AWARENESS, ADOPTION AND USE OF ELECTRONIC INFORMATION RESOURCES BY ECONOMISTS AT THE NATIONAL TREASURY AND PLANNING, NAIROBI COUNTY, KENYA

BY

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DECLARATION

DECLARATION BY THE CANDIDATE:

This research project is my original work and has not been submitted for a degree in any other University.

Signed …… Date ……

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DECLARATION BY THE SUPERVISORS:

This research project work has been submitted for examination with our approval as the University Supervisors.

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ABSTRACT

Economists play a very important role in collecting and collating information necessary for national development. They require up to date information in order to perform their roles effectively. This led to the introduction of electronic information resources in the National Treasury and Planning Library. Despite the National Treasury and Planning heavy financial resources' investment in the E- resources, the resources are under-utilized and not commensurate to the investment. This under-utilization has been attributed to lack of awareness and remote access to e-resources by the Economists resulting in underutilization of the e-resources. The aim of this study was to investigate the awareness, adoption and use of electronic information resources by economists at the National Treasury and Planning with a view to proposing interventions to enhance their awareness, adoption and use. The objectives of the study were to: establish the types of electronic information resources available at the National Treasury and Planning; determine the awareness, adoption and use of electronic information resources by economists; examine the factors that influence the adoption and use of electronic information resources by economists; establish strategies used to enhance awareness, adoption and use of electronic resources by economists; determine the challenges that are encountered by the economists in enhancing awareness, adoption and use of electronic resources and propose measures to mitigate these challenges. The study was underpinned by the Unified Theory of Acceptance and Use of Technology (UTAUT) and employed pragmatic philosophical worldview. The study adopted mixed method research approach while employing exploratory research design. The population of study consisted of economists, librarians, ICT staff, the director of library services and the director economic development coordination amounting to 234 respondents. Simple random sampling techniques were used to collect quantitative data from economists using questionnaires while qualitative data was collected from key informants, comprising: Librarians, ICT staff, the Director of library services and Director of Economic Development and Coordination using interview schedules. Quantitative data was analyzed and presented using tables, graphs and par charts while concurrent triangulation was used for qualitative data. The findings of the study revealed that electronic information resources available included; e-books, e-newspapers, e-journals and online databases. The findings also revealed that there was high awareness, adoption and use of electronic information resources by economists. The other finding of the study was that economists at the National Treasury and Planning face a number of challenges in their pursuit to be aware, adopt and use e- resources among them: lack of remote access to e-resources; failure to download full text of electronic articles; poor or inadequate sensitization and advocacy; inadequate facilities or infrastructure and inadequate user education among others. The study concludes that economists at the National Treasury and Planning are knowledgeable and familiar with electronic resources and were using them effectively but there is still the challenge of funding which has made the cost of running and maintaining e-resources high. The study recommends the upgrading of ICT and library facilities to allow remote access digitize local contents and train economist by mounting user education programs.

DEDICATION

Dedicated to my late parents, family and colleagues who constantly encouraged and motivated me to undertake this study.

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My sincere thanks and appreciation first and foremost go to the Almighty God who has granted me the gift of life, strength and wisdom without which nothing could have been possible. The same goes to my supervisors Dr. Damaris Odero and Dr. Duncan Amoth for their continuous guidance throughout this study.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS & ACRONYMS

ALA	American Library Association
CAS	Current Awareness Service
CD – ROMs	Computer Disc –Read only Memories
CD	Computer Disc
COTUL	Consortium of Tanzania University and Research Libraries
DOI	Diffusion of Innovation
EDCD	Economic Development Coordination Department
EIS	Electronic Information Sources
FAO	Food Agricultural Organization
GHRIS	Government Human Resource Information System
GITS	Government Information Technology Services
GOK	Government of Kenya
ICT	Information and Communication Technology
IFMIS	Integrated Financial Management Information System
IL	Information Literacy
INASP	International Network for the Availability of Scientific Publication
IPPD	Integrated Payroll and Personnel Database
IT	Information Technology
LAN	Local Area Network
MB	Mega – Byte
MDAs	Ministries, Departments and Agencies
MM	Motivational Model
MPCU	Model of Personal Computer Utilization
MTEX	Medium Term Expenditure
PACs	Online Public Access Catalog
NACOSTI	National Commission for Science Technology and Innovation
PCs	Personal computers
PDFs	Portable Document Format
POD	Print-On-Demand
PU	Perceived usefulness
RIN	Research Information Network
UNEP	United National Environmental Program
SDI	Selective dissemination of information

SCI	Social Cognitive Theory
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
UTAUT	Unified Theory of Acceptance and Use of Technology
WHO	World Health Organization
Wi-Fi	Wireless Fidelity
WWW	World Wide Web

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter begins by introducing the background to the study, historical background and organizational structure of the National Treasury and Planning, statement of the problem. And further lays out the purpose of study alongside the study objectives. The main questions guiding the research are highlighted in this section; linked with the significance, assumptions, scope, and limitations of the study. The chapter winds up with operational terms definitions.

1.1.1 Background to the Study

The rapid development of ICTs has made it increasingly difficult to access and retrieve data from libraries because of too much information being generated by these technologies. The difficulty to locate data needed makes exploration and decision-making to be delayed. There is duplication of work due to a lack of information awareness. The use of print information resources become cumbersome thus calling for the use of e- resources. As a result, librarians must educate library users, in the manner on how to utilize the library and locate resources needed while bearing in mind that they originate from a range of diverse cultures and possess varying levels of library understanding. Data is being packed in numerous ways as information development explodes. As a result, it is crucial to teach library users information literacy. If users are anticipated to provide high-quality materials for research and engage in learning in the long run, librarians must teach them how to reference, cite, and compile bibliographies. Education of users enhances the presence and position of academic librarians (Edemi, 2009). If users of the library have to appreciate the benefits of IT, they must have the prerequisite skills. Peyela (2011) contents that the

recent advances in IT have not only increased tremendously the ability to access, store and process information within the library but also brought significant changes in the concept, organization, functioning and the management of the library management system. Peya's assertion is also collaborated by other authors (Lopez, Peon, & Ordas, 2009) who say that the IT revolution has facilitated the processes of searching for and recovering information; ICT improves the efficiency of the organizational management processes and provides new ways of improving the capacity of response to its users.

Electronic resources (or e-resources) are materials in digital format accessible electronically. Bandele (2006), defined e-resource as a scientific means of storing, processing and sharing information through electronic means such as telephone, satellite equipment, internet, e- resources, e-book, e-commerce and e-learning that are popular information resources in the world while Dhanavandan & Tamizhchelvan, (2001) posits that these are electronic information resources and services that users can access from within or outside the library using a computer network.

These resources include online databases, electronic journals (e-journals), electronic books, (e-books), internet resources, Print-On-Demand (POD), e-mail publishing, wireless publishing, electronic link and web. Information in electronic format can be accessed via the internet, pen drives, and other peripheral devices through the use of computer systems. Electronic information resources have become popular in libraries because they make it possible for libraries to extend their collections beyond the confines of the physical walls leading to new community of resources and information seekers (Peggy, 2014).

Electronic resources have become popular with the library users in this age of information technology. Library users are currently confronted with vast information hence they have to wade in the mucky waters of infobesity. These calls for various programmes to be put in place for instance user education programmes such as user education, information literacy in order to enable easy access and retrieval to information by the library users can lead to the underutilization of e-resources in libraries. Library staffs are therefore called upon to mount such programmes to ensure that there is optimum use of e- resources. It has been argued that without the library putting in place robust programmes such as user education, computer literacy, information and literacy e- resources can be underutilized thus defeating the very purpose of investment. Fleming (1990) defines user education as various programmes of instruction, education and exploration provided by libraries to users to enable them to make more effective, efficient and independent use of information sources and services to which these libraries provide access. According to Ogbonna (2009) user education involves teaching users on how best to explore and exploit the resources in the library.

All over the world, the role of e-resources has been underscored in scholarly or in executing work related assignments in various institutions. In India, Sethi and Panda (2012) note that with the advent of the digital era, the library and information landscape has altered, and that traditional libraries have evolved into 'knowledge centres,' with a focus on value-added electronic information services. The traditional practice of handling library resources is fast transitioning to an electronic form, and internet demand and e-resources between research and academic communities has risen dramatically over time.

In Pakistan, Madhusudham, (2017) agreed that from anywhere in the globe, one may peruse through a vast range of data, including up-to-date research publications being enabled by internet. Availability of websites and a way of searching and categorizing the output allows academic and scholars institutions to share knowledge to a huge audience. In order to facilitate accessibility to e-resources usage in academic libraries, global initiatives are being undertaken.

In South Africa, Sejane, (2018) reported that e-resources were mostly used for communication, as well as assisting in activities of learning and teaching, assignments, lecture requirements and professional research. Library users became aware of e-resources mostly through official interaction, library induction, and informal engagements, like the conversations with co-workers.

An evaluation of user education literature reveals the importance of user education in both in academic and institutional libraries. It is believed by library staff offering library services that improving users' knowledge of their libraries' collection and services could be a motivating factor for more usage and more demands on the library and Ford, (1994) corroborates this by arguing that user education should be organized at different information levels to ensure that needs of all users are met.

User education programmes, according to Maduako, (2013), ranges from basic information on materials in college, up to the more formal structure and systematised programmes of instruction imparted to library users. With varied degrees of effectiveness, these various types of user education programmes aim at teaching library users how to make optimal use of the library and its resources, through the acquisition of skills in identification, location, retrieval and exploitation of information resources.

User education according to Nwokocha, (2012) is fashioned to increase users' ability to locate materials they need, extend their knowledge of useful library tools in searching for materials, encourage them to make effective use of library resources and teach users the various rules and regulations of the library

User education takes many forms and one of these forms is information literacy. According to American Library Association, information literacy is defined as “a set of abilities requiring individuals to recognize when information is needed and the ability to locate, evaluate, and use effectively the needed information.” Computer literacy could be the main support for effective use of electronic information resources. It has been observed by those offering user educations that strong information literacy skills enable effective uses of e-resources. Users of e-resources are required to gain requisite skills for computer literacy in order to make effective use of electronic systems and information sources.

Haruna, (2004) explored the extent of utilisation of resources and services by users of a public library and the revealed that majority of users used library books for studying and doing assignments while using their own books for examination purposes.

Osagie, (2003) indicates that the need for library user education is to enable users to; know how to use the library catalogue in any Library, understand the classification scheme in the library so as to be able to locate materials, appreciate the library catalogue as index to the library holdings and view the library as a repository of knowledge that determines the success of the students’ academic programmes.

The findings in Mwantimwa, (2017), suggest that majority of the academic staff and researchers were aware of the existence of e- resources, had access to usee-resources

to support teaching and research. Most of the e-resources were subscribed to through Consortium of Tanzania University and Research Libraries (COTUL)were under-utilized since they were not optimally used by both staff and researchers. The study found out that there was a need to promote the usage of e-resources through web technologies to enhance the quality of teaching and research.

Accordingly, COTUL constitutes an innovative collaborative effort in the country aimed at broadening and consolidating access to and utilisation of e-resources. COTUL primarily seeks to address the shortage of teaching, learning and research resources through joint information resources provision activities, particularly the acquisition and subscription of e-information resources such as African Journal Online (AJOL), Journal Storage (JSTOR), Oxford Journals, Emerald and other e-journals as well as other databases, research, training, consultancy and other services that are crucial attaining academic excellence in learning, teaching and research Alphonce, (2015).

A study by (Muhinja, 2013) indicated that training user on ICT skills is essential and therefore inevitably necessary for effective use of e-books, certainly end users of electronic resources often need assistance in database content, search protocols and use of computers. There is, therefore, a necessity for a good training program to enable students develop information literacy skills. Muhinja's research established that users were inadequately skilled for efficient utilization of e-resources and there was dire need for information literacy training program to facilitate utilization of e-resources by academic staff and students in universities in Kenya.

According to George, (2016) found out that researchers who used e- resources in their research reported an improved access to information and reduction of the amount of

time for completion of a research project and Thesis. In Kenya, academic libraries appear to be encountering significant challenges in fulfilling their core function of providing information to users (Makori, 2012). Information perusals are perhaps on the online society, with digital services becoming more widespread and preferred in an era of extraordinary technological progress and altering customer anticipations and information seeking behavior. Libraries are in a good position to respond as credible information providers, but doing so needs integrated strategic and enterprise architecture planning, because IT has advanced from a supportive role to a key role, creating the core systems of management, communications infrastructure, and distribution channels of the advanced library.

The Government of Kenya (GOK) has advocated for the need for a comprehensive understanding of ICT and ICT related initiatives in order to support its activities, ensure greater coherence, develop and refine a more effective national ICT Programs that optimizes decision-making and allocation of resources (Ministry Planning & National Development, 2006). Electronic information resources are available in various forms like e-books, digital libraries, online journal magazine, and e-learning tutors. Electronic information resources deliver the collection of information as full text databases, e-journals, image collections, multimedia in the form of CD, tape, internet, and web technology among others. The National Treasury and Planning is using a range of information technologies, such as the Wide Area Network, Internet, and Mobile Computing, by government agencies to transform its operations and services in order to improve effectiveness, efficiency and service delivery. By the turn of the 21st century, library automation and the Internet had revolutionized information adoption, access and usability in organization or institution operations around the world. Institutions have been able to take advantage of these developments to facilitate

the process of research and learning. These new modes of accessing information have emerged as a result of the Internet and World Wide Web. Institutions information users therefore are able to access up-to-date international literature as soon as it is published on the Internet.

1.2 Background of the National Treasury and Planning

The National Treasury and Planning is one of the Ministries of the government of Kenya. It derives its mandate from the Constitution of Kenya 2010, the Public Financial Management Act 2012 and the Executive Order No. 2 of 2013. It manages national economic policy, prepares the government's annual budget, and manages the national government's public finances. It executes its mandate in consistency with any other legislation as may be developed or reviewed by Parliament from time to time.

1.2.1 Vision of the National Treasury and Planning

To be an Institution of excellence in economic and public financial management

1.2.2 Mission of the National Treasury and Planning

To promote economic transformation for shared growth through formulation, implementation and monitoring of prudent economic and financial policy at National and County levels of Government. The mission is to be realized through the following core values: customer focus; result oriented; stakeholder participation; professionalism; accountability; transparency and integrity; team work and commitment; recognition of staff as key asset; and equity, fairness and inclusion.

1.2.3 Mandate of the National Treasury and Planning

The core functions of the National Treasury and planning as derived from the above legal provisions include: formulate, implement and monitor macro-economic policies

involving expenditure and revenue; manage the level and composition of national public debt, national guarantees and other financial obligations of national government; formulate, evaluate and promote economic and financial policies that facilitate social and economic development in conjunction with other national government entities; mobilize domestic and external resources for financing national and county government budgetary requirements; design and prescribe an efficient financial management system for the national and county governments to ensure transparent financial management and standard financial reporting. In consultation with the Accounting Standards Board, The National Treasury and Planning ensure that uniform accounting standards are applied by the national government and its entities; develop policy for the establishment, management, operation and winding up of public funds; prepare the annual division of revenue bill and the County allocation of revenue bill; strengthen financial and fiscal relations between the national government and county governments and encourage support for county governments and assist county governments to develop their capacity for efficient, effective and transparent financial management and to prepare the National Budget, execute/implement and control approved budgetary resources to MDAs and other Government agencies/entities

The National Treasury and Planning also, strengthen financial and fiscal relations between the National Government and County Governments and encourage support for county governments in performing their functions, assist county governments to develop their capacity for efficient, effective and transparent financial management, prepare the annual Division of Revenue Bill and the County Allocation of Revenue Bill, provide logistical support to intergovernmental institutions overseeing intergovernmental fiscal relations, coordinate the development and implementation of financial recovery plans for county governments that are in financial distress and

coordinate capacity building of County Governments on public finance management matters. The National Treasury and Planning has not been able to effectively and efficiently execute its mandate since the economists have not been able to exploit the e-resources in the library due insufficient knowledge on how to access and retrieve information from e- resources due to lack of user education programs that are meant to educate them (The National Treasury and planning Strategic plan 2018/19-2022/23).

1.2.4 Structure of the National Treasury and Planning

To undertake its functions effectively, the National Government has restructured the National Treasury and Planning. The National Treasury and Planning iscomprised of: Cabinet Secretary, who is also the head of the National Treasury and Planning; the two Principal Secretaries; and the department or departments, office or offices of the National Treasury and Planning responsible for economic and financial matters.

The National Treasury and Planning has five technical directorates to coordinate technical functions. The Directors General heads the five technical directorates. The four technical directories are: -Directorate of Public Debt Management; Directorate of Portfolio Management; The Directorate of Accounting Services & Quality Assurance; and The Directorate of Budget, Fiscal and Economic Affairs. (The National Treasury and planning Strategic plan 2018/19-2022/23).

The Organizational Chart of the National Treasury and Planning is shown in Figure 1.

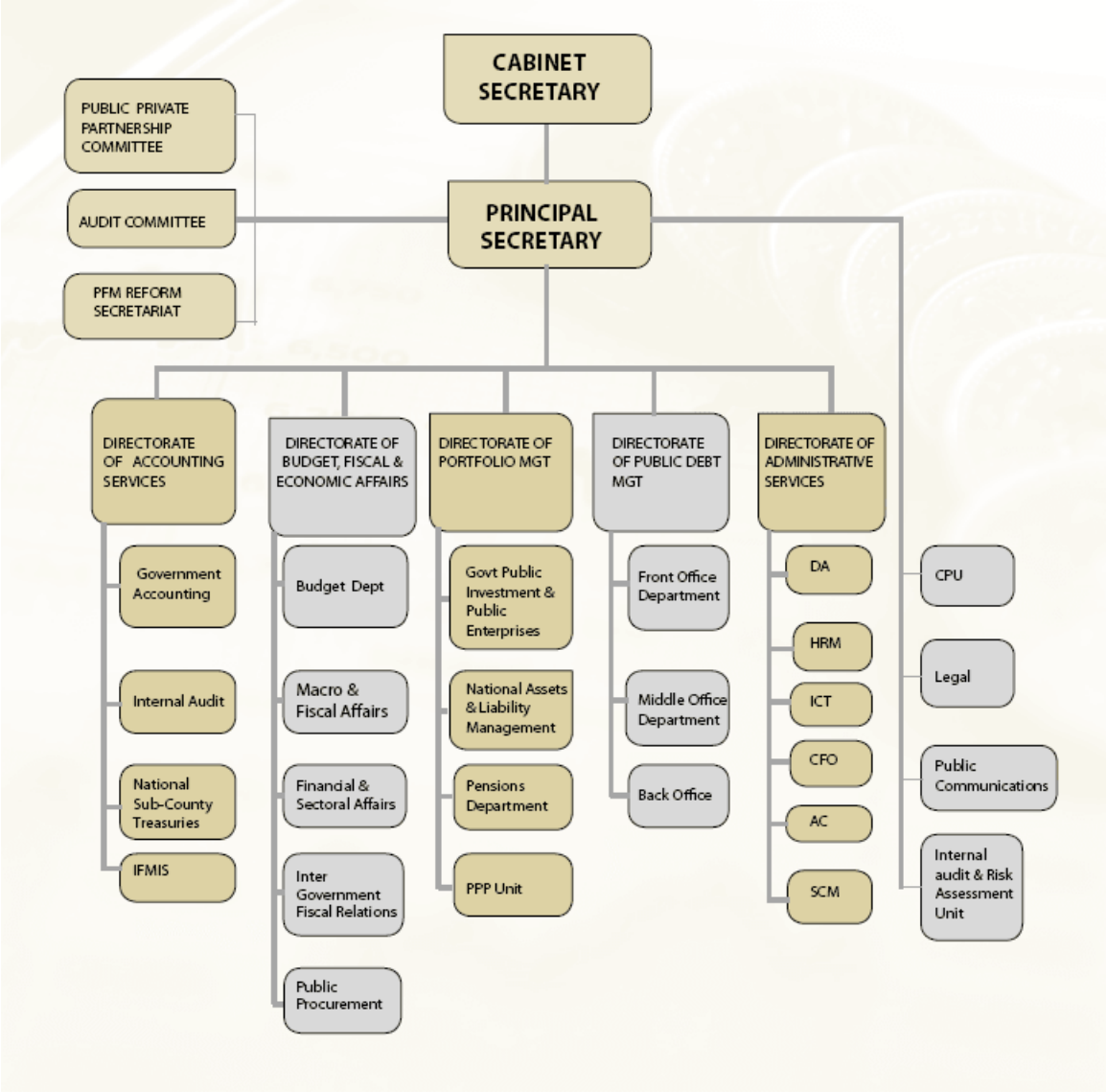

Figure 1.1: The Organizational Chart of the National Treasury and Planning

1.2.5 ICT Initiatives at the National Treasury and Planning

The number and variety of different sorts of databases ranging from journal, reference among other databases is increasingly accessible from users' desktops. Therefore, Vakkari, (2008) rightly notes that the easier and better access to the literature they need facilitates users' work in several ways. This is because the transformation of the physical library to the virtual library probably saves time, since one can access publications from one's desktop. In addition, the extent of publications available

combined with easier access may improve users' ability to keep abreast in their fields, and perhaps inspire new ideas and eventually enhance the quality of their work Vakkari, (2008).

In the past, economists at the National Treasury and Planning had access to very few information resources. However, with automation and globalization, they now have access to a diversity of electronic information resources available as a result of new technologies and access to databases. The National Treasury and Planning took an initiative to modernize operations by introducing and implementing systems to improve efficiency and services delivery. These includes: development of Websites in Ministries and Departments, development of the Integrated Payroll and Personnel Database (IPPD) system, intended to increase efficiency in the management of Government human resource, implementation of the Integrated Financial Management Information System (IFMIS) which is geared towards enforcing an integrated approach to expenditure management and monitoring across Government. It is intended to institute expenditure control and ultimately improve the overall operational efficiency of the Government and development of Information Infrastructure i.e., the Government through the Government Information Technology Services (GITS) is creating the necessary infrastructure through installation of Local Area Networks in Government buildings in order to allow for seamless communication in Government Ndende Amadi, (2006). It is worth noting that the digital infrastructure is not solely used for e- resources alone but supports other services mentioned above for the overall running of the National Treasury and Planning.

Modern technology gives library users the freedom and autonomy in the process of information searching and rapid access to many electronic information resources. Electronic tools may reduce the time needed for a search and simplify distant access, but they cannot reduce the complexity of that search. In order to succeed in getting the information they need; users must first understand the resources and be able to filter the information they contain.

The National Treasury and Planning has put in place ICT Unit and Information resource Centre placed under Economic Development Coordination, headed by a director. This unit is charged with disseminating up to date information to staff in the National Treasury and Planning. Itplays very pivotal role in formulation of the National government and planning government programs and this calls for most relevant, up-to date information thus need to use e-resources. It is in view of this, that it is necessary to appraise the awareness, adoption and use of the electronic information resources in the National Treasury and Planning since that has not been able to be achieved because the library staff have not put in place roust programs such as user education despite the National Treasury and Planning's heavy financial resources (The strategy for Public Financial Management Reforms in Kenya 2013-2018)

1.3 Statement of the Problem

E-resources are considered as the foundation of every research organization as they provide for easy and immediate information access at all times to users in today's world. The shifts from print resources to e-resources have resulted in a variety of consequences and paradigm shift for users and institutions. Information retrieval is becoming increasingly vital, particularly for academic, research applications and

organizations since they have mandates to execute. Simultaneously, the ability to sort through the vast amount of information available online in order to locate reliable and accurate information is becoming increasingly vital because of in fobesity.

Economists at the National Treasury and Planning play a very important role in collecting and collating information necessary for national development. They require up to date information in order to perform their roles effectively. The library at National Treasury and Planning makes available a wide variety of electronic information sources for their users, which form an essential part of the reference services provided by the library. In this regard, National Treasury and Planning Library has made significant investments in electronic resources and associated computer-based technology to guarantee and ensure that its staff and users have access to them. To facilitate accessibility and utilization, the organization has also offered the enabling infrastructure an e-resource environment. According to Research Information Network, (2009), institutions now days invest substantially in order to provide users with the digital literature they need for their work, with the view that improved access to electronic resources is likely to result in increased productivity.

Despite the National Treasury and Planning heavy financial resources' investment in the E- resources, the resources are under-utilized and not commensurate to the investment (Library statistics on the data bases reports from the library system). On the other hand, economists have raised concern over their inability to access to the electronic resources remotely and it's envisaged that with the provision of remote access, the e-resources could be utilized optimally. The increased demand for electronic resources has led to exponential increase in library budget over the last few years since huge amount of money is spent in obtaining or subscribing to numerous

electronic information resource packages to assist economists in the in the National Treasury and Planning, low utilization of electronic resources is an issue for library administration.

According to financial estimate2017/2018, the library was allocated seven million and the following year, the figure sky rocked to 15m in 2018/2019 financial year thus, making it a compelling reason for the library to start exploring ways of using remote access to the e-resources in order to satisfy the information needs of economists(Government of Kenya Financial Estimates 2017/2018).Despite the fact that electronic resources have greatly improved access to information by the economists and their demands have been on the increase, the management has raised concern in various forms of the high cost of providing and maintaining them. It is against this background that it was necessary for the researcher to carry out this study with a view of establishing the awareness, adoption and use of electronic resources by Economists at the National Treasury and Planning.

1.4 Aim the Study

The aim of the study was to investigate the awareness, adoption and use of electronic information resources by economists at the National Treasury and Planning, Nairobi County, Kenya with a view to proposing interventions that can be used to enhance their awareness, adoption and use.

1.5 Objectives of the Study

The specific objectives of this study were to:

1. Establish the types of electronic information resources available at the National Treasury and Planning.

2. Determine the awareness, adoption and use of electronic resources by economists at the National Treasury and Planning.
3. Examine the factors that influence the awareness, adoption and use of electronic resources by the economists.
4. Establish strategies used to enhance awareness, adoption and use of electronic resources by economists at the National Treasury and Planning
5. Determine the challenges that are encountered by the economists in adopting and utilizing electronic resources at the National Treasury and Planning.
6. Propose interventions that can be implemented to enhance awareness, adoption and use of electronic resources at the National Treasury and Planning.

1.6 Research Questions

The study was guided by the following research questions:

1 What are the types of electronic information resources available at the National Treasury and Planning?

2 What is the level of awareness, adoption and use of electronic resources by economists at the National Treasury and Planning?

3. What factors influence the adoption and use of electronic resources by economists?
4. What strategies have been put in place to enhance awareness, use and adoption of e-resources by the economists at the National Treasury and Planning?
5. What are the challenges experienced by economists in adopting and using e-resources at the National Treasury and Planning?
6. What are the interventions that can be put in place to enhance the awareness, adoption and use of e-resources at the National Treasury and Planning?

1. 7 Assumption of the Study

The assumption of the study was that:

The study assumed that the National Treasury and Planning library has automated it services and that the economists at the National Treasury and Planning are information literate.

1 8 Significance of the Study

This study will have the following significance:

1.8.1 Theoretical Significance

The findings of the study would contribute to knowledge on the awareness, adoption and use of electronic information resources by economists particularly in developing countries. The study would contribute to the advancement of knowledge on information relating to challenges and prospects of enhancing awareness, adoption and use of electronic resources at the National Treasury and Planning. Prior to this study there was no or limited research which dealt with awareness, adoption and use of electronic resources by economists. The findings of this study will inform those managing libraries how they can enhance awareness, adoption and use of e-resources through mounting robust user education programs to ensure that e-resources are optimally accessed and used by users including economists at the National Treasury and Planning.

1.8.2 Practical Significance

This study is significant because it is likely to result in more efficient use of scarce resources by the library since it will be aware of the factors affecting adoption and use of electronic resources. This will enable them to provide specific service to users. The study may also help shape positive attitudes towards electronic resources thereby impacting positively on research culture in government ministries. Other

organizations or institutions of similar nature could use the findings of this study to benchmark their e-resources. This will justify heavy financial resources being invested by respective institutions including National Treasury and Planning.

1.8.3 Policy Related Significance

The findings of this study would assist the management to formulate policies that will be used as guidelines for Ministries/Departments on the allocation of funds for e-resources..

1.9 Scope, Limitations and Delimitations of the Study

The scope, limitations and delimitations of the study were as follows:

1.9.1 Scope of the Study

The study covered all the economists at the National Treasury and Planning. The National Treasury and Planning was selected for this study because this is where majority of economists are domiciled. Additionally, the National Treasury and Planning is the administrator of the scheme of service for economists employed by the government. Whereas the study was primarily about economists, it also included librarians, ICT staff, director of library services and the director of economic development and coordination department because their views were important in verifying or supporting information gathered from economists.

This study only looked at the types of e-resources, awareness, adoption and use of e-resources, factors influencing awareness, adoption and use of e-resources, strategies used to create awareness, adoption and use of e-resources, challenges in the awareness adoption and us of e-resources and suggested various interventions but did not deal

with other concepts for instance, sources of e- resources, effectiveness of e- resources and subscription among others.

1.9.2 Limitation of the Study

In the course of administering the research instrument, the majority of the respondents overstayed with the questionnaires thus affecting the stipulated time of completing the study.

1.10 Definition of Operational Terms

Key terms used in the study are defined as follows:

Accessibility to Network: This is the ease of access or presence of network or internet or intranet connectivity in an organization or institution.

Adoption: According to Rogers, (2003), adoption is seen as the first or minimal level of behavioral utilization of an innovation.

Awareness: Knowledge and understanding that something is happening or exists.

Electronic Resources: E-resources are defined as those electronic information resources and services that users access electronically via a computing network from inside a library or from an access point remote from the library. E-resources include online databases, electronic journals, e-books, full text articles, websites and digital collections such as still and moving images, sound, and interactive resources.

Unified Theory of Acceptance and Use of Technology(UTAUT): An information system theory that modeled how users came to accept and use a technology.

Utilization: This refers as searching, browsing, examining and visiting an electronic resources or service by a user. It also refers to the degree of which people use a system or a product to successful completion of the task for which it was employed.

1.11 Structure of the Thesis

The Thesis is divided into five chapters:

Chapter One: Introduction and background to the study. It provides a global overview of e- resources and narrows it down to the area under study, in the National Treasury and Planning. It also provides a foundation of the research such as statement of the problem, aim, objectives and research questions of the study as well as the main assumptions drawn from the study. In this chapter, the scope, limitations and delimitations of the study are provided, significance of the study as well the definition of operational terms.

Chapter Two: Literature review**.** It discusses the concept of e-resources the conceptual framework upon which the study is based as well theory underpinning the study. The literature review is presented thematically under their respective sub-themes.

Chapter Three: Research methodology. It discusses the research paradigm of research, research design, methods, techniques and tools for conducting the research. How data will be analyzed and presented. Finally, ethical considerations of the study.

Chapter Four: Data, Presentation, Analysis and interpretation. The fourth presents an analysis of the data that emanated from chapter three. This data is presented and interpreted and discussed in this chapter bearing in mind the aim, objectives and research questions.

Chapter Five: Summary of Findings, Conclusion and Recommendation. This chapter provides a summary of the findings and conclusions drawn from the study. Recommendations that are provided on how awareness, adoption and use of e-resources can be enhanced so as to reap the full benefits of these resources by the

economists at the National Treasury and Planning in order to justify for heavy financial investment being made.

1.12 Chapter Summary

The chapter looked at the background of the study, particularly the National Treasury and Planning, statement of the problem, aim of the study, objectives of the study, research questions, assumptions of the study, significance of the study, limitations, and delimitations of the study and finally definition of operational terms.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a theoretical framework and conceptual framework relating to the topic under study and discusses the concept of awareness, adoption and use electronic information by economists at the National Treasury and Planning. It also reviews the literature related to the investigation. The purpose of reviewing related literature is to identify strengths, gaps and contributions to the current research. The chapter provides a review of the various works carried out by various researchers and organizations with regard to awareness, adoption and use of e- resources are concerned. The literature review is guided by objectives of the study. The researcher used sources such as publications, journals, books, manuals, concept papers and newsletters on digitalization to carryout literature review.

2.2 Theoretical Framework

Kumar, (2014: 67) views a theory as a set of systematically interrelated concepts, definitions, and propositions that are advanced to explain and predict facts. Kumar adds that a theory can be explained or defined as a framework of assumptions and concepts in which it is embedded. According to Khan (2010), a theoretical framework serves to guide a researcher in his or her investigation in abroad field of expertise by expounding on an underlying principle, rationale or foundation with respect to the research topic. Awang (2011) explains that a theoretical framework is a systematic diagram showing how the research believes the variables should relate to each other. According, to Ocholla and Le Roux (2011), a theoretical framework is objectively geared towards enhancing clarity, appropriateness and effectiveness in research. The researcher explored various theories related to ICT and e-resources for instance:

Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), Diffusion of Innovation (DOI), Social Cognitive Theory (SCT) and many others but adopted the Unified Theory of Acceptance and Use of Technology (UTAUT) as a theoretical model to help explain behavioral intention to adopt and use electronic resources amongst economists in the National Treasury and Planning.

2.2.1 The Unified Theory of Acceptance and Use of Technology (UTAUT)

The study was underpinned by the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by four scholars: Viswanath Venkatesh, Michael G. Morris, Gordon B. Davis, and Fred D. Davis (Venkatesh *et al*., 2003). UTAUT aims to explain the intentions of a user to use an Information System (IS) and subsequent usage behavior.

UTAUT model has four key constructs namely: performance expectancy, effort expectancy, social influence, and facilitating conditions are direct determinants of usage intention and behavior (Venkatesh *et al*., 2003). The variable such as gender, age, experience, and voluntariness of use which is included in UTAUT moderates and strengthens the relationships of the four main UTAUT constructs. The four constructs are; Performance expectancy, effort expectancy, social influence and facilitating conditions.

Performance expectancy is the degree to which an individual believes that the new innovation will help him or her improve on job performance (Venkatesh *et al.*, 2003). UTAUT model, illustrates that individuals are likely to develop interest in using a given technology if they believe that it will assist them to improve their performance in what they are doing. This means that the new technology can only attract the

interest of an individual if it is likely to improve efficiency or quality of an individuals' job. Venkatesh *et al*, (2003) opine that the relationship between performance expectancy and intention is moderated by age and gender such that performance expectancy directly affects intention of technology usage and is stronger for men and younger workers than it is for other categories of people. It is therefore very likely that if economists working at the National Treasury and Planning, if they come to the realization that this new technology can enhance their work through awareness, adoption and use of the technology work performance would be improved. This will call upon the library staff to purchase relevant, diversified, enough and up to date e-resources for the economists.

Effort expectancy is the degree of ease associated with the use of the system. The model assumes that if technology is easy to use then people are likely to intend to use it. However, if technology is complicated then it is unlikely to attract the intention of many people to use it. The behavior related to the intentions to use technology and the actual usage of the technology is significantly moderated by age, gender and experience. Vankatesh *et al*. (2003) noted that effort expectancy is likely to influence behavioral intention and is stronger for women, older workers, and those with limited experience than other categories of people. It is true that adoption of using new technology can be attributed to age factor thus older people are called upon to put in more effort through an awareness, adoption and use of new technology. It will be therefore imperative for library staff to mount robust user education programs to inculcate the culture of adopting and use of new technology. This would translate in optimum use of e-resources in the National Treasury and Planning thus justifying the heavy financial investment resources by the National Treasury and Planning.

Social influence is defined as the degree to which an individual perceives that other people believe he or she should use the new system. This implies that people are likely to be interested in using technology if their peers or superiors can demonstrate that they value and appreciate them when they use those technologies. This means that, individuals' intention to use new technology is likely to increase if such individuals anticipate that their peers will look positively at them if they use that technology. Social influence is moderated by gender, age, experience and voluntariness of use (Dulle, 2010). According to Venkatesh *et al.*, (2003), the impact of social influence on behavior intention is stronger for women, older workers, those with limited experience, and those using the system under mandatory conditions. If the Economists will come to the realization that greater awareness, adoption and use of e-resources has spread among the staff and the new technology is being applied across the board, they would be influenced and accept the new technology and this would become the organizational culture of the National Treasury and Planning.

Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system (Venkatesh *et al.*, 2003). It is also postulated in this model that the usage of technology is dependent on the availability of an enabling environment for its application. The influence of facilitating conditions towards usage of technology is moderated by age and experience such that its effect is stronger for older workers and those with more experience (Venkatesh *et al.*, 2003). This is because it is believed that older people are unlikely to be more interested in adopting the technology when compared to youthful workers. The impact of facilitating conditions on technology usage is also likely to increase with experience as users of technology find multiple avenues for help and support throughout the organization, thereby removing

impediments to sustained usage (Venkatesh *et al.*, 2003). Economists at the National Treasury and Planning are not unique from other employees from other Ministries by have resentment for technology that is complicated. If in terms of proper ICT infrastructure, better training in terms of user education, better library ambiance, they will appreciate these facilitating conditions thus they would be aware, adopt and use the e- resources optimally. This in essence would minimize the challenges faced by economists in terms of awareness, adoption and use of -resources. A diagrammatical representation of UTAUT is shown in Figure 2.

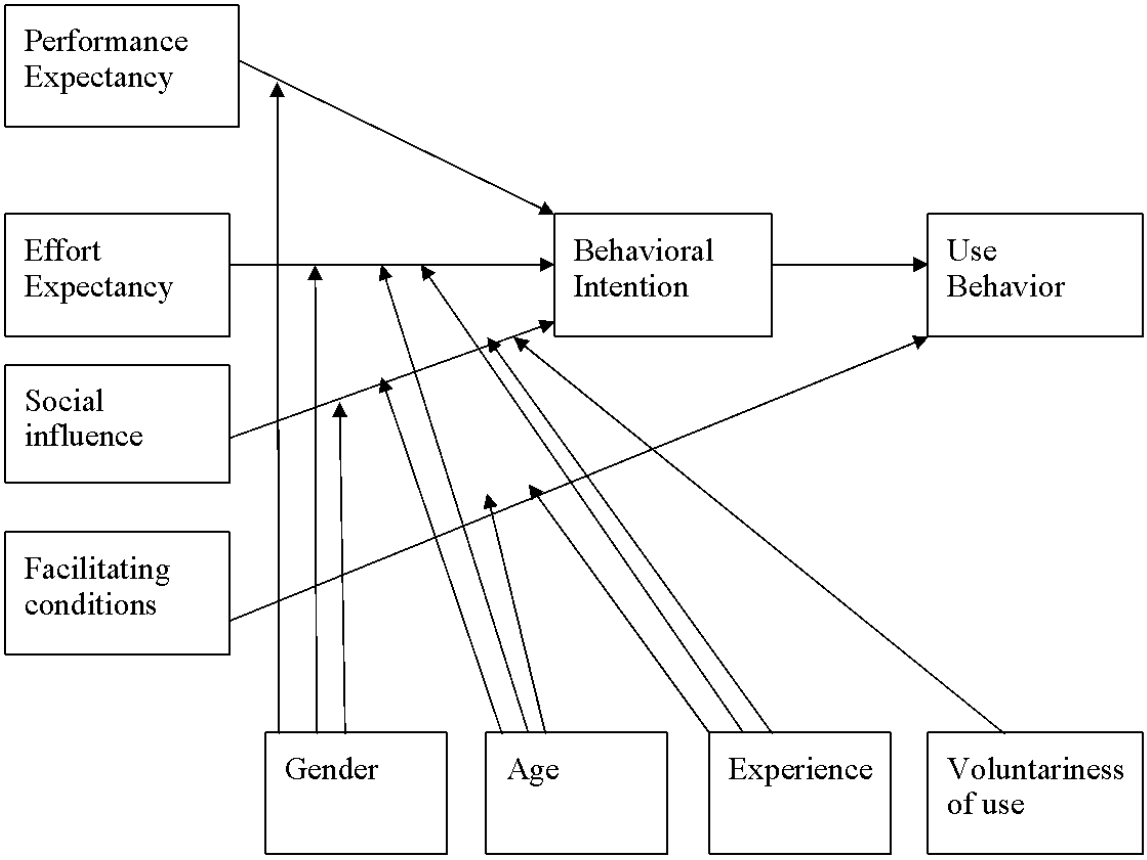

Figure 2.1: Unified Theory of Acceptance and Use of Technology (UTAUT)

(Source: Venkatesh et al., 2003)

2.2.1.1 Relevance of UTAUT to the Study

This study adopts the UTAUT model because it is a robust model in evaluating and predicting technology acceptance since the theory consolidates eight other technology acceptance theories. The UTAUT provides a refined view of how the determinants of intention and behavior evolve over time making it useful in assessing the likelihood of success for technology introduction (Venkatesh *et al.*, 2003).The theory helps the implementers of electronic information resources to understand what drives technology acceptance so as to be proactive in designing interventions such as training to specific user groups that could be reluctant to adopt and use new technology (Wu Toa & Young, 2007).

Therefore, the model was found to be suitable for this study since its aim is to establish awareness, adoption and use of electronic information resources. The extent of use of a technology is tied to facilitating conditions because more barriers means that the economists are likely to resent using that technology (Awwad & Al-Majal, 2015). Furthermore, attitudes and perceptions of economists towards electronic resources are in part shaped by the state of facilitating conditions. Economists who feel unsupported in their quest to use electronic information resources develop negative attitudes towards the technology. However, when conditions are conducive, positive attitudes can easily be developed.

2.3 Conceptual Framework

A conceptual framework describes the relationship between the research variables. Sekeran (2003) argues that a variable is a measurable characteristic that assumes different values among subjects. An independent variable is that variable which is presumed to affect or determine a dependent variable. Dependent variable is a

variable dependent on another variable like the independent variable. A dependent variable is the variable which is measured in the research study, Kothari, (2006). According to Grant & Osanloo (2014), a conceptual framework is critical in research as it assists the researcher in identifying and constructing his/her worldview on the phenomenon to be investigated. The Figure 3 below shows the conceptual framework of the study.

Independent Variables

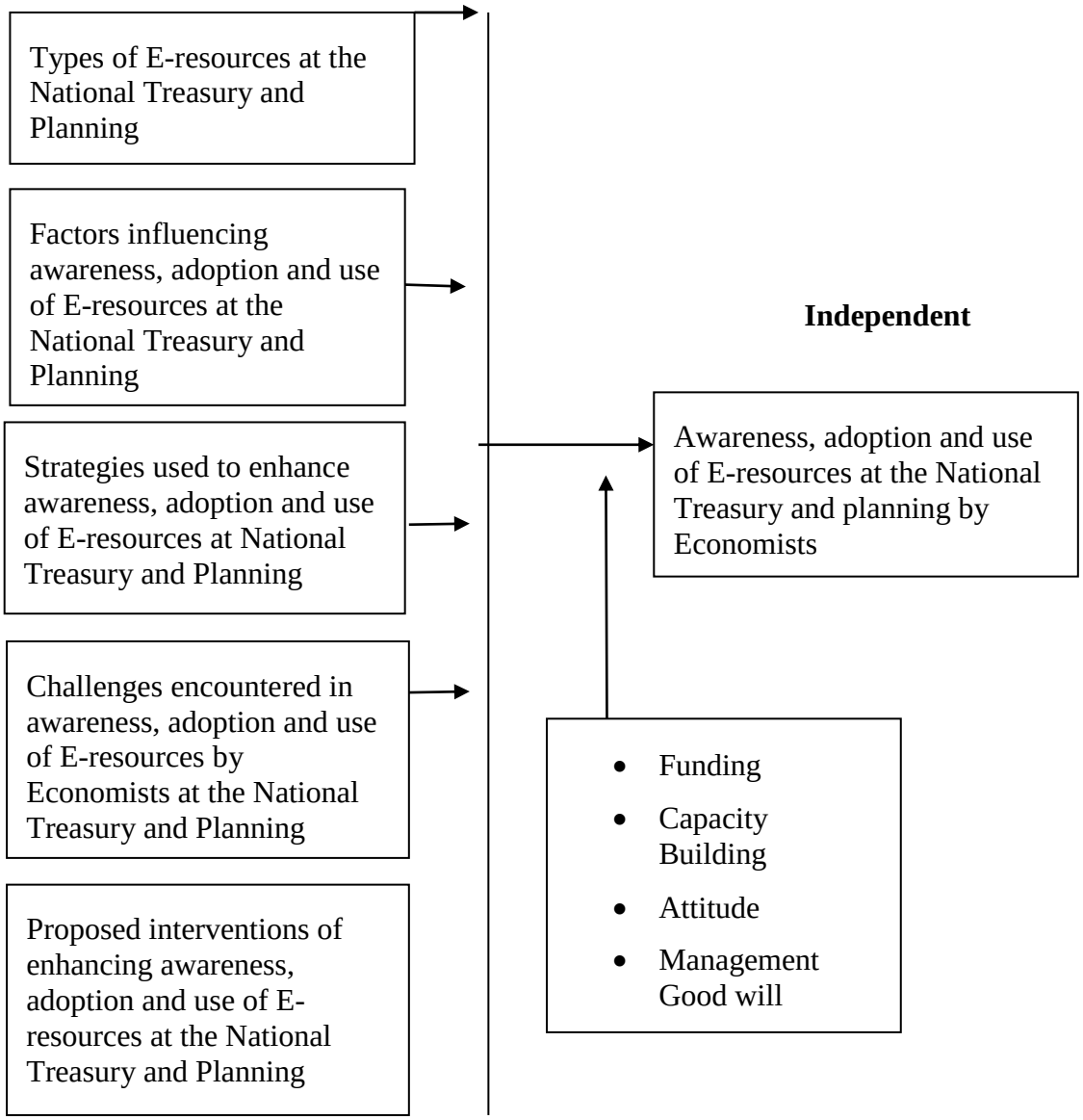

Figure 2.2:. Conceptual Framework

In this study the independent variable will be: types of electronic information resources available at the National Treasury and Planning, awareness, factors that influence the adoption and use of electronic resources by the economists, strategies used to enhance awareness, adoption and use of electronic resources by economists at the National Treasury and Planning, challenges that are encountered by the economists in adopting and utilizing electronic resources at the National Treasury and Planning and interventions that can be used to enhance awareness, adoption and use of electronic resources at the National Treasury and Planning. The dependent variable for this study will be awareness, adoption and use of e-resource at the National Treasury and Planning.

It is important to note that awareness, adoption and use of e-resources by economists at the National Treasury and Planning are influenced by the independent variables while proper application is influenced by the intervening variable such as funding, management goodwill, capacity building and attitude by both economists and library staff.

2.4 Review of Related Literature

This section reviews the literature related to the investigation of the study. The purpose of reviewing related literature is to identify strengths, gaps and contributions to the current study.

2.4.1 Types of Electronic Information Resources

In Africa, there has been a considerable growth of information in electronic format in libraries through the initiative of organizations. Since in the 1990s, the International Network for the Availability of Scientific Publications (INASP) negotiate with international publishers on behalf of African countries for discount prices on e-

resources for subscription libraries. These initiatives have been enhanced through programs like Access Global Online Research in Agriculture (AGORA), HINARI, Access to Research Initiatives, the Essential Electronic Agriculture Library (TEEAL) and Program for the Enhancement of Research Information (PERI), as well as Online Access to Research on Environment (OARE) (Rosenberg, 2006). These organizations have contributed immensely to the availability of e-resources in Africa.

The emergence of electronic resources has cut the barrier to valuable information resources which until recently were difficult to access particularly by scholars in the developing nations. Salaam & Aderibigbe (2010), attributed the popularity of electronic information resources to flexibility in searching than their paper-based counterpart, and that they can be accessed remotely at any time. They provide access to many different types of information sources including Web pages, e-journals, personal papers, local materials, conference reports among other. They are also offering different opportunities compared with the print material. Electronic information resources have gradually become major resources of information in every library and emergence of electronic information resources, has tremendously transformed information handling and management in libraries environments. Through the use of electronic resources, library users; now have access to global information resources, particularly the Internet. According to Afolabi (2007), failure to receive current and up-to-date information for research in libraries or any information Centre is attributed to poor levels of adopting electronic information resources. The most common electronic information sources found in libraries are discussed below:

2.4.1.1 Electronic Journals (e-journals)

In Africa, many university libraries benefitted from peer reviewed electronic journals at the turn of the millennium. They formed consortia which benefitted from group arrangements of institutions offering electronic journals such as the International Network for the Availability of Scientific Publications (INASP), World Health Organization (WHO), Food and Agricultural Organization (FAO), United Nations Environment Program (UNEP), Online Access to Research in the Environment (OARE), Access to Global Online Research in Agriculture (AGORA), and Electronic Information for all Libraries (EIFL) (Harle, 2010). Librarians welcomed the development as it solved some of their problems like the increasing costs of print journals, space and shelving problems, damage and loss of library resources, and lack of access to a wide range of information resources. It was evident that with their resources and space limitations libraries were not able to physically acquire every resource that their users, particularly in university settings would want. Electronic journals offered an opportunity to deal with some of the libraries‟ challenges and inadequacies.

2.4.1.2 Electronic Books (e-books)

E-books as books that are provided in a digital format for checkout or use an Internet browser, a computer, or another electronic device like an e-book Reader., e-book was defined as any piece of electronic text regardless of size or composition (a digital object), but excluding journal publications, made available electronically (or optically) for any device (handheld or desk-bound) that includes a screen.

2.4.1.3 Online Databases

An online database is a database accessible from a local network or the Internet, as opposed to one that is stored locally on an individual computer or its attached storage (such as a CD). Online databases are hosted on websites, made available as software as a service product accessible via a web browser. The most effective way to provide access to electronic materials in libraries or institutions is through subscription to online databases which can be accessed through the internet. Online databases are a collection of electronic information sources (e-journals/e-books) by publishers from various fields and disciplines**,** (Afolabi**,** 2007). Some of these databases are provided free of charge to libraries in developing countries by their publishers or vendors. For users to utilize the growing range of electronic resources they must acquire and practice the skills necessary to exploit them (Okello-Obura 2010). The National Treasury and Planning have made efforts to either acquire or subscribe to these various types of -resources. It is therefore imperative for the economists to make use of these resources if they have to achieve efficiency and effectiveness in their endeavors.

2.4.2 Level of Awareness, Adoption and Use of Electronic Information Resources in Government Institutions

Several studies conducted globally by researchers such as Veeramani and Vinayagamoorthy (2010), Thanuskodi (2011), and Tyagi (2011) among others in an attempt to understand the factors that determine adoption and use of electronic resources. The studies have unearthed chiefly four issues that should be addressed if the adoption and use of electronic resources: awareness, attitudes and perceptions, barriers to adoption and use, and promotion strategies used by the libraries to encourage use of these resources. Salaam and Aderibidge (2010) and

Shahmohammadi (2012) all pointed to the need to understand users‟ awareness of electronic resources if there is any hope of increasing use of the resources. The economists at the National Treasury and Planning are not an exception. This calls for robust user education programs which includes information literacy to be mounted by librarians at the National Treasury and Planning. Hall (2010), describes information literacy as the people's ability to know when there is need for information so as to be able to identify, locate, retrieve, evaluate and effectively use information to solve the problem or carry out their research. Information literacy entails knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner (CILIP, 2012).

2.4.2.1 Awareness of the Availability of Electronic Resources

Promotion is one of the most pertinent factors leading either to the success or failure of resources. Promotion of library material refers to any attempt at making users aware of services that are offered in that library and an encouragement to use the same resources. The National Treasury and Planning Library can create awareness through the presentation and organization of the resources on their websites. Proper organization of electronic resources on the library websites enables intended users to notice, identify, and be attracted to the resources.

2.4.2.2 Adoption and Use of Electronic Resources

In Africa electronic resources were introduced much later than in Europe and America. The introduction of these resources was met with some acute hesitation at the beginning. This was due to challenges of access faced by researchers with many impediments spoiling the desire of African researchers to use the resources. Harle (2010), noted challenges involved in the adoption of electronic resources in Africa. These challenges

include lack of adequate infrastructure, low bandwidth, electricity cuts, and lack of skills (Ekenna & Iyabe, 2013).

Technology adoption is about creating a context, an environment, in which change can be achieved and sustained over a long period. This involves two levels; organizational and individual. With adoption and embracing electronic information resources, and its entire implementation, the organization must create the supporting environment, provide needed training and resources, articulate a clear direction coupled with clear expectations, engage its people, include them in the process, and reinforce the desired new behaviors. This is not about checking things off a list, but about finding synergy among impacted group, giving them what they need, and coordinating efforts to meet the end result (Egberongbe, 2011).

Egberongbe (2011)., further emphasized that, managing the people at the implementation requires a savvy technology adoption plan that ties sponsorship, training, communication, workflow harmonization, user support and reinforcement with the business priorities of the organization, and effectively coordinates all of these activities with the user in mind in an environment that reinforces desired behavior changes. ICT, according to Rana (2011), it's vital to continue upgrading data services. ICT has a wide range of applications, but it is most commonly used to transform existing paper-print information throughout the storage, retrieval, and distribution process. Economists at the National Treasury and Planning are to wake up to this realization and be aware, adopt and use e-resources for which ICT is an enabler in order to achieve efficiency and effectiveness in their performance of their work.

2.4.2.3 Factors Influencing Awareness, Adoption and Use of E-Resources

Adoption of technology by many users including economists at the National Treasury is adopted by employing and perceiving what they think might be of benefit to them. Some of the factors influencing the awareness, adoption and use of e-resources are outlined below.

2.4.3. Attitudes and Perceptions

Attitudes and perceptions have been isolated as important in the adoption and use of peer reviewed electronic resources. Salaam and Aderibidge (2010) and Tyagi (2012) noted that negative attitudes and perceptions towards the use of electronic resources have contributed to the lack of adoption and use of these resources. This means that there has to be a period of shaping of positive attitudes and perceptions of electronic resources before they can be full y accepted. Any study that seeks to understand adoption and use of electronic resources would do well to assess the attitudes and perceptions of the intended users towards these resources.

(Harle, 2010).In Africa, attitudes and perceptions of users vary but are mostly on the low side. This is perhaps due to the many barriers that users in trying to make full use of these resources. At the University of Agriculture, Abeokuta, Nigeria, researchers expressed a very high regard for electronic resources. They, however, identified many challenges in accessing and utilizing the resources (Salaam and Aderibidge, 2010). There are challenges facing many African institutions which have affected the adoption, use and the shaping of attitudes and perceptions towards electronic resources (Barhoumi, 2016).

It is evident that the attitudes and perceptions of users towards electronic resources were initially quite negative. However, attitudes changed as users became more

familiar with using this resource. The shaping of attitudes and perceptions is affected by several factors. The more barriers 'users experience in their quest to use electronic resources, the less inclined they were to view electronic resources in positive light. The literature reviewed above has also shown that there has been a cultural shift, especially in the developed world, from print resources to electronic resources. The preference for electronic resources has resulted in a decrease in the preference and use of print resources. Organizational culture which includes attitude by the economists at the National Treasury and Planning are likely to influence the awareness, adoption and use e-resources should be positive if they are to benefit from the new technology in making use of the e- resources available.

2.4.3.1 Performance Expectancy

People will always use and apply technology while performing their duties if the use and application will enhance their performance. This is reinforced by Davies (1989) in the TAM model who contends that it can be looked at through the lenses of 'perceived usefulness' of the technology. Venkatesh *et al*., (2003) defines performance expectancy as the degree to which an individual believes that using the system will help him or her to attain gains in job performance. It can be argued that performance expectancy was influenced by many considerations among them personal and socio-cultural factors including benefits. The economists at the National Treasury are not an exceptional in the use and application of technology to be aware, adopt and use e-resources. Economists at the National Treasury are involved in formulating economic and fiscal policies that are aimed at enhancing the economy of Kenyan government. According to Venkatesh et al., (2003), technology that is perceived to be aiding better tasks while offering cost benefits whereby costs can be

in terms form of time. It is believed that the benefit of collaborative work is likely to produce a positive perceived usefulness, leading to higher rates of adoption and use.

2.4.3.2 Effort Expectancy

It is believed that if individuals can easily learn and interact with a system with less time and effort in performing their duties or tasks then this will enhance their quick adoption of technology. Venkatesh (2003) defines effort expectancy as the degree of ease assorted with the use of the system. Davies (1989) supports Venkatesh and others in the perceived ease of use in the TAM model. Library users including economists at the National Treasury will quickly embrace and use technology if the system will be accessed and used with less effort. Using the system with less effort will facilitate and encourage optimum use of e- resources. Since the application of technology is a new way of doing things less effort will encourage more users to use it hence full exploitation in the use of e-resources at the National Treasury and planning.

2.4.3.3 Social Influence

Employees at their places of work do interact and share what they believe could bond them for the benefit of the organization they are serving. The organizations including National Treasury and Planning have mission, mission and objectives to meet by their employees and employees normally should ensure that these are met in order to justify their existence. Employees are social creatures by nature hence social influence can play a big role in their behavior and actions. According to Venkatesh *et al.,* (2003) social influence is the degree to which an individual perceives that important others believe he or she should use the system. Vankatesh contends that this influence is derived from the environment in which individuals find themselves including places of work and economists at the National Treasury and Planning are not an

exception. People normally respond to social pressure hence making decision that have been socially influence. The awareness, adoption and use of the e- resources at the National Treasury is likely to have asocial influence hence either rejection of full collaboration in the adoption and use of e-resources.

2.4.3.4 Facilitating Conditions

For awareness, adoption and use of e-resources depend on the ICT infrastructure that has been put in place by the organization. The degree to which an individual believes that organizational and technical infrastructure exists to support use of the system (Venkatesh *et al*.,2003). Venkatesh contends that these facilitating conditions include but they are not limited to: existing ICT infrastructure, availability of knowledge and skills necessary to use ICTs, compatibility with other systems used and work style and technical support and the role of the university in facilitating adoption and use. The economists in order to quickly and adopt the use of technology for the full utilization of e-resources must be met with some facilitating conditions. It is argued that if organizations can facilitate and avail some of these conditions which include tools and items then there will be a high adoption and use technology which will culminate in optimum use of e-resources. These optimum use e-resources will translate into effective and efficient delivery of services at the National and Treasury and Planning.

2.4.4 Strategies Employed to Enhance Awareness, Use and Adoption of E-Resources

Promotion of library material refers to any attempt at making users aware of services that are offered in that library and an encouragement to use the same resources. Government libraries use the following methods to create awareness of electronic

information resources, equip the users how to use these resources, and encourage them to use the same.

2.4.4.1 Staff Meetings

Staff meetings are meeting attended by the members of staff of an organization, to discuss issues related to the running of the organization. Staff meetings help keep everyone informed and up to date. Such meetings allow staff to collaborate as a team by providing feedback, sharing ideas and asking questions.

2.4.4.2 Leaflets, Posters, Banners and Brochures

These are small, unbound booklet that is used to advertise or provide information on a single subject. They are mainly used for informing rather than direct selling. They are stapled together or printed on both sides of one sheet and folded in half or several times. They can come in different shapes, sizes, and number of pages. Some common uses of these leaflets, posters, banners, and brochures include political campaigns, event promotion, and communicating organization's information.

2.4.4.3 Workshops and Seminars

Librarians attend library workshops and conferences to learn about current events, trends, and technology, to participate in continuing education, and to build networks. The knowledge acquired at workshops and conferences is necessary for professional development. Workshops and conferences bring professionals of like minds together to share and discuss ideas. Workshop and conference attendance help to cultivate research ideas through conference papers, presentations, and question and answer sessions. Such attendance is part of professional capacity building among librarians.

2.4.4.4 Emails

Email is an important tool of business communication that is fast, cheap, accessible and easily replicated. Using email can greatly benefit businesses as it provides efficient and effective ways to transmit all kinds of electronic data.

2.4.4.5 Trainings through Information Literacy Programs

Information literacy has been recognized by several researchers and different definitions of information literacy in various contexts have been put forward. According to American Library Association (ALA): The information literacy skills is the ability to recognize when information is needed as well as the ability to locate, evaluate, process and effectively use retrieved information strategically. This literacy is based on a wide variety of knowledge, skills and actual behavior relating, among others, localization, evaluation and effective use of information. Furthermore, information literacy encompasses personal, social and ethical dimensions of interacting with information. The information resources conceptualization refers to skills needed to find and use information independently or with the aid of intermediaries. The information process conceptualization refers to the process of recognizing the need for information, retrieving, evaluating and using information to acquire or extend knowledge. In this aspect, ICT advancements and the life of e-resources, especially the internet, promises to improve the flow of information to research and academic communities (Ekenna & Iyabe, 2013).

Information literacy skills acquisition is an aspect of IL and may be seen as the process of gaining the tools that assist the development of IL in an individual. IL implies the intellectual capabilities involved in using information as distinct from the technical know-how required for using information technologies that hold or deliver

data. In other words, users with low information literacy skills may spend too much time retrieving information, especially when they are seeking electronic information resources.

According to Ekenna & Iyabe (2013), information retrieval skill is the ability to find information in such a way that non-relevant data are excluded while relevant information is found. Electronic information resources are the foundation of provision of accurate and timely information for better educational outcomes. They assist in the retrieval of huge accounts of information for teaching, learning and research. Owing to the information explosion and the emergence of new technologies, information needed by students, the majority is found in e-resources in the academic libraries. ICTs centers and computer laboratories have brought an alternative to facilitate awareness, adoption and use to scholarly information from around the world which enhances learning (Ekenna & Iyabo, 2013).

Information retrieval skills are crucial for retrieving information in this era of technology and that most of the information needed for research can be retrieved from e-resources. Ekenna and Iyabo (2013), observed that students' efforts to complement their work with e-resources may be limited due to lack of skills. Therefore, knowledge of kills is necessary to selectively retrieve accurate, relevant and up-to-date information stored in documents instead of all the information that may not be relevant for their academic work. Therefore, skills acquisition is very crucial to the use of e-resources because information in electronic forms can only be used if students possess the required skill to retrieve the exact information needed for teaching, learning and research.

2.4.4.6 Library Websites

It is a way to advertise when the physical presence the material is available and where it is located, as well as to give information on users who works there and what sort of services they provide**.**

2.4.4.7 Online Library Catalogue

An online library catalog is an electronic bibliographic database that describes the books, videotapes, periodicals, etc. carried by a particular library. The online library catalog evolved from a printed source, the library card catalog. They contained the records of particular items in the library.

To get one to use a product the marketer must consciously bring the targeted user to the attention or awareness of the product, a stage that they call the cognitive stage. Once the targeted user knows about the product the marketer should generate the interest and desire to use the product, a stage they call the affective stage. The last stage to be achieved is the behavioral stage. At this stage the target user is unable to resist the product and that person engages in the action of using the marketed product. To achieve this, the marketer needs to be consistent and persistent, not the one-off marketing tactics employed by some universities. This point was emphasized by INASP (2011) in a study of Kenyan universities. The study concluded that some of the reasons why promotional efforts especially in Africa were not successful is that they are done as one-off events and there is no concerted effort. The study recommended that there is need to design effective marketing and promotional strategies. These strategies need to be presented in a regular and scheduled way. One off effort will never work as new staff members are hired regularly in universities.

2.4.5 Barriers to Use and Adoption of Electronic Resources

The UTAUT model argues that for an innovation to be adopted and used there should be “facilitating conditions”. These are conditions that make it easier for the intended user to adopt and use a given technology. Absence of these conditions constitutes “barriers” to use. In this section the researcher reviews these barriers to the adoption and use of electronic resources. Electronic resources have been readily accepted in countries and institutions where barriers to access and use of these resources are minimal. They have not been readily accepted in situations where users are faced with barriers. A study of literature has shown the following barriers:

2.4. 5.1 Lack of Remote Access

Remote access is the ability of users to access files and other system resources on any devices or servers that are connected to the network from different locations other than the organization’s premises. at any time. This increases employees’ productivity and enables them to collaborate with colleagues around the world.

2.4.5.2 Lack of Awareness

One of the greatest barriers affecting adoption and use of electronic resources especially in the developing world is lack of awareness. Statistics show that in institutions where researchers reported a lack of awareness of electronic information resources, these resources have largely been ignored whereas in those institutions where there is a heightened awareness of the resources use has largely been positive. The challenge of lack of awareness has affected all institutions that have introduced electronic resources (Katabalwa, 2016). However, if institutions take measures to ameliorate this situation awareness would heighten and acceptance and use of electronic resources would increase. Veeramani and Vinayagamoorthy, (2010)

indicated that electronic resources are being effectively used in developed countries such as the United States of America (USA), United Kingdom and Japan. However, earlier research shows that these countries also struggled with lack of awareness at one point but moved quickly to implement strategies that improved awareness and therefore usage. When researchers become more aware of electronic resources, their need for them increased therefore the inclination for them to use the resources also increased.

2.4.5.3 Lack of Training

The adoption and use of electronic resources particularly in Africa have been hampered by lack of skills to negotiate the electronic environment. The problem of lack of skills is not unique to African institutions. Similar challenges exist in countries that spearheaded electronic resources provision and access. Even though institutions in developing countries are lauded for their great efforts in providing electronic resources, and for making their users aware of these resources, there are still some institutions that lack strong training regimes (Fourie & Mayer, 2016). Several reasons have been proffered for this attitude including pride, lack of time, and a preference to learn through trial and error. This then means government libraries have to be innovative in the ways they provide instruction (Nazir & Shabir, 2016). They have to incorporate extra training and help features such as web-based help, electronic references, chat rooms and other ways of interacting with remote users.According to Mishra and Mahapatra (2013), librarians must be educated and trained in the most efficient use of computers and related technologies in order to provide quick and efficient information services to e-learners and e-educators. "The introduction of new and advanced technologies in libraries necessitates the hiring of qualified personnel with a variety of ICT abilities. One of the most important factors of successful ICT implementation is the level of competency of the

staff working knowledge of ICT capacities for library professionals to handle diverse library duties. To fully utilize this potential in library administration, libraries must have appropriate experts with extensive knowledge of ICT application in libraries; yet, in practice, the majority of library professionals lack adequate ICT skills (Verma, 2014). It therefore follows that if librarians are trained properly, they can effectively mount robust user education to economists at the National Treasury and Planning which will translate to optimum use of e-resources at the National Treasury and Planning.

2.4.5.4 Lack of Adequate ICT Infrastructure

Several African scholars agree that one of the major hindrances to the adoption and use of electronic resources on the continent is lack of the requisite infrastructure in African institutions. According to Okiya (2005), poor and insufficient telecommunication facilities, low levels of computer literacy even within communities, and a lack of awareness of internet facilities among policymakers and government officials, as well as the ruling class in general, are among the obstacles to the use of electronic information resources in public libraries in Africa. Harle (2010) notes that the advent of electronic resources came as a blessing to the continent because it meant at last African scholars could access rich resources stored in developed world servers. This move, however, came with its challenges as institutions needed to upgrade their ICT facilities and infrastructure. This includes core technologies such as computers, telecommunications technologies, Internet, bandwidth, power supply, as well as peripheral technologies like printers, copiers, and scanners (Munira & Bushra, 2010). In addition, institutions have to ensure they have adequate institutional contracts and licenses with publishers and other libraries in order to have rights to access electronic resources. There is also a need to engage adequately skilled administrative and support personnel. Manda (2008), notes that

African institutions have largely been affected by inadequate information infrastructure and the absence of basic facilities required to access electronic resources effectively and efficiently. Respondents in a study in Kenya identified the following challenges they were experiencing in accessing electronic resources: inadequate computers, poor Internet connectivity, delays in downloading information, and lack of support facilities such as printers (INASP, 2011). The Kenya study recommended that efforts be made towards upgrading and increasing the existing infrastructure including computers, Internet bandwidth and skilled staff. Many organizations including public entities have been faced with situations of lack of funds thus occasioning lack of proper infrastructure of which the National Treasury and Planning is not an exception resulting less optimization in terms of use of e-resources by the economists. According to Ikem and Ajala (2004), the greatest barrier to ICT use in public libraries is a lack of money. According to them, the problem of finance entails not only the acquisition of hard and software, but also the updating and maintenance of both.

2.4.5.5 Discomfort of Reading from Screen

One of the drawbacks of electronic resources as continuously cited by researchers in a number of surveys is reading from the screen, especially in cases where there are limitations of printing research results. Many researchers report dislike for reading from the screen. The reasons academics experience discomforts in reading from a computer screen are varied. One is cultural familiarity with print resources. Any medium that does not involve physically holding a document to be read is easily dismissed as lacking academic weight. Some researchers feel that print had aesthetic qualities which is lacking in electronic resources. These researchers use electronic resources but prefer to print their results so that they have a “print feel”. Researchers

are also known for their disposition to annotate, that is, write notes on top of their papers as they read and highlight certain portions. The latest electronic resources allow for annotation however, many researchers have not yet acquired the skills to do electronic annotation and they feel safer doing it on paper. The other complaint that researchers have about electronic resources when they read from a computer screen is, the tendency of computer screens to restrict the reader to one position, especially if it is a desktop computer. People do not sit still while they read, they often prefer to move around while reading paper articles, as they shift position in their chairs or even change chairs in order to maintain a comfortable position. Some move the paper nearer or further away so as to find a comfortable reading distance. Reading from the screen confines the reader to a single position in that the screen is usually near up right and viewing distance is generally constant

2.4.5.6 Password Restrictions

Some researchers have reported challenges of password restrictions. This prevents them from realizing the benefit of electronic resources. Though technologies have been developed that should ensure that users do not have to remember any password as long as they are logging through a recognized Internet Protocol (IP) address it appears some institutions, especially in the developing world have not yet fully integrated these technologies for the benefit of their users. In some instances, electronic resources users are still required to memorize a cocktail of passwords in order to log in to desired databases. This requirement acts as an impediment to the use of these resources. Fortunately, most institutions have addressed this challenge so that it should not be a future problem.

2.4.5.7 Concerns with Permanency of Electronic Resources and Archiving Issues

One of the main concerns that electronic resources users face is archiving and long-term availability of information which exist electronically. Some researchers are concerned with the long-term durability of electronic resources and wonder if they will still be accessible generations from now. There are concerns that the electronic resources that are produced presently are intended to work with current technologies therefore, any major shift in technology may render all electronic information that is currently accessible inaccessible. The information may be unreadable. Some authors have talked of an impending "Digital Katrina" that would span nearly all scholarly disciplines. This would happen if the information infrastructure is unable to sustain the trust scholars currently have in intellectual delivery systems.

In an electronic environment continued existence of an electronic publication hinges on the continued operation of its provider. There is a difference with print resources which are permanent. In the electronic environment libraries and researchers do not literally own the electronic resources, but they receive the rights to access it. Therefore, if the publisher who provides access goes out of business, then access is likely to be lost. A further concern of researchers regarding the ownership versus access model is that, while in the print environment one receives publications they have subscribed for, in the electronic environment there is a tendency to base access to electronic resource on current subscription (Zhou, Lu and Wang, 2010). Should subscriber fail in their renewal they will lose access to both the current and previous editions of the electronic resource concerned. This, according to many commentators, is an injustice that is being perpetrated in the electronic environment and because of such issues, some have preferred to treat print resources "real" publications they can

see, feel, touch, smell and control while they treat electronic resources as supplementary.

According to Holly-Yu (2008), librarians have been meeting various challenges in relation to their duties. The changing role of librarians, the increasingly central role that these collections play in libraries, the large budgets involved in their acquisitions has led to management problems that as hindered the access and utilization of useful electronic resources. There are also frequent changes in the business models and above all the lack of automated tools to deal with the complexity of electronic resources management.

According to Tait, Martzoukou (2008), there is lack of enough strategies in the organization in the management of libraries to ease the access and utilization of appropriate electronic information resources. They further elude that restricted access to information resources; time constraints and little emphasis on research-based and information-based in workplaces inhibit the application of advance information skills and defeats the purposes of curricular that seek to assist the development of important information literacy skills and knowledge.

2.5 Chapter Summary

This chapter covered the following areas: brief introduction; theoretical framework and their application to the study; relevance of the theory, conceptual framework, review of related literature, types of types of e-resources and their application to the study; Finally, those strategies that were employed to enhance awareness, adoption, access to and use of information resources were also covered. However, from the reviewed literature, it was noted that very little had been covered regarding the awareness, adoption and use of e-resources at the National Treasury and Planning thus compelling the researcher to carry out this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with research methodology employed in the study. Research methodology refers to the systematic and organized approach used to gather, analyze, and interpret data in order to answer research questions or test hypotheses. It provides the framework for conducting a study, ensuring that the research is rigorous, reliable, and valid. This chapter serves as a guide to understanding the various components of the research methodology utilized in the study. It outlines the overall design of the research, the data collection methods employed, the sample selection process, and the data analysis techniques employed to draw meaningful conclusions.

This chapter discussed the research design adopted, target population for the study, sample size and sampling procedure, data collection methods, validity and reliability, data collection procedures, analysis and ethical issues and expected findings. According to Creswell (2014), research methodologies can be generally classified into three fundamental categories namely quantitative, qualitative and mixed approach and that the difference of these approaches lies in the basic philosophical assumptions that the researcher brings to the study, the types of research strategies adopted in the research, and the specific methods used.

3.2 Research Paradigm

The term research approach or paradigm and are normally used interchangeably. World views form the bases of paradigms explaining why paradigms are sometimes known as world views (Huitt 2011) and are the highest manifestation of philosophy (Wolters, 1989). Any study must be founded on some philosophical world view. The

study adopted both the positivist and interpretivist approaches Pragmatic) since it was under taken through a mixed method approach (Creswell& Creswell, 2017). Positivism is a

Methodological philosophy which is purely quantitative where knowledge of a phenomenon must be measured and supported by evidence (Hammersley, 2013). On the contrary, interpretivists try to get deeper understanding of the phenomenon and in respect to its unique context instead of trying to generalize it for the whole population (Creswell, 2007). There is a general link of the quantitative research to the positivist paradigm. It is an approach that entails collection and conversion of data into numerical form in order to allow statistical computations to be carried out to come up with conclusions.

3.3 Research Approach

A research approach is a plan of action that gives direction to conduct research systematically and efficiently. Johnson and Christensen (2012) identified three main approaches for undertaking research. i) quantitative (structured) approach, ii) qualitative (unstructured) approach, and iii) mixed methods research. The mixed methods approach entails research questions with both numerical and textural data (Williams, 2007). Qualitative research approach is where the researcher seeks to gather data that involves the researcher to gather information by asking respondents about their experience, attitudes, knowledge and opinion of the topic under study (Mugenda & Mugenda, 2003). This type of research approach generates textual data. On the Other hand, mixed method research approach enables the researcher to employ both qualitative and quantitative approaches.

This study adopted mixed method approach because employing one approach could limit much need variety of data needed by the researcher.The current study adopted mixed method approach where both qualitative and quantitative methods were utilized in order to comprehensively collect data that could answer the research problem. Mixed method approach enabled the researcher to collect quantitative data from economists, which formed a larger section of the population. It also enabled the researcher to collect qualitative data from the librarians and ICT staff, which formed the smaller section of the population. The use of mixed methods approach ensured that data collected through one method was validated using the other method (Creswell & Clark, 2011). The qualitative and quantitative data were analyzed separately and mixing took place when the findings were interpreted.

3.4 Research Design

Kumar (2014) defines research design as a plan through which you decide for yourself and communicate to others your decisions regarding what study design you propose to use, how you will collect information from your respondents, how you will select your respondents, how the information you will collect is to be analyzed and how you will communicate your findings. A research design is therefore a work plan or model of how and which steps will be followed through the research process. The function of research design is to provide for the collection of relevant evidence with minimal expenditure of effort, time and money.

Exploratory research design was used in this study because the researcher was able to gather information by asking respondents about their experience, attitudes, knowledge and opinion of the topic under study (Mugenda & Mugenda, 2003). This design was chosen because the researcher wanted to collect data from the respondents as it was

found on the ground. This enabled the researcher to have a comprehensive and detailed view about awareness, use and adoption of electronic information services at the National Treasury and Planning.

3.5 Target Population

The population of a study refers to the universe of units from which the sample is to be selected (Creswell, 2009). A particular population has some characteristics that differentiate it from other populations Kumar, (2014). The population for this study consisted of Economists, Librarians, ICT staff, director of library services and director of economic development and coordination department. The target population in this study was 234 respondents consisting of 224 economists, 3 librarians and 5 ICT staff, one director of library services and one director of economic development and coordination department.

Table 3.1: Target Population

Category of Staff	Total Number
Economists	224
Librarians	3
ICT Staff	5
Director of library services	1
Director of Economic Development & coordination	1
Total	**234**

(Source: The National Treasury and Planning Strategic Plan 2013-2018)

3.6 Sampling Techniques

The primary purpose of sampling is to get a representative sample from a much larger population, study it and produce accurate generalizations about the larger group.

Purposive sampling technique which is a non-probability was adopted in the study to collect qualitative data from key informants (Saunders, Lewis & Thornhill, 2012) and simple random sampling technique which is a probability sampling was to collect quantitative data from majority of the Economists.

The researcher used a sample size of 50% for the economists since Mugenda and Mugenda (1993) considered a sample size of 30% adequate for such a study. The author was of the view that 30% could be the minimum threshold of the sample size. Purposive also known as judgmental sampling was used to select the key informants who included: librarians, ICT staff, Director of Library services and director of economic development and coordination. Purposive sampling, selective or subjective sampling, relies on the judgment of the researcher in selecting units for study. The main goal of purposive study is to include in a study individual who will be able to provide information that helps the researcher answer his or her research questions (Leedy, 1997). Purposive samplings allowed the researcher to select informants were likely to provide adequate information on the issues the researcher intended to interrogate. On the other hand, simple random sampling was employed to collect data by administering questionnaires since they were many.

Economists were chosen for the study because they were considered the major contributors and backbone ofthe National Treasury and Planning thus main users of electronic resources hence pertinent to the study. Librarians on the other hand formed part of the population because they are responsible for the overall management of the library and were therefore in a position to provide information on digital infrastructure, policies, adoption and use of electronic resources. The ICT staff are

responsible for ICT infrastructure including the internet network and technical support to users, as well as offering to users of electronic resources.

Table 3.2: Sample Size

Category of Staff	**Total Number**	**Number Selected**
Economists	224	112
Librarians	3	3
ICT Staff	5	2
Director of library services	1	1
Director of economic development & coordination department	1	1
Total	**234**	**119**

3.7 Data Collection Procedures

Data collection is the process of assembling data by use of a given techniques in order to answer the pre-defined research questions of the study (Stopher, 2012).

3.7.1 Questionnaires

The questionnaires were administered to the economists who were the main respondents at the National Treasury and Planning through hand delivery. Saunders (1997) argues that questionnaires are useful as the main data gathering tool because they can collect both quantitative and qualitative data from the sample. To maximize the response rate, the researcher made follow-ups with the respondents to answer the questions. The follow-ups were aimed at having higher rate of response from the respondents. Additional time was given to the respondents who had not completed the questionnaires after a period of a week to ensure that all respondents filled the questionnaires as anticipated.

3.7.2 Interviews

The interviews were done to the sevenKey informants from the selected departments. The study used semi-structured interviews schedules to collect qualitative data from librarians, ICT staff, director of Library Services and director of economic development coordination Department. The study used uniform interview schedules to collect data from all the six Key informants. The researcher conducted the interviews in person as encouraged by Willis (2007). Conducting the interviews in person allowed for uniformity and ensured enough probing of the issues under consideration. The interviews were held at the venue preferred by the interviewees to minimize distractions and to ensure the respondents were comfortable to answer questions objectively. In addition, the researcher strived to be objective and avoided reacting to the respondent's replies by expressing approval or disapproval.

The time for the interviews was agreed prior to the date of the interview. During the interview sessions, proper identification and explanation about the study was done to promote candid discussion. The interviews from the Key informants were recorded in a note book and also the researcher had a tape recorder for the purpose of capturing what was not recorded and for clarification. The collected data was later analyzed, interpreted and presented in the subsequent chapter.

3.8 Reliability and Validity of the Instruments

The research instruments are to ensure that they should assist the researcher to collect reliable and valid data.

3.8.1 Reliability of the Research Instrument

Reliability is the process of making sure that a study's instruments are consistent in addressing the purpose of the study (Taber, 2018). However, the concept of validity

is more associated with measurement procedures. In terms of the measurement procedure, validity is the ability of an instrument to measure what is designed to measure (Kumar, 2014). Validity and reliability are concerned with how concrete measurement is connected to constructs in establishing the truthfulness, credibility or believability of findings. The study measured reliability through subjecting the research instruments through pre-testing by conducting pilot study outside the sample size to determine their appropriateness and suitability in collecting the required data for the study.

3.8.2 Validity of the Research Instruments

Validity is the process of ensuring that a study's instruments can be trusted to deliver what they were supposed to deliver (Kothari & Garg, 2014). This study maintained three types of validity such as face, content and criterion validity (Kothari & Garg, 2014). Face validity was measured to ensure that the variables test what they were meant to test (Kothari & Garg, 2014). This meant that the study's questionnaire was segmented into different variables of the study. For example, there were questions related to the types of electronic information resources available at the national treasury and planning; awareness, adoption and use of electronic resources by economists at the National Treasury and planning; factors that influence the awareness, adoption and use of electronic resources by the economists; strategies used to enhance awareness, adoption and use of electronic resources by economists at the National Treasury and Planning; challenges that are encountered by the economists in adopting and utilizing electronic resources at the national treasury and planning and proposed interventions that can be used to enhance awareness, adoption and use of electronic resources at the National Treasury and planning. The study also ensured that there was validity intent, no repetition and no ambiguity.

3.8.3 Pilot Study

The term pilot study refers to a mini-version of a full-scale study, as well as the specific pretesting of a particular research instrument such as a questionnaire or interview schedule. Pre-testing of the data collection instruments was carried out at the Ministry of Industrialization, Department of Trade which whose respondents were not part of the main study. This was to test the adequacy of the research instruments. Ministry of Industrialization, Department of Trade was chosen because it is very similar to the National Treasury and Planning in terms of work practices and dissemination of research findings. The researcher himself distributed the instrument samples for pre-testing to 5 economists, 1 librarian and 1 ICT staff totaling to 7 respondents who were purposively selected. The pilot study was carried out to determine whether the instruments were adequate for collecting the required information, whether the research procedure was realistic, and to identify potential challenges that might arise during the research process. The pilot study enabled the researcher to identify ambiguous and vague question(s), make wording clear, provide enough space for answers, rephrase sentences and revise the layout of the instruments, if necessary, before starting the actual data collection exercise. The results from the pilot study revealed that there were redundancies, repetitions, structural problem of questions and ambiguity challenges, which were rectified before the actual data collection. From the pilot study, the researcher was able to delete the repeated questions as well as replace the ones that were not specific in order to provide the right questions that would give expected outcome. Thus, the pilot study helped to find the reliability index of the instruments.

3.9 Data Presentation and Analysis Procedures

The process of data analysis involves organizing the data, conducting a preliminary read through the questionnaires and responses of the interview, coding and organizing themes, representing the data and forming an interpretation of them. The study collected both quantitative and qualitative data. Quantitative data was generated from the questionnaire administered to economists, while qualitative data was generated through interviews from the librarians, ICT staff, director of economic coordination and director library services. The data collected were examined for accuracy in terms of legibility, consistency and completeness of responses. Quantitative data was analyzed using tables, graphs and bar charts while concurrent triangulation was employed for qualitative data.

3.10 Ethical Considerations

De Vos et al., (2011) defined ethics as a set of widely accepted moral principles that offer rules for, and behavioral expectations of most correct conduct towards experimental subjects and respondents, employers, sponsors, and other researchers. Ethics is needed at each step of the research process in order to avoid "fabrication and falsification of data, copyright violation and plagiarism, and double publishing among others" (Mugenda, 2008).

Prior to the collection of data from the field, necessary permissions were sought from Moi University and NACOST. The researcher was given two letters from Moi University which introduced him to the place where the study was to be conducted and another one to NACOSTI. Permission was sought and a research permit was obtained from National Commission for Science, Technology and Innovation (NACOSTI) to conduct the study at the National Treasury and Planning. The

researcher also made an application to the Principal Secretary at the Treasury and Planning of which it was granted.

In addition, informed consent from the respondents was sought and they participated in this study voluntarily and they were fully informed about the purpose of the study so that those who chose to participate did so from an informed position. Before the respondents started answering the questions, the researcher made some introduction and explained the purpose of the study. For the key informants the researcher explained the purpose of the study and why interviewing them was necessary. The research tools were designed to avoid uncomfortable questions through pre-testing of the questionnaire during the pilot study and the respondents were assured that the information and views given would be kept confidential. The participants remained anonymous as questionnaires did not require them to indicate their names. Plagiarism was avoided in the study by ensuring that those authors whose works were cited in the study were fully acknowledged.

3.11 Chapter Summary

This chapter exhaustively covered the following areas; brief introduction; research paradigm, research approach; research design; population of the study; sampling techniques the researcher employed in the study; Pilot study; validity and reliability of the research instrument; data collection procedures that were used to collect data; data processing techniques that were employed and ethical considerations.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the data and subsequent analysis and interpretation of key variables derived from the study. The data were generated from the completed questionnaires and interview schedules from the respondents. The data has been presented through tables and analyzed by Statistical package for social sciences. After analysis and interpretation of data is done, there is discussion and implication of these data.

4.2 Response Rate

Response rate refers to the number of successful interviews and questionnaires completed and returned. This is expressed as a percentage of total target interviews and questionnaires issued. Different scholars have given their opinion on the acceptable response rate levels. Different scholars and others have given their opinion on the acceptable response rate levels for example Kothari (2004), considered a response rate of 50% and above to be adequate for analysis and reporting.

Table 4.1: Response Rate of Economists (n = 95)

Target Group	Sample Size (N)	Response Rate (n)	Response rate in percentage (%)
Economists	112	95	85.0

Data from table 4.1 shows that the response rate for the economists was relatively high at 95(85%). The high response rates were achieved by aggressively following up the respondents. Based on this response rate it can be argued that this was enough data

to be analyzed since this was above 50% as Kothari (2004) considers a response rate of 50% and above to be adequate for analysis and reporting. It therefore follows that if the researcher was able to get this response rate, there was enough data and that met the objective of the study by answering the research questions.

The study also realized a high response rate on the interviews carried out as is shown in table 4.2 below:

Table 4.2: Response Rate of the Key Informants (n =6)

Target Group	**Sample Size**	**Response Rate**	**Response rate in percentage (%)**
Librarians	3	3	50
Head of ICT	1	1	17
Director of library services	1	1	17
Director of economic development and coordination	1	1	17
Total	**6**	**6**	**100**

Source (Field data 2019)

The results presented in table 4.2 above reveal that all the planned 6 interviews were conducted giving a response rate of 100%. Key informants are considered as those respondents who are rich in providing useful information an insight concerning a phenomenon at hand concerning the study. The fact that the researcher got 100% concerning the response rate means that meaningful data was collected hence achieving the objective of this study. Kothari (2004) considers a response rate of 50%

and above to be adequate for analysis and reporting and this response rate is adequate enough since its even above what the author is recommending.

4.3 Demographic Information of the Respondents

The study collected demographic data from economists, librarians, ICT staff, director of library services and director of director of economic development and coordination department. The information sought included: the respondent's, gender, age. job title, academic qualifications and length of service at the National Treasury and Planning as shown in table 4.3.

4.3.1 Demographic Information of Economists

The researcher sought to know about the demographic information. The importance of knowing the respondents' demographic information is to understand the type of respondents the researcher is dealing with in terms of gender, age, academic qualifications and experience. The economists' demographic information is indicated in table 4.3 below.

Table 4.3: Demographic Information of Economists (n=95)

Biographical Information	**Categories**	**Frequency**	**Percentages**
Gender	Male	64	67.4
	Female	31	32.6
Total		**95**	**100**
Age	30 years and below	11	11.6
	31-40 years	31	32.6
	41-50 years	41	43.2
	51-60 years	12	12.6

Total		**95**	**100**
Qualifications	Bachelors	29	30.5
	Masters	63	66.3
	PhD	3	3.2
Total		**95**	**100**
Experience	5 years and below	6	6.3
	6-10 years	38	40.0
	11-15 years	25	26.3
	16-20 years	17	18.0
	21 years and above	9	9.4
Total		**95**	**100**

Source (Field Data 2019)

The results presented in table 4.3 indicate majority of the respondents were male at 64(67.4%) relative to female respondents at 31(32.6%). Most of them were aged between 41 to 50 years 41(43.2%), followed by those aged between 31 to 40 years 31(32.6%). The data further revealed that 12(12.6%) of the respondents were aged between 51-60 years. On the other hand, 11(11.6%) were 30 years and below. The results further revealed that majority of the respondents 63(66.3%) had masters' degrees and 29(30.5%) had bachelor's degrees while only 3(3.2%) had PhD degrees. The findings also revealed that most of the respondents had worked for 6 to 10 years 38(40%), followed by those who had worked for 11 to 15 years 25(26.3%) and 16 to 20 years 17(18%). On the other hand, the respondents who had worked for 21 years and above were 9(9.4%) while those who had worked for five years and below were 6(6.3%). It can be observed from the above data that majority of the respondents had

worked for ten years and above. It can be argued that the demographic information of the economists had some influence on awareness, adoption and use of e- resources at the National Treasury and Planning since majority of them were male, having master's degree and had worked for more than six years and gained prerequisite experience. Age is a very critical factor in the adoption technology according diffusion of technology they by Rodgers (2003). This in essence means that the information they provided had some credibility thus meeting the objective the study by gathering the research questions.

4.3.2 Demographic Information of Key Informants

The demographic information of the key informants was important to the researcher since these are respondents who contribute immensely to the study thus providing useful information and a lot of insights that eventually enabling the researchers have rich data which inferences can be made. The demographic data of the respondents is shown in table 4.4/

Table 4.4: Demographic information of Key respondents (n=6)

Biographical Information	**Categories**	**Frequency**	**Percentages**
Gender	Male	4	67
	Female	2	33
Total		**6**	**100**
Age	30 years and below		
	31-40 years	1	17
	41-50 years	3	50
	51-60 years	2	33
Total		**6**	**100**

Qualifications	Bachelors	2	33
	Masters	3	50
	PhD	1	17
Total		**6**	**100**
Experience	5 years and below		
	6-10 years	2	33
	11-15 years	2	33
	16-20 years	1	17
	21 years and above	1	17
Total		**6**	**100**

Source (Field Data,2019)

The researcher sought to find out the demographic information about the key informants and the results were that in terms of there was no Key informant who was 30 years and below but the results of the rest were that 31-40 years 1(17%), 41-50 years3 (50%) and those who were 51- 60 years were 2 (33%). It can then be deduced that majority of the Key informants are between the age of 41 to 50 years meaning this is a group of employees who are still energetic and if they are aware, adopt e-resources they are likely to contribute to the overall success of the National Treasury and Planning.

Regarding the qualification of the Key respondents, 2(33%) had bachelor's degrees, 3 (50%) had master's degrees and 1(17%) had PHD degree. Based on this information, it can be deduced that majority of the Key informants are highly qualified and are likely to use e- resources profitably for the sake of the success of the National Treasury and Planning.

Concerning the Key informants experience, there was no respondent who had experience of less than 5 years but 6-10 years were,2(33%), 11-15 years were 2(33%) while 16-20 years were 1(17%) and finally that who had experience of 21 and above was 1(17%). Based on these findings, it can be deduced that majority of the Key informants had the pre-requisite experience coupled with proper awareness, adoption and use of e- resources can propel National Treasury and Planning into achieving its objectives.

4.4 Types of Electronic Resources Available at the National Treasury and Planning

The respondents were asked about the types of electronic resources available at the National Treasury and Planning. The responses are provided in table 4.5.

Table 4.5: Types of Electronic Resources Available at the National Treasury and Planning (n = 95) Multiple Responses

Electronic information resources	Frequency	Percentage
E-Books	67	70.5
E-Newspapers	45	47.3
Online databases	30	31.5
E-Journals	22	23.2
E-Data archives	19	20.0
E-Conference	4	4.2
Others	4	4.2

(Source: field data 2019)

It is evident from the results presented in table 4.4 that majority of the respondents 67(70.5%) stated that e-books were available, 45 (47.3%) stated that e-newspapers were available and 30(31.5%) stated that online databases were available. On the other hand, 22(23.1%) respondents were of the view that e-journals were available while 19(20 %) respondents stated that e-data archives were available. In addition, 4(4.2%) respondents stated that e-conference papers were available whereas 4(4.2%) of the respondents stated that other e-resources were available at the National Treasury and Planning library. These findings were in line with the response given by Head of Library Services(R1), who noted:

> *''There are quite a large number mostly e-resources including online journals, e-books, online newspapers, databases and electronic reference sources such as dictionaries, encyclopaedias, audio visual resources as well as, library catalogues and indexes among others.''*

These findings implied that there were diverse electronic resources available to users at the National Treasury and Planning. This is an indication that electronic information resources are gradually becoming a major resource of information for economists at the National Treasury. Based on the above responses it can be deduced that e- books are the most predominant sources of information at the National Treasury and Planning. The finding that e-resources are popular can be supported by Salaam & Aderibigbe (2010), who attributed the popularity of electronic information resources to flexibility in searching than their paper-based counterpart, and that they can be accessed remotely at any time. They provide access to many different types of information sources including Web pages, e-journals, personal papers, local materials, conference reports among other. They are also offering different opportunities compared with the print material. Electronic information resources have gradually become major resources of information in every library and emergence of electronic information resources, has tremendously transformed information handling and

management in libraries environments. Perhaps based on their popularity, the National Treasury and planning has invested heavily in these types of resources.

4.5 Level of Awareness, Adoption and Use of Electronic Resources

The level of awareness about the value of electronic information resources among economists is necessary to promote acceptance and use. Besides, their views and awareness about the electronic information resources is an important component in sustaining their use. Economists will use the electronic resources more if they are aware of their existence and the benefits of using them.

4.5.1 Level of Awareness of the Existence of Electronic Resources by Economists

The second research question of this study addressed the extent of awareness, adoption and use of electronic resources by the respondents.

Awareness of the existence of electronic resources is important for their adoption. The economists were requested to state whether they were aware of the existence of electronic resources in the National Treasury and Planning library as indicated in figure 4 below

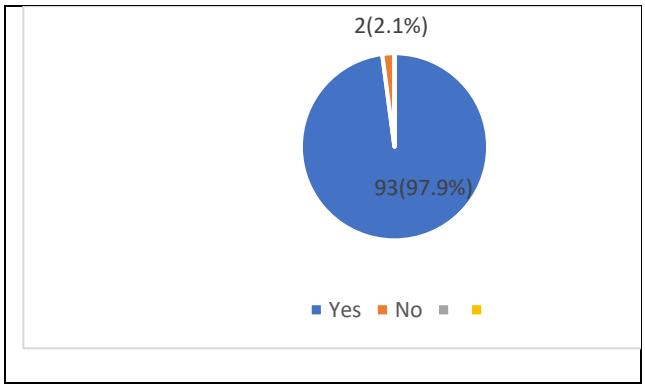

Figure.4.1: Level of Awareness of the Existence of Electronic Resources by Economists (n=95)

Source (Field Data, 2019)

The findings in figure 4 revealed that majority of the economists 93(97.9) were aware of the existence of electronic resources at National Treasury and Planning library. A paltry 2(2%) stated that they were not aware of the existence of electronic resources in the National Treasury and Planning library. From the above responses it can be deduced that majority of the economists at the National Treasury and Planning are aware of the existence of e – resources. This could be perhaps being attributed to the fact that the librarians have put in place robust user education programs that are aimed at enhancing the awareness, adoption and use of e- resources. This is reinforced by Osagie (2003) who indicates that the need for library user education is to enable users to; know how to use the library catalogue in any Library, understand the classification scheme in the library so as to be able to locate materials, appreciate the library catalogue as index to the library holdings and view the library as a repository of knowledge that determines the success of the students' academic programmes.

4.5.2 Level of Use of E-Resources at the National Treasury and Planning

The level of use of e-resources at the National Treasury and Planning was further evaluated as indicated in figure 5 below

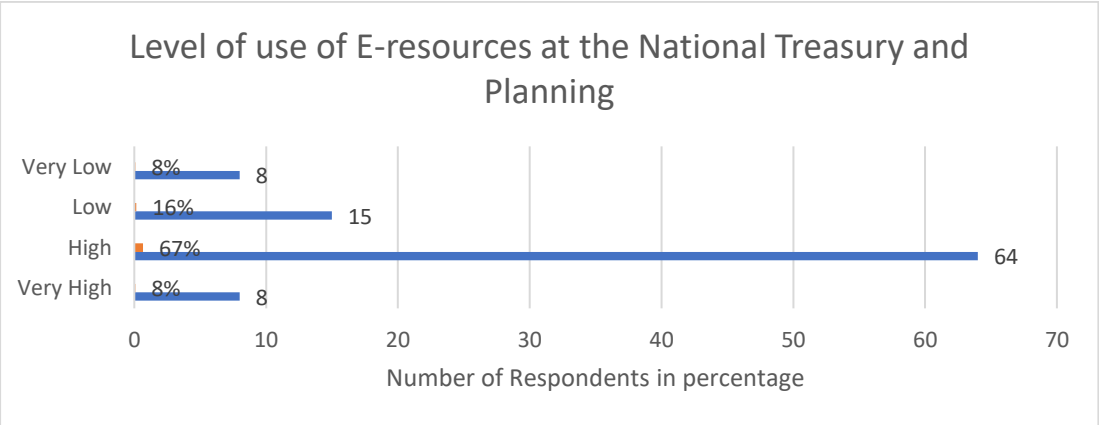

Figure 4.2: Level of Use of E-Resources at the National Treasury and Planning (n=95)

Source (Field data, 2019)

The results outlined in figure 5 show that majority of the respondents, 64 (67%), indicated that the use of e-resources was high in the organization. This finding is supported by the views of Tsakonas *et al.* (2006) who asserted that electronic resources had gradually become a major resource that were being utilized by organizations to meet their objectives. The rest of the respondents indicated, very low 8(8%) low 15 (16%) and very high 8(8%) respectively.

From the interviews, the Director of Economic Planning and Coordination department and the Head of ICT department asserted that the level of usages of e-resources in the organization was very high. In contrast, the Head of Library Services (R1) argued that the usage was very low stating:

> *''The use is very low. Most of the economists are yet to exploit a number of different types of e-resources available here.''*

4.5.3 Means by which the Respondents came to be Aware of the Existence of Electronic Resources

The respondents were also asked to state how they came to know about the existence of electronic resources. The responses are provided in table 4.6 below.

Table 4.6: Means by which the Respondents came to be Aware of the Existence of Electronic Resources (n=95). N/B * Multiple Response

Means	Frequency	Percentage
Leaflets or Newsletters or Flyers	28	29.5
Posters	17	17.9
Library orientation	22	23.2
Staff meetings	27	28.4
Seminars and workshops	38	40.0
Informed by library staff	72	75.8

Informed by colleague	48	50.5
National Treasury and Planning website	11	11.6
E-mail from library	61	64.2

Source (Field data, 2019)

The results in table 4.5.2 revealed that majority of the economists, 72(75.8%) came to know about the existence of electronic resources through the library staff followed by e-mail from the library at 61(64.2%) and informed by colleagues 48(50.5%). On the other hand, slightly less than a half of the economist knew about the existence of the library through seminars and workshops 38(40%) while 28(29.5%) and 27(28.4%) knew about the existence of the library through leaflets or Newsletters or Flyers and staff meetings respectively. The data further revealed that very few economists knew about the existence of the library through the National Treasury and Planning website 11(11.6), posters 17(17.9%) and library orientation 22(23.2%). The fact that majority of the economists came to know the existence of library staff through librarians means that there are concerted efforts by library staff to market the e- resources and other information materials. Such programs may include user education programmes, whereby according to Maduako (2013), ranges from basic information on materials in college, up to the more formal structure and systematised programmes of instruction imparted to library users. With varied degrees of effectiveness, these various types of user education programmes aim at teaching library users how to make optimal use of the library and its resources, through the acquisition of skills in identification, location, retrieval and exploitation of information resources.

4.5.4 Willingness to use Electronic Resources

Willingness to use electronic resources is important for their adoption particularly for economists who wish to share their research findings with other researchers globally. The participants in this study were asked to state whether they were willing to use electronic resources. The responses are presented in Figure6 below

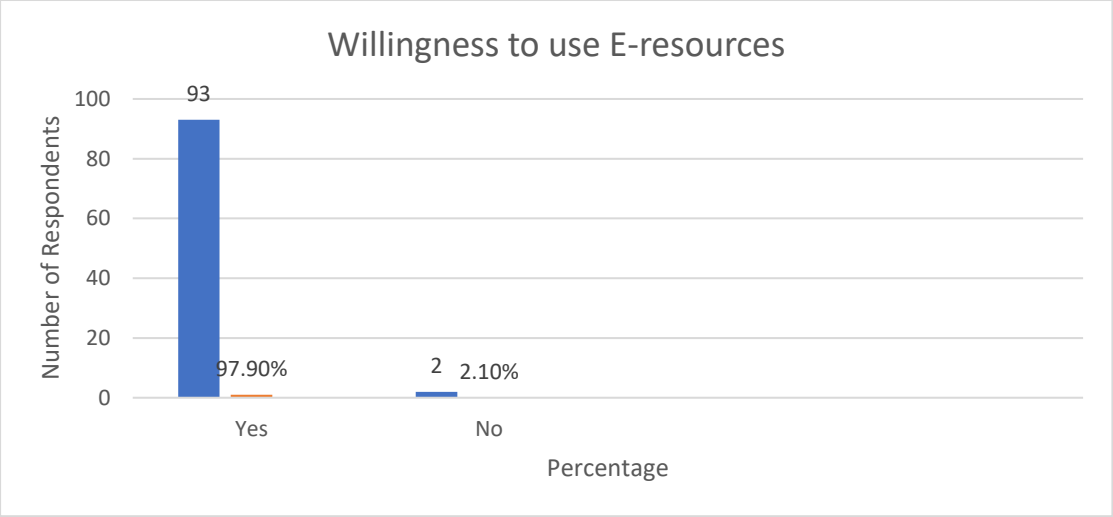

Figure 4.3: Willingness to Use Electronic Resources (n=95)

The results in Figure .6 show that, willingness to use electronic resources by the economists was very high 93(97.1%). This can be attributed to the fact that economists require up to date information that are easily available electronically.

When asked about the willingness of economists to use electronic resources, the Director library services (R2) service expressed:

"Majority of the economists are willing to use electronic resources."

From the above responses, it can be deduced that majority of the economists have embraced technology in accessing information they could need in executing and solving various assignments allocated to them. Their actions of embracing e- resources can be reinforced by Sethian Panda(2012) who note d that with the advent of the digital era, the library and information landscape has altered, and that traditional libraries have

evolved into 'knowledge centres, with a focus on value-added electronic information services whiles Jane (2018) reported that e-resources were mostly used for communication, as well as assisting in activities of learning and teaching, assignments, lecture requirements and professional research.

4.5.5 Frequency of Use of Electronic Resources

Respondents were further asked to state how frequently they used electronic resources. The results are presented in table 4.7.

Table 4.7: Frequency of Use of Electronic Resources (n=95)

Frequency of Use of Electronic Resources	**Frequency**	**Percentage**
Almost Daily	11	11.6
Several Times a Week	25	26.3
Once a Week	32	33.7
Once a Month	15	15.8
Infrequently	10	10.5
Not at all	2	2.1
Total	**95**	**100**

Source (Field Data, 2019)

The general outlook from data presented in table 4.8 above revealed that majority of the respondents 68(71.6%) used the electronic resources at least once a week whereas 15(15.8%) used the electronic resources once a month. The data also revealed that 10(10.5%) respondents used the electronic resources frequently while 2(2.1) did not use the electronic resources at all.

When asked about the level of use electronic resources by economists, the Director of library service (R2) expressed:

> *''I think the usage of electronic resources is high because most economists require up to date information in order to perform their duties and they have realized that most of the information they require are available electronically.''*

It has become common that at work place, challenges emerge while economists perform their various duties. These challenges require up to date information. E-resources by their nature of being current come in handy to sought out these challenges of the economists. This response by the director of library services at the National Treasury can be collaborated by Sejane (2018) who reported that e-resources were mostly used for communication, as well as assisting in activities of learning and teaching, assignments, lecture requirements and professional research.

4.5.6 Length of Time the Respondents had Used Electronic Resources

It was necessary to establish how long the economists had used the electronic resources. The findings are presented in table 4.9 below.

Table 4.8: Length of Time the Respondents Had Used Electronic Resources (n=95)

Length of time in electronic resources	**Responses**	
	F	**%**
5 years and below	57	60
6-10 years	36	37.9
11 years and above	0	0.0
Not at all	2	2.1
Total	**95**	**100**

Source (Field Data,2018)

The study established in table 4.9 that majority of the respondents 57(60%) had used electronic resources for five years and below whereas 36(37.9%) had used them for 6-10 years. None of the respondents had used electronic resources for more than eleven years. However, 2(2.1%) had not used electronic resources at all. One of the key informants who is the Director of library service (R2) retorted:

''We have been subscribing to electronic resources for close to ten years''

Based on these responses it is quite clear that majority of the respondents have been using e- resources but not more than five years. This could be attributed to perhaps a number of factors for instance; frequent transfer among the staff, lack of interest in using e-resources or lack of user education campaign from the library staff.

4.5.7 Training in the Use of Electronic Resources

The study also sought to find out whether the respondents had been trained in the use of electronic resources. The results are presented in Figure 7 below.

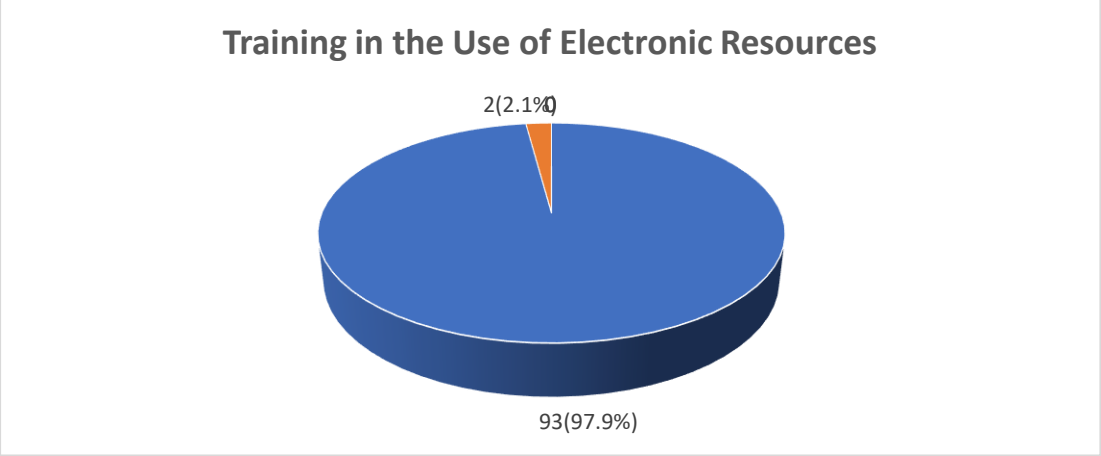

Figure 4.4: Training in the Use of Electronic Resources (n=95)

The findings in figure7 revealed that majority of the economists 93(97.1%) had been trained on how to use electronic resources, while a paltry 2(2.1%) had not taken training on how to use electronic resources.

All 6(100%) key informants agreed that they had been trained and in fact one of them senior librarian (R5) said:

> *''You cannot train the rest of the library users if you do not have the pre-requisite skills''*

In order to optimize the use of e- resources training is very imperative. The assertion of the senior librarian is supported by Mishra and Mahapatra (2013), who posits that librarians must be educated and trained in the most efficient use of computers and related technologies in order to provide quick and efficient information services to e-learners and e-educators. Capacity building enhances knowledge among the staff in any organization thus improving effectiveness and efficiency which translates to service delivery. The fact that majority of the economists agreed that they had been trained means that the management has set aside funds for capacity building at the same time the library staff have put in some mechanisms of optimizing e-resources usage for instance computer literacy and user education programs which include information literacy among others as Hall (2010), describes information literacy as the people's ability to know when there is need for information so as to be able to identify, locate, retrieve, evaluate and effectively use information to solve the problem or carry out their research.It is believed by library staff offering library services that improving users' knowledge of their libraries' collection and services could be a motivating factor for more usage and more demands on the library and Ford (1994), corroborates this by arguing that user education should be organized at different information levels to ensure that needs of all users are met.

4.5.7.1 Means by Which Economists got their Training

The respondents were further asked to state who trained them in the use of electronic resources. The responses are presented in Figure8 below.

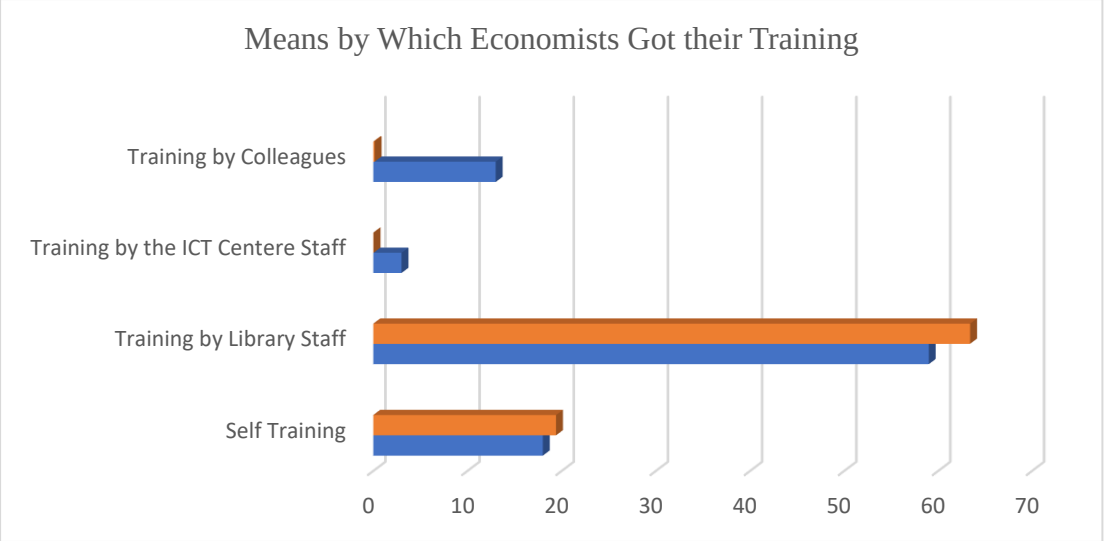

Figure 4.5: Means by Which Economists Got Their Training (n=95)

The results in figure 8 revealed that majority of the economists 59 (63.4%) agreed that they were trained by the library staff whereas 18(19.4%) of the economists stated that they undertook self-training. On the other hand, 13(14%) of the economists agreed that they were trained by the ICT Centre staff while 3(3.2%) of them agreed that they were trained by colleagues.

When the key informants were asked about who trained them, Head of ICT (R3) said:

''I got trained during my time at the university of Nairobi"

While majority of the key informants who included Director of library services, Director of Economic development and coordination department and the three librarians agreed that they got their training through the initiatives of library staff who occasionally have been mounting user education programs. The responses of the respondents is in agreement with Collins (2013) who observes that although employees may be trained in some basic technical aspects of troubleshooting, the library's technical assistance staff frequently has the experience needed to tackle more complex e-resource issues

4.6. Factors that Influence the Awareness, Adoption and Use of Electronic Resources

The decision by economists to adopt and use electronic resources is dependent on their attitude. In order to establish the attitude of economists towards electronic resources, the respondents were asked to rate the constructs from the UTAUT theory which included effort expectancy, performance expectancy, social influence and facilitating conditions in order to establish the factors that have more influence on economists in adopting and using of electronic resources. Based on the UTAUT theory they asked to state what influenced their awareness, adoption and use of e-resources. The results are presented in table 4.9 below.

Table 4.9: Factors that Influence Adoption and use of E-Resources (n=95)

Factors that influence adoption and use of e-resources	**F**	**%**
Effort expectancy	64	67.4
Performance expectancy	50	52.9
Social influence	80	84.2
Facilitating conditions	54	56.8

Source (Field Data, 2019)

Results in table 4.9 revealed that 80(84.2%) of the respondents felt that social influence determines their decision to adopt and use electronic resources. The findings also revealed that 50(52.9%) of the economists were of the view that the adoption and use of electronic resources by economists is highly dependent on performance expectancy which translates into expected benefits the economists derived from using electronic resources. The results further revealed that 54(56.8%) of the economists felt that there are adequate facilitating conditions in the national treasury and National

Treasury and Planning library to facilitate the adoption and use of electronic resources by economists. The findings of the study revealed that majority of the economists 64(67.4%) felt that less effort is needed to use electronic resources. The findings suggest that economists are unlikely to use more effort in accessing electronic resources. These findings suggest that all the UTAUT constructs are influences the adoption and use of electronic resources since they were rated over highly (over 50%).

Based on the above responses, it can be deduced social influence which is one of the constructs of UTAUT theory has had a huge impact in terms of influencing awareness, adoption and use of e- resources at the National Treasury and Planning. The fact that social influence has had a huge influence in terms of awareness, adoption and use of e- resources can be attributing to the emergence of IT in the digital era. The application of IT has resulted in considerable advancements in the field of IT, which has boosted library services tremendously. Furthermore, the use of ICT in libraries allows users to successful admittance and use of online resources and other services of library (Saikia & Chandel, 2012; Prakash, 2017; Atram, 2017). This in essence means that it is the IT which has promoted the social influence otherwise minus IT becomes impossible.

4.7 Strategies employed to Enhance Awareness, Adoption and Use and of E-Resources

The study sought to find out the strategies that were being used to enhance the adoption and use of electronic resources. The results are presented in Table 4.10.

Table 4.10: Strategies Used to Enhance Awareness, Adoption and Use of E-Resources

(n=95) N/B Multiple responses **Strategies used to enhance use adoption and use**	**Frequency**	**%**	**Frequency**	**%**
Promotion by use of posters, flyers, leaflets and brochures	45	47.4	50	52.6
Lobbying and advocacy by the library staff	92	96.8	3	3.2
Holding Library workshops and seminars	65	68.4	30	31.6
Library orientation	22	23.2	73	76.8
Trainings through information literacy programs	75	78.9	20	21.1
Promotion by use of e-mails and online	34	35.8	61	64.2
Promotion through National Treasury and Planning website	11	11.6	84	88.4

Source (Field Data, 2019)

The results in table 4.13 revealed that majority of economists 92(96.8%) stated that lobbying and advocacy by the library staff was the most commonly used strategy to enhance adoption and use of electronic resources. This was followed by trainings through information literacy programs at 75(78.9%) and holding library workshops and seminars at 65(68.4%). On the other hand, promotion through National Treasury and Planning website and library orientation were the least used strategies to enhance use and adoption of electronic resources at 11(11.6%) and 22(23.2%) respectively. The study also established that 45(47.4%) of economists felt that the library was using posters, flyers, leaflets and brochures to enhance the adoption and use of electronic resources whereas 34(35.8%) of them felt that the library was using e-mails and online to promote adoption and use of electronic resources.

When the key respondents were asked this question, the director of economic planning (R4) remarked:

> *''E-resources have enhanced the work of economists and in management meetings we have always advocated the use of these resources''*

Based on the above responses, it can be deduced that majority of the economists were of the views that lobbying and advocacy by library staff coupled with information literacy programs are some of the most popular strategies employed in enticing economists in creating awareness, adoption and use of e-resources. The economists' views were supported by those of the key respondents who agreed that lobbying and advocacy had enhanced awareness, adoption and use of e-resources as a strategy. It can also be argued that since some of the key respondents attend top management meetings and lobby and advocate for the usage of e-resources, this has gone a long way in reinforcing lobbying and advocacy as a very effective strategy in creating awareness, adoption and use of e-resources at the National Treasury and Planning.

4.8 Challenges faced in Awareness, Adoption and Use of Electronic Information Resources

The economists were also asked to state the challenges they encountered in accessing and using electronic resources. The responses are presented in table 4.11 below:

Table 4.11: Challenges Encountered by Economists in Accessing and Using Electronic

Resources (n = 95) N/B Multiple responses

Challenges	F	%
Inadequate searching and retrieval skills	58	61.1
Failure to download full text electronic articles	61	64.2
There is poor or inadequate sensitizations and advocacy	2	2.1
The poor state of ICTs	47	49.5
Inadequate facilities or infrastructure	50	52.6
difficult electronic journal interfaces	64	67.4
Lack of remote access	89	93.7
There is inadequate user education	33	34.7
Lack of local contents	86	90.5
Copyright and intellectual property rights issues	45	47.4

Source (Field Data, 2019)

The findings in table 4.11 revealed that majority of economists encountered the following challenges in adopting and using electronic resources: lack of remote access 89(93.7%); lack of local contents 86(90.5%); difficult electronic journal interfaces 64(67.4); failure to download full text electronic articles 61(64.2%); inadequate searching and retrieval skills 58(61.1%) and inadequate facilities or infrastructure 50(52.6%). Property rights issues at 45(47.4%) and inadequate user education at 33(34.7%).

When the key informants were asked to respond to this question, the head of ICT (R3) said:

> *''We have always encountered many challenges regarding the use of e-resources among* them *frequent power outages which normally put the users in a state of hopelessness''*

While the director of economic development & coordination department (R4) retorted;

> *''Lack of funds can be a major impediment as far as awareness, adoption and use of e-resources are concerned since all activities that are carried out involve funds which is always inadequate''*

From the responses of the economists, it's quite apparent that majority of them were of the opinion that lack of remote access and lack of local content followed by failure to download full text of electronic resources are major challenges. It should be noted from the responses that all the challenges are related to funding which is always inadequate as one of the key respondents has put it. Library in the National Treasury and Planning is one of the departments which is supposed to be allocated funds in competition with other departments. The response of the director of economic development & coordination department is supported by Ikem and Ajala (2004), who posit that the greatest barrier to ICT use in public libraries is a lack of money. According to them, the problem of finance entails not only the acquisition of hard and software, but also the updating and maintenance of both.

4.9 Measures to Improve the Awareness, Adoption and Use of Electronic Information Resources at the National Treasury and Planning

The respondents were asked to suggest measures that could be put in place to mitigate the challenges in accessing and using electronic resources by economists. The responses are provided in table 4.12 below.

Table 4.12: Suggested Mitigation Measures to the Challenges Faced by Economists (n=95)

N/B Multiple responses

Mitigating the challenges	**Frequency**	**%**
Incorporate searching and retrieval in information literacy programs	68	71.6
Identify training needs in order to improve training programs	54	56.8
Improve ICT infrastructure especially to allow remote access.	77	81.1
Improve library facilities	61	64.2
Seek support from top level management in order to get more funding	53	55.8
Address copyright and right issues	45	47.4
Digitize local contents	90	94.7

The results in table 4.12 revealed that majority of economists recommended that the following measures should be undertaken to mitigate the challenges: digitize local contents 90(94.7%); Improve ICT infrastructure especially to allow remote access 77(81.1%); incorporate searching and retrieval in information literacy programs 68(71.6%); improve library facilities 61(64.2%); identify training needs in order to improve training programs 54(56.8%); seek support from top level management in order to get more funding 53(55.8%) and address copyright and right issues 45(47.4%).

When the Key respondents were asked to suggest measures that could enhance awareness, adoption and use of e-resources among the economists, Head of ICT (R3) remarked:

> *''Funding is the key in unlocking all the challenges facing utilization of e-resources at the National Treasury and Planning''*

The statement by the head of ICT is supported by the assertion of Ikem and Ajala (2004), who say that the greatest barrier to ICT use in public libraries is a lack of money. Perhaps with the availability of funds such programs such user education can be facilitated since user education is critical in creating awareness, adoption and use of e- resources at the National Treasury and Planning. User education is paramount as Osagie (2003) indicates that the need for library user education is to enable users to; know how to use the library catalogue in any Library, understand the classification scheme in the library so as to be able to locate materials, appreciate the library catalogue as index to the library holdings and view the library as a repository of knowledge that determines the success of the students' academic programmes. Funding is a facilitating factor which if provided to the staff of National Treasury and Planning can go a long way in enhancing performance as spelled out in UTAUT theory. The facilitation and performance will be the resultant factor of awareness, adoption and use of e-resources at the National Treasury and Planning.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of findings, conclusions and the recommendations based on the findings of the study and research questions. The essence of carrying out any research or study is to answer the research questions. This study sought to investigate the awareness, adoption and use of electronic resources by economists at the National Treasury and Planning, with a view to proposing interventions that can be used to enhance their awareness, adoption and use.

5.2 Summary of Findings

The following is the summary of the major findings

5.2.1 Demographic Information of the Respondents

The findings revealed that majority of the respondents were male compared to female and were aged over 40 years. In terms of education the results revealed that majority of the respondents had master's degrees and had worked for over six years.

5.2.1.2 Demographic Information of the Key Informants

The findings revealed that majority 3(67%) of the Key informants were between 41 and 50 years and in terms of qualifications the majority 4 (67%) were having master's degrees and above. In terms of experience majority of the respondents 4 (67%) had over 11years of experience.

5.2.2 Types of Electronic Resources Available at the National Treasury and Planning

The study revealed that electronic resources available at the National Treasury and Planning included e-books, e-newspapers, online databases. e-journals e-data archives e-conference papers and other e-resources.

5.2.3 Level of Awareness, Adoption and use of Electronic Resources

The study established that majority of the economists were aware of the existence of electronic resources at National Treasury and Planning library with the while the minority of the economist stated that they were not aware of the existence of electronic resources in the National Treasury and Planning library. The high awareness of the existence of electronic resources can be attributed to the high publicity as well as lobbying and advocacy programs carried out by the library staff.

Regarding how the economists came to know the existence of electronic resources, results revealed that majority of the economists came to know about the existence of electronic resources through the library whereas a half of the economist knew about the existence of the library through seminars and workshops. The rest came to know about the existence of the library through leaflets or newsletters or flyers and staff meetings respectively. Similarly, the National Treasury and Planning's website and library orientation played some role in bringing to the attention of the economists about the existence of the library's e-resources.

The results indicated that there was a lot of willingness to use electronic resources by the economists them at least once a week. The study further revealed that majority of the economists had used electronic resources for five years and below while the minority 57 (60%) had used them for more than six years.

As to whether the economists had had been trained on the use of electronic resources, majority of them agreed that they had been trained by the librarians through user education and other related programs.

5.2.4 Factors that influence the Adoption and Use of Electronic Resources

The findings of the study revealed that majority of the economists indicated that less effort is needed to use electronic resources. The findings also revealed that majority of the economists were of the view that the adoption and use of electronic resources by economists is highly dependent on performance expectancy which translates into expected benefits the economists derived from using electronic resources. The findings further revealed that majority of the economist in that social influence determines their decision to adopt and use electronic resources. The results also revealed that majority of the of the economists felt that there are adequate facilitating conditions in the National Treasury and Planning library to facilitate the awareness, adoption and use of electronic resources by economists.

5.2.5 Strategies employed to Enhance Awareness, Use and Adoption of E-Resources by the Economists at the National Treasury and Planning

Majority of economists of the indicated that lobbying and advocacy by the library staff was the most commonly used strategy to enhance adoption and use of electronic resources followed by trainings through information literacy programs and holding library workshops and seminars respectively. Minority of the economists indicated that promotion through National Treasury and Planning website and library orientation were the least used strategies to enhance use and adoption of electronic resources.

5.2.6 Challenges Faced in the Adoption and Use of Electronic Resources

The findings of the study revealed that majority of economists encountered the challenges related to the awareness, adoption and use of electronic resources such as: lack of remote access; lack of local contents; difficult electronic journal interfaces; failure to download full text electronic articles; inadequate searching and retrieval skills and inadequate facilities or infrastructure among others.

5.2.7ProposedInterventions of Enhancing Awareness, Adoption, Access and Utilization of Electronic Resources

Majority of economists suggested measures that could mitigate challenges associated to the awareness, adoption and use of e-resources at the National Treasury and Planning. These measures include but not limited to: digitizing local contents; improving ICT infrastructure specially to allow remote access; incorporating searching and retrieval in information literacy programs; improving library facilities; identifying training needs in order to improve training programs; seeking support from top level management in order to get more funding and address copyright and right issues among others.

5.3 Conclusions

The first objective of the study was to establish the type of e- sources at the National Treasury and planning and the study concluded that there are diversified e-books, e-newspapers, online databases. e-journals e-data archives e-conference papers and other e-resources in the library.

The second objective was to determine the Level of awareness, adoption and use of electronic information resources and the study concludes that there is high level of

awareness, adoption and willingness to use of e -resources among the economists at the National Treasury and Planning.

The third objective of the study was to examine factors that influence the awareness, adoption and use of electronic resources and the study concludes that economists at the National Treasury and Planning have embraced e– resources and the constructs of UTUAT theory which include: effort expectancy, performance expectancy, social influence and facilitating conditions have played a big role as far as awareness, adoption and use of e- resources is concerned.

The fourth objective of the study was to establish strategies employed to enhance awareness, use and adoption of e- resources by the economists at the National Treasury and Planning and the study concludes that lobbying and advocacy by the library staff have been employed as the most effective strategies in creating awareness, adoption and use of e- resources at the National Treasury and Planning.

The fifth objective of the study was to determine the challenges encountered by economists at the National Treasury and Planning in terms of awareness, adoption and use of e-resources at the National Treasury and Planning library and the study concludes that economists face challenges ranching from but not limit to lack of remote access; lack of local contents; difficult electronic journal interfaces; failure to download full text electronic articles; inadequate searching and retrieval skills and inadequate facilities or infrastructure due funding among others. That these challenges require a lot of money which increases the cost of running and maintaining e-resources at the National Treasury and Planning.

The sixth objective was to propose interventions that could enhance awareness adoption and use of e -resources at the National Treasury and Planning and the study concludes that economists suggested quit a number of interventions which included: digitizing local contents; improving ICT infrastructure specially to allow remote access; incorporating searching and retrieval in information literacy programs; improving library facilities among others.

5.4 Recommendations

Based on the study findings, the study makes the following recommendations

5.4.1 Upgrade ICT and Library Facilities in order to allow Remote Access

The results showed that level of ICT preparedness at the National Treasury and Planning library to allow remote access was inadequate, as a result most of the economists can only access electronic resources within the National Treasury and Planning building. Since ICT has taken a center stage in the collection, processing, storage, access and distribution of electronic resources, the study recommends that the Head of ICT at the National Treasury and Planning in conjunction with top management should set up a robust information technology infrastructure that can allow remote access to electronic resources.

5.4.2 Inadequate Funding

The Director, economic development and coordination department where the ICT and Library belong should initiate a process of lobbying for more funds for these two units in order to improve the use of e-resources in the organization. These funds should be lobbied from government of Kenya and donors since running and maintaining e-resources have become a costly endeavor at the National Treasury and Planning.

5.4.3 Digitize Local Contents

The findings revealed that there was lack of digitization of the local content. The study therefore recommends that the director of Library Services at the National Treasury and Planning library should digitize their local contents in order to increase the visibility of local content thereby promoting the awareness, adoption and use of electronic resources. The library should start digitization programs targeting local contents in the National Treasury and Planning. This will address and seek local solutions by economists at the National Treasury and Planning to challenges facing Kenya.

5.4.4 Mounting of User Education Programs

The findings revealed that economists at National Treasury and Planning require training on searching and retrieval skills. The study therefore recommends that the Director of Library services in conjunction with his team in the library should mount user education programs which include among other programs information literacyand computer literacy to train economists.

5.5 Contribution to Knowledge

The study was important because it has stressed the importance of awareness, adoption and use of e-resources at National Treasury and Planning by economists. The main highlights included types of e-resources; awareness, adoption and use of e–resources by economists; strategies used to enhance awareness, adoption and use of e-resources; challenges encountered by the economists in the awareness, adoption and use of e- resources and proposed interventions suggestions that can be used to enhance awareness, adoption of e-resources. Based on these findings of this study, one can affirm that e-resources can actually contribute to improving the performance

of economics at the National Treasury and Planning. E-resources can be major tools in enhancing the execution of duties by economists at the National Treasury and Planning.

5.6 Suggestions for Further Research

Since this study confined itself to the National Treasury and Planning, the researcher suggests that a similar study could be replicated across government ministries, agencies and parastatals so as to assess the awareness, adoption and use of e-resources. The study also suggests that a study exploring the funding crisis towards information services in public entities should be carried out.

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Appendix I: Questionnaire for Economists

I am Joseph Mboji a post graduate student at Moi University undertaking a master's degree in (Information of Sciences) majoring in library & Information Studies (LIS). I am required to conduct a research study on the **Adoption and use of electronic information resources by economists: at the National Treasury and Planning, Nairobi County, Kenya.**

SECTION A: Biographical Information

1. Gender: Male [ ] Female [ ]
2. Age Profile: 30 years and below [ ] 31-40 years [ ]41-50 years [ ] 51-60 years [ ] 61yrs and above [ ]
3. Level of Education: Undergraduate [ ]Master's Degree [ ]PhD [ ] Others (Explain)……
4. Years in employment: 5 years and below [ ] 6-10 years [ ] 11-20 years [ ] 21 years and above [ ]

SECTION B: TYPES OF ELECTRONIC INFORMATION

5. What are the types of electronic information resources available in the library? (Please tick box against all that apply)

E- Books	[ ]	E- Newspapers	[ ]
Online database	[ ]	E- Journals	[ ]
E- Data archives	[ ]	E- Conference proceedings	[ ]

Others (List)
……

6. Are you familiar with electronic resources available in the library? (Please tick on appropriate box) Yes [ ] No [ ]
7. How did you come to know about the existence of electronic resources? Please tick box against all that apply)

Leaflets/Newsletters/flyers	[ ]	Posters	[ ]
Library workshop	[ ]	Library website	[ ]
Told by a librarian	[ ]	Through library orientation	[ ]
Told by a colleague	[ ]	Library online catalogue	[ ]
By accident	[ ]	E-mail from library	[ ]

Others, please specify_____
8. How often do you access and use electronic resources?

Almost daily	[ ]	Several times a week	[ ]
Once a week	[ ]	Once a month	[ ]
Very infrequently	[ ]		

Others, specify……

9. Why do you prefer using electronic resources?
10. How do you rate your skills in sing electronic resources? (Please tick appropriate box)

Very Good [ ] Good [ ] Fair [ ] Poor [ ]

11. Have you taken any training in the use of electronic resources?

Yes [ ] No [ ]

(b). If your answer to the above question is yes, please indicate your trainer. (Tick all that apply)

Self-learning [ ] Training by the library staff []
Training by the IT Centre [ ] Training by colleagues [ ]
Others (Please specify)_____

12. Which areas do you have skills gap in making effective use of electronic resources?

Computer literacy skills [ ] Searching and retrieval skills [ ]
Others (specify)_____

12. What factors influence you to adoptand use electronic resources?

Effort expectancy ( ) Performance expectancy ( )
Facilitating conditions ( ) Social influence ( )

13. What strategies have been put in place to enhance awareness, use and adoption of electronic resources? (Tick all that apply)

Strategy	✓ **(Tick)**
Promotion by use of posters, flyers, leaflets and brochures	
Lobbying and advocacy by the library staff	
Holding Library workshops and seminars	
Library orientation	
Trainings through information literacy programs	
Promotion by use of e-mails and online	
Promotion through National Treasury and Planning website	

14. What challenges do you experience in adopting and using electronic resources? (Tick all that apply)

Challenges	✓ **(Tick)**
Inadequate searching and retrieval skills	
Failure to download full text electronic articles	
There is poor or inadequate sensations and advocacy	
The poor state of ICTs	
Inadequate facilities or infrastructure	
Difficult electronic journal interfaces	
Lack of remote access	
There is inadequate guidance	
Lack of local contents	
Copyright and intellectual property rights issues	

15. What measures do you recommend to be put in place to mitigate the challenges? (Tick all that apply)

Measure	✓ **(Tick)**
Incorporate searching and retrieval in information literacy programs	
Identify training needs in order to improve training programs	
Improve ICT infrastructure especially to allow remote access.	
Improve library facilities	
Seek support from top level management in order to get more funding	
Address copyright and right issues	
Digitize local contents	

16. Any other comment……..

Thank you for your participation

Appendix II: Interview Schedules for Informants

1. (a) Name of University_____
   (b) Respondent's position_____
   (c) Respondent's gender_____
   (d) Highest qualification_____
   (e) Age_____
2. Do you think electronic resources have received wide support in National Treasury and Planning since their introduction?
3. Would you say the general conditions in the National Treasury and Planning are conducive for the adoption and use of electronic resources by economists?
4. Does your National Treasury and Planning library has a strategy to maximize the dissemination of the contents of electronic resources to the economists?
5. How do you encourage economists to adopt and use electronic resources?
6. What kind of support/services does the National Treasury and Planning provide to economists to ensure effective use of electronic resources?
7. Does your National Treasury and Planning library have the necessary ICT infrastructure required to manage electronic resources?
8. What would you say is the level of usage of electronic resources by economists?
9. (a) What percentage of the National Treasury and Planning budget is given to the library?
   (b) What percentage of the overall library budget is dedicated to electronic resources?
   (c) Is this budget adequate?
10. What policies have you put in place to regulate the management of electronic resources?
11.. In your opinion, does the top management support the acquisition of electronic resources?
12. What human resource capacity and expertise is available to handle electronic resources?

13. Is your library engaged in digitizing its local content as a way of preserving and making them accessible to the economists?
14. What digital platform do you use?
15. What is the level of adoption of technology by economists?
16. What measures have you put in place to encourage economists to adopt and use new technology?
17. What are the challenges encountered by economists in adopting and using new technology? (Please elaborate and suggest possible solutions to such challenges)
18. Do you have any other general comment(s) regarding the acquisition and management of electronic resources?

Thank you for your participation

Appendix I11: Authorization for Data Collection

MOI UNIVERSITY
DEPARTMENT OF LIBRARY, RECORDS MANAGEMENT AND INFORMATION STUDIES
SCHOOL OF INFORMATION SCIENCES

Tel: (053) 43231
Fax No. (053) 43292
Telex NO: 35047 MOIVASITY
E-Mail: jmaseh@gmail.com OR deanis@mu.ac.ke

P. O. Box 3900
Eldoret
Kenya.

Our Ref: IS/MPHIL/112/011

17th December, 2018

The Executive Secretary,
Kenya National Council of Science and Technology,
P. O. Box 30623,
NAIROBI.

Dear Sir,

RE: JOSEPH MBOJI – IS/MPHIL/112/011

The above named is a Master of Science student in the Department of Library, Records Management and Information Studies, School of Information Sciences, Moi University.

Mr. Mboji is intending to carry out research work entitled ***"Adoption and Use of Electronic Information Resources by Economists at the National Treasury and Planning, Nairobi County, Kenya".***

We are kindly requesting you to issue him with a research permit to enable him proceed with his research.

Thank you.

Yours sincerely,

HEAD, DEPARTMENT OF LIBRARY, RECORDS MANAGEMENT AND INFORMATION STUDIES
MOI UNIVERSITY
DATE 17/12/18

DR. ELSEBAH MASEH
HEAD,
DEPARTMENT OF LIBRARY, RECORDS MANAGEMENT & INFORMATION STUDIES

EM/mn

Appendix 1V: NACOSTI Research Permit

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471, 2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/83855/27547** Date: **6th February, 2019**

Joseph Ondigo Mboji
Moi University
P.O Box 3900-30100
ELDORET

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Adoption and use of electronic information resources by economists at the National Treasury and Planning, Nairobi County, Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **6th February, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

Appendix V: Authorization Request

P.O. BOX 5529-00100
NAIROBI.
7th February, 2019

The Principal Secretary
The National Treasury and Planning
P.O. BOX 30007 – 00100
NAIROBI.

Dear Sir,

TO WHOM IT MAY CONCERN

I am a student at Moi University undertaking a master's degree in (Information of Sciences) majoring i library & Information Studies (LIS). As part of the requirement in partial fulfillment of the Degree of Master of Science in Information Sciences. I am required to conduct a research on the **Awareness, adoption and use of electronic information resources by economists at the National Treasury and Planning, Nairobi County, Kenya.** The study is to take place within the National Treasury and Planni Head Quarter in Nairobi Country, Kenya. It is hoped to contribute in enhancing the awareness, adoptio and use of the electronic Information Resources in provisions and services at the National Treasury and Planning.

The purpose of this letter therefore is to request you and your staff especially economists to avail the necessary information. The information that I will be obtained from your staff will be used for academi research purpose only and will be treated with utmost confidentiality. A prompt response to the attachec questionnaires will be highly appreciated.

Thank you.

Yours

Joseph Mboji.

IS/MPHIL/112/011

Appendix V1: Research Authorization

REPUBLIC OF KENYA

THE NATIONAL TREASURY AND PLANNING

Fax: +254- 020 - 222 - 7436
Telephone: +254 - 020 - 2227436, 2251005
E mail: psnationaltresury@treasury.go.ke
Website: www.nationaltreasury.go.ke

National Treasury Building – Harambee Av.
P.O. Box 30007-00100
Nairobi, Kenya

14th February, 2019

When replying please quote
Ref: GLS /4/67/2019(23)

Joseph Mboji,
P.O Box 5529 - 00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application letter addressed to this office on the above subject. I am pleased to inform you that you have been authorized to undertake your research entitled: **Awareness, adoption and Use of Electronic Information Resources by Economists at the National Treasury and Planning Library** for a period of three (3) months as from **1st March 2019 to 30th May, 2019.**

You are hereby advised to report to the **Director, Economic Development & Coordination Department** for further instructions. You shall also be required to deposit a copy of the final research to the National Treasury and Planning Library.

Benson Kimani
For: PRINCIPLE SECRETARY

Appendix VII: New Plag Thesis

New Plag-Thesis

ORIGINALITY REPORT

21%	21%	0%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	strategicjournals.com Internet Source	21%

Exclude quotes	On	Exclude matches	< 15%
Exclude bibliography	On		

New Plag-Thesis

PAGE 1
PAGE 2
PAGE 3
PAGE 4
PAGE 5
PAGE 6
PAGE 7
PAGE 8
PAGE 9
PAGE 10
PAGE 11
PAGE 12
PAGE 13
PAGE 14