaluation to ensure that library online e-book services are constantly reviewed for continued relevance and utilization. The model provides an appropriate framework for e-book awareness programs to be sufficiently informative without weighing down the undergraduate students with information overload while also ensuring that e-books are appropriately packaged for easy acceptance by undergraduate students. This has the potential to appeal to the entire perspectives of undergraduate students by influencing their beliefs and attitudes, ensuring that intention to utilize e-books is established, and that there is sufficient motive (through sufficient interaction with the faculty which identifies library online e-books as part of reading materials recommended). The model also highlights the fact that enhanced utilization of e-books can also be achieved by recognizing that lecturers are very influential on undergraduate students' attitudes, motives, intention, and beliefs. Peers' lifestyle is also influential in alternative evaluation and choice. E-book awareness creation should therefore be enhanced from a perspective that is able to bring all participants on board with minimum personnel and time demands (because as it has been observed by Amunga (2011) in section 2.9.1, information literacy (IL) is too demanding and the support of lecturers in this regard may fail to be achieved due to claims of an overloaded curriculum. Librarians do not have

sufficient capacity for effective IL programs either). Librarians should ensure that library online e-books are the best branded alternative to enhance satisfaction which would further reinforce the belief in them.

2.2.2 Theoretical Framework's Relation to Study Objectives

EKB model directly relates to the objectives of the study which are largely on the undergraduate students' e-book consumption behavior. The study is premised on understanding undergraduate students' e-books consumption behavior in order to strategize on effective marketing for enhanced use. This is appropriately embodied by the EKB model.

The first objective on the level of awareness is informed by the ability to make *choice* of e-book resources in the fourth activity in the Decision Process of EKB model. This is demonstrated through the ability to use *alternative search* skills for relevant *choice* of the resources to use. Inclusion of e-books within resources available in the *alternative evaluation* bracket and the ultimate *choice* of e-books for utilization would be indicative of level of awareness.

The second objective on the analysis of the programs that facilitate awareness of e-book resources to undergraduate students is the *Input* process of the EKB model. The success of the *Input* process is determined by the uptake of different stages in *Information Processing*. These stages include exposure, attention, comprehension, acceptance and retention. For awareness creation programs to be regarded as effective the stages in Information Processing should be assimilated by the undergraduate students. Awareness created should provide exposure to the e-books, arrest the attention of undergraduate students, be fully

comprehensive, be accepted and finally be mentally retained as useful information resources for use when a problem is recognized.

The third objective on establishing the factors that affect the use and non-use of e-book resources by undergraduate students is measurable by the Decision Process of the EKB model in which the activities of *problem recognition, search, alternative evaluation, choice* and outcomes made are evident. This process should be well understood by marketers. This has a direct impact on how e-books are positioned through communication, design and attributes. The Decision process is determined by the Input made; Information processing achieved; and is also influenced by Decision Process Variables and External influences in the fourth and fifth processes respectively of the EKB model.

The fourth and fifth processes of the EKB model, Decision Process Variables that include beliefs, lifestyles, motives, attitude and so on; and External Influences which include cultural norms, reference groups and unanticipated circumstances; are parameters of measure for the fourth objective on establishing the perception of e-books in comparison to other resources. These are variables that impact on perceptions and influence the Decision Process in the selection of e-book resources as appropriate and relevant information resources for use.

To answer the fifth objective which was to ascertain the extent to which e-book resources meet the expectations of undergraduate students, outcome is measurable through '*choice*' made in stage three of the EKB model leading to either satisfaction or dissonance.

The final objective was to propose a framework and recommendations for improving access and use of e-books by undergraduate students. These were identified as processes presenting difficulties in the marketing and consumption processes. Where a certain process may fail to be achieved, reasons for the failure would be recognized as an area of recommendation for intervention.

2.2.3 Conceptual Framework

A conceptual framework is a graphic or narrative representation of the main concepts or variables of a research and their relationship with each other. It helps in placing the entire study into perspective (Punch, 2005). A conceptual framework maps out the actions required in the course of the study. It is the researcher's synthesis of how the particular variables in the study connect with each other. In this study it is the intervening and independent variables that help in creating strong perceptions about e-books hence enhancing their acceptance. Creating awareness on e-books for undergraduate students utilization is the core of this study hence a framework that demonstrates potential areas for intervention.

Odini (1995) observed that any information service should be designed based on the prevailing need of its users. He further warned professional librarians in Kenya that "unless users are fully considered, an information service may fall well short of full utilization". Ismail (2010) also warned that "it is important to know who your users are before launching a service that could be ineffective and costly". She went further to observe that libraries that were quick to launch certain services without adequate research were likely to be disappointed. User needs should be appropriately interpreted in order to chart an

effective pathway towards meeting them. Hence the importance of this study in identifying the underlying factors that determine the utilization of e-books in the library by undergraduate students of public universities in Kenya with a view of enhancing their use.

All marketing decisions are based on consumption and understanding of consumer behavior. Consumer behavior is based on consumer motivation, psychology, attitude, argument, consumer's environment and alternatives (Stankevich, 2017). The buying process starts long before the actual purchase and has consequences long after the purchase. In marketing, sales are the driving force for production or service. The number of e-books used and the frequency of their utilization are important in determining their viability. Extent of utilization is also indicative of whether there is a need for rebranding or re-strategizing on awareness creation. Hence, the need for a feedback mechanism on e-book information needs for undergraduate students.

There are several factors that influence the undergraduate students in choosing to utilize e-books in the library. As observed by the EKB theory, consumer decision making involves several variables which interplay at different stages before a final decision is made on purchasing or not to purchase a product or service. Successful interventions can be made by strategic positioning of e-books. This will ensure that the regular use of e-books in the library is enhanced. It will also ensure that their utilization is self-sustaining. The graphic presentation of the conceptual framework is shown in Figure 3.

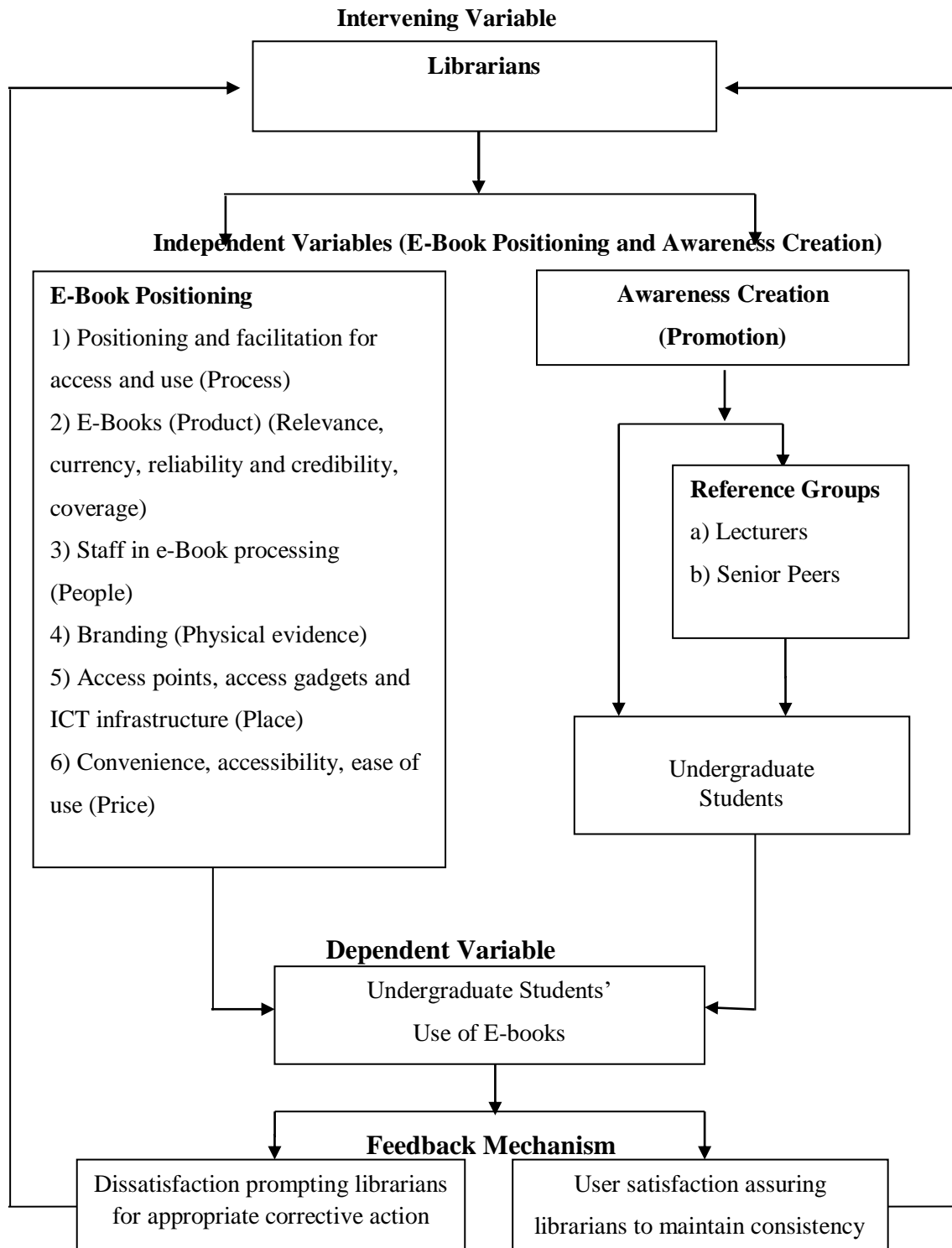


Figure 3: Conceptual Framework

Designed by the Researcher Using the 7ps Marketing Mix

(a) Intervening Variable (Librarians)

The intervening variable in the conceptual framework includes librarians in manipulating the 7ps of the marketing mix in positioning of e-books through two arms namely: processing and awareness creation.

(b) Independent Variables (7Ps Marketing Mix)

The 7Ps Marketing Mix Model was found to be important in ensuring the e-book products were appropriately packaged as information resources for utilization by undergraduate students. Product; people; processing; place; price; and physical evidence are components in positioning e-books on the one hand. On the other hand is promotion or awareness creation. The ways in which the alternatives fail to measure up to library online e-books should also be clear and evident in practical utilization. This demands that librarians identify the reasons they encounter competition from other channels in this regard. This will in turn guide them in ensuring that the packaging of e-books fulfills the expectations of accessibility, relevance, ease of use, convenience, coverage, currency, credibility, format and sufficiency before being delivered to the users. This would ensure that e-books are well positioned for effective awareness creation to be made to enable enhanced utilization. Each of the 7ps has a specific role in ensuring readiness for utilization of e-books by undergraduate students.

Product: The e-book product should be clearly defined. E-book unique qualities that differentiate it from other online resources should be clear. The gap that e-books are intended to fill should also be clear. For example, for learning and research in programs taught by the respective universities and colleges. This has the advantage of ensuring that in

response to the need, the product has relevance, currency, reliability and credibility, and coverage.

People: This involves stakeholders of the product. Librarians and library student ambassadors or friends of the library should be trained to effectively create e-book awareness. The people identified in awareness creation should deliver the service consistently. Awareness creation should be genuine to be convincing to the market which includes lecturers as they play a very definitive role in influencing undergraduate students in utilization of e-books. Staff assigned to processing e-books should have sufficient skills to ensure enhanced access and discovery.

Physical evidence: This pertains to how products are perceived in the marketplace. It is the physical evidence of the business presence in the market. It is the key element that clients consider when making purchase decisions. E-books should be well branded to ensure market penetration. The use of logo or brand identifier in order to reduce any uncertainties is recommended (Baines, Fill & Page, 2011). Gupta (2006) observed that brand recognition increases the chances of repeat utilization of the product or service. Brand loyalty is built through consistent engagement with the customers and effective capturing of feedback and adjustment. Branding is associated with key product benefits. Some customers may identify a certain brand first while others will choose an outlet to which they are loyal and then make a purchase from there (Berkman, et al., 1996). Either way can be adopted by university and college libraries in creating awareness for library online e-books. The librarian is also advised to know the competing brands so that effective positioning of e-books is made. Benefits associated with the utilization of library online e-books should be

evident and easily convincing to attract the attention of the undergraduate students. Since information search by users also leads to other alternative competing brands as observed by Kotler and Keller (2012), branding of e-books in the library is important as undergraduate students are not prohibited from access to information from other sites.

Price: Pricing helps shape the perception of the product by the consumer. The price to pay to access and utilize the e-books should never be deemed costly in terms of time and effort. Librarians should ensure that the undergraduate students' utilization of e-books is characterized with convenience, accessibility and ease of use. E-books should be easily accessible, devoid of multiple access platforms, and easy to navigate.

Place: The product should be conveniently accessible. Access infrastructure should also be in place. This includes internet and ICT infrastructure which should be adequate and sufficient. Access to e-books should be possible from different locations and through different access gadgets majorly the smart phone or other hand held devices. The university and college library as a brand is identified as an established centre of academic convergence. These are an accepted and highly esteemed brand by undergraduate students. They are looked upon to deliver in their role of information resource provision and have therefore retained their place as central educational information hubs in universities. They have been identified as the most secure and trusted providers of information resources. They are expected to provide information resources to satisfy the needs of the faculty, students, researchers and administrators as well as enhance a culture of lifelong learning (Kadli & Kumbar, 2013; Kavulya, 2004; Olajide & Adio, 2017; Salubi, Ondari-Okemwa, &

Nekhwevha, 2018). This provides a conducive environment for awareness creation and library online e-books brand acceptance.

Process: The systems and processes in place should result in efficiencies in product delivery, access and utilization. The processes that clients use in access and utilization have to work effectively and efficiently. Processes also give an opportunity to provide product differentiation and reposition service brand (Baines et al., 2011). Processes in e-book processing should have synergy for enhanced utilization which should further improve by capturing feedback. Efficient processes enhance service provision in e-book selection, acquisition and access.

The time saved or lost through the search and utilization of the product affects perception and ease of access. Hence the need to ensure that products are sensitive to the needs of the customers in how they are packaged, the environment in which they are delivered, and variety offered. Baines et al (2011) observed that there is need for a product or service to have a sustainable competitive advantage and a unique selling strategy for market success.

Promotion/Awareness Creation

Promotion is concerned with presenting the service/ product to the target clients. The promotion of e-books may be done through diverse channels of communication such as through public relation events, exhibitions; or through advertisements and bulletin boards; word of mouth, the web and social media. A top-down approach is to be preferred in awareness creation where awareness should be made to lecturers, then senior peers before being made to the targeted undergraduate students. This is to ensure that the awareness created is grounded on awareness that can be backed by these groups which act as

references. Top-down approach prepares targeted undergraduate students to be easily receptive and enhances their willingness to learn.

(i) Reference Groups: Lecturers and Peers

The choice in the final stages of a purchase in the decision process, as demonstrated in the theoretical framework, are influenced by the input that undergraduate students get which includes the awareness done by librarians and motive created by lecturers, and peers and the self-drive by some. Jansson- Boyd (2010) observed that in avoiding mental fatigue and time wasting involved in making choices, customers depend on heuristics depending on past experiences and possible interactions with the product or influence through other peoples' experiences. Information Processing is enhanced by the quality of content in the awareness creation received, and influence of Reference Groups. The influence of lecturers and senior peers has a direct impact on undergraduate students' interest in the utilization of e-books. E-books being introduced for the first time should be made using a top-down approach. This makes it possible for holistic support in embracing the utilization of e-books.

(ii) Undergraduate Students

Relevant and strategic content in awareness creation ensures that information processing is not hindered. Information processing allows sufficient exposure to the product; ensures that the product gains the attention of the target clients; ensures product comprehension and leads to product acceptance as it demonstrates the gap the product seeks to fill; and ensures that the product can be easily remembered. The penetration success of a product into the market requires that the product is well understood by the target clientele. For e-books to be

accepted it is not just about awareness creation or exposure, but also about claiming the attention of the undergraduate students, and helping them to comprehend what the product is all about by showing the problem it intends to solve or the fulfillment it aims to give. If awareness creation does not ensure that the e-books attract attention and are easily understood, chances of their being recognized as useful are minimal. Chances are that even when a problem is recognized, library e-books will fail to be in the list of alternatives to be considered because they were not sufficiently convincing and therefore failed to make it to the memory list of potential solutions to the problem encountered. The key is in first ensuring that the product meets a defined need and is well positioned to sell. The failure to identify the associated benefits may make it difficult for the undergraduate students to accept the product as a potential solution for their utilization. This has a direct impact on their ability to remember e-books as an alternative source of information. The mental processing of information received is then stored in the memory for recall when a need arises or when interested in making a search.

(c) Dependent Variable (Utilization of E-Books by Undergraduate Students)

In seeking to enhance continued use, Berkman et al (1996) identified several factors that may determine brand loyalty and these includes specific product qualities; number of brands available; frequency of need for purchase; perceived differences among brands; level of involvement; and level of perceived risks in using the product. These ingredients all determine the ultimate choice of a product albeit unconsciously and should therefore be taken into account in awareness creation and in product positioning.

The totality of these influences in turn shapes the motives and attitudes towards products and services. The decision process is therefore not only influenced by input of librarians but also by decision process variables that include motives, beliefs, attitudes and lifestyles which are largely informed by reference groups. For example, the use of smart phones and other ICT gadgets is their preferred medium of access to e-books. Ideally, interventions in the identified areas should result to enhanced utilization of e-books.

(d) Feedback Mechanism

Librarians should have in place a mechanism for feedback in order to ensure that failings in the system are addressed promptly while successes are guarded. Interventions will lead to increased utilization of library e-books through the creation of synergy between the provision of e-books that are convenient, relevant, sufficient, and easy to utilize for academic pursuits and a clientele that has the requisite awareness for access and utilization.

The importance of the framework is the fact that, to the decision maker, the centrality of decision making is to solve a problem hence the purchase is made on the basis of its apparent value. Ultimate purchases are a result of different influencing factors. Brand preference and loyalty are keys to frequent repeat purchases. This may be stimulated through enhanced publicity to undergraduate students and lecturers as motivation and perspectives are constantly reviewed and updated through engagement in regular life activities. This model clearly shows the potential areas of intervention in e-book awareness creation programs by demonstrating the expected input from the librarians; and the processes involved in positioning e-books.

2.3 Reviewed Literature

This section discusses the literature reviewed which is thematically arranged by the objectives of the study. It seeks to contextualize the study by reviewing what has been done by other researchers on the extent of e-book awareness by undergraduate students; e-book awareness creation programs in place for undergraduate students; factors that influence the utilization of e-books by undergraduate students; perception of undergraduate students towards e-books in comparison to print text books; the extent to which e-books meet the expectations of undergraduate students; and recommendations made by different authors and researchers on enhancing the utilization of e-books by undergraduate students. The literature reviewed attempted to expose existing knowledge gaps with regard to access and utilization of library electronic books by undergraduate students in Kenya.

2.4 Awareness of Library E-books by Undergraduate Students

Literature reviewed on awareness of e-resources shows different findings from varied researchers. Undergraduate students who are mainly in generation Z (born after 1995) are stereotyped as digital natives. This has been derived from the assumption that since they have grown up in a digital environment, their automatic preference is to work, play and study using electronic gadgets (Mizrachi, 2013). Contrary to this view, Tripathi and Jeevan, (2013) observed that this generation is not as internet savvy as thought of. However, according to this researcher, the concept of digital native may differ from one geographical region to another. Real digital natives in Kenya may not be in the majority of the current crop of undergraduate students since digital gadgets for the majority of citizens only became the norm majorly after 2011 with the advent of the smart phone. These students are non-the-less fascinated by technology and are easy technology adopters.

Wang and Bai (2016) observed that in China, there was high awareness about e-books by undergraduate students but that these were not highly used. Leonard (2017) observed that there has been a general low utilization of e-books in Africa. In a study done in South Africa, she observed that there was high awareness and utilization of e-books. However, the e-books were from diverse sources including the library and non-library platforms. At Redeemers' University in Nigeria, Adeniram (2013) observed that students were aware about e-books and preferred them over print because of their portability and durability. Leonard and Snyman (2019) found that in the University of Namibia, impediments to the use of e-books by undergraduate students were lack of awareness and skills.

According to Tella (2009), research on undergraduate students information seeking behaviour in Africa showed that most of them did not use the library effectively. In a study done in University of Botswana, she observed that though the library was very well equipped, well-furnished and highly organized, undergraduate students using its resources were very few and showed poor information seeking habits. It was observed by several other researchers that e-resources in particular were highly underutilized specially by undergraduate students mainly due to inadequate awareness in Nigeria, Uganda, Ghana and South Africa (Bakrin & Bello, 2017; Gakibayo, et al., 2013; Kwadzo, 2015; Omeluzor, et.al, 2016; Tlakula & Fombad, 2017). However, in the study done by Adeniram (2013) at Reedemers' University in Nigeria, it was found that undergraduate students were aware of e-resources but that usage levels recorded were very low. Nyambala (2015) in her study on the growing use of e-books at the Technical University of Kenya and the Catholic University of Eastern Africa in Kenya found that students were aware of the availability of e-books in libraries but that despite growing use there was need for intense awareness

creation. It was observed by McDonald, Rosenfield, Furlow, Kiron and Lopatavska (2015), that 65% of students became aware of e-books available in the library through e-mail notifications by the librarians. Slater's (2010) view was that awareness of e-books relied largely on how collections were presented to users because students may not distinguish between different kinds of online resources.

Harle (2009), reporting for the Association of Commonwealth Universities (ACU), opined that addressing the use of information resources by their clients was the most important responsibility that should be the focus of university libraries as opposed to the provision of resources. The report, in its findings, highlighted that very often students and the faculty were either unaware of what was available to them or were simply unable to find their way to the resources provided. The problem did not seem to be one of provision but rather of capacity by users to make full utilization and to access what they are entitled to.

Knowledge gap as to the reasons contributing to low levels of awareness as identified by the literature review and causes of low utilization of e-book resources despite high level of awareness, in some instances, was the interest of this study. To enhance user capacities several strategies have been deployed by different universities with different levels of success. Strategies used in creating awareness are as established by the literature reviewed in section 2.5.

2.5 E-Book Awareness Creation Programs Offered

Awareness creation for e-books in most libraries is embedded in user education programs also referred to as awareness creation programs which are designed to ensure greater effectiveness in information access and utilisation by users. These programs provide

undergraduate students and other users with skills and support to overcome anxiety and frustrations that are often experienced in information seeking environments. User education programs also take into cognisance that it is the information user who ultimately decides on the available resources to utilization to solve and meet their information needs. Programs adopted need to be appealing, understandable and accessible to users (Birch, 2012; Chen & Lin, 2011; Gregory & Broussard, 2011). The diverse programs offered include: library orientation; Information Literacy Programs, and competition and games.

2.5.1. Library Orientation

This researcher observes that orientation programs, in general, are designed to help students adjust to the university environment. Library orientations are guided tours through the library where students are introduced to services that are provided, how to access databases, utilize library resource catalogues, shelves arrangements, opening hours, how to borrow books and are shown reading areas, electronic resources available and how to utilize them.

Orientations are also necessary due to information explosion and the proliferation of various media in the organization and dissemination of information. Skills in the utilization of these resources are required for adequate utilization. The tours are popular orientation instruments meant to familiarize the students with the university library as well as prepare them for research. Students are encouraged to take responsibility for their learning and academic progression and are given awareness that gaining clarity in their career goals will enable them to be more alert to information resources provided by the library. The library tours explain what, why and how students will benefit by using the library resources in their education. These are organized in small groups of about 15 to 50 students. Each group

takes about 25 to 45 minutes of the guided tour around the library. Every group comes in at some interval depending on the respective library (Bem-Bura, 2015; Gregory & Broussard, 2011; Nicholas et al, 2015; Rhoades, 2008). Students that missed out on this orientation were taken through at a later date in most universities. However, many who reported after orientation had been done missed it all together as they were not aware that they could ask the librarians to be taken through.

Library orientations draw mixed feelings from different researchers, for example, Gregory and Broussard (2011) are of the view that these are the least effective ways to teach though they are the most predominant method of introducing students to the library. Dudley (2011) and Currie, Devlin, Enide and Graves (2010) observed that this form of training has no positive effect on perceptions on ease of use. They suggested that user training needs to be re-examined. There was need for adequate user support to be provided to help students retrieve information. They further observed that there was no evidence of any significant increase in utilization of library e-resources based on whether or not students had received general user instruction. Contrary to this view, Martin (2008) observed that though library instruction did not affect usage much it was in reality better than no instruction at all as this has been known to reduce student anxiety.

2.5.2 Information Literacy Programs

Academic librarians have resulted to offering information literacy to help users navigate the diverse information landscape. Information literacy is meant to instil life-long learning skills and give abilities for making informed judgements about authoritative information that is found from diverse information resources (Mansour, 2016).

Information Literacy provides a foundation to recognize and understand an information need; discern the appropriate resources to satisfy the information need; evaluate, synthesize, and apply the information as it applies to the need; discern when enough information has been gathered to satisfy the need; and utilize information technology appropriately (ACRL, 2000; Birch, 2012).

In recognizing that students have an independent active learning behaviour, Problem Based Learning (PBL) has become the trend in enhancing information literacy. Through this the students acquire critical knowledge, problem solving skills, and self- directed learning strategies. Through this the students learn to select relevant resources from among various formats using criteria such as effectiveness, efficiency, and aesthetic value. While information literacy programs are integrated into the curriculum, other orientation services such as user guides for use and evaluation of library resources are provided by the library reference services (Chen & Lin, 2011).

Myrberg (2017) recommended that as students are trained on how to find, download and read e-books, they also need to learn how to use different devices to enhance their information retrieval skills. Amankwah (2014) observed that there was lack of interest in the training provided by the library from data collected from one institute in Ghana.

2.5.3 Competitions and Games

Competing groups are used in orientation by some university libraries. Students are expected to go to different locations in the library and complete certain assignments. Learning, in this sense, is viewed as puzzle solving, exploration and experimentation (Gregory & Broussard, 2011).

2.6 Factors that Influence Utilization of Library E-books

There are several factors that were identified to influence the utilization of electronic resources by undergraduate students. It has been observed that all information users in general opt for formats that suit them the most in terms of effectiveness, efficiency, aesthetic values, affordability, and convenience (Connaway, Dickey, & Radford, 2011; Davenport & Beck 2001). Factors that positively influence utilization of e-books by undergraduate students include the ability of users to easily adopt use; motivation from the lecturers, ease of use; and relevance (Bennett, 2006; Shimray & Ramaiah, 2015). Availability and accessibility of information and situational factors such as lack of time can affect the choice of information resources. The ease of use and speed of electronic search engines, time saving probability; type of learning tasks; teaching and learning styles; motivation to learn and personality type; access and convenience are major determinants in the choice of information resources by undergraduate students (Connaway et.al, 2011). Despite challenges experienced such as lack of sufficient computers, the utilization of e-books was reported to be on the rise (Salau, 2014).

Undergraduate students' information behaviour in its totality is influenced by macro and micro factors. The macro factors encompass information resource design; information and learning technologies, infrastructure, access, organizational culture and leadership, policies and funding. The micro factors on the other hand include information literacy, search strategy, role of the faculty in changing information behaviour, discipline and curriculum, pedagogy, support and training (Nicholas, Huntington, Jamali, Rowlands & Fieldhouse, 2009). These factors have either direct or indirect influence on the information behaviour of the students.

Literature reviewed on the utilization of e-books covers undergraduate students' awareness levels; access to e-book reading devices; skills and information communication technology infrastructure ; e-book systems design; convenience; use of jargon and keywords; students' temperaments and library anxiety; internet access; relevance of e-books; and faculty involvement.

2.6.1 Awareness Levels

E-books are only utilized occasionally by undergraduate students as awareness is not high (Abdullah & Gibb, 2008a). Lack of awareness leads to the use of general search engines such as Google (Kwadzo, 2015). Students use search engines because they do not realise that library subscribed databases helps in guaranteeing a level of quality information that is not readily retrieved through open internet searches. Undergraduate students are often unaware of information resources accessible to them through university libraries. Undergraduate students are also known to be unwilling to try new search strategies. It has been observed by several researchers that lack of awareness was the direct reason why e-books remain unused by undergraduate students (Dudley, 2011; Martin, 2008; Omeluzor, et.al, 2016).

To draw enhanced use of e-books, Wendo and Mwanzu (2016) opine that awareness creation should include reasons for using e-books. They recognize that self-drive and peer influences also affect individual access and utilization of e-books. Hence there is a need for adequate access points, high internet speed, supportive librarians, e-book availability and hands on training.

2.6.2 Access to E-book Reading Devices

Possession of an e-book reading device such as tablets influenced the level of utilization of e-books. Kahn and Underwood (2016) observed that users with personal devices were more interested in accessing e-resources more than those who did not in a research they did in four universities in West Cape in South Africa. They observed that as reading devices became more widespread and as their functionality improved, the attitudes of those using them became more positive thereby motivating the use of e-books. Urhibo (2017) further observed that the provision of relevant and up-to-date hardware and software should go hand in hand with the provision of e-books. This researcher observes that the provision of e-books alone without the requisite hardware and software will not be cost effective as the e-books will not be accessible to all target users as expected in an ideal situation.

Allison (2013) observed that the screen size of some reading devices is an impediment to reading e-books. Myrberg (2017) posited that e-books could be unpopular because of small screen sizes in cases of smart phone usage. She recommended that e-books should be read on large enough screens that can display sufficient content in legible font size. Preferred devices should be hand held and not too small as to cause difficulty in reading. She was of the view that so long as the text sizes and presentation of e-books were the same as those of print formats there ought not to be significant differences in readership. She also observed that many users admitted to getting distracted to other platforms when they read e-books.

2.6.3 Skills and Information Communication Technology Infrastructure

In order to utilize e-books appropriately, undergraduate students require basic ICT skills. Gakibayo et al (2013) observed that the lack of computer skills and information literacy,

low self-confidence, insufficient computers and slow internet connectivity obstructed the effective utilization of e-resources. Usage remained low in spite of several workshops, seminars, and regular communication to the undergraduate students about available e-resources. Tella (2007) (as cited by Gakibayo, et al., 2013) was of the view that the acquisition of information skills should be a key objective for every student in the university.

Amunga (2011) observed that computer illiteracy among students and staff in universities in Kenya, reliance on lecture method of teaching and the habit of reading for examinations hindered the implementation of effective information literacy. She also pointed out that Information literacy programs are hampered by understaffing, lack of adequate access facilities and inadequate funding.

Booth (2009) (as cited by Ismail 2010) revealed that undergraduate students were not overly enthusiastic with technology with regard to teaching and learning and that much of the IT skills required were learnt at the university. She observed that familiarity with technology in mobile and social aspects was less likely to draw similar familiarity in the academic context. On the other hand, Weisberg (2011) (as cited by Kahn & Underwood , 2016) observed that as reading devices become more mainstream and as their functionality improves , the attitudes of those using them is likely to become more positive.

Gakibayo, et al (2013) concluded that access was not necessarily the problem but that careful utilization of the resources was the problem as the users did not always understand which information resources were appropriate for their needs. Allison (2013) observed that undergraduate students were good at filtering information but not skilled at evaluating the

quality of information. Their skills for analysing were underdeveloped and they were likely to take in information without questioning its source. Their searches were biased to favourite sites or in selecting the first listed citation among search results. Currie et al (2010), on the other hand, observed that despite training in evaluation criteria for electronic resources undergraduate students proved unable to fully utilize the evaluation parameters.

Sometimes students were overconfident and thought they knew how to access e-resources when in actual sense they did not have the required information literacy skills in evaluating information. Hence they were prone to look for quick and easy solutions. This led to an over reliance on search engines. This thereby calls for induction in information seeking to reverse the poor strategies of acquiring knowledge (Chen & Lin, 2011). Studies showed that undergraduate students have difficulties in accessing information they required. It was observed that they demonstrated less competence in the utilization of e-resources than they boasted of. The lack of skills inhibited their success in the utilization of e-resources. They were characterized by low information skills and high deficiency in identifying diverse information sources and in some cases they had negative attitudes towards e-resources (Ferdows & Ahmed, 2015; Tlakula & Fombad, 2017). The overconfidence demonstrated by undergraduate students was only applicable to the first level of access as few would attempt to venture beyond the first log in. Any kind of barrier to access was costly in terms of limiting access by undergraduate students (Cowan, 2012).

2.6.4 E-Book Systems Design

Salubi, et al (2018) observed that the extent of utilization of digital libraries is greatly influenced by the way they are constructed. They identified e-books to be among the

library resources that are rarely or never used. In two universities in South Africa, they found that only six per cent of total e-resource users were undergraduate students. They assumed that this might have resulted from a failing by the library to provide information resources required by undergraduate students. Booth (2009) (cited by Ismail 2010) advised that libraries should understand how students interact with libraries and technologies before assuming that these are appropriate and friendly for utilization. Lewis (2015) further observed that professional collection development librarians' success in interpreting the interests and demands of their users as measured by collection usage is limited. Kiilu and Kiilu (2014) are of the view that patron driven acquisitions should be preferred over other determinants because this results to resource utilization.

Provision of useful, high quality and innovative library resources and services is most effectively gauged by the magnitude of utilization. Repeated utilization is indicative of relevance and ease of use. The success of the academic library is no longer judged by the size of the collection but by the quality of the librarians and the services offered (Allison, 2013; Kadli & Kumbar, 2013). There is a significant relationship between information resources provided by the library and the frequency of visits to the library. Service quality also directly translates to an equal measure of utilization. It is observed that there is a decrease in the number of times undergraduate students visit the library when it fails to provide information resources requested for (Salubi et al, 2018).

Nicholas et al (2009), while advocating for the utilization of e-books by undergraduate students compared the utilization of e-books and e-journals among different categories of users. They found that undergraduate students did not view a lot of pages in e-journals as

compared to the faculty and postgraduate students. This was different with e-books where undergraduate students viewed more than the faculty. This is also supported by the fact that the text book is the most dominant information resource for undergraduate students. Olajide and Adiop (2017) observed that the more information resources there were the more likely they would be used.

Relevance was relative and discipline had a major influence on usage patterns and preferences in Uganda. It was found that the faculty in sciences tended to utilize e-resources more than their social sciences and humanities counterparts. Younger students and younger faculty tended to utilize e-resources more. It was equally observed that gender and academic rank had minimal influence in the utilization of e-resources (Gakibayo et al., 2013).

Nariani (2009), (cited in Leonard, 2017), observed that the library catalogue was the most popular channel of e-books discovery as opposed to library websites. According to Joo and Choi (2015), search efficiency enhanced ease of use and ultimately shaped perception. How quickly students believed they could find information determined where they looked for it. In general, academic library systems were found to be more complex than the web search engines and therefore required more skill.

2.6.5 Convenience

Convenience is a critical factor for all users. Inconveniences in different forms led to non-use of library resources. Convenience is the complete access to resources with the least of effort expended in the information seeking exercise. Information users lack the patience and the time to wade through separate lists and databases in search of relevant information

(Connaway, et al., 2011). Difficulties experienced in identifying relevant databases to meet their information needs contribute to non-use of library e-books by undergraduate students (Omeluzor, et al, 2016). Undergraduate students have been observed to utilize resources that required minimal access effort (Olajide & Adiop, 2017).

Convenience is a major aspect that influences the choice of search engines and websites arising from their ability to deliver fast and intuitive access to information. Such ease is not experienced in academic libraries despite the greatness of wealth of information resources available. It is observed that the OPAC has failed to keep the same pace with the charm experienced through the utilization of search engines such as Google. Libraries need to evolve at the same pace with search engines in order to enhance comfort, confidence and ease for users in making the choice to search for information (Connaway, et al. 2011; Wilcox & Chia, 2003). High utilization of e-resources may be attributed to free access, ease of use and currency (Gakibayo, et al, 2013).

2.6.6 Use of Jargon and Keywords

Speed and reliability, convenience and ease of use are considered key factors in undergraduate students' resource selection. How quickly students believe they can find information determines where they look for it. If they cannot obtain the information promptly, they are less likely to continue using that particular system (Joo & Choi, 2015). Time and urgency influences the choice in the utilization of e-books as it is more practical to consult an e-book at the last minute than searching for the print version which may not be certainly available. Timelines, ease of use and quick access to full text are important to

undergraduate students. Undergraduate students are skilled at filtering information but are not skilled at evaluating the quality of the information (Allison, 2013).

Academic information resources are characterized with jargon that only the most experienced understand. This is a barrier that makes it difficult for undergraduate students to access relevant resources within available time limits. These lead to frustrations, and therefore, end up using alternative resources perceived less complex (Martin, 2008). Searching for relevant e-books is done mainly through the use of keywords. However, the faculty has observed that this leads to undergraduate students taking information out of context and sometimes drawing erroneous conclusions (Worden & Collinson, 2011).

2.6.7 Students' Temperaments and Library Anxiety

Factors such as students' temperaments, preferred learning styles and pressure for information might influence information seeking behaviour. The lack of confidence on how to begin a search; and the lack of knowledge on how to navigate the library resources accompanied by feelings of inadequacy; and being hesitant to ask for assistance are major hurdles faced by many university students (Mellon, 1986).

Users should be given the confidence that they will access the information they seek after with sufficient ease. Lack of interaction between the library staff and the users is one of the major reasons for anxiety. Interaction with librarians may help reduce library anxiety by increasing student confidence and comprehension of the library services (Nicholas et.al, 2015).

Undergraduate students who are largely generation Z and a few others in generation Y (also known as millennials) have been identified as lacking patience with technology. They have a need for ease of use and quick access to full text resources. They are self-reliant and expect a single search to give them what they need (Allison, 2013).

Mizrachi (2013) is of the opinion that policies and decisions based on the stereotype of the undergraduate students as digital natives miss “important aspects of student information behaviours and preferences and thus create barriers to their learning potentials”. This researcher undertook to look keenly at their information behaviour with regards to e-books in public universities in Kenya.

2.6.8 Internet Access

Undergraduate students can access lots of information via the internet. Wang and Bai (2016) observed that search engines were generally used in searching for information resources. Kwadzo (2015), and Tlakula and Fombad (2017) observed that some undergraduate students have a preference for search engines. Search engines have overtaken libraries due to the fact that one can access a wide range of information at one stop. Urhibo (2017) observed that the Internet is one of the most preferred sources of information by undergraduate students.

Virtual technologies have been observed to influence its preference as a method of accessing information with the undergraduate students (Chen & Lin, 2011; Toner, 2008). Undergraduate students were found to enjoy information seeking from an electronic environment; finding information quickly and easily; finding interesting related articles and finding that librarians are very pleasant and helpful when asked for assistance (Tella, 2009).

Undergraduate students can get what they consider sufficient from the web due to prevailing computer technologies (Houlihan, 2005). According to Mbabu, Bertram and Varnum (2012) about $\frac{3}{4}$ of undergraduate students in a university in America conduct their research over the internet as opposed to being physically present in the library. It was observed that undergraduate students would rather utilize search engines than try to learn skills required on searching from scholarly databases. Search engines are preferred because of their familiarity and past student success in finding relevant information (Currie, et al., 2010; Martin, 2008; Mbabu et al., 2012). According to Connaway et al (2011) users found libraries frustrating and preferred to use the web which they found to be fast, easy and with an appealing simplicity. They reported that many of the undergraduate students preferred Wikipedia which offers coverage, currency, convenience and comprehensibility.

The online revolution has made lots of information so accessible that students no longer see the benefits of using the library's resources and services in comparison to those of other information providers. The central role of the library in the academic environment thereby becomes challenged compelling the library to learn new skills to effectively compete for the attention of its intended users (Makori, 2012; Wilcox & Chia, 2013). A majority of undergraduate students perceive that their web searches yield the information they need and sometimes even much more than they actually need (Mbabu et al., 2012).

2.6.9 Relevance of E-books

Students reported confusion and lack of clarity in the navigation and search for e-books from the library (Salau, 2014). Reasons why undergraduate students do not utilize electronic information resources effectively may be summarized to include large amounts

of irrelevant information, the need to filter results from searches, delays in downloads, failure to find information, inadequate or lack of search skills and difficulties in navigating electronic resources (Adeniran, 2013).

Dewan (2012) (cited by Leonard, 2017) observed that the lack of relevant academic content is the biggest obstacle in the use of e-books. Harle (2009) reporting for ACU observed that much of the scholarly information is currently published outside of Africa and its electronic format also largely hosted out of the continent. Kahn and Underwood (2016) observed that e-books were not sufficient, there was lack of titles of interest, certain disciplines were underrepresented and local content was missing in four universities at the West Cape in South Africa thereby obstructing their utilization by undergraduate students.

Although students had a preference for e-books in the University of Namibia, utilization was hindered by lack of relevant e-books, lack of skills, slow internet, lack of integration of e-books into the curriculum, and difficulties in discovering e-books (Leonard, 2017).

This researcher is of the opinion that explosion in information resources available both in print and electronic formats has led to enhanced relevance of librarians in determining what should or should not be acquired depending on the university mission, programs and courses offered.

2.6.10 Faculty Involvement

Bakri and Bello (2017) observed that the faculty had little influence in the selection of e-resources in the university libraries in Nigeria as most e-resources were acquired as packaged databases. According to Kahn and Underwood (2016), undergraduate students

were found to be less inclined to utilize e-books probably because they were not being recommended by the faculty. Where the faculty was aware and placed them in their reading lists there was better awareness and utilization. The experience of Universities in South Africa between 2010 and 2012 was that the utilization of e-books rose from 24% to 70% because they were being more exposed and also because the library was stocking more of them. Gakibayo et al (2013) gave a major reason for the non-use of e-resources to include lack of awareness of the potential and relevance of e-resources to academic programs. They advised that students should be encouraged by their lecturers to utilize e-resources. The referrals would enable students to utilize and locate these resources. The choice of information resources by undergraduate students is mostly influenced by their lecturers. The lecturers provide the greatest inspiration to undergraduate students in the utilization of e-books and other resources. It must, therefore, have sufficient knowledge to ensure competence in information access, interpretation, skills and attitudes to effectively impact the undergraduate students (Martin, 2008; Tlakula & Fombad, 2017).

Cowan (2012) opined that lecturers were undergraduate student academic guides but that undergraduates also relied on their peers though they more often depended on themselves in weighing the choices and in making appropriate decisions. According to Urhibo (2017), students preferred to engage other people as information channels to guide them where they can get relevant information for their needs.

In conclusion, factors leading to use or non-use of e-books as have been identified by various researchers include lack of awareness and perceived lack of relevance, lack of time, distance, lack of skills in the use of electronic resources, having personal books and/or

borrowing books from friends, unreliable access to the internet as well as borrowing from other libraries, no need and denied use. Users' perceptions, awareness, interest and exposure also influenced utilization of e-resources. Factors such as insufficient e-resources in various study areas, unavailability of e-resources at all times, lack of awareness of their availability, not knowing where to search, lack of referrals to e-books, and difficulty of identifying relevant information hindered effective utilization of resources (Kwadzo, 2015; Leonard, 2017; O'Dell & Preston, 2013; Omeluzor, et.al, 2016; Toner, 2008).

Many users as yet do not associate libraries with e-books because of the prevailing perception that libraries are only concerned with print information resources (Allison, 2013). This researcher concurs that searching for e-books does not occur easily for most library users especially undergraduate students in Kenya who are from diverse backgrounds and for who e-resources are a new phenomenon.

2.7 Perception of Undergraduate Students on E-books

Engbrecht (2018) observed that undergraduate students chose the e-books to utilize based on cost, ease of use, ability to keep the book, ease of acquisition and learning style. On the other hand, perception and utilization of library resources in the library depended on user awareness, packaging, format, ease of use, and references given by lecturers (Omeluzor, et.al, 2016). Poor perception and low inclination to utilize e-books was enhanced by low levels of information literacy from earlier schooling which may also have contributed to limited use of electronic resources in universities (Tlakula & Fombad, 2017). It was however observed by Rafiq and Warraich (2016) that the use and non-use of e-books by undergraduate students is almost on an equal level. They identified gateways to e-books to

include Google books (83%), publishers' websites (7%), college library and national digital library (5%) usage for each.

Walton (2014) observed that utilization of e-books for most undergraduate students in a college in America was as a result of forced use as students preferred print. He also observed that the undergraduate students' utilization of e-books was at equal or higher rate to print books and that there was need for less restrictive DRM to enhance adoption and popularity of e-books. Undergraduate students preferred e-books because of their convenience and also for research.

Walton (2014) found that where both e-books and print were available, preference was for print texts. There was a mix of students who preferred e-books and those who preferred print texts. While some students enjoyed reading e-books there were those that disliked reading them (Rafiq & Warraich, 2016; Walton, 2014).

The perception of undergraduate students on e-books was of interest in this study in informing on their acceptance as information resources. Utilization of e-books among the undergraduate students was limited due to the discomfort of reading on the screen for long periods. Users preferred print books for extended reading while they preferred e-books for reference purposes (Abdullah & Gibb, 2008b). Other problems associated with e-books were eye strain when reading from the screen, lack of sufficient e-books in areas of interest and poor e-book reading environment (Hwang et. al., 2014). Abdullah and Gibb (2008b) observed that students in an institution of higher learning in Scotland preferred print books and lacked knowledge on how to utilize e-books. They observed that for undergraduate students, the print text book has remained the most dominant source of content. Students

were prompted to utilize e-books because of their convenience as alternatives to print books in high demand or out of print, and for convenience in remote access.

Mizrachi (2013) found that more undergraduate students in University of California (USA) preferred print above the utilization of e-books. However, convenience, and monetary saving made from not buying the texts through using online resources often influenced their decisions to access online. Kahn and Underwood (2016) observed that e-books were preferred as academic texts because of the convenience they offered in terms of ease in skimming for relevant information. E-books saved time for some users as finding information in them was quicker and alternating windows on the screen was more convenient than alternating between the screen and paper. Leonard and Snyman (2019) found that in the University of Namibia there was an overwhelming preference for e-books due to various factors such as ease of use, ease of access, convenience and portability.

Research on undergraduate students by Martin (2008) found that 80% of them were of the view that finding information on the internet was easier than using the library. Ease of use is an important perception in determining if resources will be used or not. However, even though the students understood that library resources were more credible, they still chose the internet instead of the library resources. They cited convenience as a reason for this. The perception that the internet is better ran deep with the undergraduate students and was therefore found to be more popular than library resources (Martin, 2008).

McDonald et al (2015) observed that digital information was preferred by the students because of easy and convenient access while smart phones were perceived to be the most important tool. They observed that first years preferred print books when asked to indicate

their preferences. E-resources only became more important when students were informed that they could access them from anywhere anytime and where the resources provided were free, useful, and convenient. Salau (2014) and Martin (2008) also observed that Google was the main search engine and e-books accessed via Google books search were more highly used than those sought from the university library web site.

2.8 Expectations of Undergraduate Students on E-books

In view of the above, students wanted technology, and content ubiquity, and network access anywhere anytime. They wanted more and better content, more and better access, convenience, new capabilities, ability to manage costs, participation and control, and organizational and individual productivity (Neal, 2009). Students wanted unrestricted downloads and ability to utilize offline. They also expected to read without access complications in navigating from one platform to another and not having to learn multiple e-book systems (Myrberg, 2017; Walton, 2014). It was further observed that undergraduate students lack patience in perusing over several platforms. Information resource users expect seamless access to resources (Allison, 2013; Connaway, et al., 2011).

Adeniram (2013) observed that the utilization of e-resources by undergraduate students in a university in Nigeria was low due to factors such as large mass of irrelevant information; the need to filter the results from the search; download delays; failure to find information; inadequate or lack of search skills; high cost of access, inaccessibility of some e-resources; difficulties in navigating through e-resources. Other structural factors that contributed to low utilization were the absence of constant electricity supply, lack of facilitation for

network resource sharing, inadequate professionals with requisite ICT skills and inadequate funds to support development.

Issues that negatively affected the utilization of e-resources by undergraduate students in Ghana and South Africa revolved around lack of awareness, information illiteracy, lack of skills, ICT challenges, inadequate library computers, lack of guidelines on how to utilize the e-resources, poor internet connectivity, inadequate access points, power outages and few subscribed titles (Amankwah, 2014; Tlakula & Fombad, 2017).

According to Toner (2008), students were more interested in more inductions and trainings from the library, easier online access, and more staffing than in more information resources. Dobler (2015) observed that permanent access may not always be possible as most e-books are licensed only for a limited period of time. This also denied the students the feeling of ownership and having control over their learning. According to Currie et al (2010), students expressed frustration in identifying, accessing, and discovering resources. They preferred resources that were easy to find, easy to access, easy to understand, available when needed, up-to-date, and access to reputable publications and authors.

Limitations imposed through DRM obstructed the access to e-books as many users lacked the knowhow in navigating for e-books that have unlimited access such as would be preferred. DRM license agreements were limiting to users in several ways by allowing only one user at a time; limiting the number of e-books that are downloadable for permanent access; restricting reuse of content; limiting permission to print; and denial of ownership of purchased e-books (Kahn & Underwood, 2016). This researcher observes that such

limitations discourage utilization of e-books since they are perceived to be time consuming and create lack of certainty in finding resources for unlimited utilization.

It has been observed that e-book platforms to which the library subscribes are too diverse for undergraduate student utilisation. Some users cannot find enough e-books in their fields of interest. Others have difficulty in finding keywords, technical and search related difficulties, password protected e-books, and ignorance of where and how to utilize e-books (Hwang et al., 2014; Slater, 2010).

In general, students expected that going to the library would add value to their lives and that it would be the place to be. While they intensely engaged with ICT gadgets, they also wanted to enjoy the library as “a contemplative oasis”. It was observed that a majority of students considered the physical library reading spaces as their most favourite areas for study (Freeman, 2005).

2.9 Suggestions for Enhanced Utilization of E-books

Several suggestions have been made by different researchers for enhanced utilization of e-books. These include: student orientation and information literacy; information technologies and resources; training of librarians; branding and relevance; and engagement with students.

2.9.1 Student Orientation and Information Literacy

Bibliographic instruction and student orientation are found to be more useful when they are course related (Gelfand, 2005). Libraries must reach a position where the acquisition of information skills should be a key objective for every student. High use can be attributed to

free access, ease of use, currency and relevance of information. There is need to correct the current situation through strategic interventions for effective utilization of e-resources through acquisition of enhanced computer utilization skills (Gakibayo, et al; 2013). Ray and Day (1998), (as cited by Gakibayo, et al., 2013) observed that extensive experience in user education programs has shown that teaching information retrieval skills to students should be embedded in the curriculum and instruction should be given at the time when users can understand its applicability. Gakibayo et al (2013) observed that information literacy may have failed to get tangible results due to the fact that it was only taught by librarians. They recommend that information literacy is best delivered when integrated within the curriculum as relating information resources to various courses is more meaningful to students. They suggested that training should be done at a time that students can understand and relate with its appropriateness. Allison (2013) found that undergraduate students learnt better through participatory processes. Harle (2009) (reporting for ACU, 2009) observed that if access is to be translated into use, it is important to look into how available resources are incorporated into learning, teaching and research.

Kaur and Kathuria (2016) recommend that a paper on Library and Information Studies (LIS) regarding library resources and services should be mandatory for all courses. It was also recommended by Amunga (2011) that universities should upgrade the training on communication skills currently provided by public universities in Kenya to information literacy which is more appropriate for digital information environments for real impact in the utilization of e-resources to be experienced.

Tlakula and Fombad (2017) observed that Information Literacy through partnership and collaboration between the Lecturers and Academic Librarians was necessary for the effective development of information literacy where students are taught relevant skills on how to utilize various devices to access e-books and how to find, download and read e-books. The process of selection and utilization of library e-resources and the participation of librarians in the process of curriculum changes would be enhanced by such partnership and collaboration. This is likely to enable the provision of subject-specific training which may empower the undergraduate students. An outcome based education has been recommended in this regard. However, Amunga (2011) observed that it might be difficult to expect lecturers to participate in information literacy as this will be seen as extra work.

2.9.2 Information Technologies and Resources

Identification and acquisition of key course titles is likely to attract high level utilization. To improve convenience for undergraduate students, more investment in online e-resources and mobile services would be necessary. Of equal importance is to make resources easier to navigate and to provide a seamless resource discovery tool. There is need for information resources to be offered in multiple delivery strategies to meet the different needs of users in different situations as “one size does not fit all” (Connaway, et al., 2011; Wilcox & Chia, 2013). It has been suggested that undergraduates should be compelled through policy to have personal laptops and tablets and that librarians should also be guided by policy to assist students to install relevant e-resources on their devices (Wendo & Mwanzu, 2016).

Connaway et al (2011) observed that the inclusion of keywords for all books in the OPAC; universal catalogue for all information resources; better hyperlink; virtual reference service;

and roaming reference staff moving about the library to provide assistance to users are advisable for undergraduate students.

Gelfand (2005) was of the view that there were too many choices for students to make but that they were often unclear about what they needed or what the resources contained. Mawere and Sai (2018) recommended that the library should analyse its e-resources and pull down titles that have false starts. They observed that such occurrences are disappointing to users and are bound to discourage further utilization. Slater (2010) recommended title by title e-book purchase model as research shows that individually selected titles led to significant increase in the utilization of e-books. Baker and Evans (2013) were of the view that in this digital age libraries should not pay for any titles that were not used. Instead they should consider user needs by acquiring only what is needed through Patron Driven Acquisitions Model.

2.9.3 Training of Librarians

Library staff should be sufficiently skilled to assist users in accessing information resources. It has been observed that there is need for greater emphasis in the training on communication and interpersonal skills for librarians and attention to social dynamics of the user community to increase understanding as well as reduce librarian versus user frustration (Chimah, Nwajei & Akom, 2015; Hussain & Abalkhail, 2013; Makori, 2012).

Chimah et al (2015) observed that half of all patrons leave the library without obtaining what they are seeking. They also found that 65% of the users do not take the trouble to make any enquiries from the librarians because they felt that the librarians were too busy;

or felt that their questions were too basic; or had experienced dissatisfaction in an earlier encounter with a librarian.

Mansour (2016) observed that librarians may not all have knowledge of digital content. And that knowledge on related library ICT competencies were marginal such as in evaluating ICT products, digital library development, database management systems and knowledge of computer-based information. Walton (2014) observed that the technical demands of integrating e-books into an easily accessible collection presented a significant hurdle in the way for librarians.

The need for merging both the print information resources with new and emerging information technologies is most appropriately fulfilled by the library which has the advantage of being an academic convergence point (Gelfand, 2005; Hussain & Abalkhail, 2013).

2.9.4 Branding and Relevance

It has been observed that there is need for product branding to differentiate products from others in the market in order to ensure winnings in sales by identifying what is not offered by other markets. Building a strong brand involves making a product occupy a prominent place in the minds of the targeted consumer (Kotler & Keller, 2012; Varshney & Gupta, 2005).

A website that is assured of continued utilization is one that provides relevant content to meet user needs in a timely manner and with required content. This also means that relevance extends beyond the provision of relevant information resources to services

provided. User needs prevail beyond provision of information resources. Diverse researchers opine that the modern academic boutique library is about an e-customisation service that values individuality and uniqueness above uniformity and consistency. In the library context this would mean the need for subject librarians to provide more personalized collection content and services. The ideal university library as a learning centre combining learning, writing, research and technology requires librarians to change their attitudes, concepts and relationships with students (Tilley & Priestner, 2010; Wilcox & Chia, 2013).

Embedding the library in each course module through creation of useful links for resources in a given subject and thereby ensuring that the e-resources are directly aligned and accessible to each course module is advised. This highlights to students the immediate relevance of the collection to their study needs. Library outposts are also relevant in providing popular resources and services (Wilcox & Chia, 2013). It has been suggested that libraries should have a more refined definition of services, focusing on unique strengths, local needs and ways of delivering information (Pritchard, 2008). Kahn and Underwood (2016) asserted that if libraries want their collections used, they should not solely rely on what publishers think their users want but that they should get their own findings.

2.9.5 Engagement with Students

Recognizing the commanding role of library users has been emphasised by Allison (2013). Wilcox and Chia, (2013) observed that relevance is not sufficient to ensure the loyalty of clients as it can be offered by alternative services and sources. To improve the users' perception of the unique value of the library and thereby increase sustained utilization, engagement becomes critical. The degree of relationship determines the quantity and

quality of communicated information. Creating connections with users is necessary in order to create awareness of library resources and services. This may be virtual (via use of blogs) or face to face interactions by subject librarians to provide support in terms of subject and e-resource expertise. Engagement with users can also be attained through: orientation, in-depth subject workshops, and information literacy workshops or classes. Librarians must provide what patrons want and not what librarians believe they need. Hwang et al (2014) also pointed out that libraries should design strategies to develop e-book services based on usage patterns and demands.

Engagement on the other hand includes aggressive collection of relevant data from users about their needs and expectations. Usage of e-resources should be closely monitored and users' attitude and information behaviour investigated so that library services are designed to suit their needs. There is need for a data collection tool that can tell how many times users have accessed an e-resource and how many were found relevant for utilization. This would guide in acquisition decisions as well as assist the librarians in making library users more accountable by "using what they recommend" or "recommend only what they want to use" (Kavulya, 2004; Tripathi & Jeevan, 2013). "Just in case" acquisitions should be avoided.

Librarians should be receptive to feedback from customers and stakeholders about its services and products (Kavulya, 2004). Kaur and Kathuria (2016) recommend that interactive media should be implemented to facilitate two way interactions between users and professionals. Woodward (2009) also asserted that librarians must partner with their users to enjoy success. She recommended multiple strategies in decision making where all

stakeholders were taken on board with a view to designing a library that is user-driven. This may demand a complete reassessment of library priorities which in turn may require a complete reassessment of staff calibre. But which must be anchored on user recommendations and needs. As the “academic heart of the university”, the library should have quality, value and an aura of the place to be.

Worden & Collinson (2011) are of the view that promoting e-books first to the lecturers is likely to yield high results since they are directly instrumental in directing the students. Currie et.al (2010) recommended the integration of research skills into the curriculum by the teaching faculty.

2.10 Chapter Summary

This study was based on Engel, Kollat and Blackwell model of consumer behavior of 1968. The 7ps marketing mix was embedded in the model in the input stage of the conceptual framework. Literature review showed that the levels of e-book awareness vary around the world; different awareness creation methods are used; drivers that inspired the utilization of e-books were identified; preference for e-books was established; undergraduate students expectations on e-books were ascertained; and different suggestions made by different authors and researchers for enhanced utilization of e-books were assessed and documented.

2.11 Research Gaps

Awareness levels of e-book resources by undergraduate students of e-book resources in several parts of the globe are known, such as in China (Wang & Bai, 2016), South Africa (Leonard, 2017) and in Nigeria (Adeniram, 2013). Such data is not available in Kenya. This study intended to provide this data which creates ground for further research in Kenya.

Parameters used in evaluation of effectiveness in orientation programs in Kenya are not documented. While Gregory and Broussad (2011) are of the view that these are the least effective tools, Martin (2008) observed that it is better than no instruction at all as it reduced anxiety. This research found that the value of orientation for undergraduate students given that they are drawn from diverse backgrounds was pivotal in providing an introductory entrance to diverse information resources unknown previously.

Currie, et al. (2010) were of the view that orientation has no positive effect on perceptions on ease of use. This researcher was determined to model awareness creation specifically for e-book resources with a view to positively enhance perception by demystifying their access and use. Perceptions on e-book resources by undergraduate students in Kenya and potential areas of intervention for ease of access and use were a research gap that this research sought to create knowledge in.

Several factors were identified by different researchers to influence utilization of e-book resources by undergraduate students in different parts of the world to include forced use, ease of use relevance and motivation by lecturers among many others. However the lack of literature in Kenya on the same is a major research and knowledge gap that this research sought to contribute.

The research contributed literature on the utilization of e-book resources by undergraduate students in Kenya to the existing body of literature, and identified issues that impede use of e-books to include lack of awareness, qualities of e-books including relevance, ease of use, ease of access, and convenience as factors for interrogation by the research.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research methods employed based on the objectives of the study. It provides a detailed presentation of the processes that were used in investigating the utilization of e-books by undergraduate students in public universities in Kenya. These processes are demonstrated through the following sub-topics: introduction; research paradigm; research approaches ; research design; study population; sample and sampling techniques; data collection instruments; piloting of research instruments; validity and reliability of research instruments; ethical considerations in data collection; data collection procedure; data analysis and interpretation; and the chapter summary.

Research methodology is a framework for conducting research through diverse forms of strategies. It refers to techniques and procedures used in data collection and analysis. The aim of methodology is to demystify the process that leads to certain findings (Babbie & Mouton, 2001). From the numerous arrays of research methods, the choice of method to use is dependent on the aim, objectives, research questions, problem under investigation and the underlying theory or expectations of the researcher in filling certain knowledge gaps (Babbie & Mouton, 2001).

The most important question in selecting a research methodology is whether it will yield results in the respective area of research and if the method selected will help the researcher to know what they set to find out (Frankfort-Nachmias & Nachmias, 1996; Odera- Kwach & Ngulube, 2011).

3.2 Research Paradigm

Research paradigm or philosophical framework is one of the three arms that determine the appropriate Research Approach to employ. The other two include research design and the actual research methods (Creswell, 2014). All researchers consciously or unconsciously use the three arms in generating findings that answer to their objectives. Paradigms that shape the basis of any research include positivism; social constructivism (interpretivism); transformative and pragmatism.

The positivism paradigm studies cause-effect relationships that determine outcomes. It identifies and isolates the causes that influence outcomes. It also reduces ideas into small distinct sets that are measurable. In this philosophical framework, the development of numeric measures for observations and the behaviour of persons in a reality that is under study is supreme. This is mainly employed in proving or disproving hypothesis advanced. It is inclined to quantitative research designs. It is mainly deductive as it examines measurable relationships among variables (Creswell, 2014).

Social constructivists, on the other hand, believe that individuals seek to understand the world they live in. The goal of this paradigm is to get the participants perspectives of issues under study by relying on the participants' views. This therefore largely employs qualitative research designs that allow for in-depth investigation of a situation such as open ended questions. In this, the generation of meaning from data is always social as its interpretation is done within an interactive social framework. Hence it is also interpretive. By virtue of its qualitative nature, it is largely inductive whereby the researcher generates

meaning from the data collected unlike in positivism where data collected is intended to verify or discount a proposition (Creswell, 2014).

A research that is based on a transformative paradigm looks for an end that would provide actionable findings that may change the lives of those under investigation. It aims at enhancing social justice and change especially for the marginalized in society or those seeking for affirmative action by allowing the persons under investigation to air their views. It uses unstructured means and hence qualitative in nature. This philosophy evolved after the positivist and constructivist paradigms were found inadequate in addressing actionable requirements to help the marginalized persons at all levels (Creswell, 2014).

Pragmatism is the most recent research paradigm which embraces the use of all possible approaches to understand the problem under study. The focus is mainly on the research problem and not on methods. Researchers use both quantitative and qualitative means to understand the problem based on the intended consequence. The research problem determines the designs used to resolve it and it is most suited by mixed research approaches (Creswell, 2014).

3.2.1 Paradigm Adopted for the Study

Pragmatism implies that research should be considered based on its expected impact or practical consequences. It suggests that research results should help in deciding the next course of action. Pragmatism offers a practical and outcome oriented method of enquiry that is based on action and leads to further action. It has an explicit value-oriented approach to research. Pragmatic researchers look to what and how to research based on the intended consequences (Creswell 2014).

This research was pragmatic in looking at what led to the use or non-use of e-books by undergraduate students and how utilization could be enhanced resulting in enhanced uptake of information. The pragmatic paradigm called for a mixed methods research approach to ensure relevant and comprehensive data was collected.

3.3 Research Approaches

There are three main research approaches that include quantitative, qualitative and mixed (Creswell, 2014; David & Sutton, 2011; Frankfort-Nachmias & Nachmias, 1996; Odera-Kwach & Ngulube, 2011; Punch, 2005). The respective research approach chosen for any study is influenced by the research philosophy, design; and actual research methods intended to be used (Creswell, 2014).

3.3.1 Quantitative Research

Quantitative research approaches examine measurable relationships among variables. It is mainly based on positivism (Creswell, 2014; Punch, 2005). Quantitative designs mainly use surveys or experiments. They mainly employ the manipulation of variables to prove a hypothesis. For example, a survey provides a quantitative description of trends, attitudes or opinions of a population derived from a sample of the population. Quantitative data may be collected through structured questionnaire or structured interview methods. Findings obtained can then be generalized to the population (Creswell, 2014; David & Sutton, 2011). This study required the use of quantitative approach in investigating the factors that influence the utilization of e-books.

3.3.2 Qualitative Research

Qualitative data is collected majorly through social interactions and questions constructed are mainly open-ended (Creswell, 2014). Qualitative data may be used to get in-depth data while quantitative data may be used to enable findings to be generalized to the entire population (Creswell, 2014). In this research, the undergraduate students informed on the prevailing scenario on the use of e-books through quantitative data collected through a structured survey questionnaire with few open-ended questions and a qualitative approach using focus group discussions (FGDs). FGDs were used to evaluate results obtained through the self-completion questionnaires as observed by Stopher (2012). The study further sought for qualitative data from information rich cases that included lecturers and librarians. Lecturers and librarians as service providers directly and indirectly provided insights that informed on the use of e-books by undergraduate students and suggested ways how access and use may be enhanced.

Qualitative benefits are rich and well able to deal with the complexities of social phenomenon involved such as intentions, experiences, attitudes and culture. These are sensitive to context and aim for depth as the researcher tries to get close to what is being studied. Qualitative methods have been identified to be the best in investigating real life situations and data obtained gives a holistic understanding by unravelling unknown realities within the research (Cameron, 2009; Creswell, 2014; David & Sutton, 2011; Gray, 2009; Johnson, Onwuegbuzie & Turner 2007; O'Dell & Preston, 2013; Punch, 2005). In qualitative research, “the intent is to explore the general, complex set of factors surrounding the central phenomenon and present the broad, varied perspectives meanings that participants hold” (Creswell, 2014). In exploring people’s everyday behaviour, qualitative

methods are preferred (Silverman, 2010). Thus the relevance of qualitative methods in this research on awareness and utilization of e-books by undergraduate students in public university libraries in Kenya is established.

3.3.3 Mixed Methods Research

This involves combining quantitative and qualitative research approaches in order to better understand a particular research problem (Creswell, 2014). According to Johnson et al. (2007), mixed methods must include quantitative and qualitative perspectives in the examination of the same research question. These may be used when there is likelihood that qualitative and quantitative data approaches will add insights to the research. The symbiosis of qualitative and quantitative data collection is important. Mixed methods attempt to consider multiple view points, perspectives, positions and standpoints by drawing from the benefits brought about by both quantitative and qualitative methods. Silverman (2010) observed that for the “story” to be well told both quantitative and qualitative methods are important. According to Creswell (2014), the heart of this form of inquiry is “that the combination of qualitative and quantitative approaches provides a more complete understanding of a research problem than either approach alone.”

Mixed methods may be used to explore different aspects of the research question. They are used to complement each other where more detail can be obtained by enhancing clarity of findings through balancing out the weaknesses of individual data collection methods. Mixed methods may also be used to corroborate research findings by merging data collected through more than one method. They can be used to help verify or authenticate research findings leading to greater accuracy in understanding (David & Sutton, 2011).

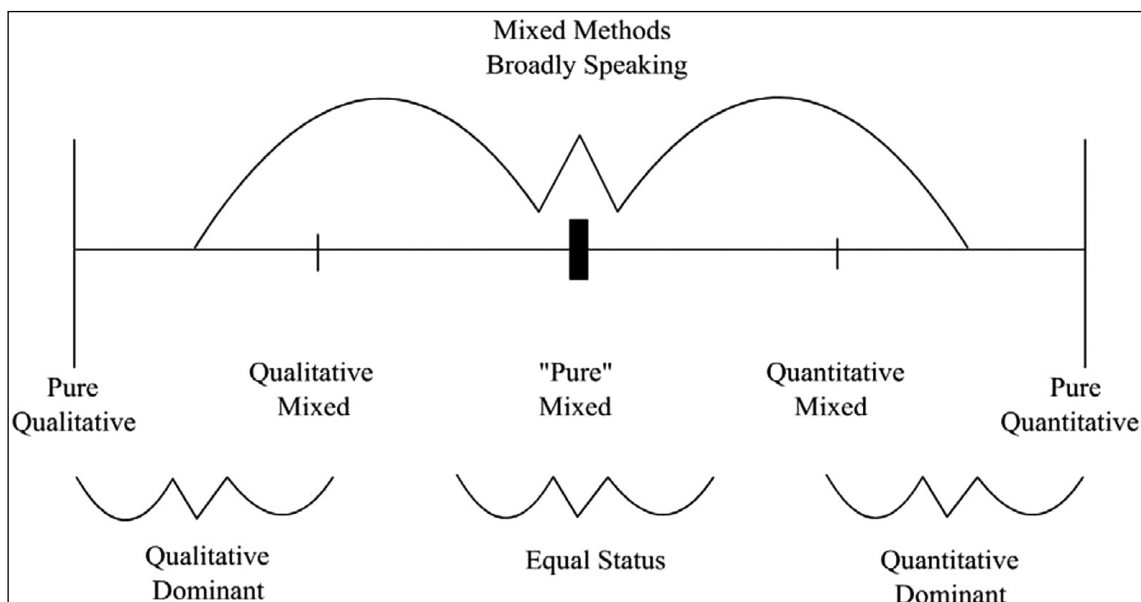


Figure 4: Three Major Research Paradigms and Subtypes of Mixed Methods Research
Adopted from: Johnson, et al (2007). Toward a Definition of Mixed Methods Research.

Figure 4 shows different combinations of mixed methods that may be used in research. It has been observed by some researchers that the use of mixed methods is more prevalent where the combinations of quantitative and qualitative approaches have equal weight (Creswell, 2014; David & Sutton, 2011; Johnson, et al. 2007). Mixing of methods can occur at any one or several stages or at all stages of the research process that comprises of data collection, data analysis and data interpretation. The purpose for the mixing should be established by the researcher. There needs to be sufficient rationale for mixing qualitative and quantitative data (Creswell, 2014; Gray, 2009).

Use of mixed methods in this study is justified by the fact that both the numbers (quantitative) that access and utilize e-books and the factors (qualitative) that determine utilization were important in this study. The researcher attempted to understand the

prevailing situation and the complexities involved by establishing existing facts through both quantitative and qualitative research approaches. Quantitative and qualitative methods were utilized to offset weaknesses inherent in each and also to benefit from the strengths of both such as the ability to generalize results to the entire population from the quantitative data and ability to gain insights through qualitative data (Creswell, 2014; Punch, 2005). Qualitative data enhanced insights gained through literature review and provided understanding of undergraduate students perceptions of the university library e-books in general and reasons for their use or non-use. Collins (2015) observes that the use of mixed methods enhances the significance of data collected as well as enhancing validity of instruments used.

The disadvantage associated with this approach is that the researcher is required to be familiar with both quantitative and qualitative forms of research, and multiple data collection strategies thereby increasing data collection and analysis workload (Creswell, 2014). However, the researcher was able to utilize both approaches.

3.3.4 Research Design

Research designs are strategies of inquiry within quantitative, qualitative and mixed methods approaches that provide direction for the application of procedures in a research (Creswell, 2014). A research design is the detailed plan for a research undertaking. It is a blueprint of how the envisioned research will be conducted. The purpose of research designs is to provide a framework for the collection and analysis of data. Research designs facilitate answering of research questions as clearly as possible. A research design focuses on the kind of research being planned, research problem and the results aimed at. It

connects research questions to data collection and has four basic elements including: strategy used; conceptual framework; what will be studied and tools for collecting and analysing data.

A survey design was considered to be most appropriate for this form of study. Surveys are concerned with discovery of facts, opinions, attitudes, respondent motivation and level of understanding of certain subjects. They aim to develop generalizations about groups. A survey design provides a description of trends, attitudes or opinions of a population by studying a sample of the population. Generalizations to the population can be made from the findings obtained from the survey (Babbie, 1990; Crano, Brewer & Lac 2015; Creswell, 2014; Stopher, 2012).

According to Brick (2011), the advantages of survey research include:

- i) Effectiveness in collecting data from a wide variety of people about a wide variety of topics.
- ii) Versatility and can be used gain deeper understanding of issues under investigation.
- iii) Efficiency in both time and cost involved.
- iv) Applicability by sometimes being the only available tool for obtaining data from a large population.

Surveys may involve: face-to-face interviews, mail or self-completion questionnaires, telephone interviews, internet surveys and observational surveys (Stopher, 2012). This study adopted the use of self-completion questionnaires and face-to-face interviews. FGDs were also used. According to Stopher, (2012) FGDs are some of the in-depth qualitative

survey methods and may also be used to shed light on results obtained while also ensuring that the survey achieves its objectives.

3.4 Study Population

A study population is the total number of all cases that conform to some designated set of specifications (Frankfort-Nachmias & Nachmias, 1996). In this research, the study population were all registered undergraduate students in Public Universities in Kenya who formed the main study population; all lecturers in public universities; and librarians in Circulation Services and Library Electronic Resource Centres.

3.5 Sample and Sampling Techniques

All research involves sampling. Sampling is the process of selecting respondents from the target population. The intention of sampling in quantitative research is to choose individuals who are representative of a population so that results can be generalised to the entire population. While in qualitative research, the researcher purposefully selects individuals that can provide the necessary information based on the purpose of the research (Creswell, 2009; Gray, 2009). All respondents were sampled from the main campuses of four public university libraries namely: Egerton, Njoro Campus; Jomo Kenyatta University of Science and Technology, Juja Campus; Moi, Kesses Campus; and University of Nairobi main campus. These universities were identified through purposive convenient sampling. The four universities were conveniently accessible to the researcher and were identified as older with well-established libraries hence considered to be an appropriate representation of all public university libraries in Kenya. Equal number of respondents was sampled from each of the four universities.

3.5.1 Sampling Undergraduate Students

The total population of undergraduate students was 400,927 while that of third years in public universities was 73,988 (CUE, 2019; KUCCPS, 2018). Data was collected from undergraduate students using two instruments: the survey questionnaire and FGDs.

3.5.1.1 Survey Sampling

Crano et al (2015) observed that when the population is large, precise sample results can be obtained even when the sampling fraction is quite small. What matters most is the absolute size of the sample. There are no hard rules for sample size in qualitative studies.

The undergraduate student population was narrowed down to those in third year of study through use of purposive sampling. Third year students were perceived to be the most representative category of the undergraduate students in terms of knowledge and experience in the use of e-books. This was due to their length of stay, and stage in the undergraduate academic calendar where use was expected to be optimum. These were also perceived by the researcher to have sufficient time to complete the questionnaires with minimal disruption in their program in comparison to fourth years. They were also considered by the researcher to be more experienced in information resources use than their second and first year counterparts. The undergraduate students were drawn from different programs to ensure that data collected was inclusive and comprehensive. Silverman (2010) observed that purposive sampling is used when the respondents sampled are most likely to give rich responses. The study employed the use of quota sampling in which a total of 300 undergraduate respondents from the four universities with 75 from each of the main campuses were surveyed. The research used a non-probability sampling for third year

undergraduate students as advised by Collins (2015). He observed that non-probability sampling may be used where it may be difficult to draw random sampling. Quota sampling was preferred where respondents were drawn from different programs albeit without specifications on numbers from each. Collins (2015) observed that non-probability sampling can yield good results if done correctly and is more conducive and practical.

This is determined by defining the number of samples to be taken from the target population and then allowing the surveyor to select any respondent from the identified category. This is less costly in implementing. However, this may not be sufficiently representative of the target population, and may err in assigning equal quotas to strata of different sizes (Stopher, 2012). Representativeness was not a requirement in this research as the main focus was on the qualitative aspect of enhancing use of e-books by undergraduate students.

3.5.1.2 Focus Group Sampling

There was one FGD for undergraduate students in each of the four universities sampled. Convergent Parallel Mixed Methods design used in this research allows individuals in the quantitative sample to be in the qualitative sample. This is because the intent of the design is to merge quantitative and qualitative data in order to gain a holistic analysis of the research problem (Creswell, 2014).

3.5.2 Sampling Lecturers

Twenty lecturers were sampled from the population of lecturers from different programs in the four universities. The lecturers from each of the four universities were identified on convenience and ease of availability for the face-to-face interviews using a purposive quota

method as observed by Collins (2015). These were lecturers that were most readily willing to be interviewed but drawn from different programs.

3.5.3 Sampling Librarians

Twelve librarians from the population of librarians from the four universities were from the library circulation services and library electronic resource centres. According to Collins (2015) the sample size in a purposive sample is determined by saturation in which data collection and data analysis produces no new information. Collins (2015) further advised that the point of saturation to be 12 interviews.

Summary of respondents and instruments used is as shown in Table 1.

Table 1: Summary of Respondents

Respondents	Instrument	Nos. per Institution	Total
Undergraduate students	Survey Questionnaires	75	300
Undergraduate students	FGDs	1	4
Lecturers	Face-to-face Interviews	5	20
Librarians	Face-to-face Interviews	3	12
Total		84	336

3.6 Data Collection Instruments

Data collection instruments for the study included self-completion survey questionnaires for undergraduate students and interview schedules for lecturers and librarians. FGDs schedules were also used for undergraduate students. Data collection instruments were

constructed using the same variables in the self-completion survey questionnaires and FGDs for students. The interview schedules for lecturers and librarians included concepts along the same variables and where responses did not require specific undergraduate students' experiences.

3.6.1 Self- Administered Questionnaires

This type of survey is characterized by an impersonal engagement which has several advantages including: low cost of administering; reduction in biasing error that might result from the influences of interviewer personal characteristics; greater anonymity which provides a sense of liberty in providing information; accessibility to wide and diverse coverage; and attracts well thought out responses (Frankfort-Nachmias & Nachmias, 1996). The disadvantages of self-completion survey questionnaires include: the need for simple, straight forward easy to understand questions; inability to control the context within which the questions are completed; provide no opportunity for probing or seeking clarity over ambiguous answers; lacking in control over who fills the questionnaire and chances that it may be filled by persons not identified as respondents are high; and response rate is low especially where it is left for the respondent to give feedback on their own (Frankfort-Nachmias & Nachmias, 1996). To counter this weakness, questionnaires in this research were delivered and collected by identified research assistants to ensure a high response rate. The self-completion survey questionnaires included factual questions as recommended by Frankfort-Nachmias and Nachmias (1996). The questions were majorly quantitative with minimal open ended questions in order to give respondents room to raise concerns on e-books in general. The quantitative questions were mainly structured on a five point Likert Scale. These were intended to provide information about the environment that

undergraduate students operated in with regards to e-books. Questions were kept to the minimum to avoid participant fatigue and the accompanying loss of data quality as advised by Crano, et al (2015).

Likert Scale questions involve presenting ordinal measures with extreme positions at both ends of a continuum on aspects under investigation. Likert Scales are a convenient method of collecting data on a concept from a number of different approaches. They allow the researcher to obtain more information on a research question beyond a yes or no answer. These tools assisted the researcher in providing insights in the interpretation of data and in establishing the extent of use of e-books among undergraduate students in public universities in Kenya (Appendix B).

3.6.2 Focus Group Discussions

A FGD is a qualitative data collection tool. It is an informal meeting of target persons whose points of view are sought in addressing a selected topic. FGDs are deemed to explain how people regard an experience, idea or event. They are inexpensive, quicker and more efficient in gathering large amounts of information than questionnaires and interviews as they aid recall, and are cumulative and elaborative. The group dynamic is intended to spur responses that would not have been obtained in the absence of social interaction where participants are encouraged to interact and exchange ideas. They have become regular tools of evaluation in academic libraries and have been identified as appropriate tools in trying to probe behaviour. Their usefulness lies in the use of group interaction to draw out data and insights that would be less discernible without the group participation (Crano et al., 2015; Mills & Bannister, 2001; Punch, 2005; Satoh, Nagata, Kytomaki & Gerrald, 2005; Weare,

2013). “Through the use of focus groups, academic librarians can discover what students really think, feel, need and want” (Weare, 2013).

Investigators listen to group participants, and participants listen to and respond to one another. In a group set-up, interaction of members has the added advantage of working as a stimulant to new perspectives as well as unearthing perceptions on the areas of interest and thereby enriching the contributions made. They provide rich data within a short time while providing multiple perspectives and thereby making them a convenient tool to researchers (Connaway, et al., 2008; Gray, 2009; Weare, 2013).

FGDs have a few disadvantages that include: opinions ‘lauded’ by dominant participants hence some opinions may be suppressed; group mentality may hinder individual fronted opinions; and extraneous noise. Data collected through FGDs moderated the findings obtained from self-completion survey questionnaires by undergraduate students as was advised by Stopher (2012).

Questions for the focus group discussions were on their level of awareness of library e-books; user education programs offered by public university libraries; factors that influenced their use of e-books; their perception on library e-books in comparison to other resources; their expectations on library e-books; and their recommendations on library e-books (Appendix C).

3.6.3 Face-to-Face Interviews

Face-to-face interviewing strategies are qualitative data collection tools. Structured interviews are most effective in asking open-ended questions and for eliciting more detailed

responses. They also allow for probing on unclear responses (Creswell, 2009). Face-to-face interviews were used in data collection from lecturers and librarians. They were chosen for this study due to the numerous advantages they possess. These include: flexibility in the questioning process which allows for probing for additional information on emerging themes and patterns; control of the interview situation to ensure responses given are relevant to the study; high response rate; and comprehensive information also drawn from the non-verbal communication and spontaneous reactions. They have a major advantage in providing the respondents with liberty to express themselves. Face-to-face interviews are the most appropriate when seeking to get in-depth information on views and perceptions of respondents with regard to the problem being investigated (Frankfort-Nachmias & Nachmias, 1996; Gray, 2009; McDonald et al. 2015). However, these have a higher cost in terms of implementation, are subject to interviewer bias, and lack anonymity (Frankfort-Nachmias & Nachmias, 1996).

This form of interviewing is most appropriate in situations where respondents are known to have been involved in a particular experience; or similar situations have been analysed prior to the interview; or an interview guide specifying topics related to the objectives is applied; or its focus is on subjects' experiences regarding the situation under study.

Interviews for lecturers were designed to find out where they referred their undergraduate students for information resources; the formats of references they gave to their undergraduate students; how they rated the usefulness of e-books in terms of accessibility, relevance, convenience and ease of use for undergraduate students; whether they perceived undergraduates to be good at evaluating e-books; their perception on e-books for

undergraduate students' use; and their suggestions on what should be done to improve access and use of e-books by undergraduate students (Appendix D).

Interviews for librarians were on the programs in place for undergraduate students' awareness creation and the impact that these have had; the kind of support asked for by undergraduate students; the expectations of undergraduate students with regard to e-books; and the suggestions they would make towards improving access and use of e-books by undergraduate students (Appendix E).

3.7 Piloting of Research Instruments

Survey questionnaires, FGDs and face-to-face interview instruments were piloted on selected undergraduate students, lecturers and librarians in Egerton University. Clarity and flow of questions were piloted to ensure that they were clear, easily understood and that they could elicit relevant responses. Piloting was also done to ensure that questions were not repeated while also ensuring that questions with the same meanings were deleted while omitted questions were included. Time taken to complete the questionnaire was taken into consideration to ensure ease in implementation. The data collection instruments were then edited to incorporate all arising concerns and questions were framed in such a way as to ensure a logical flow in responses as well as to easily prompt users to volunteer information.

3.8 Validity and Reliability of Research Instruments

Validity refers to the degree to which a measuring instrument actually measures and describes the concept it was designed to (Crano, et al., 2015; David & Sutton, 2011; Golafshani, 2003). It refers to "the capacity of research techniques to encapsulate

characteristics of the concepts being studied, and so properly measure what the methods were intended to measure” (Payne & Payne, 2004). Validity has to do with qualitative accuracy and credibility of findings (Creswell, 2014). It is also the authenticity and the trustworthiness of data collected. The sampling technique and the measuring instruments enhance internal validity by showing that there were no other internal factors that were not incorporated that may have contributed to the research output. The convergence of findings from two or more methods enhances validity of results and minimizes errors that may stem from methodology used. “Once a finding has been confirmed by two or more independent measurement processes, the uncertainty of its interpretation is greatly reduced” (Collins, 2015; Johnson, et al., 2007). This research had diverse approaches and respondents including undergraduate students, lecturers and librarians to offset the weakness of the purely quantitative approach or the purely qualitative approaches and hence enhanced validity. To ensure validity, research instruments used were carefully chosen and administered to measure what was meant to be measured through the research questions. Research instruments were piloted to ensure reliability and validity of data collected.

Reliability is a matter of whether a particular technique, applied repeatedly to the same object would yield the same result each time. A research instrument is considered reliable if similar results of the study can be reproduced using the same techniques at a different time or using a different sample, regardless of who uses it provided that basic conditions remain constant. It is more critical in a quantitative research whereas in qualitative research reliability is a result of validity (Golafshani, 2003; Payne & Payne, 2004). Qualitative reliability indicates a consistent approach in data collection (Creswell, 2014). Structured FGDs and face-to-face interviews were used. The same tools were used in data collection in

the four universities samples. Reliability is an indication of consistency between two measures of the same thing. If an instrument is unreliable, it cannot be valid. The use of mixed methods enhanced reliability of data collected and analysed as a result of the multiple indicators involved. The use of comparison of two or more measurement processes greatly reduces uncertainty in interpreting data (Gray, 2009). Reliability was enhanced through careful construction and piloting of questions as advised by David and Sutton (2011).

3.9 Ethical Considerations in Data Collection

A national research permit was required for data collection. Application for the research permit was made to the National Commission for Science, Technology and Innovation (NACOSTI). Relevant approval for data collection was also sought from the relevant institutions visited while copies of NACOSTI authorization were submitted to the respective counties and institutions for noting. Respondents were assured that confidentiality would be observed and that responses given would not be utilized for reasons other than the intended academic research. This thesis was checked for plagiarism at the Centre for Excellence Moi University using Turnitin software and was certified with an 8% similarity index (Appendix G).

3.10 Data Collection Procedure

Data collection methods refer to the actual procedures in data collection (David & Sutton, 2011). To gain a comprehensive understanding of the research objectives, data was collected from undergraduate students, lecturers and librarians. Data was collected from undergraduate students as the main respondents using two sets of tools namely self-

completion survey questionnaires and FGDs while face-to-face interviews were conducted with librarians involved directly with e-books and with lecturers drawn from diverse programs.

3.10.1 Self-completion Survey Questionnaires

Self-completion survey questionnaires were administered by third year students identified by the researcher to be contact persons. These respondents were identified on availability and willingness to assist in dispersing the questionnaires to target respondents drawn from diverse schools, faculties and departments. These targeted a maximum of 300 undergraduate respondents identified through quota sampling.

Respondents at Egerton University were drawn from programs such as agriculture, Arts and social sciences, Biochemistry, Computer Science, Economics, Education, and Statistics. Respondents from Jomo Kenyatta University of Science and Technology were drawn from different areas of Agriculture, Engineering and Technology including Agribusiness, Food Science, Applied Bio Engineering, Industrial Biotechnology, Development Studies, Biostatistics, Computer Science, information Technology, Applied Science, Project Management, Mechanical Engineering, and Civil Engineering. Respondents from Moi University were drawn from Education and Arts including Economics, and Kiswahili. Respondents from University of Nairobi were drawn from Humanities and Social Science including Anthropology, Economics and statistics, Physics, Project Planning and Project Management, Quantity Survey, Physics, and Medicine and Surgery. Care was taken to ensure that a cross section of faculties and schools were taken into consideration in the survey investigations. This was done by identifying contact persons from different schools

and faculties within each university main campus so as to ensure data validity. There were 75 respondents surveyed from each of the four universities. The use of contact persons ensured that high response rates were experienced.

3.10.2 Focus Group Discussions

FGDs were used in gathering data that aided in understanding reasons for utilization of e-books from the perspective of their attitudes, beliefs, concerns, behaviours, and preferences. FGD participants were from among undergraduate third year students. These were drawn from different programs. To ensure consistency with the survey respondents, contact persons were asked to bring three or four survey questionnaire respondents for a FGD in a designated place. These were organized in a relaxed atmosphere so that participants were free to talk openly and give honest opinions. Each group was moderated by the researcher who led the discussions through properly structured open-ended questions which allowed detailed discussion and discovery of responses sought after. The moderator, as advised by Crano et al (2015), was careful to show sensitivity to the views of all the participants and ensured that all opinions were heard. FGDs were formed of 10 to 12 third year undergraduate students from the selected universities. Collins (2015) advised that FGD should have six to twelve participants.

Students in the FGDs were also part of the larger group of respondents for the survey questionnaires as advised by Creswell (2014). According to Creswell (2014), it is preferable in mixed methods research to include the sample in the qualitative in the quantitative sample because it is the ultimate comparison in data gathered that is important and therefore the more similar the databases the better the comparison. The intention of the

design was mainly to provide credence to findings obtained through self-completion questionnaires by merging the results with findings obtained using qualitative means. The advantages of this approach led to well validated and substantiated findings.

To identify the specific issues that determined the use or non-use of library e-books, a detailed introduction on the research objectives was made to each group. Respondents were guided in the introduction to respond on issues in the research questions namely: awareness of e-books; user education programs undertaken; use of e-books; reasons for use of e-books; expectation on e-books and perception of undergraduate students on e-books provided by the respective libraries. Discussions were audio taped and later transcribed. This was to ensure that the process of analysis did not leave out any relevant point raised. The discussions took 45 to 60 minutes.

3.10.3 Face-to-Face Interviews with Lecturers

In seeking to understand the utilization of e-books by undergraduate students, lecturers were expected to provide insightful information. Interviews included questions such as where they advised their undergraduate students to access information resources; whether they provided library e-book references to their undergraduate students; their assessment of undergraduate students in using e-books; whether they considered the library e-books to be accessible, relevant, convenient and easy to use by undergraduate students; and what recommendations they proposed to enhance their use. Responses were carefully noted in the interview guide and later organized thematically.

3.10.4 Face-to-Face Interviews with Librarians

Data was collected from librarians in library Circulation Services and library E-Resource Centres via face-to-face interviews. These librarians were considered by this researcher to be intervening variables on which the use of e-books heavily depended. These were interviewed with the intent of drawing out facts on e-books access and use by undergraduate students; perceptions on the undergraduate students' e-book use abilities; and make recommendations that were valid, realistic and that if effected would serve in meeting the information needs of undergraduate students users with regards to e-books.

Questions that were presented to librarians required factual data such as user education programs offered to undergraduate students, known challenges encountered by undergraduate students in accessing e-books and so on. Questions were open ended in order to provide in-depth responses as well as provide opportunity to raise any concerns and realities encountered by undergraduate students in accessing and using e-books.

The collection of both qualitative and quantitative data was done concurrently. However, initial investigation leading to the designing of questionnaires and interview schedules was done sequentially. Qualitative data in form of FGDs were done first in order to determine questions that would be relevant in the survey questionnaire as advised by Creswell (2014).

The combination of four data collection tools in the survey of many service users and the face-to-face interviews from a smaller number of service users and providers were meant to enhance accuracy. In this study, service users were the undergraduate students who were investigated through self-completion survey questionnaires and FGDs while service

providers were the lecturers and librarians whose opinions were sought through face-to-face interviews. Librarians are directly involved in delivery of information services while lecturers are indirectly involved through the curriculum and through the provision of recommended reading lists. This research was guided by the view that beyond the need for getting actual numbers of those using the e-books (quantitative), there was need to understand what actually drove the numbers, the issues underlying the interpersonal dynamics involved and the conditions that have to be met in order to increase utilization (qualitative).

Quantitative and qualitative data was collected concurrently and the actual sequence did not matter as it did not make a difference to the quality of data collected in the respective universities. Quantitative questions were predetermined based on literature review and were later refined based on the findings of the piloting done.

3.11 Data Analysis and Interpretation

The weight between the two approaches was equal. Data was presented sequentially while analysis, interpretations and discussions were merged in the overall results. The data sets collected from survey questionnaires, FGDs and face-to-face interviews with both lecturers and librarians were carefully analysed. Quantitative data formed the first part of the analysis on which other findings were integrated. Qualitative data collected was then analysed sequentially in three data sets beginning with FGD findings followed by findings from interviews with lecturers and ultimately findings from interviews with the librarians. These were presented in the pattern used in the analysis in an attempt to show all findings in regard to each research objective and question. Data was merged and synchronized in the

interpretation stage in order to provide meaningful explanations to the findings. This included comparison of data in all the four data sets to determine convergence, divergence, and mixed responses.

Data obtained was analysed separately in the four approaches used in data collection and then converged using a side-by-side approach in the findings. The mixing of data in this approach was in the interpretation and discussion of findings. This was done by merging and comparing the four data sets in relevant stages in order to provide a comprehensive analysis of the research problem. This involved analysing the quantitative data first and then comparing it to the qualitative results to get a holistic interpretation of the research findings. Qualitative results brought out discoveries and insights as were raised by the respondents thereby providing depth in the findings of the research undertaken.

Survey questionnaires were analysed using the Statistical Package for Social Sciences (SPSS) Version 21. FGD recordings with undergraduate students and responses from lecturers and librarians were followed through by transcribing responses given by emerging themes after every FGD and face-to-face interview. Findings from groups or respondents from the four universities sampled were ultimately synthesized per category in order to give a comprehensive understanding of the perspectives of each group of respondents.

Responses from lecturers gave the research a broad perspective as well as recommendations on realistic approaches to providing relevant e-books to undergraduate students and also exposed limitations of the library e-book collections. Data sought from librarians was largely factual information. The analysis and discussions combined the two forms of data in order to provide meaningful interpretation of the findings.

3.12 Chapter Summary

This chapter explains the various data collection methods that were used in order to realize the aim and objectives of the research. The use of multiple approaches in data collection has been discussed. Justification for the use of mixed research methods has been provided as arising from a pragmatic framework which accords high value to getting solutions and results that would be actionable than getting results that cannot be acted on. The use of both qualitative and quantitative approaches in data collection and analysis revealed certain truths that would have remained hidden if only one approach had been adopted. This approach had the advantage of enhancing the validity and reliability of data. Data collected can, therefore, be trusted as a true presentation of the utilization of e-books by undergraduate students in public universities in Kenya. Findings of the research were relevant in answering the research questions and in providing insights into existing gaps.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.1 Introduction

This study investigated utilization of Library Electronic Books by undergraduate students in Public Universities in Kenya. The purpose was to create an understanding of the factors that determined the use of e-books by undergraduate students in public universities in Kenya. This would then offer guidance on factors and actions that required to be made in order to enhance use of e-books by undergraduate students. The findings generated several proposals to the various stakeholders such as university management and university librarians on the management of e-books for use by undergraduate students. The research was inspired by the need by public university libraries in Kenya to enhance provision of e-books. E-books have continued to gain popularity on the basis of numerous advantages that they offer including affordability by respective universities. To fulfill the aim of the study, both qualitative and quantitative data was collected. Quantitative data was collected from undergraduate students through the use of self-completion questionnaires. Qualitative data was collected from undergraduate students through FGDs, while data from lecturers and librarians was collected through face-to-face interviews.

Using the above methodologies and as explained in detail in Chapter 3, data was collected based on the objectives and research questions of the study. Each objective had one research question. Objective one was to examine the level of awareness of e-book resources by undergraduate students in public universities in Kenya, which was investigated through the research question: *to what extent are undergraduate students in public universities in Kenya aware of e-books?* Objective two was to analyze programs that facilitate awareness

of e-book resources to undergraduate students, which was investigated through the research question: *how are undergraduate students informed about the availability of e-books?* Objective three was to establish the factors that affect the use and non-use of e-book resources by undergraduate students, which was investigated through the research question: *what factors influence the use of e-books by undergraduate students?* Objective four was to establish the perception of undergraduate students on e-books in comparison to other resources which was investigated through the research question: *how do undergraduate students view e-books compared to other resources?;* objective five was to ascertain the extent to which e-books met the expectations of undergraduate students, investigated through the research question: *to what extent do e-books meet the expectations of undergraduate students?;* and objective six was to propose a framework and recommendations of improving access and use of e-books by undergraduate students, provided through the research question: *what should be done to enhance the utilization of e-books by undergraduate students?* The objectives, research questions, the self-completion survey questionnaires, FGDs and face-to-face interviews were drawn from literature review and the personal experiences of the researcher. These were designed by the researcher with the ultimate aim of drawing responses that would ensure that proposals for enhanced utilization of e-books by undergraduate students and added knowledge to existing literature gaps in this regard are realistic and implementable.

4.2 Data Analysis and Presentation

To gain a holistic understanding of undergraduate students' access and use of e-books in public universities, data analysis and presentation of survey questionnaires, FGDs and face-to-face interviews were done sequentially. The survey questionnaires were analyzed using

SPSS while the responses for open-ended questions, FGDs, lecturers and librarians' interviews were grouped in respective objective clusters and analyzed thematically. These were first analyzed university to university and then synthesized in respective groups of respondents to ensure ease in presentation and clarity of data. Findings were presented descriptively, and through the use of tables and a figure as per the research questions.

4.3 Response Rate

Data was collected from four public universities in Kenya namely: Egerton University, Jomo Kenyatta University of Science and Technology, Moi University and University of Nairobi. Data was envisaged to be collected from 300 undergraduate students sampled for the survey questionnaire, four FGDs, 20 lecturer and 12 librarian interviews. Out of 300 survey questionnaires, 230 were returned however, 213 were considered appropriate for analysis as 17 were spoilt. This constituted 71% of response rate. Questionnaires received back for analysis from undergraduate students in the self-completion survey, number of FGDs and face-to-face interviews are indicated in Table 2.

Table 2: Respondents from Each University

University/ Parameter	Undergraduate students		Focus groups		Lecturers		Librarians	
	N	%	N	%	N	%	N	%
Egerton	53	24.9	1	25	5	25	3	25
Jomo Kenyatta	60	28.2	1	25	5	25	3	25
Moi	48	22.5	1	25	5	25	3	25
UoN	52	24.4	1	25	5	25	3	25
Total	213	100	4	100	20	100	12	100

Highest responses were received from Jomo Kenyatta University of Science and Technology which had 28.2% compared to Moi University which had 22.5 % of the total respondents for the survey. FGDs and face-to-face interviews with both lecturers and librarians were 100%. The researcher ensured that the required number of respondents in each category from every university was achieved. The use of convenience in interviews was favorable to the study.

4.3.1 Characteristics of Respondents by Gender

The numbers of each gender of respondents was as shown in Table 3. Despite the effort made by the researcher to obtain a balanced number of respondents especially for the undergraduate students, it was observed that females were fewer in all the universities visited. However, both genders were represented in all categories. The male students were 63.4% as compared to 36.6% females. Data collected did not reveal any peculiar trait for either gender nor for the age groups. A similar observation was made with lecturers and librarians where gender and age did not show discernible differences.

Table 3: Gender for Different Categories of Respondents

Gender	Undergraduate students		Lecturers		Librarians	
	N	%	N	%	N	%
Male	135	63.4	14	70	5	41.7
Female	78	36.6	6	30	7	58.3
Total	213	100	20	100	12	100

4.3.2 Characteristics of Respondents by Age

The undergraduate students' survey respondents were grouped in five age groups as shown in Table 4.

Table 4: Characteristics of Respondents by Age

Age Bracket	Nos.	Percent %
20-24	196	92.0
25-29	13	6.1
30-34	1	.5
35-39	3	1.4
Total	213	100.0

Majority of undergraduate students surveyed were aged 20 to 24 years and comprised of 92%. These were followed by undergraduate students aged 25 to 29 who were 6% of the total survey undergraduate student respondents.

4.4 Awareness of Available E-books in the Library

To answer the question on *to what extent are undergraduate students in public universities in Kenya aware of e-books?* in examining the level of e-books awareness by undergraduate students in public universities in Kenya, the survey questionnaire had three questions. These questions were intended to find out whether individual undergraduate students sampled were aware about library e-books and to what extent the level of awareness was.

4.4.1 Awareness of E-books

The survey revealed that of the 71% (213) valid questionnaires, 95.8% (204/213) of the undergraduate students were aware about e-books. However, FGDs conflicted with these findings as it was observed that most undergraduate students were not clear on the definition of e-books.

The 4.2% (9) undergraduate students not aware about e-books gave varied reasons for their lack of awareness. Some were of the opinion that these were not available in their

respective institutional libraries; others said that they had never come across them; while others reported that these had not been introduced to them.

Table 5: Level of Awareness

Measure	Frequency	Percent	Cumulative Nos.	Cumulative Percent
Very High	26	12.2	26	12.2
Quite High	59	27.7	85	39.9
Medium	101	47.4	186	87.3
Quite Low	13	6.1	199	93.4
Very Low	14	6.6	213	100.0
Total	213	100.0		

A combined 87.3% reported ‘medium’ to ‘very high’ levels of awareness. This is shown in Table 5. The combined levels of ‘medium’, ‘quite high’ and ‘very high’ were reflective of having awareness while those measuring ‘quite low’ and ‘very low’ were considered to be lacking awareness.

FGDs were meant to establish that responses given in the questionnaire were a true representation of the behavior of undergraduate students with regards to e-books. This was important in setting the proper perspective in the data collection and in the general understanding about awareness of e-books by the undergraduate students. This tool had three questions to answer the research question on the extent to which undergraduate students were aware about e-books. Undergraduate students were asked if they understood what e-books were, how they came across e-books for the first time and if they were aware that e-books were provided by their respective university libraries.

FGDs established that very few undergraduate students could define an e-book. Their attempts at defining an e-book came up with definitions such as a blog, twitter and anything that can be read online. Some believed that the OPAC was an e-book. A sizeable proportion of undergraduate students in FGDs reported that it was their first time to hear of the term “e-books”. This research question could only be appropriately answered by undergraduate students themselves hence no data was collected from lecturers and librarians in this regard.

4.4.2 Frequency of Use of E-books

Undergraduate students were asked how frequently they used e-books in the survey with a view to identifying their source of awareness and motivation for use. Responses were expected to give a better understanding of their general feeling of “at ease” with e-books.

The findings of the frequency of use are shown in Table 6:

Table 6: Frequency of use of E-books

Measure	Nos.	%	Cumulative Nos.	Cumulative %
Daily	45	21.1	45	21.1
Once a week	78	36.6	123	57.7
Once a month	34	16.0	157	73.7
Once a semester	33	15.5	190	89.2
Never	23	10.8	213	100.0
Total	213	100.0		

A combined 57.7% (123) reported to e-books ‘daily’ and at least ‘once a week’. Out of the 213 undergraduate respondents, 33 respondents who used e-books once a semester and the 23 who never used them were not expected to respond to the question on what motivated them to use of e-books. Their rare use of e-books was interpreted by this

researcher as indicative of lack of motivation. This question was only directed to undergraduate students through the survey questionnaire.

4.5 E-books Awareness Creation Programs in Place

In order to meet the second objective of the research on analyzing programs that facilitate awareness of e-book resources by undergraduate students, a research question on *how are the undergraduate students informed about the availability of e-books?* was advanced. To answer the research question, undergraduate students were asked how they got to know about library e-books through the self-completion survey questionnaires and FGDs. In the self-completion survey questionnaires, the question had six possibilities through which undergraduate students may have learnt about e-books. Multiple responses could be made. Channels not listed were to be added. In FGDs, undergraduate students were asked two questions on when and where they first came across e-books. Librarians were asked two questions on what programs were in place to create awareness of library e-books among undergraduate students and the impact these programs have had on the students. Lecturers were not interviewed on this objective as they were not considered responsible for creating awareness for library subscribed e-books. Their responsibility was passive and limited to providing e-book references to undergraduate students. The conceptual framework pegged the responsibility of awareness creation on librarians as the intervening variable. However, lecturers were asked where they referred their undergraduate students for information resources. Responses to this question are presented in section 4.6.2.

Undergraduate student responses from the survey showed that they became aware of e-books through diverse channels including library orientation, peers, lecturers, information

literacy programs, brochures, and email services. These have been presented in descending order from the channel having the highest number of responses to the one having the least in Table 7.

Table 7: Channels Leading to Awareness of E-books

Channels of Awareness	Nos.	Percentage
Formal Library Orientation	129	60.6
Peers	116	54.5
Lecturers	102	47.9
Information Literacy Programs	47	22.1
Email services	49	23
Brochures	32	15

Undergraduate students had an option for listing other channels through which they became aware of e-books. The other channels identified through an open-ended question in the self-completion survey questionnaires and in FGDs included social media such as WhatsApp and Telegram, and through the university library's online catalogue, university web pages, self-discovery, own experience and the Internet. Channels specifically identified through FGDs as leading to awareness of e-books in general included friends, online advertisements, links from lecturers and visits to other libraries.

To answer the research question on how undergraduate students became aware of library e-books, there were two questions directed to librarians. One question was on the programs of awareness creation that were in place while the other was on the effectiveness of these programs. Librarians were considered by this researcher to bear responsibility for enhancing awareness. The programs undertaken in awareness creation were orientation for

first years; school awareness programs; continuous guidance and training; and information literacy.

4.5.1 Orientation for First Years

These are spread over two days and students were divided into manageable groups by the librarians. Both the undergraduate students and the librarians identified this as a way of increasing the undergraduate awareness of e-books. The FGDs drew the similar responses to those given in self-completion survey questionnaires on how they became aware of e-books. In all universities visited, undergraduate students reported that the only training they had undergone was during the first year orientation. The positive and excited engagement of undergraduate students when being given orientation, as observed by librarians, was indicative of eagerness and readiness to use e-books.

4.5.2 School/ Faculty Awareness Programs

These programs were more detailed than orientation and involved the use of power point and more elaborate demonstrations. In all the responding universities, the librarians were sometimes invited to create awareness as well as understanding of library e-resources by individual faculties and schools. They also held awareness sessions in different schools and faculties through their own initiative.

4.5.3 Continuous Guidance and Training

In all the universities sampled there were librarians assigned to offer training on e-resources and provide reference services. These librarians offered guidance to students on a continuous basis. They were expected to be within reach by all undergraduate students. Librarians encouraged undergraduate students to be organized in groups for enhanced ease

in demonstrating the processes of access and use e-resources. However, in some cases, demonstrations to individual enquiries on how to access, search and use e-books were also offered. This service was available in all universities. In one university there was an online documentary on the library web page. This particular university also had knowledge ambassadors who were drawn from the student community. These students were expected to create awareness of e-resources in general among their peers.

This made it possible for students to access information easily. The librarians were convinced that these were sufficiently effective as enquiries made at the circulation desk markedly reduced when these trainings were done. One librarian was of the view that undergraduate students would not hesitate to ask for any assistance required and hence their absence at the inquiry table was a positive indicator that they were having no difficulties in access and use of information resources at their disposal.

4.5.4 Information Literacy Programs (ILP)

IL curriculum was embedded in one school in one university. IL instruction in this school is examinable. There was a draft IL curriculum in readiness to be launched university wide in this particular university. The teaching of IL skills and awareness creation was reported to have resulted to increased use of e-resources by undergraduate students. To increase the use of e-resources, it was reported that plans were in progress to ensure that IL was integrated into all programs in the university as a mandatory examinable course. In another university teaching of information literacy skills was availed through e-learning which all interested users could access. Librarians were of the view that the awareness for the e-books is sufficiently there, despite low use in all universities visited.

4.6 Factors Affecting the Use of E-books

In establishing the factors that affected the use of e-books by undergraduate students, answers were sought from all respondents. Undergraduate students, lecturers and librarians were all expected to give their experiences and perspectives in this regard. This objective was answered through the research question *what factors influence use of e-books by undergraduate students?* This had four measures which included the: level of skillfulness in access to e-books; driving factors to the use of e-books; characteristics of e-books subscribed by the university library and characteristics of other sites and channels that gave them preference over the subscribed e-books.

4.6.1 Level of Knowledge in Access to E-books

To give a seamless link between awareness and use, this researcher found it necessary to have a question on the level of skillfulness in accessing e-books in the survey questionnaire. This was also intended to tell whether the undergraduate student levels of skillfulness had anything to do with access and use of e-books. It was the assumption of this researcher that competence in the use of ICTs had a direct impact on their ability and motivation to use e-books. It was the researcher's premise that the lower the level of skillfulness in the use of computers and other ICT gadgets in accessing the internet, the more the likelihood of not using e-books. Higher levels of skillfulness in the use of ICT gadgets were expected to translate to higher levels of e-books access and use. Similar questions were posed to the lecturers and librarians to get their perspectives on undergraduate students' level of competence in the use of e-books. A combined 84.5% of undergraduates considered themselves to have medium to very high skills in accessing e-books as shown in Table 8.

Table 8: Level of Knowledge and Skills in Access to E-books

Knowledge	Nos.	Percent	Cumulative Nos.	Cumulative %
Very High	17	8.0	17	8.0
Quite High	56	26.3	73	34.3
Medium	107	50.2	180	84.5
Quite Low	17	8.0	197	92.5
Very Low	16	7.5	213	100.0
Total	213	100.0		

Librarians considered undergraduate students to be skillful in the use of ICT gadgets and therefore in access to e-books as demonstrated through the questions they asked on internet connectivity and in the interest they showed in getting connected online once registered. They showed eagerness when access to e-resources was demonstrated to them as opposed to print. However, one librarian observed that continuing undergraduate students seemed to *lack motivation to use e-books*. There was lack of sufficient pressure to give reason to undergraduate students to use e-books as anticipated by the library.

Lecturers were equally of the opinion that undergraduate students were sufficiently skilled in the use of ICT gadgets and would therefore have no problem in accessing e-books. Some lecturers observed that undergraduate students were very competent in the use of electronic devices. It was observed by others that undergraduate students were not skilled in evaluating the different information resources as well as information itself. Two lecturers in different universities and one librarian observed that it is possible that undergraduate students were not as competent in the use of ICT as believed to be. They suggested that training on ICT needs to be enhanced for all students to enhance their capacity to use e-books. This perception is derived from the consistent requests that undergraduate students

made to their lecturers to have relevant e-books and articles downloaded for them even where references were direct. In this case, ability to access could be a challenge despite existing ICT and Internet infrastructure. Training for both students and lecturers on basic e-book evaluation parameters were also said to be lacking and were recommended in section 4.9.2.

4.6.2 Driving Factors to the Use of E-books by Undergraduate Students

It was in the interest of the research to isolate the individual factors that drove undergraduate students to using e-books. This would to enable sufficient interrogation on how much impact each had. It was found necessary to examine the impact that these factors had in directing, supporting, encouraging, and instructing the undergraduate students on the use of e-books in an attempt at identifying the most appropriate points of intervention through which use of e-books could be enhanced. In the survey questionnaire undergraduate students were asked to indicate on a Likert Scale what led them to using library e-books from four indicators namely: information literacy classes, self-motivation, peers and lecturers. These were derived from the researcher's experience. Lecturers had the highest level of influence with 31% reporting very high influence. However, self-motivation had higher 63% combined respondents reporting moderate to very high influence followed by lecturers at 55.4%, Information Literacy Programs had 53.9% and peers 48.8% respectively. There was also an option to include other responses not listed among the four identified. The impact of the influencing factors on undergraduate students is shown through Figure 5.

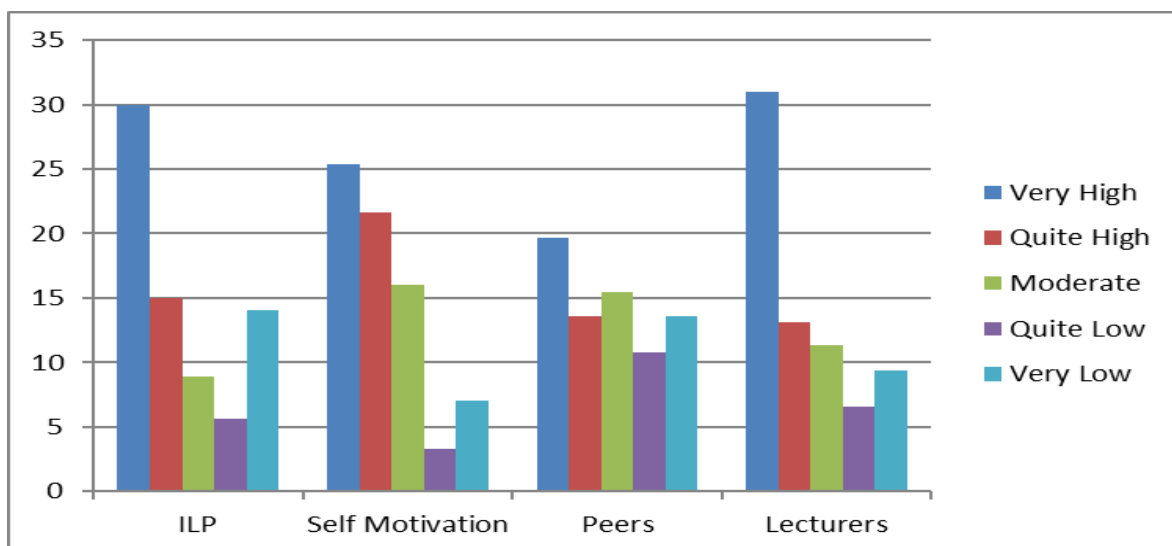


Figure 5: Impact of Influencing Factors

An additional reason given through FGDs was the fear of losing print books borrowed from the library. In trying to remain compliant, avoiding being penalized for late return or for losing books, some undergraduate students were found to opt for the use of e-books. The desire to do well in their assignments compelled them to access several e-resources for comparison. However, some in the FGDs felt that e-books were not reliable.

Lecturers on the other hand were asked *where do you normally advise undergraduate students to access the references you give in your reading lists?* Several responses were given. Some lecturers referred students to e-books from specific sites which they considered to be most relevant, while others referred their students to their respective university web sites, while some provided references to specific blogs and online journals, others provided links to core e-texts, while yet others were only concerned in receiving well researched papers and for them it did not matter which resources were used but were open to references from any resource cited by the students. These lecturers felt that there was no

need of giving the undergraduate students references as they would not necessarily have to use them. Students had the liberty to use any resources in completing their assignments. Some lecturers from one university were of the opinion that information from their university website was more filtered hence better.

There was a mix of responses while some lecturers referred their students to the library, others did not show any interest in the library resources despite admitting that they are aware of them. One lecturer's response was that some of the e-books required were available in the library. This lecturer referred her students to specific articles or book chapters from their university website. Those that did not refer their students to the library were convinced that the library did not have the relevant texts. A specific lecturer felt that e-books in the library were inadequate for languages, linguistics and literature especially on Africa. This lecturer could not refer his undergraduate students to the library because according to him, there was nothing of relevance to his students while those available online were quite expensive. His conviction was that his students were not aware of any e-books.

Some lecturers identified the relevant e-resources in form of articles or e-text chapters from the internet or friends abroad which was passed to undergraduate students as email attachments. Some lecturers admitted to getting very good links from their undergraduate students which they shared with other students. Most lecturers did not limit their students to only the material they provided but encouraged them to get more from other sources they could access. However, most lecturers as revealed by the interviews were not overly concerned with where the undergraduate students would get the material for the

assignments given. A few lecturers referred their students to e-books from different platforms and to specific links for the core texts.

4.6.3 E-book Qualities that Influence Use by Undergraduate Students

In an attempt to find out what made the use of e-books conducive to undergraduate students, this research question was made through 11 survey questions and four in FGDs. Lecturers and library staffs were not interviewed on this research question. The research question was twofold as the intention was to find out the factors that influenced use as well as reveal reasons for non-use. Eleven factors derived from literature review were identified for weighting by undergraduate students in the survey questionnaire through a Likert scale. Findings are presented in Table 9 by ranking from the quality identified as having the highest influence to the lowest on an ordinal scale cumulating measures of moderate to very high influence.

Table 9: Qualities that Influence Choice of E-books for Use

Measure	Value (%)
Convenience	69.4
Accessibility	67.6
Ease of Use	65.3
Relevance	64.7
Coverage	61.5
Format (eg PDF, doc)	59.7
Reliability and Credibility	59.6
Sufficiency	57.8
Accuracy	56.7
Inadequate print textbooks	52.1
Currency	49.2

Convenience was identified as having the highest impact in decision to use library e-books while currency had the least impact (49.2%). Accessibility, ease of use, relevance and coverage all had over 60% identifying them as most important qualities in determining whether to use the e-books or not. Format, reliability and credibility, sufficiency, accuracy and inadequacy of print books were not rated highly. In FGDs it was found that convenience was rated highly in the use of e-books. Undergraduate students valued the portability aspect of e-books which they could access and read from their smart phones from any locality provided there was internet connectivity.

Lecturers were asked to give their views on the existing e-books on whether they were sufficient, relevant, convenient and easy for use by undergraduate students. This was intent on finding out whether their views had anything to do with the undergraduate students' tendencies towards use of e-books. This was to supplement data given by undergraduate students as influencing their decisions to use e-books.

Findings were diverse as some lecturers reported to never using the resources while others had used them and found them relevant, good and appropriate for undergraduate students. Some lecturers using the resources were of the opinion that these were more helpful to themselves as lecturers while a few affirmed that the resources were also useful to undergraduate students. Some lecturers had identified certain e-books for reference to their undergraduate students. One lecturer observed that good, current e-resources are not available among the library e-resources and open access. He observed that most of the resources in his field of study required to be purchased from commercial sites. However, most lecturers preferred to send relevant articles to their students to ensure that the students

had what was required by their programs. Lecturers sometimes provided links to other online resources and e-textbooks even when well aware about library subscribed e-books. This was reported to arise from the fact that not all books in subscribed databases could be accessed full text as was desirable while others were not part of paid resources for use. Some lecturers held the view that the e-books were relevant but did not refer their students to them. One lecturer reported that even after referring students to the library resources it seemed that students were not keen on using them but preferred to access from other open access sites as these were perceived easier to access. Some of the titles recommended in undergraduate students reading lists were not available in the library e-resources. One lecturer observed that he was unsure about the relevance of the e-books provided, as many other lecturers also observed, that undergraduate students were not keen on reading either print or electronic formats. Undergraduate students seemed to lack motivation for reading. Where there was relevance, inconvenience in terms of access was reported. One lecturer was of the view that the use of e-books is yet to be fully embraced by undergraduate students and that these are yet to be sufficiently ingrained in their psyche. The lecturer was of the view that it was possible that undergraduate students had not well understood the use of e-books unlike print as they were not commonplace. They considered awareness creation to be a priority before dealing with issues of whether these were relevant, convenient, sufficient, or easy to use. This explained the low use of e-books.

4.6.4 Access to Other E-book Sites by Undergraduate Students

An open-ended question on alternative sites used by undergraduate students for e-books and another one on the frequency of use of these sites were made. These questions were made in an effort to identify qualities that drew the attention of undergraduate students to

these alternative sites and resources. The frequency of use of resources from these sites was also of interest to this researcher in relation to the use of library e-books. The researcher was of the opinion that these would be some of the reasons that influenced the use or non-use of library e-books.

Open access sites used by undergraduate students as reported in the survey questionnaire were: Academic.edu, Book boon, Book finder, Freebooks.com, Google, Google Books, Google maps, Google scholar, I books, Internet archive, Lib gen, Lit chat, Math world, Open edition, Open library, Pdfdrive.net., Torrent, Tutorials point, Wiley library, World reader. One question was made for the FGDs in which it was asked “what alternatives do you use?” FGDs responded that they acquired additional information from other institutional websites; colleagues from other universities; and through the Internet.

This researcher considered undergraduate students use of other sites as relevant in this study as this would inform on appropriate future handling and management of e-books and to address the statement of the problem that highlighted existing gaps that led to low documented use of library procured e-books. It was important to the research to find out how frequent e-books from these alternative sites were being used in comparison to those from the library. A combined number of 69.5% used other sites ‘daily’ and ‘at least once a week’ compared to 57.7% who used library e-books ‘daily’ and at least ‘once a week’ as shown in Table 10.

Table 10: Comparative Use of E-books from the Library and Other Sites

Frequency	Library %	Cumulative %	Other Sites %	Cumulative %
Daily	21.1	21.1	24.4	24.4
Once a week	36.6	57.7	45.1	69.5
Once a month	16.0	73.7	14.1	83.6
Once a semester	15.5	89.2	8.8	92.4
Never	10.8	100.0	7.6	100.0
Total	100.0		100.0	

Table 10 shows that whereas there were more undergraduate students that never used library e-books or used them once a semester compared to those that used other sites, there were slightly more who used other sites more frequently (once a week and daily) than those that used library e-books.

Included in the survey questionnaire were 11 possible reasons why e-books from these other sites were preferable over library e-books under the research question: *what factors influence undergraduate use of e-books?* Respondents were to indicate on a Likert scale the level each indicator had in influencing use of e-books from the alternative sites. Findings were as shown in Table 11 from the most influential characteristic to the least combining *very high* and *quite high* influences.

Table 11: Factors Influencing Use of E-books from Other Sites

Aspect	No. of Respondents	%
Convenience	157	73.7
Ease of Use	157	73.7
Accessibility	150	70.4
Relevance	141	66.2
Reliability and Credibility	136	63.9
Format	133	62.4
Accuracy	130	61
Sufficiency	127	59.7
Coverage	122	57.3
Currency	113	53
Inadequate print text books	104	48.8

Measures that were considered were the combined percentages of *very high* and *quite high* parameters of each attribute. Access to e-books from other sites was perceived to be more convenient, easy to use and accessible compared to e-books from the library.

A similar question was posed in FGDs in which respondents argued that they acquired additional information from other institutional websites as well as colleagues from other universities. They asserted that they always got a lot through the internet but also acknowledged that the authenticity of the information from these sites could not be trusted. A most interesting finding was that *inadequacy of print text books* did not influence their drive to access to e-books from these sites.

4.7 Perception on E-books by Undergraduate Students

In investigating the perception of undergraduate students on e-books in comparison to print textbooks, the research question *how do undergraduate students view e-books compared to*

other resources?, was posed through a total of twelve questions to undergraduate students in the survey questionnaire; two in FGDs; one question for lecturers and one question for the librarians.

The first sets of questions for undergraduate students in the survey questionnaire were to evaluate e-books by comparing them with print books using nine variables. Respondents were expected to indicate their level of preference for e-books over print on a five point Likert scale. The variables considered for evaluation were derived from literature review. The survey questionnaire additionally had a question on the frequency of use of print books use and another one on preferred format from three options. The options on preferred format were use of e-books, use of print books and use of both electronic and print books. An open-ended question inviting undergraduate student respondents to give reasons for their preferences was also made. The findings were as shown in Table 12.

Table 12: Preference of E-books over Print Books

E-book Measure	No of Respondents	%
Convenience	138	64.1
Ease of Use	131	61.5
Accessibility	128	60.1
Relevance	119	55.9
Reliability and Credibility	115	54
Accuracy	114	53.5
Currency	108	50.7
Sufficiency	104	48.8
Coverage	98	46.1

In seven indicators, e-books were marginally preferred over print. From the findings, it was observed that undergraduate students considered sufficiency and coverage of print books preferable over e-books.

4.7.1 Frequency of Print Books Usage

It was in the interest of the study to find out how frequently print books were used in order to establish any similar patterns with the use of e-books. A question was raised in the undergraduate students' survey questionnaire for respondents to indicate how frequently they used print books from an option of five responses. Findings made are as indicated in Table 13.

Table 13: Comparative Use of E-books and Print Books

Frequency	Use of E-books			Use of Print		
	Nos.	%	Cumulative %	Nos.	%	Cumulative %
Daily	45	21.1	21.1	40	18.8	18.8
Once a Week	78	36.6	57.7	82	38.5	57.3
Once a Month	34	16	73.7	45	21.1	78.4
Once a Semester	33	15.5	89.2	30	14.1	92.5
Never	23	10.8	100	16	7.5	100
Total	213	100		213	100	

There were 57.7% of undergraduate students using e-books as compared to 57.3% who used print books at least once a week or daily. It was observed that while there was a 21.1% who used e-books daily compared to 18.8% who used print books daily, there were a higher percentage of those who never used e-books (10.8%) compared to those who never used print books (7.5%). Findings based on their level of use from both the survey and FGDs did not out rightly show preference for either format.

4.7.2 Preferences for Different Formats

Questions on preferred format were directed to undergraduate students in both the survey questionnaire and in the FGDs. Through an open ended question in the survey questionnaire, undergraduate students were asked to give reasons for their preferred format. This was intended to provide an insight into the driving factors for e-books use or non-use. There were more undergraduate students that preferred both electronic and print formats at 46%. E-books only were preferred by 34.7% compared to 19.2% who preferred only print texts.

4.7.2.1 Preference for Electronic Formats

It was observed that the 34.7% undergraduate students from the survey preferred the use of e-books because of their unique qualities. These included the fact that these could be accessed from anywhere through assorted gadgets including mobile phones; were easily portable; time convenience as they were virtual and could be used anytime and from anywhere; recognized as *very easy to use; a good supplement where print was insufficient*; the need to visit the library was negated; wide coverage of subject matter and therefore good for research; able to get information fast; there was less use for paper; and was considered affordable.

Responses received from the FGDs indicated preference for e-books was driven by factors related to good ICT infrastructure and inconvenient access to print books. FGDs felt that e-books were cheap as all one required was wireless connectivity or an internet connection; these could be accessed from anywhere including the fact that they have mobile phones from which they were able to read conveniently; undergraduate students were not always

able to visit the library; *locating physical books from the library was quite difficult*; and had the perception that e-books were more reliable, easy to access, have direct information, saves time, and reduces the bulk of books to carry. FGDs further revealed that it was important to have global perspectives which are most effectively obtained via the internet. The undergraduate students' preference for e-books was however unexploited as they responded to the question by saying that they *preferred e-books but were forced by circumstances to use print as they used the references given by their lecturers*. Despite several shortcomings in the use of e-books, undergraduate students were largely seen to favor the use of e-books over print. Reasons that hindered effective use of e-books were distractions to other sites, poor network connectivity, could not be downloaded as preferred, were perceived to be full of viruses, and were also perceived by some to be more expensive.

It was observed by lecturers generally that the undergraduate students were technology savvy and that, therefore, e-books would be more appropriate for their use as it was also observed that these could be accessed from anywhere. However, one lecturer was of the view that it was possible that undergraduate students have not well understood e-books unlike print as they are not commonplace and this could explain why their use was still low.

4.7.2.2 Preference for both Electronic and Print Formats

Majority (46%) of undergraduate students preferred the use of both e-books and print books. Their responses in the open-ended survey questionnaire for reasons of preference for both formats were identified as *good for comparison and sufficiency; will not mind either of the two formats whichever is more easily accessible and available; they supplement each*

other in providing content; a good alternative where one fails; have sufficient information; comparison between the two leads to information that is reliable; enables good research; both are equally good; both are relevant and easy to use; print books are for deeper understanding while e-books are fast to access; both co-function and when one may be unavailable the other will be a back-up; for better understanding and for easy perception of what is covered in class; enhances ability to locate relevant information since where one format is not accessible, then one can result to using the other format. Some books may not be in electronic format while print may be bulky hence a balance of the two is considered better than either electronic or print alone. Some undergraduate students considered the internet a last resort when they failed to get the relevant books from other sources.

4.7.2.3 Preference for Print Format

Undergraduate students who preferred print books (19.2%) in comparison to e-books gave the following reasons in their responses: *does not require internet connection; perceived to have more information than e-books; ability to concentrate more without being distracted unlike when using e-books where the likelihood of diverting to other sites was high; convenient; easily accessible; free access to all the pages of the book; comfortable to the eyes; easy to read; can be highlighted on or notes added; internet connectivity is sometimes poor; perceived as enabling fast reading and as easier to remember from; enables better understanding; information needed is readily available so long as one gets the right book; retains information for as long as the book is available unlike electronic where e-books sometimes disappear; provides better storage; perceived to be less costly; they require no gadgets to access the information; easy to navigate and print text books especially for chemistry and physics are quite clear in that they relate to the notes from lecturers; they*

are less cumbersome to access; they were easy to access and use. However, they needed e-books as back up where they failed to get a print text book. Undergraduate students observed that lecturers gave them references to e-books along other print references.

It was observed that there was no mechanism by the lecturers to verify whether these had been used or demand for evidence of their use hence undergraduate students did not feel obliged to use e-books; print books were less cumbersome to access; not everyone had digital devices such as laptops; they are also more dependable when there is no electricity which is a regular occurrence in the universities; some felt that the use of the internet can be compromised by viruses which distort original information; information from the internet may not be practical especially with regards to practical subjects such as agriculture; for some disciplines such as require formulae, they preferred print as keying in the respective symbols on their keyboard was a challenge. The perception of some undergraduate students was that e-books in most cases gave unnecessary information.

4.7.3 Perception of Lecturers on E-Books for Undergraduate Students' Use

Lecturers were asked their perception about e-books for undergraduate students use. Findings showed mixed responses. It was observed that some preferred e-books because these could be used by from anywhere without having to physically go to the library. Another opined that e-resources were the only reliable information resources they could use as text books accessible from the library were outdated. Lecturers also felt that print books in the library took too long to reach the users and that e-books would be advantageous in countering these delays experienced in procurement. Most lecturers felt that e-books were to be preferred instead of filling the library with print which soon become outdated it was

better to go for electronic as these could be easily updated since knowledge was dynamic. Lecturers from some programs such as Economics preferred e-books in order to get the best as well as expose the undergraduate students to global knowledge. Lecturers were generally of the opinion that there was need to transition from print to e-books.

A lecturer was of the opinion that the layers of access to good e-books created limitations to access and use by undergraduate students. In her case, she had to seek assistance from librarians to give her access to certain e-resources and thereby acted as a mediator for access to e-books in her field of teaching. She therefore felt that access to e-books by undergraduate students was well facilitated. Some lecturers asked for access without university log in while others asked for direct access to resources with minimum filtering.

Another lecturer was of the view that e-books should only be availed to supplement the print collection but should never be the main resources. He was of the view that *nothing compares to a good book*. Another lecturer was of the view that it should never be a case of either or but rather it should be both e and print books complementing each other. He observed that the advantages of e-books include providing exposure to global information, as well as in countering delays experienced in procuring and delivering the print books to users.

Several lecturers were of the view that undergraduate students did not need to access any books from the library as they were sufficiently provided for by their lecture notes. A lecturer was of the view that neither e-books nor print were well read. It did not matter where she referred her students as the outcome was same. It was also an observation by lecturers that their promotion criteria did not pressure them on what they have taught. They

are gauged on their research hence they are not much focused on what they teach. They also observed that the university was mainly geared towards research and teaching was not weighted much. Lecturers promotion criteria are based on research as opposed to teaching hence they did not feel compelled to get reading materials for undergraduate students use.

Another observed that the teaching system is designed in such a way that they give undergraduate students all the material they need. Most lecturers did not refer their students to the library but rather gave them e-handouts or downloads which they felt were sufficient for undergraduate students learning needs. It was not until the final year that students were writing projects that they were expected to visit the library. The library seemed designed to help postgraduate students more than the undergraduate students. However, there was one respondent who observed that the relevance of the library still remained as books were quite expensive. However, another observed that e-books were not many and of those available few were considered relevant. Lecturers had the perception that information accessible through Google was more up-to date and therefore to be preferred over that accessible through the university website.

4.7.4 Perception of Librarians on Undergraduate Students' Use of E-Books

In finding out the perception of undergraduate students on e-books, Librarians were asked *what is your view on undergraduate students' perception of e-books?* In general librarians observed that undergraduate students preferred the use of e-resources. They created awareness for all e-resources and as librarians they preferred undergraduate student use of e-books because these could be used by multiple users at the same time. One librarian observed that undergraduate students relied much more on their notes and were not keen on

e-resources. It was also observed that e-resource centers on campus were never full as compared to library e-resource centers; this was a clear indication of undergraduate students' preference for use of library spaces for their studies.

4.8 Expectations of Undergraduate Students on E-books in the Library

To meet the objective on ascertaining the extent to which e-book resources met the expectations of undergraduate students, the question *to what extent do e-books meet the expectations of undergraduate students?*, was made to the undergraduate students in FGDs. The survey questionnaire had two open-ended questions. One was on the challenges encountered and expectations by undergraduate students in selecting the most appropriate title to use in their readings and academic assignments. The second one was on what they would *propose to improve access and use of e-books in the library*. These questions aimed at giving the undergraduate students freedom to highlight the difficulties and the expectations they had in attempting to use library e-books. The questions were open-ended to avoid limiting the responses to the predetermined answers as well as ensure that findings were detailed. To further understand this, a question on the expectations of undergraduate students on e-books was made to lecturers and librarians. Expectations reported by undergraduate students in the self-completion survey questionnaires and in FGDs have been thematically categorized into broad areas to include: lack of awareness; lack of adequate guidelines; filtering; lack of local content; lack of relevance for many resources; limited access; inappropriate format; and lack of motivation.

4.8.1 Awareness Creation

In the survey, undergraduate students expected creation of more awareness. They suggested that sensitization on e-books could be made through social sites, advertising, radio, and television. Along with the training in the use of e-books they also asked for computer literacy. Some of them requested for sensitization on the advantages of using e-books. Proper knowledge should be given on e-books and how to access those books. These expectations were expressed through statements such as: *more resources should be channeled towards this program since it is a better option in regard to vision 2030 and concurrent with the global changing world; creation of more awareness on e-books; more education on how to use them; and more orientation should be done to create high awareness on how to use them.*

In the FGDs, when asked what they needed the most regarding e-books, they were unanimous in voicing their need for “awareness”. Very few students were aware that they could access e-books via the respective university web sites. They expected adequate guidelines on access to e-books’ search from respective university web sites. The lack of knowledge on how to access e-books led to difficulties in identifying the required e-book or relevant title.

4.8.2 Filtering Challenges

Difficulties were also experienced in identifying the most appropriate title in the midst of so many. The use of keywords was not sufficient in filtering as it yielded many titles. This led to much time being spent on e-book searches to getting to know the exact book to use and in getting the appropriate e-book. Undergraduate students felt that searching for relevant

titles was time consuming. Some felt that there were a lot of phrases to filter through. The difficulties encountered were expressed as: *hard to find the relevant ones, presence of similar but differing reading materials, variety of articles with related information hence difficulty in selection of which to use and which to avoid, so many articles available, getting to know the exact book, consumes quite some amount of time, having many titles under one similar search word(s), picking one with relevant information, and difficulties in accessing the right book for my need.*

4.8.3 Content

Undergraduate students expected content they could relate with. They found available e-books to be characterized by lack of local titles, too many books with inadequate information, coverage was very little, shallow or irrelevant, *sometimes information given was not relevant, similar content makes it a challenge to be convinced on how to choose, and different and rather confusing approaches used to explain the same content by different authors and articles.* Undergraduate students also observed that some of the articles did not give enough information on different topics; some e-books did not have all the required information, and there were too many with inadequate information. Comments such as: *the coverage is very little, they are general and not specific to the topic in question, inadequate information, contradictory information on the same topic, and some are not direct to the answers* were made. Undergraduate students expected availability of e-books for their programs as some of the relevant e-books were not accessible through the university web site. They expected e-books in every taught subject area. There were expectations for more locally authored e-books; *e-books in PDF formats, more current publications of e-books should be availed.*

A computer science student recommended that more *books in the library should be in electronic form since they are few and we all need to access them* while another one stated that *Library e-books should be highly encouraged in public universities*. There was a request for more varieties of e-books, minimal access restrictions, and more complete e-books and not just journals.

4.8.4 Relevance

Undergraduate students observed that the numbers of e-books for use are too many. One respondent commented that *one cannot go through all the books to search for one*. Another undergraduate student commented that *most e-books are meant for postgraduate studies thus the relevance of the information in them is quite low, especially for chemistry* while another was of the view *that these should be direct and to the point without going thoroughly through them*.

Lecturers observed that e-books were important for the undergraduate students unlike e-journals which only became important in the fourth year of study when the students write their projects. Lecturers in languages, linguistics and literature felt that e-books in the library were inadequate especially content on Africa and in African Studies. It was the observation of one lecturer that there was no local content in his field of African languages.

4.8.5 Access and Use of E-books

In access and use of e-books, undergraduate students had the expectations that e-books would be downloadable, sufficient, have unlimited access, *some are not accessible without university log in; procedure of accessing them (through the use of log in passwords); and that access to e-books was strictly managed*. Undergraduate students felt restricted in terms

of time and space and therefore asked for more time allocation for access to e-books when using library resource centers. Some expressed their expectations by asking for: *ample time and space for students to use computers; all sites should be free; free access to books; and they should be easily accessible.*

4.8.6 Wider Coverage and Broader Bandwidth

Poor internet connectivity was reported as a challenge in all universities visited. Inadequate access tools such as computers were also reported in some universities. On coverage and bandwidth, undergraduate students expected: *provision of more links to get e-books; easily accessible links; more internet facilities which are available for access 24/7; enhanced bandwidth; network and convenience of accessing e-books should be improved; provision of wireless access in the libraries; access should be improved by increasing hot spots within the universities; and increased international collaborations that would allow for reading e-books from sites of other world -wide universities and prompt payment of subscription for relevant resources.*

4.8.7 Increased Number of Computers

Undergraduate students expected that computers and computer libraries should be increased in relation to the population. They expressed this need using statements such as: *provision of more resources such as computers to enable more users to get direct access, be easily accessible as well as internet services; proposed that more e-books be availed to avoid congestion (licenses that support more users per item) since e-books are all about internet, then more computers should be availed in the library; there was dire need to increase the*

number of desktops for access of e-books in comparison to the number of students within the institutions.

4.8.8 Arrangement

Undergraduate students expected easier access to e-books. One respondent reported that they experienced the greatest *difficulty when selecting certain e-books in the library because of the arrangement*. Another challenge in organization of e-books was to know *the right book that has information that you need; selecting the best article from the many articles given is difficult*.

4.8.9 Lack of Motivation

Undergraduate students reported to use resources recommended by their lecturers. They were rarely referred to e-books. A few librarians observed that undergraduate students seemed to lack the motivation to use e-books as one commented that undergraduate students “*lack reason to use e-books*”. To enhance access and use of e-books undergraduate students suggested that lecturers should give specific e-book references for specific books that are available in the library for student use in their assignments. In the FGDs, undergraduate students were very conscious of the dependence they had on their lecturers and were asking to be encouraged and given assignments aimed at the use of e-books to motivate them.

4.8.10 Professionalism

Through FGDs, undergraduate students expected that libraries would employ skilled professionals to deal with e-book resources. One undergraduate student suggested that they should be allowed to print e-books without charges while two FGDs showed that they

expected to access all e-books they needed. Librarians observed that undergraduate students expect to access the very exact titles recommended by their lecturers as well as access all books they need. They also expect to be able to print e-books without any limitations. According to librarians undergraduate students expect to access computers at will from a library environment where they could receive the support of librarians. Require highly interactive staff to assist in identifying, downloading, printing and saving on portable devices. Resource centers were identified as not conducive to the use of e-books because of time limitations while undergraduate students expected to access e-books without being rushed.

In summary, the responses derived from the FGD included the fact that undergraduate students expected to access all books they needed. However, this was not always possible due to restricted access to some resources. According to them, most of the resources were inappropriate for their use as most had very little relevant content for their use while others seemed to contradict each other. Undergraduate students observed that it was not always possible to identify the relevant e-books for use. Similar observation was made by the lecturers and librarians. As a result of the above challenges, undergraduate students were found to prefer other sites through links that were easily accessible through their default browsers.

4.9 Suggestions for Enhanced Use of E-books

To meet the objective on proposing a framework and recommendations of improving access and use of e-books by undergraduate students, the research question asked was: *what should be done to enhance use of e-books by undergraduate students?* This question was

referred to all respondents through the self-completion survey questionnaires, FGDs, and face-to-face interviews with Lecturers and Librarians. Librarians were asked to give suggestions on improving access and use of e-books by undergraduate students. This was with a view to merging the diverse views from different universities and respondents and presenting them in a structured format that will be viewed from a unified perspective for implementation. Responses by undergraduate students were merged with their expectations in chapter 4.8 to give the presentation a coherent logical flow. Suggestions by lecturers and librarians have been presented in topics derived from the emerging themes to include: awareness creation; information and computer literacy; access; relevance; ease of use; policy; funding; lecturer involvement; and procurement of e-books.

4.9.1 Awareness Creation

Lecturers recommended that deliberate measures required to be made to build and saturate the use of e-books among undergraduate students to equal levels as print books. Though undergraduate students are ICT savvy, they were not able to effectively use e-books. Some lecturers were unaware of e-books in the library and recommended that awareness should be heightened. As a result of lack of awareness, lecturers referred the undergraduate students to the Internet and online information resources. They recommended that awareness creation should also be extended to them.

4.9.2 Information and Computer Literacy

Embedded librarianship was suggested for every program. Some lecturers suggested that access and evaluation of e-books is a challenge to undergraduate students. They

recommended that access could be enhanced through advanced training in the use of ICT and evaluation criteria.

4.9.3 Access

Lecturers recommended an improvement on access to e-books as they perceived them to be more reliable and could be used by multiple users at a time unlike print which could only be used by one person at time. One lecturer felt that the layers of access to good e-books are a hindrance. She had to ask librarians severally to enable her to access the e-books and other e-resources. She has assisted undergraduate students to access e-books and therefore felt that access by undergraduate students is not well facilitated in this regard. In some cases access was limited to a few chapters or pages while access to the entire document was denied thereby limiting full benefit of the resources. One lecturer observed that e-books that were accessible, and that she referred her students to, were never read. But that this was not unique to e-books as the print books were also hardly read. She attributed this to the downward trend of the reading culture.

Lecturers and librarians observed that undergraduate students lacked skills on how to operate from one platform to another in search of relevant information resources and would therefore prefer seamless access operability functions. It was observed that undergraduate students will more often (99%) use search engines than go to the University website despite the training they received. This may have emanated from the observation that they were computer illiterate. This was in spite of the existing good and user friendly resources. It was observed that university web sites could not be conveniently accessed through mobile phones as the screens are too small to access large web sites. A few lecturers discouraged

the thought of undergraduate students using e-books for fear of plagiarism and were of the view that e-books encouraged laziness as it was easy to find what one is looking for and copy paste.

In order to enhance access, it was suggested by one lecturer that e-books should be organized per unit or subject taught to make it easier for undergraduate students access and use. A portal or application could be developed where one could sign in at their convenience and access the various course materials and relevant e-books. Librarians suggested that it was important to have e-books' metadata linked to the OPAC to enhance their visibility. It was also recommended that e-books required to have federated access capabilities that were available for e-journals to enhance search ability of e-books.

4.9.4 Relevance

Another lecturer observed that it was the responsibility of the librarians to go through the course outlines and ensure that the required e-books were provided to undergraduate students. One lecturer recommended that lecturers should be involved in the e-book selection. She referred her students to alternative sites that she felt were favorable for their use.

The availability of the Internet has ensured that there is so much information available and lecturers prefer to access databases they know of. Many ask for information resources they require from their contacts abroad. The networks are very vibrant among the lecturers. Undergraduate students also have connections abroad and will freely share these links with their lecturers and peers. Comparing Kenya with countries abroad such as South Africa,

most relevant titles were not available in e-format. They view the e-resources provided by the library for their own use and do not recommend them for their undergraduate students.

4.9.5 Ease of Use

Some felt that it was not possible to use the computers for a long time as it was strenuous to the eyes. It was recommended that e-books be organized according to the subjects even if this demanded the employment of subject specialized staff to enhance ease of use. It was also recommended that related e-books be put in folders to save time by the users. There needs to be a logical organization of e-books to enhance ease of use as well as ensure that e-resources were user friendly especially to undergraduate students.

4.9.6 Policy

It was recommended that librarians should go through the course outlines and provide the undergraduate students with the relevant links or acquire the relevant titles preferably in e-format. There should be a policy in place to ensure that this is done. Digitization of core texts was recommended. There seemed to be a missing link between the faculty and the library which would be best addressed by policy. One lecturer recommended that there should be an organ monitoring the kind of resources the library has.

4.9.7 Funding

To enrich the library e-collection lecturers recommended that the library should be well funded. *If the university can pay for some of these titles the better.* One respondent from computer science had the perception that the university had a bias towards larger teaching departments. There was a common perception that the university was not interested in getting relevant information resources. *There is need for the support of top management in*

providing sufficient budget for acquiring relevant library resources. In order to enhance access to e-resources by undergraduate students, university management has made effort to enhance connectivity to hostels as well as enhanced bandwidth and more hot spots.

4.9.8 Lecturer Involvement

A librarian recognized that undergraduate students did not use e-books much and recommended that their motivation for use should stem from the lecturers who more frequently provide print references. It was observed by several librarians that undergraduate students are unwilling to use references not given by their lecturers despite similar content. Students insisted on using the specific titles recommended by their lecturers as opposed to getting the same content irrespective of the source. They expected to access the very exact titles recommended by their lecturers. Librarians have an expectation that lecturers will encourage their students to have flexibility in the resources they use. Students insisted on using the specific titles recommended by their lecturers as opposed to getting the same content irrespective of the source. Librarians recommended that undergraduate students should be encouraged by their lecturers to be flexible and use alternative titles where the specific references were unavailable.

4.9.9 Procurement of E-books

Package procurement of e-books was identified to be unfavorable to university libraries as most of the books were not relevant yet they had to be acquired with the package. It was felt by several librarians that different options should be explored. Some also felt that at some point librarians will need to justify this procurement of so many titles that were never used despite their being easily accessible.

4.10 Chapter Summary

In this chapter, data analysis and presentation of findings has been made through emerging themes. These have been presented and analyzed through the following themes and subtopics: Respondent profiles analyzed through age and gender profiles; Awareness of available e-books in the library through the sub topics of awareness of e-books, level of awareness, and frequency of use of e-books; undergraduate students' training, education and sensitization on e-books in the library through the subtopics of: channels leading to awareness of e-books, orientation for first years, school/ faculty awareness programs, continuous guidance and training, and Information Literacy Programs (ILP); Factors affecting use or non-use of e-books through the subtopics of: level of knowledge (skillfulness) in accessing e-books, level of skillfulness in access of e-books, driving factors to the use of e-books by undergraduate students, impact of different factors in influencing the use of e-books, qualities that influence choice of e-books for use, access to other e-book sites by undergraduate students, comparative use of e-books from other sites and library based, and factors influencing use of e-books from other sites; Perception of undergraduate students on the use of e-books in comparison to other resources through the subtopics of: preference of e-books over print books, frequency of print books usage, comparative use of e-books and other resources, preferences for different formats, format of preference, perception of lecturers on undergraduate students perception of e-books, and perception of the librarians on undergraduate students use of e-books; Expectations of undergraduate students on e-books in the library; and Recommendations for enhanced use of e-books.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

This chapter discusses the findings of the study. The discussion synthesizes the findings in thematic areas as guided by the research questions in relation to the statement of the problem, aim, assumptions, significance of the study, conceptual framework and literature review. The discussion of the research findings has also been put in context through the personal experiences of the researcher. This was targeted towards the realization of the aim of this study which was to investigate the use of e-books by undergraduate students in Public University libraries in Kenya, and to make proposals for enhanced use as well as give input to existing knowledge gap with specific regard to how undergraduate students interact with e-books in public universities in Kenya. It was also with the expectation that this would shape future management of e-books amongst other e-resources for undergraduate students use. The following research questions were addressed by the study:

1. To what extent are undergraduate students in public universities in Kenya aware of e-books?
2. How are undergraduate students informed about the availability of e-books?
3. What factors influence the use of e-books by undergraduate students?
4. How do undergraduate students view e-books compared to other resources?
5. To what extent do e-books meet the expectations of undergraduate students?
6. What should be done to enhance use of e-books by undergraduate students?

5.2 Awareness of E-books by Undergraduate Students

The low uptake of e-book resource utilization is the concern of this research as highlighted through the statement of the problem. Lack of awareness was identified as one of the reasons why e-books did not attract expected use levels among undergraduate students in public universities. The lack of awareness of existing training programs had also been identified earlier as a cause for stifled use (INASP/KLISC, 2011). Despite awareness creation efforts by librarians the uptake of e-books was still low. Hence one of the research assumptions was that awareness programs alone were not sufficient to spur and sustain use of e-books in adequate levels.

It was found that levels of e-book awareness were different in each of the universities depending on the diversity and effectiveness of their respective awareness programs. The more diverse awareness programs in place the more the levels of awareness were discerned. In three of the universities under study the greatest need by undergraduate students was awareness while in the other the need was for consistent internet access. Hence findings may not be fully generalized to all public universities. The lack of adequate awareness was also reported in diverse universities in Nigeria, Uganda, Ghana and South Africa as observed by Bakrin and Bello (2017), Gakibayo, et al. (2013), Kwadzo (2015), Omeluzor, et.al (2016), and Tlakula and Fombad (2017) in chapter 2.4. However, this was contrary to the observation by Wang and Bai (2016) that high awareness with undergraduate students in China did not result in high use. Adeniran (2013), as cited in chapter 2.4, found that although undergraduate students at Redeemer's University, Nigeria were aware of e-resources the usage levels were very low. This meant that besides awareness creation, there were other variables that determined use. Training alone could not enhance or sustain use

of e-books and other library based e-resources as part of regular information resources distinct from those accessible via search engines. This suggested that awareness creation had to involve strategies that would ensure use. The theoretical framework used showed that there was need for diverse inputs by librarians in ensuring that e-books were used. There was need for varied input in e-book systems design.

The level of differentiation between e-books from the internet and those provided by the libraries via their web sites in respective universities was blurred in three of the universities visited. Awareness was a product of diverse awareness creation strategies and existing ICT infrastructure. In the fourth university where some level of understanding was observed it was found that this resulted from the fact that subscribed e-resources were accessed as the default settings in their computers. There was, however, the lack of proper distinction between e-books and other e-resources. The FGDs established that the bulk of undergraduate students did not know what e-books were. To most undergraduate students any information resource accessed through the internet could be referred to as an e-book. Some learnt about e-books for the first time at the FGDs while others could not distinguish the platforms they accessed the e-books from. Some were specific that they accessed information resources via the university web site but many were unsure. The links they used were somewhat inconsistent leading to a scenario where many could not tell the difference between accessing e-books from the library and accessing from the internet. It seemed that their method of access was through trial and error as opposed to deliberate. This was a clear indication that awareness creation efforts had not yielded expected results. Exploitation of e-books through the training provided was insufficient. Hence the third assumption of the study that awareness programs alone were not sufficient to spur and

sustain use of e-books by undergraduate students. Slater (2010) in chapter 2.4 observed that e-books awareness depended on how they were presented to users as many could not differentiate between different kinds of online resources. Similar findings to Slater's (2010) in chapter 2.4 were made in chapter 4.4.1 where undergraduate students could not effectively define e-books. From FGDs it was clear that students could not distinguish between different kinds of online resources. Undergraduate students required the ability to distinguish between different e-resources such as e-books, e-journals, open access, and other online resources. Of equal importance was the ability to evaluate information resources.

The opposite was found in the survey which indicated that the level of awareness of e-books in the library were quite high. There were 95.8% that said they were aware of e-books with a cumulative 57.7% saying they used e-resources daily or at least once a week. However, this was not found to translate to discernible levels of use of e-books accessible from their respective libraries through individual university web sites. In chapter 2.4, similar findings were reported by Nyambala (2015). Using a purely quantitative data collection tool, she found that undergraduates were aware of the availability of e-books in the library.

Information resources through both the library and search engines were numerous and required almost similar mental input as they both required filtering where they did not have specific titles to search. It was equally demanding to get an appropriate title from the e-books in the library as it was from the internet and other open access resources. Hence undergraduate students preferred to use the approach that they perceived could deliver

information needed and also easy to remember for use whenever needed. They also did not limit their searches to platforms linked through respective university web sites.

This demonstrates the importance of the EKB model in trouble shooting problem areas in the process of e-book resource utilization by undergraduate students. Librarians should be keen on ensuring that stage two of the EKB model is achieved. Unless the undergraduate students have undergone all the levels of information processing (exposure, attention, comprehension, and acceptance), it is unlikely that they will have retention for considered utilization at the level of *alternative evaluation* in the decision process. This goes hand in hand with e-book positioning in the conceptual framework which demands that for effective marketing of e-book resources, certain inputs should be involved. These include relevance, ease of access, and branding distinguishing library e-books from other online resources.

5.3 Awareness Creation Programs in Place

In this second objective of the study, several awareness creation programs, services and channels were cited to be instrumental to undergraduate students' awareness including formal library orientation, peers, lecturers, ILP, brochures, email services and social media channels such as WhatsApp and Telegram. It was the recommendation of the Association of Commonwealth Universities (Harle, 2009), as observed in chapter 2.4, that addressing the use of information resources by their clients was more important than the provision of resources. The commission had observed that very often students and the faculty were unaware of what was available or were unable to access the resources. Users in general did not have adequate capacity to make full use and to access what they were entitled to.

Allison (2013) also observed that undergraduate students found access to e-books complex (Chapter 2.7). The researcher is of the view that this is a contributing factor to the low intake of the use of e-books by undergraduate students. The numbers of librarians involved were equally inadequate in comparison to the undergraduate student population because only a small number could provide the training. Besides grappling with their academics, their attempts to access and use of e-books experienced numerous challenges as observed by undergraduates in the findings in chapter 4.8.

The statement of the problem in chapter 1.3 observed that the undergraduate students' competence in the evaluation of information resources was quite low hence it is unlikely that use of e-books will ever rise unless there is change of strategy in awareness creation and e-book delivery systems. This confirmed the first assumption of the study that librarians assume that undergraduate students have adequate capacity to identify and evaluate information resources. There is need for much simplified training and access to e-books which undergraduate students will use consistently. The conceptual framework demonstrates that awareness creation should be done alongside other processes including staffing, relevance, branding, facilitation for access and ease of use to enhance e-book resource utilization. The absence of either arm will cripple the efforts towards enhanced utilization of e-book resources.

Stankevich (2017) in 1.2.6, observed that effective simplified training will be easily adopted as undergraduate students are able to use various platforms and from different devices. However, it is the belief of this researcher that use of different approaches within the same platform is confusing. This researcher opines that this could be one of the reasons

why even after undergraduate students were taught the skills many could still not use the resources as expected. This was also found to be the case by Obasuyi and Odion (2015) in the University of Benin in 1.3.

Undergraduate students got to learn about e-books and other library resources majorly through orientation. Library orientation is considered by this researcher as important as it was an eye opener for existing avenues of accessing unlimited information resources. Though this orientation was not immediately useful to undergraduate students, it became important as the academic programs progressed. Some researchers such as Gregory and Broussard (2011) did not consider orientation to be important and felt that it was the least effective tool in creating awareness. However, according to this researcher, undergraduate students in public universities in Kenya are drawn from diverse backgrounds and for most, orientation provides a major entrance to diverse information resources unknown before. Though orientation was done when students were very new on campus, it nonetheless provided indelible impact on the undergraduate students on new areas that would spur interest for use when the need arose. Those who missed it were severely incapacitated in access and use of information resources. These were some of those who reported to have never heard about e-books. This also created awareness of the need for further training in access and use of e-resources in general. Orientation was important in letting the students know that they could seek for assistance where needed.

Dudley (2011) and Currie, et.al (2010), as observed in chapter 2.5.1, suggested that user training needs to be re-examined. They also observed that there was need for adequate user support to be provided to help students retrieve information in order to enhance perceived

accessibility and ease of use. This researcher is of the view that the first years were unable to fully relate the relevance of what they learnt in their academic programs to respective information resources provided by the library. Their ability to adjust effectively in their academics was obstructed by the timing of the orientation which was only done in their first week of arrival in campus. This settling period was clouded with the challenges occasioned by other social cultural adjustment struggles prevalent in public university set ups. This meant that the awareness programs through orientation and the skills they learnt were quickly forgotten and shortly afterwards there was need for another orientation. The use of print could be remembered as they could easily relate with books. There was also the 'lack of reason' syndrome that seemed to cause indifference and lack of continuing interest ignited in first year with the e-books as was found in chapter 4.8.9. There is need for librarians to align their training alongside engagement of other reference groups as shown in the EKB model and in the conceptual framework. The model and conceptual framework as well as results as found in 4.8.9 show that use of e-book resources has to be sustained by other people beside librarians. Although undergraduate students were considered ICT savvy as was evidenced in chapter 1.7, their use of ICT was confined to entertainment. They needed to be weaned to fully appreciate the fact that ICT can also be used for academic studies. This was a reality recognized by librarians and hence extending their training to individual schools and faculties. Continuous guidance and training was also offered.

The awareness programs were based on the assumption that library subscribed e-resources were appropriate for undergraduate students. This was found to be not true for all e-resources in the literature review as observed in chapter 2.6.3 by Gakibayo et al (2013). Research findings in chapter 4.8.4 where undergraduate students perceived e-books to have

been designed for postgraduates supported this view. This researcher observes that this perception may have been founded on the fact that weight on training on all e-resources was equal. Training for different categories of users were not based on relevance hence the potential value of e-books over e-journals for undergraduate students was not adequately differentiated. Training in the use of e-resources between e-books and e-journals was not differentiated in terms of relevance and ease of use. This resulted to lack of clarity by undergraduate students. The fact that the momentum for use could not be sustained after training despite initial records of high use was a sure indication that there were limitations experienced in access and use. Walters (2018) in chapter 1.3 observed that journals were not appropriate as information resources for undergraduate students as they required some level of knowledge on the subject matter. Slater (2010), as observed in chapter 2.4, was of the view that awareness of e-books relied largely on how collections were presented to users because students may not distinguish between different kinds of online resources. This researcher is of the view that there is need to ensure that e-books and other electronic resources are appropriately organized and packaged. There was also need to engage professional librarians with certain competencies such as ICT and subject expertise. This would have double advantages, in providing training and also in giving confidence to users that guidance provided was reliable and dependable.

Information Literacy was yet to be fully implemented by all the universities sampled. The universities experienced inherent challenges in having sufficient human resource capacity due to lack of adequate staff. There were also issues of curriculum overload arising from the faculty. There is therefore a need to come with different ways to ensure that undergraduate students are reached. The online e-program may seem attractive, but some

lecturers were skeptical as they reported many malpractices in the use of electronic and print resources in their assignments.

The engagement of multiple approaches in creating awareness was to be preferred. There was need for diverse strategies to ensure sustained use. It was found that the university that engaged diverse approaches such as using a documentary, e-learning program, and knowledge ambassadors, had minimal reports of lack of awareness. This demonstrated that it was possible to create adequate awareness through innovative ways. Navigating guidelines should be designed in most basic steps and should be easily accessible. These should be easy, appropriate and straight forward keeping in mind that undergraduate students were characterized by lack of patience with complex procedures as observed by Allison (2013) in chapters 2.6.6 and 2.6.7. Other channels that were identified to be used in creating awareness were email notifications. It was noted by McDonald et al. (2015) in chapter 2.4 that 65% of students became aware of e-books available in the library through e-mail notifications by the librarians. Undergraduate students also identified use of social media as a way of learning about e-resources.

In conclusion, as a result of awareness creation programs, librarians reported fewer enquiries which could be directly associated to increased awareness use but was still not sufficiently adequate in spurring sustained heightened use.

5.4 Factors that Influence Use of E-books by Undergraduate Students

The third objective on establishing factors that affected the use and non-use of e-book resources by undergraduate students was answered by the findings in Chapter 4.6. E-books were increasingly preferred in providing information resources by librarians as this brought

about numerous advantages including increased space release for other services through reduced shelf space, economies of scale in procurement and staffing from labor intensive to one that engages fewer but skilled professionals, procurement in real time and thereby increasing real user satisfaction, in addition to 24 hour access from any locality and assurance that resources needed will always be available and never out on loan.

While it was true that undergraduate students were heavy users of the Internet, this had not translated to high use of e-books as a result of several contributing factors. This includes level of skillfulness; layered forms of searching and access, and lack of awareness. The current packaging of the e-books was not popular with undergraduate students and has been found to be time intensive and one required patience to identify usable resources. Time was a resource that was short. This was also found to be the case by Connaway et al (2011) in chapter 2.6. Evaluation of resources for use was a challenge that undergraduate students face on a constant basis as was also observed by Currie et al (2010) in chapter 2.6.3. They also observed in chapter 2.8 that undergraduate students preferred resources that were easy to find, easy to access, easy to understand, available when needed, up-to-date, and access to reputable publications and authors. The diversity and broadness of available information resources demands lots of time to wade through to identify a useable relevant e-book. Joo and Choi (2015) in chapter 2.6.6 observed that if students cannot obtain information promptly, they are less likely to continue using that particular system. Resources should be fully aligned to programs within the university as diversity only chokes the visibility of those that are relevant.

5.4.1 Level of Skillfulness

From the literature review it was clear that the level of skillfulness in the use of ICT gadgets had an impact in the confidence levels in the use of e-books and on the frequency of use. While there were a cumulative 57.7% who used e-books daily and once a week, those who considered themselves skilled in ICT access 'quite highly' and 'very highly' were cumulatively 42.3%. It is, however, possible that those reporting to use e-books were not necessarily referring to library based e-books but all e-resources in general as it was found in FGDs that most of the undergraduate students could not differentiate e-books from other forms of e-resources. For the skills to be effectively transmitted, a revitalized learning environment is necessary. This would demand easily accessible ICT gadgets and 'reason' for use.

Digital access to knowledge was a novel technique that undergraduate students were easily attracted to and frequently used. Manipulation of digital gadgets was the norm for this category of users most of who were in their early 20s. These are fascinated in using different applications in their smart phones. Undergraduate students showed competence in accessing e-handouts from their emails without difficulty. They accessed sites which were recommended by lecturers. So not accessing e-books in the library is not as a result of lack of skills but could be associated to other factors including inability to competently select relevant information resources and lengthy access routes compared to search engines.

Undergraduate students have been stereo typed as digital natives but this did not translate to effective use of e-books. They were good with electronic gadgets and in communication on social media and access to various sites and blogs. The fact that they were able to use these

gadgets in diverse ways meant that the inability to use ICT gadgets to access e-books was not the reason behind ineffective use of e-resources despite the fact that some librarians raised it as a concern especially in online searching. The seamless flow and transition from one platform to another in use of e-resources was missing. Whereas there was technology adoption, its applicability in relation to the academic undertakings was missing. Low use was also indicative of lack of allure such as was to be found in social media applications by which undergraduate students were able to interact with without external promptings. Packaging and e-customization that was suitable for academic resources including e-books needs to be improved. Consistent use requires that one is at ease with the tools of trade involved.

Among the difficulties encountered by undergraduate students in accessing e-books were that *'e-books in most cases gave unnecessary information that one did not need'*. Many books were considered not relevant largely because undergraduate students expected that these would synchronize with the lecturers' notes and be considered straight forward. This is an indication that undergraduate students were more interested in titles that were directly relating to their areas of interest. This was also an affirmation of the statement of the problem and the assumption that undergraduate students' information needs are foundational. Undergraduate students find library electronic information resources complex and difficult to use in identifying the relevant information resources for use and are therefore highly dependent on their lecturers to determine the information resources they should use in their course readings. Digital skillfulness was not synonymous with the ability to evaluate resources and make choice of relevant resources. This was in agreement with Currie et al (2010) in chapter 2.6.3 who had observed that despite training in

evaluation criteria for electronic resources, undergraduate students proved unable to fully employ such criteria. In view of these realities, this researcher proposes that there is need for an alternative e-resources model for undergraduate students such as is proposed in chapter 6.4.5.

The lack of skills and inability to adopt different strategies could easily interfere with the popularity of the service causing it to be perceived as complex. When this occurs, users despair and no longer make effort to use the service and are likely to change to resources that are perceived straight forward and that quickly yield results whether good or bad.

5.4.2 Factors that Inspire Use of E-books

Undergraduate students gave multiple responses on what motivated their use of e-books from four possibilities namely information literacy classes, self-motivation, peers and lecturers. Lecturers were reported to have the highest level of influence with 31% reporting *very high influence* as observed in chapter 4.6.2 and as depicted in Figure 4.

Lecturers were responsible for guiding students in their academic progression through providing reading lists. They also provided links to several resources that would be helpful to their students. Findings also identified lecturers as major drivers in the use of e-books. It is recommended that they be provided with sufficient capacity in order to give them *reason* to encourage undergraduate students to use e-books in the library. Capacity maybe increased through awareness programs specifically targeting the lecturers, creation of flexible e-book procurement processes that would allow for immediate purchase of an e-book required for teaching and learning.

Most lecturers admitted to providing external links to their students and to providing email attachments of e-resources. The use of e-books and other resources by undergraduate students is likely to substantially improve where lecturers are involved. Very few lecturers referred their students to e-books in the library. Others were unaware of e-books from the university website that could be helpful to undergraduate students while some said that e-books were few which directly indicated lack of full awareness of e-books available through the library. The observation by lecturers in chapter 4.9.4 is indicative of lack of full information on the availability of e-books that are designed for use by undergraduate students. Hence they considered the e-resources only useful to themselves.

Lecturers also needed awareness of not only e-resources in general but also e-books specifically. E-books were not accessible via the federated approach which was popular for most users. Undergraduate students were not sufficiently convinced as to why they should use library based e-resources as they also got other links from their lecturers. Some lecturers argued that they provided undergraduate students with sufficient information resources. They had the perception that referring students to the library would not make a difference based on their experiences that students would report not getting access to the resources referred to (chapter 4.6.3). However, it is the view of this researcher that there will always be the curious minds that should be taken care of through library facilitation as well as through other channels. Awareness for lecturers needs to be raised in all universities surveyed. This researcher perceived a level of disconnect between the library and the faculty. This can be improved in order to enhance the overall benefits that would arise from this cooperation. The perception by some lecturers that the university administration was

not interested in acquiring titles for the library needs to be corrected through regular engagement.

In investigating the use of e-books by undergraduate students, it occurred to this researcher that most could actually not differentiate library subscribed e-resources from those in open access and other links. In an effort to get information to support their academic learning and research they resorted to various avenues as referred to by their lecturers or randomly as they browsed. Another motivation to use e-books was to avoid penalties that may be incurred through possible losses of print texts loaned by the library. Because of limited budgetary allocations print books were limited in numbers and currency. This led to a situation where it was a risk to get a book on loan as these could be easily lost. The remaining option was to browse from the internet and recommended sites while others visited institutional websites. The university management and the library had an obligation to pursue alternative resources in form of e-books. In spite of low response to the use of e-books, there was indication that they were viable in the absence of other obstacles.

Information literacy classes had an influence on 22% of undergraduate student respondents in the survey as observed in chapter 4.5 (Table 7). FGDs showed that library orientation was what they remembered most as through which they were inducted on e-resources. However, some had actual classes as reported by librarians.

Knowledge ambassadors were active in one university. Some 54.5% undergraduate students reported to have been influenced by peers to use e-books. Only one university among those sampled was using knowledge ambassadors. The overall finding was that there was higher awareness of e-books and other e-resources in this particular university.

5.4.3 E-books Qualities that Influence Use

From 11 indicators as shown in chapter 4.6.3 Table 9, qualities that endeared use ranked from the one that mattered most were convenience, accessibility, ease of use, relevance, coverage, format, reliability and credibility, sufficiency, accuracy, inadequate print books, and currency. Convenience, accessibility, ease of use, relevance and coverage had over 60% each reported to influence use of e-books. Any improvement should therefore ideally capitalize on these indicators.

The statement of the problem in chapter 1.3 indicated that the low use of e-books was probably as a result of lack of relevant content, information overload and limited access. Some researchers such as Allison (2013) observed that the screen size of some devices is an impediment to reading e-books. A librarian was of the view that for effective use of e-books there was need for a wide screen. However, undergraduate students asserted that the smart phone screen they were using to browse was sufficient.

Allison (2013) in chapter 2.6.10 observed that many users did not associate libraries with e-books because of the perception that libraries were for print information resources. This researcher adds that this led to a situation where electronic information searches via search engines were most instinctive than from library platforms. While some lecturers opined that undergraduate students are yet to fully adapt the use of e-books. This was in the belief that undergraduate students were actually reading print texts. However, there was no sufficient evidence that they did so as observed by Kiilu and Kiilu (2014) in chapter 1.3.

Walton (2014) in chapter 2.9.3 observed that the technical demands of integrating e-books into an easily accessible collection presented a significant hurdle in the way of librarians. According to this researcher, this calls for review of library curriculum to enhance ICT training for library information professionals. Access to e-books from each publisher required a different approach. This further enhanced the perception of access and use of e-books as a complicated, laborious, and strenuous undertaking.

The underlying existent lack of differentiation would not have been identified in the absence of a Mixed Methods Approach. Results from the survey implied understanding and confidence which were dispelled through the FGDs. In building up on the quantitative data it was clear that responses were not specific to e-books subscribed by the library but were inclusive in all platforms they used.

The survey found that undergraduate students were quick to look for easier less demanding routes to identify and access information. These mainly used Wikipedia or Google, and several other sites identified through self-discovery or through their Lecturers. This puts pressure on librarians not only in creating awareness but also to ensure that access to e-books is less demanding and easily understood. This confirms the fourth assumption of the study that access channels to e-books by undergraduate students are cumbersome and therefore not appropriate; and that complex access routes affect the popularity of e-books in comparison to other alternatives such as the use of search engines. Different access strategies for different databases and publishers should not exist. Instead approach to e-books should be by subject as opposed to publisher.

Survey results created an illusion that it would be possible to mitigate low e-books use by creating more awareness. However, qualitative data collected through FGDs, face-to-face interviews with lecturers and librarians suggested a need to relook at the entire structure of e-books in university libraries in Kenya. The findings from the survey investigation suggested that the undergraduate students under investigation understood what they were responding to, until this was watered down by findings from FGDs which showed a prevailing depth of lack of knowledge about what constituted a library e-book.

5.5 Perception on E-books Compared to Other Information Resources

Findings showed that at times undergraduate students used e-books when they failed to get print versions. Print books in such cases were used as a last resort for some students while for others the scenario was vice versa. Lecturers and Librarians observed that undergraduate students had a positive attitude to e-resources. Undergraduate students recognized and appreciated that most current knowledge and information is delivered in electronic format. Respondents recognized that to be up-to date in knowledge, e-format had to be in use. Literature reviewed indicated preference for electronic or print formats was different in different parts of the world. Findings from this research indicated that in Kenya, the preference for electronic resources was marginally higher than that of print but that the preference for both was greatest. This is evidence that there is opportunity to enhance the utilization of e-books by undergraduate students.

The global experiences in the use of e-books by undergraduate students were different in different localities. Walton (2014) as observed in chapter 2.7 found that where both e-books and print were available, preference was for print texts while Rafiq and Warraich (2016)

observed that there was a mix of students who preferred e-books and those who preferred print texts. While some students enjoyed reading e-books there were those that disliked reading them. This researcher is of the view that perceptions of undergraduate students can therefore not be generalized to all, but these would be different in different localities and also depending on several other factors as established through the literature reviewed.

The observation that users preferred print books for extended reading, and e-books for reference purposes as observed by Abdullah and Gibb (2008b) in chapter 2.7, did not resonate with the research findings of this study. There were those that were easily distracted to accessing other applications when using e-books from the smart phone. Other problems associated with e-books as observed by Hwang et al., (2014) in chapter 2.7, were eye strain when reading from the screen, lack of sufficient e-books in areas of interest and poor e-book reading environment which were not identified as challenges in this study. This is indicative of improved screens and perceived convenience of the mobile phone by undergraduate students especially in Kenya.

Undergraduate students who preferred only electronic formats were 34.7%. Findings obtained implied that with good ICT infrastructure, internet connectivity, and good ICT knowledge, few undergraduate students would remain hooked to print preference. This researcher observed that it was not clear between the preference for library subscribed e-books and those accessible from search engines as these were viewed interchangeably. This researcher agrees with the observation made by a librarian that the undergraduate students accessed e-books somewhat randomly without any discernible consistent pattern. Undergraduate students also consistently asked for awareness creation confirming the

assumption that undergraduate students found e-books complex and difficult to use. It was observed by one lecturer that despite the library having several print copies of a certain title, these were never borrowed. Instead his students opted for its electronic version. Where undergraduate students were aware of the existence of both print and electronic versions of the same title, the electronic versions were preferred as they were perceived faster to access. This was affirmed by the second assumption of the study that undergraduate students have a preference for e-books arising from the observed obsession with ICT gadgets and that reviewing the management of e-book information systems would improve usage.

E-books were observed to provide exposure to global information research findings thereby bridging the knowledge divide. This was echoed by lecturers from some programs such as Economics who preferred e-books in order to get the best as well as expose the undergraduate students to global knowledge. It was also perceived that these would counter delays experienced in procuring and delivering of print books. This was the most direct indicator that lecturers' opinions soon became the belief of undergraduate students.

There were 46% of undergraduate students who were comfortable with either format. In this case, both were to supplement information accessed from the other and to fill missing information gaps. When one resource was not accessible then the use of the other was made. Undergraduate students were seen to use rational judgment to use the resource that was most promising at different times for different assignments. However, one lecturer observed that it should never be a case of either or but rather it should be both electronic and print books complementing each other.

Various reasons as shown in the findings in chapter 4.7.2.3 were given by undergraduate students for preferring print text books in comparison to e-books. For some practical subjects print texts were preferred such as required the use of formulae, they preferred print as keying in the respective symbols on their keyboard was a challenge. Advanced training in ICT is called for to address such challenges of using formulas in retrieving e-books and many others.

Statements such as these *“print text books especially for chemistry and physics are quite clear in, they relate to the notes from lecturers”* were indicative of inability to relate the e-books to their academic programs as easily as they did with print texts. This implied that where a connection could be drawn, use of e-books would be the automatic preference. The perception of some undergraduate students was that e-books in most cases gave unnecessary information that one did not need. In actual sense this emanated from the inability to select relevant e-books. This researcher is of the view that this kind of difficulty in selection occurred where there were too many titles to select from and this was not unique to e-books only but could also be experienced with print.

From the findings, it can be surmised that preference for print books results from an inability to access e-books at will from wherever and whenever required due to irregular internet connectivity; limited access to some e-books unlike print where one can have full access to the entire text; cultural biases that lead to a misconstrued belief that e-books could not be fully trusted to have reliable information, and inability by some undergraduate students to have concentration with electronic gadgets for academic assignments. Print books were preferred for better understanding and were perceived by these undergraduate

students as enabling fast reading and as easier to remember from. This mainly stemmed from the social cultural view of ICT gadgets as entertainment tools which tended to prejudice the handling of ICT delivered information. Digital information was handled with less concentration and seriousness unlike with information from print resources. These experiences may be improved through enhanced ICT skills and familiarity from earlier schooling and improved ICT infrastructure. Print books were also preferred as they could be easily retraced for reuse where needed.

The reason for some 19.2% undergraduate students who preferred only print can be related to the limitations associated with the use of e-books. This researcher believes that these can be gradually weaned to preference for both or for the electronic through ensuring that e-books are favorably packaged.

5.6 Expectations of Undergraduate Students on Utilization of E-books

Research findings indicated that undergraduate students expected e-books that were directly relevant. They expected locating core e-books to be easy and straight forward. The current set up of e-books is such that it is difficult for them to identify relevant e-books, the e-books were perceived to be difficult to read as some were perceived to be contradictory. There were mixed responses as there were few who were happy with the set up but many were for relevant e-books being identified for them. Currie et al (2010) similarly observed that students expressed frustration in identifying, accessing and discovering resources. Use of passwords was a put off to some.

Statements such as make them *direct and to the point without going thoroughly through them* in chapter 4.8.4 showed that undergraduate students expected references that were directly relevant and straight to the point of their interest. However, it is unlikely that any library can cope with the speed at which information is generated. There is therefore need for the academic library to shield its undergraduate student clients from information overload while being careful not to compromise on the quality of services provided. New ways of information delivery must therefore be devised to ensure that respective university libraries achieve their mandate especially with regard to research and learning. There is need for continuous review of library services and the overall functioning of the library for it to remain a place of interest to users. Undergraduate students also expected unlimited access and provision for printing e-books; as well as adequate professional assistance as observed by Myrberg, (2017) and Walton, (2014) in chapter 2.8

The model used by libraries in providing e-books to undergraduate students needs to accommodate their realities including the fact that these are *learners* and hence information resources provided should be organized using an easier approach. The undergraduate students expected enhanced ease of use especially in access to relevant titles. Titles of relevance were not easily identifiable from the packages. Use of key words in searching for relevant titles identified many titles which was not friendly to undergraduate students leading to use of alternative resources. The research observed that e-books linked to the OPAC recorded higher usage than those not linked. Nariani (2009) (cited by Leonard, 2017) observed in chapter 2.6.4, that the library catalogue was the most popular channel of e-books discovery as opposed to library websites. Librarians also suggested, in chapter 4.9.3, that it was important to enhance the visibility of available e-books by linking the

metadata to the OPAC. Recommendation made by Connaway et al (2011) was that access to e-books could be enhanced by including all keywords in the OPAC, virtual reference service and assignment of roaming reference staff to provide assistance to users.

It was observed by Freeman (2005) in chapter 2.8 that majority of students considered the physical library reading spaces as their most favourite areas for study. They enjoyed being in the library. This makes library resources of whatever nature attractive to users suggesting that awareness creation can be intensely advanced from within the physical library. Professional librarians would also extend assistance more productively from within the library environs. Undergraduate students also expected sufficient ICT infrastructure in terms of bandwidth and computers.

Time limitations imposed on undergraduate students in computer labs does not encourage use of e-books. This is because searching for relevant e-books takes time and most are not downloadable. Allison (2013) and Connaway et al (2011) observed that undergraduate students lacked patience in perusing multiple platforms in chapter 2.8. In one of the sampled universities, a laptop was compulsory for all students and time limitation was therefore not a challenge. When a student wants to revert back to a title they read, it becomes easier if it is a text format or already downloaded onto a personal storage device.

5.7 Suggestions Made by Respondents

Proposals made towards enhancing the utilization of e-books by undergraduate students are discussed alongside similar observations made in the literature review. Suggestions were made for enhanced awareness by both the undergraduate students and lecturers. Lecturers unaware of the e-books could not refer their students. Connaway et al (2011) and Wilcox

and Chia (2013), on the other hand were of the view that information resources needed to be offered in multiple strategies to meet the different user needs (chapter 2.9.2).

In chapter 4.8.5 there was a suggestion by undergraduate students to have more varieties of e-books with minimal access restrictions and more complete e-books. Mawere and Sai (2018) in chapter 2.9.2 recommended that titles with false starts should be pulled down as such occurrences were bound to discourage use.

Lecturers felt that since evaluation of e-books was a challenge to undergraduate students, advanced training in the use of ICT and evaluation criteria should be done. The research also found that undergraduate students lacked skills in operating from one platform to the other. Similar findings were made by Gakibayo et al (2013) in chapter 2.9.1 when they observed that there was need for enhanced utilization skills for the effective use of e-resources. They were insistent that acquisition of library skills was crucial for all students.

In order to enhance access, it was further suggested that e-books should be organized as per subjects taught to make it easy for undergraduate student access and use. Gakibayo et al (2013) in chapter 2.9.1 were of the view that relating information resources to various courses was more meaningful to students. They recommended the integration of information literacy within the curriculum. However, Tlakula and Fombad (2017) in chapter 2.9.1 were of the view that there should be partnership and collaboration between the faculty and librarians to enable librarians participate in curriculum changes that would enable the provision of subject specific training for undergraduate students as well as enhance selection of relevant titles.

Library staff interviewed recommended that package procurement of e-books should be revisited. This was because e-books considered not relevant had to be acquired with the package. Some responding lecturers were of the view that librarians should use course outlines in selecting e-books for procurement while arguing that there should be policy guidelines to ensure that relevant e-books were acquired. Some lecturers recommended that they be involved in the selection of titles to ensure relevance. Baker and Evans (2013) recommended that only titles requested for through Patron Driven Acquisitions should be acquired (chapter 2.9.2). Slater (2010) had similar views when he recommended a title by title e-book purchase (chapter 2.9.2). Recommendation for increased funding was made. This was to facilitate procurement of relevant titles as some lecturers felt that their disciplines required more resources.

5.8 Chapter Summary

In summary, this chapter discussed the findings of the research questions advanced in relation to the literature reviewed and the assumptions of the study. Discussion done was on e-book awareness levels for undergraduate students in public universities in Kenya; awareness creation programs in place; factors identified to influence the undergraduate students use of e-books; the perception of undergraduate students on e-books in comparison to print; the expectations of undergraduate students on e-books; and recommendations made on provision and access to e-books.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter summarizes and concludes the research on the use of e-books by undergraduate students in public universities in Kenya based on the research questions advanced. It concludes the research by making proposals for enhanced use of library electronic books by undergraduate students in Public Universities in Kenya. Suggestions on areas for further research have also been made.

6.2 Summary

The crux of the research was the use of library e-books by undergraduate students in public universities. The interest in the study was stirred by the low use of library e-books particularly by undergraduate students in public universities. It was in the interest of this researcher to identify the factors that led to this situation. The findings are expected to go a long way in the management of e-books and in the formulation of institutional policies with regard to undergraduate students' access and use of e-books. The summary of the findings is presented using the research questions advanced.

6.2.1 To what extent are Undergraduate Students in Public Universities in Kenya

Aware of E-books?

Awareness levels in the institutions investigated were quite low. Undergraduate students were observed to be more aware about e-resources accessible through search engines more than they were aware about access to library e-books. Many undergraduate students were unsure about the meaning of the term 'e-books'.

6.2.2 How are the Undergraduate Students Informed about the Availability of E-books?

Awareness programs were not very effective due to several limitations such as lack of capacity. Librarians were found to be overwhelmed in providing awareness to the undergraduate student population including other users through information literacy which has been recommended by CUE for enhanced use. The use of multiple strategies was found to be effective given that different personality types have different approach preferences. These approaches are considered effective even in the absence of formal information literacy classes. This was found to be true in one university where a documentary, knowledge ambassadors and continuous training were employed, and laptops were compulsory. However, the question on knowledge on e-books specifically was a challenge in all the institutions visited.

6.2.3 What Factors Influence the use of E-books by Undergraduate Students?

Undergraduate students were motivated in using e-books and other e-resources by their lecturers, peers, self-drive and also through librarians. E-resources were generally used as they were found to be convenient. Inadequate ICT infrastructure hindered the effective use of ICT in accessing and using e-books. It was found that internet connectivity was inconsistent in all universities visited. This inconvenienced users of electronic information resources as access whenever and wherever required was not always assured. It was however observed that these were temporary inconveniences. Access could be reached from different identifiable locations. There were also challenges experienced in slow

downloads. E-books were found not to meet the 'ease-of-use' quality which was important for enhanced use of e-books.

Undergraduate students lacked sufficiently motivating reasons to use e-books. E-book references in their reading lists were very few and mostly these were also found in other sites. It was found that lecturers were also unaware of existing e-books. The push for use of e-books was largely done by librarians alone.

6.2.4 How do Undergraduate Students View E-books Compared to other Resources?

Undergraduate students perceived e-books as difficult in deciding which e-book publisher to use. This was not as a result of slow technology adoption but one that was mainly because of lack of awareness and lack of uniform navigation access routes. It was found that undergraduate students had no problem using ICT per se but were challenged when attempting to access e-books. E-journals have a federated access which was lacking for e-books. Each database had a different access method which led to a situation where e-books were perceived as difficult to access. There was also a perception that e-resources in general were for postgraduates. Decision making was challenged by lack of respective titles in their reading lists as well as in choosing which titles were better than others. It was observed that undergraduate students hardly have any skills on evaluating e-books. Time was limited in their having to decide which of the many available e-books to use especially if using computers in university resource centers. This obstructed the use of e-books. Undergraduate students in such instances were found to prefer the use of search engines. Use of institutional web resources was only done if referred to and in most instances required the assistance of librarians.

6.2.5 To what Extent do E-books meet the Expectations of Undergraduate Students?

Undergraduate students expected to be aware of existing e-books. They also expected that access and use would be easy, convenient and user friendly. They expected more hot spots which would facilitate access more conveniently. E-books were yet to be fully understood by most undergraduate students. Where accessible, use was not convenient due to challenges of filtering for relevant titles.

6.2.6 What Should be done to Enhance the use of E-books by Undergraduate Students?

Several proposals were made in this regard. Most notably undergraduate students proposed awareness creation and motivation through diverse media such as through advertisements. Additional proposals include improved access to e-books as those identified as good had limited access; seamless operability functions instead of having to operate from one platform to another; relevant content; ease of filtering for relevant titles was required; wider internet coverage and broad bandwidth; increased number of computers; and advanced training in the use of ICT.

6.3 Conclusions

In conclusion, undergraduate students, lecturers and librarians recognize that e-books have a key role in the undergraduate academic programs. The relevance of e-books is rising given the scattered student population and the increased demand for open and distance e-learning. In earlier years all students were resident within the university, but this has considerably changed to situations where the number of students who reside out of the

campus has increased. Most of the students may not access traditional physical library services. The requirement to quarantine and/or fumigate physical information resources before use by the next user, prompted by COVID 19 outbreak, enhances the demand for e-book use as these are deemed eco-friendly. E-books are therefore, timely and convenient. However, it was established from this study that despite using the internet a great deal for various purposes, undergraduate students in Kenyan Public Universities were largely unaware about library e-books. Undergraduate users look for information from specific titles or through keyword approach.

Intensive and diverse awareness programs have shown potential for enhanced access and use in universities that have implemented this. Strategies such as the use of knowledge ambassadors and embedded documentary on the website and online teaching were found to bear fruit in one university.

Undergraduate students are heavy users of electronic resources from diverse sites. These were found to access sites and channels from which they were assured of getting information. Most popular of these were Wikipedia and Google. Channels that provided relevant information with ease of access, convenience, and easy to use information were popular destinations. Undergraduate students have an ICT readiness to exploit information resources presented to them in e-format. What was found to be crucial for their use is awareness and reliable internet connectivity. Though some students preferred the use of desktops located within the university library, there were many who were contented with having smart phones which they used to access the internet for various resources.

Librarians had an expectation that lecturers will encourage their students to have flexibility in the resources they use.

This study concludes that the use of e-books was not solely dependent on awareness creation. Certain truths needed to be fulfilled, such as ensuring that reference groups were also aware of e-books; that input was easily learnable; and devoid of too much clutter created through multiple databases.

Findings indicated that where e-books and print were equally accessible, preference was for e-books. It was also found that wireless connectivity is yet to get to saturation levels. Undergraduate students had expectations that access and use of e-books would be easy. They expected to access and download all resources without any limitations. They also expected that there would be sufficient reason for them to use e-books as well as get the right information resources within minimal time and with minimal effort. The undergraduate students expected e-books to be customized for their use.

6.4 Recommendations

In view of the findings of the research, several recommendations for the enhanced use of e-books have been made in this section. These are directed to University Librarians, Kenya Library Information Services Consortium (KLISC), Kenya Library Association (KLA), and respective University Management Boards. Recommendations for librarians include awareness creation specific to e-books; provision of e-book access skills; faculty involvement; training of librarians; engagement of professional librarians; branding of e-books; and use of library spaces. Recommendations for KLISC include revised acquisition model; and selection of titles and rebranding. Recommendations for KLA include research

on information resources; and monitoring and evaluation parameters. Recommendations for University Management Boards include enhanced internet and ICT Infrastructure; advanced training in use of ICT; and funding. Also proposed is a model for e-book awareness creation to undergraduate students and suggestions for further research.

6.4.1 Recommendations for University Librarians

According to EKB model, consumer behavior is a result of diverse processes hence, University Librarians should employ strategic interventions to influence decision making by undergraduate students to favor use of e-books in the library. These include awareness creation specific to e-books; provision of e-book access skills; faculty involvement; training of librarians; engagement of professional librarians; branding of e-books; and use of library spaces.

(a) Awareness Creation Specific to E-books

In view of the fact that ICT is gaining prominence in the education sector, the use of web-based instruction tools to reach users should be enhanced. Creation of awareness can also be done through different forms of electronic media that undergraduate students have access to. These may include social media. Kaur and Kathuria (2016), as shown in chapter 2.9.5, recommended that interactive media should be implemented to facilitate two way interactions between users and professional librarians. Undergraduate students should be encouraged to view e-books as equally valuable in their academic pursuits as the use of print.

Librarians should capitalize on ensuring that e-books provided are accessible, convenient, and easy to use. This will enhance response to awareness creation by undergraduate students. Equally, awareness creation needs to be tied together with relevance and ease of use if undergraduate students are to be convinced that these resources are more appropriate than those they access through search engines. This requires a seamless access to all e-books. It is recommended that access to e-books is consolidated in one access platform in order to enhance ease of use as access through a single database is also more helpful. E-books should all be discoverable through the OPAC for enhanced use as well as increased ease of access. It is important that librarians are able to link all e-books to the OPAC. Harle (2009) in chapter 2.4 observed that addressing the use of information resources by the clients is more important than focusing on the provision of the resources. This researcher is of the view that librarians also need to filter what is accessible full text or partially. This will ensure that users are protected from user fatigue. Librarians also need to know what has been paid for in full or by chapter.

Perception that e-resources target researchers should be debunked. Decision making involves more players in creating legitimacy, as explained in the decision making process of the EKB model, and as shown under Reference Groups in the conceptual framework in chapter 2.2.3. Hence awareness creation should reach all parties considered as reference groups by undergraduate students mainly their lecturers and the general student body. These play a major role in creating perceptions and are more crucial in decision making than the librarians. In an environment where e-books are not well understood by the reference groups, adoption and use may fail to gain the expected momentum. It is recommended that initial awareness creation should target these groups which will directly

influence the trickle-down effect to first years as they join universities and colleges. This will also make it easier for librarians to realize effective awareness creation which will result to enhanced use of e-books.

(b) Provision of E-book Access Skills

Several challenges were identified in attempting to implement Information Literacy program. The program was envisaged to be implemented by librarians whose capacity in terms of numbers was severely strained. Kaur and Kathuria (2016), as shown in chapter 2.9.1, recommended that a paper on Library and Information Studies (LIS) regarding library resources and services should be mandatory for all courses. However, Amunga (2011) (as shown in chapter 2.9.1), observed that this may experience challenges in being accepted and in implementation due to curriculum overload. In this regard, this study recommends that Library skills taught in Communication Skills in first year in all public universities in Kenya be enhanced to include in-depth access to e-books. In addition, librarians should design innovative ways of marketing their services such as advertising and repositioning e-books for undergraduate students' use.

(c) Faculty Involvement

The role played by the faculty (teaching staff) as major stakeholders in the access and use of library e-books cannot be ignored. For the use of e-books or other information resources by undergraduate students to be improved, there is need for involvement by lecturers in selection of relevant titles as was recommended in chapter 4.9.8. The interaction between the lecturers and the librarians should be nurtured for meaningful information services to be provided. This researcher recommends a deliberate change of strategy in the teaching

policy which will ensure a seamless flow in selection, acquisition, access and use of e-books. This can be effectively done through the use of ICT.

It was because of lack of awareness, as reported by some lecturers, that they referred the undergraduate students to the Internet and online videos, forums, and sites. However, librarians have raised concern that lecturers are non-responsive when called upon to attend awareness creation programs. Since awareness creation is not dependent on physical interaction, this may be achieved through social media and/or online communication channels. The EKB model gives premium to external influences and other decision process variables in ensuring enhanced use of e-books, the stake-holders including lecturers and all users must be convinced of the value that the use of the library online platform provides in comparison to other e-book platforms. Lecturers pointed out that in order to ensure use of e-books, there should be institutional policy because this requires sufficient and functional ICT infrastructure, adequate knowledge on access and use of e-books, and close consultation.

(d) Training of Librarians

In order to enhance the overall management of e-resources, the training for librarians requires to be enhanced to have more e-book acquisition and processing procedures dedicated to the curriculum. This will enhance their confidence and guarantee that users will receive the ICT and e-book support they require.

It is recommended that capacities for librarians need to be enhanced through diversified training to ensure that advice given is program specific, and for effective continuous guidance and training for users. University libraries are in need of librarians who are able to

relate information resources to academic programs. Based on their training, all librarians have knowledge on print books. However, very few have knowledge on e-book resources. Awareness of e-books should be enhanced not only for undergraduate students but also for all librarians and library staff. Staff should have adequate knowledge on all forms of e-resources. The curriculum for library schools should be inclined towards more content in digital information management and much less of the traditional print information processing. Librarians should all have ICT training to meet the needs of the current crop of users. Training needs to keep abreast with dynamic information use transformations. Where there are more users inclined to use e-resources, there should be an equivalent number of staff to support them. The current scenario has staff skewed in favor of managing print books.

(e) Engagement of Professional Librarians

In view of challenges that may arise from achieving the required capacities by individual university libraries, University Librarians should engage respective University Management Boards and national library organs for collaboration in enhanced consultancy services as may be required. It is proposed that these may be pooled by KLISC or KLA for greater efficiency than if each is undertaken in isolation. For example agriculture information experts may be assigned to compile collections of e-books for all member universities in agricultural programs. This will have the advantage of reducing mental fatigue arising from searching for relevant titles which clearly undergraduate students do not have sufficient capacity to engage in. In the changing roles of the librarian, this is a more profitable form of engagement especially where package acquisitions are to be preferred due to cost benefits.

The use of e-books in learning should not be torturous but an easy experience. Hindrances to uptake of e-books for undergraduate students can be related to acquisition of titles that are not relevant or acquisition of too many relevant titles in one field. This complicates the information scenario making it an unpleasant experience that leads to e-books being perceived as irrelevant or difficult to use by undergraduate students some of who viewed them as mainly for post graduate students. To ensure that e-books acquired are relevant there is need for engaging professional librarians with subject expertise. This would require transformed information management dynamics in handling both e-books and print information resources. University libraries would be required to employ librarians with other qualifications in diverse subject areas, or hire services of consultants, or have experts within the consortium to transcend institutional boundaries for selecting and monitoring the development of up-to-date information resources in the respective academic fields.

Professional librarians should regain their responsibilities in provision of information resources. Expecting undergraduate students to find relevant information resources from a myriad of them is ceding much of their responsibilities to clients that are ill equipped. Librarians should, ensure that relevant information is delivered in appropriate formats to the users. Librarians should seek to recover responsibilities ceded to publishers and aggregators who are inclined to pursue sales and thereby fail to take into consideration the learning levels of all university library users.

(f) Branding of E-books in the Library

The information market has gone through revolutionary transitions. This requires timely response by librarians in aspects such as in packaging which directly impacts use of e-

books. Products are designed to be demand driven and to spur more production. Where the uptake of a product perceived useful fails in spite of diverse awareness creation efforts, certain adjustments to product design and packaging may be required. The EKB model aptly demonstrates that input in terms of advertisement and awareness creation should be convincing and able to arrest the attention of the target users. Effective awareness creation and marketing of e-books to undergraduate students may require repositioning to more acceptable formats. Qualities such as convenience, consistency, mnemonic, ease of use, and time saving should be inherent in the structure adopted. These should have clear advantages over competing brands. It has been observed that even universities which have diversified strategies of awareness creation can still not boast of optimal levels of use. This calls for librarians to revisit e-book provision for undergraduate students and repackage them in more helpful formats as undergraduate students expected easier access. Caution should be taken to protect undergraduate students in their earlier years from the deep seas where academic sharks swim as this will be too intimidating and many may fail to take the plunge. Chernev (2011) in chapter 2.2.3 also observed that where there were many choices especially for novices the option may be not to choose at all. Few choices enhance capacity to make decision by reducing information overload and thereby curtailing on time spent by the *instant* generation. This will also ensure effective adaptation to consciously thoughtful use of e-books as opposed to random researches hurriedly done through search engines.

It is recommended that packaging of e-books be made per program for ease of access. It was clear from the findings that awareness may fail to result to desired use unless certain adjustments were made in the packaging formats. This requires respective discipline oriented librarians to customize e-books so that at the level of evaluation of alternatives in

the decision making stage, e-books in the library platform will meet the criteria for choice. E-customization may be designed in a way that enhances ease of use, convenience and organizes e-books with the undergraduate students in perspective. This researcher calls for repositioning of e-books in public universities for effective access and use. The design should demonstrate sensitivity to undergraduate students' e-book information needs. It should promote easy navigation and retrieval of relevant information and discovery of e-book delivery pathways for effective access.

Additionally, it is recommended that only actual books paid for should be visible from the online public access catalogue. Books that have not been paid for and are unlikely to be procured should not be reflected among other e-books. Frustrations encountered through access to titles which can only be viewed up to abstract level or have minimal pages that can be accessed are numerous. Mawere and Sai (2018) in chapter 2.9.2 recommended that the library should analyse its e-resources and pull down titles that have false starts. They observed that such occurrences are disappointing to users and are bound to discourage further use.

Delivery of e-books places responsibility on undergraduate students to search out for information which they do not have sufficient capacity to evaluate. The assumption by the librarians that undergraduate students will easily select relevant titles from bulk of titles availed did not take into consideration their levels of expertise in the academic fields as opposed to their skillfulness in the use of ICT gadgets. Skillfulness in the use of ICT gadgets did not translate to appropriate access and use of e-books. The direct link to the

relevance of the e-books to their programs was missing. This was also observed by Wilcox and Chia (2013) in chapter 2.9.4.

(g) Use of Library Spaces

The fact that e-books can be accessed virtually has not diminished the value of the physical library. The library is popular for serious study and remains a place where students retreat to when they want to engage in serious study arising from the inspiring atmosphere that prevails. Awareness creation can be done from within these spaces. These can be used to enhance the use of e-books by ensuring 100% wireless connectivity while ensuring that the capacity of staff support is sufficient. Because of the prevailing atmosphere for inquiry this becomes the most appropriate place to enhance awareness to provide sufficient utilization.

6.4.2 Recommendations for Kenya Library Information Services Consortium (KLISC)

Recommendations have been made to KLISC as the organ that largely coordinates the acquisition of e-books for public universities. These include: change of acquisition model; and selection of titles and rebranding.

(a) Revised Acquisition Model

The acquisition of e-books needs to transition from the current package plan to one that addresses respective university programs. INASP's formula worked well and is still appropriate for advanced learning and research. This was initiated at a time when there was a dearth of literature experienced in access to research findings in scientific publications by universities in Kenya and prior to global connectivity through fiber optic cables becoming a

reality. The model was also convenient for bulk purchases at negotiated prices specifically targeting Africa, Asia and Latin America. There is now a call for transition to diversified strategies of e-resource acquisition due to a changed information landscape where access has been highly made possible. Sufficient research and piloting should be conducted before launching any product to determine expected reception by the target community. Attempt to market after the launch may be met with lack of interest and failure to sell as observed in chapter 2.2.3.

This period of transition for Kenya with regards to INASP relations presents an opportune time for KLISC to revisit the INASP model. This is because the reasons that led to its creation have been overtaken by the current social economic status of the country reached through transformed ICT environment and global access to research through the Internet. This is a far cry from its initial status where access to research findings was a major challenge owing to slowness of VSAT and affordability of internet access prevalent in the previous ICT environment. The general consensus by the lecturers was that e-books were to be preferred over print as these could be accessed by more students at the same time. Hence a revisit of the acquisition model is necessary.

(b) Selection of Titles and Rebranding

There is need for careful selection of e-book titles. This will ensure profit maximization resulting from an actualized purchase and employment of economies of scale in eliminating dead stock as observed in the conceptual framework in chapter 2.2.3. The superstore experience is similar to that likely to be met in a typical university or college library by undergraduate students who are normally unclear about what they need except in cases

which they have direct references. Hence it is important to be focused on information resources that adequately meet the needs of the clientele and are also cognizant of existing financial limitations. The prevailing ubiquitous information environment guarantees that all levels of undergraduate students users can have their information needs met. The consortium should develop sufficient capacity to negotiate with publishers and aggregators on their own terms. Acquisitions of e-books will be most appropriate if library driven as opposed to the current model which is publisher driven as observed by Kahn and Underwood (2016) in chapter 2.9.4. Librarians should partner with publishers to come up with friendlier packages targeting specific user groups. Relevant e-books may be negotiated at better terms for use. Whereas the Consortium model is proven as the best model for procurement of e-resources, the package acquisitions especially for e-books has been largely viewed by librarians as inappropriate. Titles used by all universities are only a small fraction of the entire packages that librarians are compelled to sign up for. Savings on cost are negated by the loss of value when most remain unused. Purchase of individual titles on the other hand may mean fewer e-books with the same budget but has the advantage of a guarantee that resources provided will be used. University and college libraries need to rebrand their collections of e-books to attract and retain use.

Resources procured largely with a research clientele in mind may fail to provide value to undergraduate learning. Whereas large, rich and diverse collections are important to the faculty and graduate students, the undergraduate students are likely to show less enthusiasm. To meet the undergraduate electronic information needs there is need to develop a more realistic model. Librarians should be more actively engaged in the discovery of undergraduate students information needs to fulfill their mandate in

connecting the undergraduate students with information and knowledge they need. Librarians should be committed to inclusion of information service provision for all its different categories of clients.

6.4.3 Recommendations for Kenya Library Association (KLA)

KLA is also relevant as the national professional organization in matters concerning professional growth and ensuring professional guidelines. Recommendations that have been proposed for the association include: research on information resources; and creation of monitoring and evaluation parameters.

(a) Continuous Research on Information Resources

The objectives of the library need to be clear as it balances its services to all its categories of users. While providing research resources, it equally needs to provide for learning to its bulk of users. Undergraduate students require e-books that enhance learning. This calls for continuous research in all consumer aspects in order to cope with changing tastes and consumption habits of its consumers. American Libraries Association is a good example of unified research which ensures holistic absorption of findings of research by its member libraries. It is recommended that research by academic and research libraries be coordinated by a single entity to ensure best absorption of research findings. An umbrella body would also be important in guiding research.

For the effective use of e-books to be realized by public universities in Kenya, research on alternative approaches should be enhanced. Research conducted abroad may not be very appropriate for transplanting due to social economic and cultural differences. For example

digital natives in the west are not true representation of the typical undergraduate students in Kenya as discussed in the background information in chapters 1.2.6 and 2.4.

Professional librarians need to be innovative in identifying best practices that are home-grown by doing their own research for what is workable in their unique situations. Institutions should be willing to fund these researches to avoid possible disappointments that would arise from transplanting practices built through foreign experiences. The Kenya Library Association (KLA) should seek ways to enforce absorption of research findings. This could be done in several ways such as by recognizing researchers who are innovative and have come up with practical research findings. The experiences of the American Research and College Libraries (ACRL) could be emulated in this regard where they fund research that is then trickled to respective member libraries.

(b) Continuous Monitoring and Evaluation Parameters

University libraries have embraced certain evaluation parameters to ensure quality in services such as the CUE Standards and Guidelines, ISO (International Standard for Standardization) Certification, as well as having oversight committees such as Library Advisory Committees. There, however, remains a need for a continuous scorecard to evaluate services provided. These may include Cost Benefit Analysis (CBA) of titles acquired and Return on Investment (ROI) measurement parameters.

Cost benefit analysis of titles would ensure that information resources acquired in whichever format are acquired after sufficient evaluation to ensure that they shall be useful to the clientele including undergraduate students. Regular cost-benefit analysis should be carried out on the use of e-books to ensure that demand consistently yields a return on

investment. Certain titles are more popular and attract repeat borrowing while others are hardly touched. Repeat subscription of e-book titles hardly touched should be avoided.

6.4.4 Recommendations for the University Management Boards

Responsibility for the overall infrastructural development in public universities is vested on the university management boards. Recommendations for university management boards include: enhancement of internet and ICT infrastructure; advanced training in the use of ICT by undergraduate students; and increased funding.

(a) Internet and ICT Infrastructure

Existing limitations such as weak internet and ICT infrastructure have severely hampered the fast uptake and growth in popularity of e-books. Librarians interviewed identified the request by undergraduate students for larger computer laboratories. It was interesting to note that this was raised in all universities sampled. Even where laptops were compulsory for all undergraduate students, they still requested for more computer spaces within the library. In spite of the improvements that have been made in ICT infrastructure in all the universities sampled, there was still much to be done to reach a point of saturation. This study recommends the facilitation of access to the internet from all areas of the physical libraries. ICT infrastructure needs to be continually improved to benefit all levels of users. Ideally, facilitation for access to information in teaching and research institutions should be a priority area for investment in order to achieve desirable ends. Appropriate wireless connectivity as well as affordable ICT gadgets such as computers is important in enhancing convenient access and use.

(b) Advanced Training in Use of ICT

Undergraduate student awareness creation programs undertaken should be well structured to accommodate even the most basic ICT user with the realization that there is a possibility that beyond the use of social media, the use of ICT in learning could be a new experience for some undergraduate students in Kenya. Findings made in 4.6.1 observed that undergraduates were not as competent in the use of ICT as believed to be. This study proposes that respective universities should increase the capacities of undergraduate students for internet access and use. The compulsory units in computers (Comps 101) may need to have the practical aspects increased. Hence, it is recommended that more advanced training should be made to enhance undergraduate student capacities.

(c) Funding

This study calls for increased budgets by university managers to enable the librarians to meet their obligations which form the core function of the universities namely knowledge creation in teaching, learning and research. Increased budgets would ensure increased procurement of relevant information resources as well as employment of professional library staff. It is the recommendation of this researcher that every school or faculty should be assigned a librarian even where there was no physical library. This affiliation will ensure enhanced understanding of e-book needs for all users.

6.4.5 Proposed Model for Undergraduate Students' E-book Awareness Creation

It was found that awareness creation by librarians alone was inadequate in spurring and sustaining required levels of e-books use. There was need to address issues of system design and attributes such as relevance, ease of use, convenience, library staff capacities,

ease of access, 'reason to' and creation of a strong recognizable brand. An e-book user system and awareness creation model is proposed in which librarians, lecturers and undergraduate students are involved. The process of mixing of 7Ps in ensuring that e-books conform to the needs of undergraduate students should be librarian driven as shown in Figure 6.

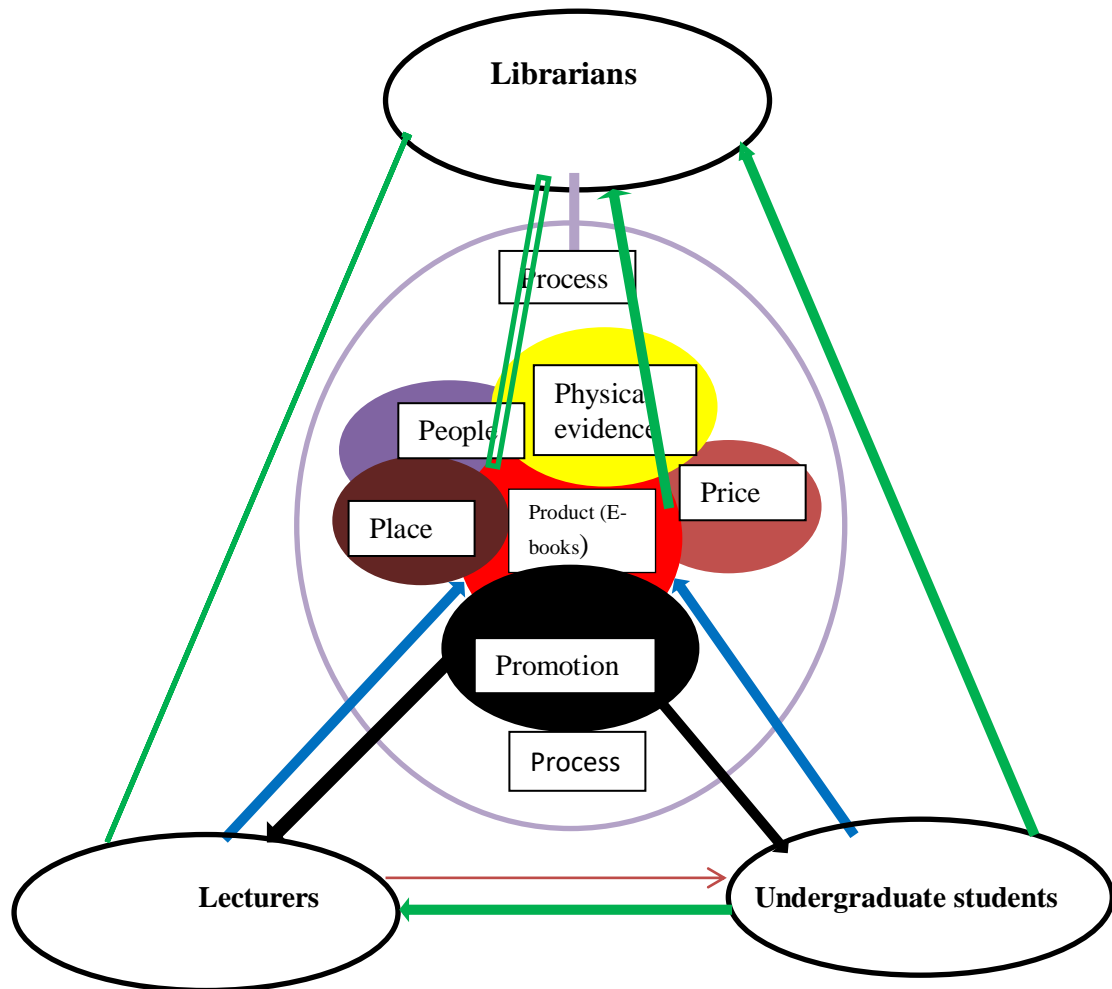







Figure 6: Proposed Model for E-book Awareness Creation

Key:

-  Processing of e-books
-  Awareness creation
-  Access and use of e-books

-  Communication by lecturers
-  Feedback

Librarians have the responsibility of ensuring that e-books (product) conform to the programs and are suitably packaged for use by undergraduate students by involving lecturers, undergraduate students and other stakeholders denoted by the *Process*. The conceptual framework advanced maintains that librarians act as the intervening variable in the *process*. Process is important as it is the main ingredient in creating synergy for all other aspects in ensuring that e-books are well positioned for use by undergraduate students. Awareness creation for both undergraduate students and lecturers is denoted as *promotion*. This is the *Input* in the EKB model. *Price* involves issues of convenience, ease of use, and ease of access. This should be entailed in the e-books' resource systems design. Librarians should also be conscious of accessibility or *places* where utilization of e-book resources is possible. Library staff or the *people* involved in all aspects of e-book *processing* should be sufficient and possess requisite competencies.

Where e-books are accessible and where access challenges are minimized, increased use by undergraduate students should be experienced. There should be feedback from both the lecturers and undergraduate students to librarians. Librarians should also devise a mechanism for getting feedback from the system showing how undergraduate students interact with e-books. The communication of information by the lecturers to undergraduate students would ensure that awareness creation by librarians result to expected use of e-books. There should be equality in awareness creation or promotion to both lecturers and undergraduate students. For example, if awareness is to be made to undergraduate students in a certain program then similarly awareness creation should be made to the lecturers and vice versa. It is proposed that lecturers should have prior awareness where their input on content would be taken into consideration and ensure preparedness for the undergraduate

students. It is also noted that if peers in classes ahead are not aware, awareness creation to the targeted lower classes may fail to achieve expected use. This study, therefore, recommends that awareness creation should preferably have a top-down approach. Lecturers should also receive feedback from the undergraduate students on relevance and usability of e-books provided. Undergraduate students will be more confident in accessing the e-books when encouraged by their lecturers. Feedback gets to the librarians and the people assigned to work on e-books. Feedback should result to minimal or major repositioning which may include the awareness creation information and or the design and delivery of e-books. Undergraduate students expect coordinated support from their lecturers and librarians. Where any of the 7Ps is neglected, the system is bound to experience inadequacies in effective e-books resource provision to undergraduate students and thereby obstruct the intended enhanced sustained utilization.

6.5 Suggestions for Further Research

- 1) A study on the comparative use of online e-books and library e-books needs to be done to establish whether the perception that undergraduate students depended on other online resources may be verified.
- 2) In view of the challenges that librarians encounter in embedding information literacy in the curriculum, there is need to find home grown solutions. Research in this regard is recommended.
- 3) This study recommends to university librarians to consider having a database for the competencies that the professional librarians have. This may be relied upon where

their subject competencies are needed by other universities through the consortium or the professional association. Research in the actual potential of such an undertaking is recommended.

- 4) With dwindling funding for university libraries, a study to verify the potential success of an alternative model of provision of information resources through open access is recommended.

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APPENDICES

Appendix A: Letter of Introduction to Undergraduate Students

Dear Student,

RE: UTILIZATION OF ELECTRONIC BOOKS (E-BOOKS)

I am a student in the School of Information Sciences in Moi University. I am collecting data on the “Use of Electronic Books by Undergraduate Students in Public Universities in Kenya”. Findings are expected to help understand the experiences of undergraduate students of public universities in accessing and using electronic books (e-books) with a view to finding ways in which the library can enhance the service. You have been randomly selected as a respondent. Kindly fill the questionnaire attached by indicating your most appropriate answers. You are assured that your identity will remain anonymous and responses you give will only be used for this study.

Thank you.

Peris W. Kiilu
Moi University
Contacts: 0722265702
Email: periskiilu@gmail.com

Appendix B: Survey on Use of E-Books by Undergraduate Students in Public Universities in Kenya

Please fill in the missing gaps by giving your most appropriate response or by putting a tick (√) on the box next to appropriate response.

A: General Information

- 1. University..... 2. Faculty/School.....
- 3. Degree Program e.g. Bachelor of Education, B.A., etc.....
- 4. Gender: Male [] Female []
- 5. Age bracket: 20 – 24yrs [] 25 – 29yrs [] 30- 34yrs [] 35- 39yrs [] 40 & above []

B: Level of Awareness of Library E-books

- 6. Are you aware of e-books? Yes [] No []
If no, why?
- 7. If yes, at what level is your awareness of library e-books?
Very High Quite High Medium Quite low Very low
- 8. How often do you use library e-books?
Daily Once a week Once a month Once a semester Never

C: Awareness Received

- 9. How did you get to know about the e-books provided by the library? Through:

S/No.	Service	Yes	No.
a.	Formal Library Orientation		
b.	Colleagues		
c.	Lecturers		
d.	Information Literacy Programs		
e.	Brochures		
f.	Email services		

- g. Others, please specify.....

D: Factors that Influence the Use of Library E-books

10. At what level is your knowledge on access to library e-books?

Very High Quite High Medium Quite low Very low

If your answer to question 8 is never or once a semester, please skip to question 23

11. What leads you to using Library e-books? Please rank your answers using Nos.5 to 1; where 5 has the most influence, 4 for High influence, 3 for Moderate influence, 2 for Low influence while 1 is for very low influence.

S/No	Purpose for using E-books	5	4	3	2	1
a	Information Literacy Classes					
b	Self-motivation					
c	Influence by colleagues					
d	Referred by lecturers					

e. Others, please specify.....

How do the following aspects influence your level of use of library e-books? Please tick (√) 5 for Very High Influence, 4 for Quite High Influence, 3 for Medium Influence, 2 for Quite Low Influence, and 1 for Very Low Influence.

S/No.	Measure	5	4	3	2	1
12.	Convenience					
13.	Ease of use					
14.	Relevance					
15.	Accessibility					
16.	Inadequate print textbooks					
17.	Sufficiency					
18.	Accuracy					
19.	Currency					
20.	Reliability and credibility					
21.	Coverage					
22.	Format (e.g. PDF, html, etc)					

23. Which other qualities of e-books influence your use of e-books?

24. Which other site(s) do you access for e-books, for example, Google Scholar and so on? Please specify.....

25. How often do you use e-books from the above sites?

Daily Once a week Once a month Once a semester Never

What aspects influence your use of e-books from these site(s), please tick (√) 5 for Very High, 4 for Quite High, 3 for Moderate, 2 for Quite Low, and 1 for Very Low.

S/No.	Measure	5	4	3	2	1
26.	Convenience					
27.	Ease of use					
28.	Relevance					
29.	Accessibility					
30.	Inadequate print textbooks					
31.	Sufficiency					
32.	Accuracy					
33.	Currency					
34.	Reliability and credibility					
35.	Coverage					
36.	Format (e.g. PDF, html, etc)					

E: Perception of Library E-books in Comparison to Library Print Books

Please skip Nos. 37 to 45 if you do not use library e-books.

How would you rate library e-books in comparison to library print books using the following aspects? Please tick (√) 5 for Very highly, 4 for Quite highly, 3 for same, 2 for Quite low, and 1 for Very low.

S/No.	Measure	5	4	3	2	1
37.	Convenience					
38.	Ease of use					
39.	Relevance					
40.	Accessibility					
41.	Sufficiency					
42.	Accuracy					
43.	Currency					
44.	Reliability and credibility					
45.	Coverage					

46. How often do you use print books in the library?
 Daily Once a week Once a month Once a semester Never

47. What format of text books do you prefer?
 Print Electronic Both Formats

48. Please give reasons for your preference in No.47 above

F: Expectations Regarding Library E-books

49. What difficulties do you encounter in selecting relevant articles from the range of library e- books provided? Please specify.....

G: Propose Recommendations on Library E-books

50. What would you propose to improve access and use of e-books in the library?

.....
.....

Thank you for your time and participation

Appendix C: Focus Group Discussions for Undergraduate Students in Public Universities on Use of Library E-Books

A: Focus Group General Information

1. University:.....

B: Level of Awareness of Library E-books

2. Are you aware of e-books’?

a) If no, why not?

.....

b) If yes, what are they?

.....

3. When and where did you first come across e-books?

.....

4. Are you aware that the library has e-books among other e-resources? If no, why are you not aware?

.....

.....

C: User Education Programs Offered by Public University Libraries

5. How did you become aware of library e-books? (For example through: peers, lecturers, library orientation and so on).

.....

6. Have you had any training in the use of e-books? If yes, what kind of training did you go through? Explain

.....

D: Factors that Influence the Use of E-books

7. In view of the above, what alternatives do you use?

.....

.....

E: Perception of Undergraduate Students on Library E-books in Comparison with Library Print Books

8. Which format of information resources do you prefer and why?
.....
.....
.....

9. How do you perceive library e-books in terms of *relevance, convenience, accessibility, and ease of use* in comparison to print books?
.....
.....

F: Expectations of the Undergraduate Students on Library E-books

10. What challenges do you experience in using the e-books in the library?
.....
.....

11. What are your expectations on e-books?
.....
.....
.....

G: Recommendations on Provision of Library E-books

12. In your view, what should be done to improve access and use of e-books from the library?
.....
.....

Thank you for your time and participation.

Appendix D: Interview Schedule for Lecturers on Undergraduate Use of Library E-Books in Public Universities in Kenya

A: General Information

- 1. University.....
- 2. Faculty/ School affiliated to.....
- 3. Undergraduate teaching experience: 0-5yrs 6-10yrs 11 yrs and above
- 4. Gender: M F
- 5. Programs teaching.....

B: Undergraduate Students’ Level of Awareness of Library E- Books

- 6. Where do you normally advise undergraduate students to access the references you give in your reading lists?
.....
.....
- 7. Do you refer students to only print or electronic materials or both? Please explain why.
.....
.....

C: Use of Library E-books by Undergraduate Students

- 8. Do you refer your undergraduate students to library e-books? Please explain your response.....
.....
- 9. In your opinion, how would you rate library e-books in usefulness to undergraduate students in terms of
 - a) Accessibility
 - b) Relevance.....
 - c) Convenience.....
 - d) Ease of Use.....
- 10. From your experience, do you perceive undergraduate students to be good in evaluating e-books for use gauging from the assignments you give them?
.....
.....

D: Perception of E-books

11. What is your perception about library e-books for undergraduate students use in general? Do you consider them useful for students to use? Please explain.

.....
.....

E: Recommendations for improvement

12. In your view, what should be done to improve access and use of e-books in the library?

.....
.....

Thank you for your participation and valuable contribution

Appendix E: Interview Schedule for Librarians in Circulation Services and Resource Centers on Undergraduate Students Use of E-Books

A: General Information

- 1. University:.....
- 2. Undergraduate population.....
- 3. Highest professional qualification: Certificate Diploma
 Bachelor’s Degree Master’s Degree None
- 4. Gender: M F
- 5. Experience in the provision of library electronic information resources and services:
 0-4yrs 5-9yrs 10-14yrs 15yrs and above

B: Library E-book User Education Programs by University Libraries for Undergraduate Students

- 6. What programs are in place to create awareness of library e- books among undergraduate students?

- 7. What impact has the use of these programs had on students?

C: Perception on Undergraduate Students Perception of E-books

- 8. What kind of support do undergraduate students specifically ask for?

D: Expectations of Undergraduate Students with Regards to E-books

9. What are the expectations of undergraduate students with regard to e-books?

.....
.....

E: Recommendations towards Meeting Undergraduate Students Library E-book Needs

10. What suggestions would you make to improve access and use of e-books by undergraduate students?

.....
.....

Thank you for your time, participation and insights

Appendix F: Public Universities in Kenya

The following is the list of public universities as at the time of conducting the study:

1. University of Nairobi.
2. Kenyatta University.
3. Moi University.
4. Egerton University.
5. Jomo Kenyatta University of Agriculture and Technology.
6. Maseno University.
7. Masinde Muliro University of Science and Technology.
8. Technical University of Kenya.
9. Pwani University.
10. Dedan Kimathi University of Technology
11. Technical University of Mombasa.
12. Chuka University.
13. Kisii University.
14. Maasai Mara University.
15. Meru University of Science and Technology.
16. University of Kabianga.
17. Jaramogi Oginga Odinga University of Science and Technology.
18. South Eastern Kenya University
19. Multimedia University of Kenya.
20. Laikipia University.
21. Karatina University.
22. University of Eldoret.
23. Taita Taveta University.
24. Muran'ga University.
25. Kirinyaga University.
26. Cooperative University.
27. Kibabii University.
28. Garissa University.
29. Rongo University.
30. Embu University.
31. Machakos University.

(Universities in Kenya: <https://www.advance-africa.com/Universities-in-Kenya.html>, Accessed 2017)


Appendix G: Research Permit by National Council for Science, Technology and Innovation

THIS IS TO CERTIFY THAT:
MS. PERIS WAMBUI KIILU
of MOI UNIVERSITY, 0-20100
NAKURU, has been permitted to conduct
research in Kiambu , Nairobi, Nakuru
Uasin-Gishu Counties

on the topic: THE NON-USE OF LIBRARY
SERVICES BY UNDERGRADUATE
STUDENTS IN PUBLIC UNIVERSITIES IN
KENYA



for the period ending:
5th June,2019

Peris Wambui Kiilu
Applicant's
Signature


Director General
Director General
National Commission for Science,
Technology & Innovation

Permit No. : NACOSTI/P/18/66103/22468
Date Of Issue : 5th June,2018
Fee Received :Ksh 2000

Appendix H: Research Authorization by Egerton University

<p>EGERTON P. O. BOX 536-20115 EGERTON, KENYA</p>		<p>UNIVERSITY ④ Tel: (051) 2217987, 2217781, 2217892 Fax: (051) 2217805, 2217827 Email: radmin@egerton.ac.ke</p>
<p>OFFICE OF THE REGISTRAR (ADMINISTRATION)</p>		
<p>EU/AF/CR/2N</p> <p>Ms Peris W. Kiilu C/o School of Information Sciences MOI UNIVERSITY</p>	<p>20th November, 2017</p>	
<p>Dear Ms Kiilu</p>		
<p>RE: APPROVAL TO COLLECT RESEARCH DATA</p>		
<p>Reference is made to your letter dated 14th November, 2017 on the above subject.</p>		
<p>Permission is hereby granted for you to carry out research on Thesis entitled "Use of e-books by undergraduate students in Public University Libraries in Kenya".</p>		
<p>It is noted that your research study will involve interviewing five (5) lecturers randomly sampled, three (3) librarians and a group interview for undergraduate students including a survey with seventy five (75) undergraduate students.</p>		
<p>Please note that the confidential information so obtained during the course of your studies should be treated with utmost confidentiality.</p>		
<p>Yours sincerely</p>		
		
<p>Dr. T. K. Serrem REGISTRAR (HUMAN CAPITAL & ADMINISTRATION)</p>		
<p>TKS/jjk</p>		
<p>"Transforming Lives Through Quality Education" Egerton University is ISO 9001:2008 Certified</p>		

Appendix I: Research Authorization by Jomo Kenyatta University of Agriculture and Technology



**JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY**

P.O. Box 62000-00200 Nairobi Kenya, Tel: +254-067-5870001-4, +254-67-53-52711,
Office of the Registrar (Administration)

9TH JULY, 2018

JKU/ACA/3D

Ms. Peris Wambui Kiilu,
P O Box3717-20100,
NAKURU

Dear Madam,

SUBJECT: PERMISSION TO CONDUCT RESEARCH AT JKUAT

Reference is made to your letter dated 27th June, 2018, in which you sought permission to collect data for your PhD research project entitled *"The Non-use of Library Services by Undergraduate Students of Public Universities in Kenya"*.

Approval has been granted for you to collect data on the understanding that all the data collected will be for academic purpose only and will be kept confidential throughout the project and after completion of the project. This is on condition that the University Library will receive a copy of your final thesis for future reference.

Yours sincerely,

DR JOSEPH OBWOGI, PhD
REGISTRAR (ADMINISTRATION)

JO/jm

Copy to: - Deputy Vice Chancellor (Admin)
 - Human Resource Manager

Appendix J: Research Authorization by Moi University



MOI UNIVERSITY

OFFICE OF THE DEPUTY VICE CHANCELLOR
ACADEMICS, RESEARCH AND EXTENSION

Tel: (053) 43355
(053) 43620
Fax: (053) 43412
Email: dvc_are@mu.ac.ke or dvcresearchmu@gmail.com

P.O. Box 3900
Eldoret - 30100
Kenya

REF: MU/DVC/REP/27B

Date: 6th November, 2017

TO WHOM IT MAY CONCERN

RE: PERMISSION TO CARRY OUT RESEARCH – PERIS WAMBUI KIILU

The above subject matter refers.

Ms. Peris W. Kiilu who is a Doctoral Student at Moi University has applied for authority to conduct research within Moi University. We would be grateful if she is permitted to conduct her research on "*The Non-Use of Library Services by Undergraduate Students in Public Universities in Kenya*".


By a copy of this letter authority is hereby granted to her to conduct the research.

After the completion of the research, a complete report both on hard and soft copy will be handed over to the office of Deputy Vice-Chancellor, Academics, Research & Extension.

Any assistance accorded to her will be highly appreciated.

Thank you.

Yours faithfully,


PROF. I. N. KIMENGI, Ph.D.
AG. DEPUTY VICE-CHANCELLOR
(ACADEMICS, RESEARCH & EXTENSION)

SKM/ur



(ISO 9001: 2008 Certified Institution)

Appendix K: Research Authorization by University of Nairobi



UNIVERSITY OF NAIROBI
OFFICE OF THE DEPUTY VICE - CHANCELLOR
 (Research, Production & Extension)
 Prof. Lucy W. Irungu B.Sc., M.Sc., Ph.D.

P.O. Box 30197-GPO.
 00100, Nairobi-Kenya
 Telephone: +254-20-2315416 (DI), 318262

Fax: 0202317251
 Email: dvrpe@uonbi.ac.ke

UON/RPE/3/6/Vol. XVI/115

January 22, 2018

Ms. Peris W. Kiilu
 PhD Candidate
 Library and Information Sciences
 Moi University
 Nairobi Campus

AUTHORITY TO CONDUCT RESEARCH

Approval is hereby granted for you to collect data at the University of Nairobi for your research project entitled, "***The Non-use of Library resources by undergraduate students in public universities in Kenya***", in partial fulfillment of the degree of Doctor of Philosophy Degree in Library and Information Sciences, Moi University.

Upon completion of your study, you are expected to share the findings of your study with the University of Nairobi by depositing a copy of your research findings/report with the Director, Library & Information Services.

LUCY W. IRUNGU
DEPUTY VICE-CHANCELLOR
(RESEARCH, PRODUCTION AND EXTENSION)
 &
PROFESSOR OF ENTOMOLOGY

Copy to: Director, Library and Information Services

SWM/...




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Appendix L: Plagiarism Awareness Certificate

SRD35



EDU 999 THESIS WRITING COURSE

PLAGIARISM AWARENESS CERTIFICATE


This certificate is awarded to

PERIS WAMBUI NJUGUNA KIILU

IS/PHD/LIS/03/13

In recognition for passing the University's plagiarism
Awareness test with a similarity index of 08% and
Striving to maintain academic integrity

Awarded by:



Prof. John Changách, CERM-ESA Project Leader

11th /02/2022