EXAMINING THE CONTRIBUTION OF LIBRARIES IN PROMOTING USE OF OPEN GOVERNMENT DATA IN KENYA: CASE OF THE UNIVERSITY OF NAIROBI LIBRARY

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A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF LIBRARY AND INFORMATION SCIENCE, DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE, UNIVERSITY OF NAIROBI

NOVEMBER 2022

DECLARATION

This research project is my original work and has not been submitted for examination to any other university.

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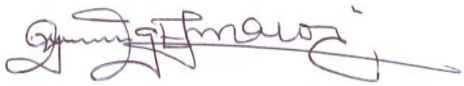
Signature:  Date: 27/11/2022

DEDICATION

This research work is dedicated to my late sister Esther Mmbone. We miss you all the more. Don’t worry about your son because I am in charge to make sure he obtains a good education. Rest in peace.

ACKNOWLEDGEMENT

My sincere regards to Dr. John Oredo and Dr. Elisha Makori for their toil and leadership which ensured success of the project. Special thanks also to the entire department of MLIS under the leadership of Dr. Dorothy Njiraine and all other lecturers including Dr. Agnes Amunga, Dr. George Kingo'ri and Dr. Grace Irura.

Above all, I thank God Almighty for enabling me to undertake my project and for providing the finances I needed all the time. This far I have come in the name of the Lord, our God.

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ABSTRACT

Open Government Data initiatives have gained momentum in many parts of the World with key emphasis being on promoting transparency and enhancing public participation in governance. Central to this tremendous development is the library which has enabled governments and business entities to understand how they can utilize available data. This study examined the contribution of libraries in promoting use of open government data in Kenya by exploring how the University of Nairobi's Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library had promoted use of open government data. The study was guided by key objectives which were to: Evaluate the contributions of the library in promoting open data initiatives in Kenya, assess how varying levels of skills on data literacy and media literacy among university students has affected the use of open government data, find out if the inequality in internet connection in libraries had affected utilization of open government data and services, examine application of ICT tools in libraries in accelerating utilization of open government data and lastly develop a suitable conceptual framework for supporting use of open government data in Kenya. Out of the 160 questionnaires distributed to respondents, (137) questionnaires comprising (121) for university students and (16) for middle-level library employees were returned for analysis. Additionally, two (2) library employees participated in direct personal interview. Qualitative data was collected by use of interviews while quantitative data was collected by use of questionnaires. Qualitative data was analyzed through descriptive words/text while quantitative data was presented through tables, graphs, pie charts and bar graphs. The study found out that the library had significantly contributed to increased use of open government data in Kenya. Additionally, the study revealed a gap in the training of media literacy and data literacy at the University of Nairobi. The study recommended increased collaborations between the university library and other stakeholders to accelerate use of open government data among other recommendations. Lastly, the study developed a suitable conceptual framework for promoting use of open government data in Kenya.

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LIST OF ABBREVIATIONS AND ACROYNMS

OGD	Open Government data
ICT	Information Communication Technology
IFLA	International Federation of Library Associations
UNECA	United Nations Commission for Africa
IFAP	Information for all Programmes
OGP	Open Government Partnerships
AfDB	African Development Bank
NAMLE	National Association for Media Literacy Education
UNESCO	United Nations Education Scientific Organisation
ARCC	African Regional Center for Computing
ABS	Australian Bureau of Statistics
OPAC	Online Public Access Catalogue
UoN	University of Nairobi
ILS	Integrated Library System
IFAP	Information for all Programmes
Wi-Fi	Wireless Fidelity

CHAPTER ONE

1.1 Background to the Study

Various scholars have defined open government data in a variety of ways. However, all their definitions include aspects such as data that is provided, produced or stored by government and other public sector institutions, and can used and distributed freely by anyone, anytime and anywhere without any copyright restrictions (Sanchez-Nielsen et al., 2021; Turuy et al., 2021 UNECA, 2017:12; Belle, 2018:4; Ayre and Craner, 2017:3; Jelenic, 2019). By enabling governments and business entities to understand their information needs, libraries are acting as the link between the government and the public, who are the salient users of open government data (IFLA, 2019:3). Sanchez-Nielsen et al., (2021) acknowledges that parliamentary proceedings data, yearly budget allocations and spending data, population and census data, environmental and education data are just examples of datasets held by governments.

As a critical component in sharing open government data, libraries are increasingly playing a central role in dissemination of open datasets by helping patrons to locate data and web applications that meet their information needs (Ayre and Craner, 2017:6); despite the vast challenges. Despite accessing open government data being a fundamental human right (Ifeanyi, 2022), the use of open government data still faces many challenges (Svärd, 2018:4). These challenges range from inadequate use of technological infrastructure in libraries, acceptability of legal framework and the entrenched behavioral issues by both the citizens and public servants (Abu-Shanab and Shehabat, 2018:2). Additionally, opening up government data demands addressing key issues pertaining to records conversion costs, privacy and legal concerns as well as overhauling internal political and institutional barriers (Belle, 2018:3).

Adelina et al., (2021) point out that despite these challenges, governments all over the world have tremendously shifted towards developing information policies that manage information and give people free access to it. Information policy refers to plans, strategies, practices, laws and regulations to control the creation, processing, transportation, distribution, use and destruction of information both in the private and the public sectors (US open data policy | Proceedings of the 19th annual International Conference on digital government research: Governance in the data age, 2018). While using digital technology tools, (Motamarri et al., 2022), these information policies have enabled libraries to share open government datasets with various stakeholders.

With the growth of the internet and ICT, governments are inventing and sharing large volumes of data with the public (IFLA, 2019:6). In this respect, access to open government data has become an essential element in promoting transparent, people centered governance (Adelina et al., 2021). This research study is therefore anchored on information policies that have addressed the technical requirement issues and the terms under which libraries can share open government data with the public (UNECA, 2017:9). These information policies include: Information for All Programmes (IFAP), Article 35 of Kenya's Constitution and Access to Information Act, 2016.

1.2 Context of the Study

As a signatory member state to the 2011 Open Government Partnership (OGP), the Kenyan government has embraced open data to boost economic growth, increased transparency and accountability, improved public services, and efficiency in government (TRALAC TRADE LAW CENTRE, 2017). In an article entitled "UoN ready to support Judiciary build a data center" (UoN ready to support judiciary build a data center, (2020) the retired Chief Justice David Maraga revealed the partnership with the University of Nairobi to build a data center that will harbor data from government agencies such as the police and prisons departments, DPP and DCI among others. Through such initiatives, the Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library hope to expedite utilization of open government data in Kenya. Furthermore, the two libraries hope to provide increased access to learning and research resources (University of Nairobi, 2020). It's imperative to note that a significant amount of these information materials cover key areas such as governance, transparency and accountability, and can be retrieved by patrons through university's open access repository.

1.3 Statement of the Research Problem

Open government data must be universally accessible (Chirchir, 2017:21; Adelina et al., 2021). However, Kenya still has wide inequality in internet access that discriminates against various groups of information users from accessing and using open government data. Mutegi, (2020:3) laments that even though the Kenyan government has put in place ICT infrastructure in schools, such facilities have not been fully utilized because most teachers have no capacity in terms of skills to utilize them. Latest statistics show that many people in Kenya access and use the Internet from their mobile phones or other SIM enabled devices. As of 2019 nearly 52 million people accessed and used the internet while mobile subscriptions stood at 53.2 million (UNESCO, 2020). Despite

this tremendous development, a sizeable portion of the population still cannot use open data which implies they cannot use it to search for jobs or information on their health or for agricultural purposes. Furthermore Burress et al. (2019) point out that despite students being surrounded with large volumes of data, the majority are not fully equipped to use it to make decisions.

A report by The Human Impact of Data Literacy, (2020) shows that over 74 percent of employees in developed countries reported feeling overwhelmed or unhappy working with data which always resulted in some completely avoiding or finding an alternative method to complete a task without using data. The same report also indicates that only one-fifth of the global workforce are confident in their data literacy skills. Furthermore, Adelina et al., (2021) decry students' low level information literacy self-efficacy; a move that has hindered them from relating with data adequately. The inadequate information literacy specialization skills in key areas such as data and media literacy has resulted in students not grasping essential skills in critical areas that have the ability to boost the use of available public data in Kenya. In this regard, Nelson and Megan, (2020) suggest that librarians be equipped with data information literacy skills for them to fully guide patrons in accessing, using and critically evaluating the various aspects of data.

This study therefore addressed the gap of insufficient skills in data literacy and media literacy among university students and middle-level library employees as an enabler in promoting utilization of open government data. Additionally, the study developed a suitable model for enhancing use of open government data, examined application of ICT tools in libraries in accelerating utilization of open government data as well as suggested potential ways of addressing the inequality in internet connection in libraries to ensure increased utilization of open government data and services.

1.4 Purpose/aim of the Study

This study examined the contribution of libraries in promoting use of open government data in Kenya emphasis on Jomo Kenyatta Memorial Library and Mahatma Gandhi Graduate Library at the University of Nairobi.

1.4.1 Objectives of the Study

The objectives of this study were to:

1) Showcase the contributions of libraries in promoting open data initiatives in Kenya.
2) Assess how varying levels of skills on data literacy and media literacy among university students has affected the use of open government data.
3) Find out how the inequality in internet connection in libraries has affected utilization of open government data and services.
4) Examine application of ICT tools in libraries in accelerating utilization of open government data.
5) Develop a suitable model for supporting use of open government data in Kenya

1.5 Research Questions

1) What are the contributions of libraries in promoting open data initiatives?
2) How has varying levels of skills on data literacy and media literacy among university students affected the utilization of open government data?
3) How has the inequality in internet connection in libraries affected utilization of open government data and services?
4) How has application of various ICT tools in libraries accelerated utilization of open government data?
5) How can a model for promoting use of open government data be developed?

1.6 Significance of the Study

The study provided primary data on the contribution of libraries in promoting use of open government data in Kenya. Its findings will help academic libraries to understand how they can play a role in promoting use of open government data in Kenya. The study will also showcase how different information users can benefit from open data sources available in library. The study will also help information professionals to understand how they can customize open government data at their custody to maximize consumption by various users. It will also help information professionals to identify specific ICT tools that can be deployed to promote use of open data in library. Furthermore, the study will showcase how public and private information organisations

can collaborate in fastracking use of open government data. Lastly, the study will benefit policy makers who will use its findings to demonstrate how libraries can promote development within the community.

1.7 Assumptions of the Study

This study presumed that Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library are yet to develop blueprints for promoting utilization of freely accessible government data. It also assumed that data literacy and media literacy skills were not effectively taught by both the library and academic faculties. Finally, the study assumed that limited use of ICT tools in libraries had impeded students' use of open government data.

1.8 Scope and Limitation of the Study

This study was conducted at Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library. The purpose was to examine the contribution of libraries in promoting use of open government data in Kenya. Primary data was collected from both students and middle-level library staff at the University of Nairobi. Anticipated challenges included: Inability or reluctance by library staff members to respond to the questionnaires and the existing red tape in accessing certain confidential information on library's partnership with the government and other institutions in regard to the topic under investigation.

1.9 Operational Definition of Terms and Concepts

Government: This study adopts the Oxford English dictionary definition of government. It defines government as a group of entities mandated by law to control affairs of the State. These affairs include overseeing daily operations of government Ministries and other State agencies.

Government data: This study defines government data as information held by institutions such as Ministries, State agencies among others.

Open government data: This study refers to open government data as digital datasets produced and stored by government agencies and can be accessed by anyone without any legal restrictions.

Library: This study defines a library as a collection of materials (print and electronics) that can be accessed by patrons for academic and other use.

Use: To deploy something in order to achieve a certain desired outcome or results.

1.10 Organisation of the Study

The chapter has presented the contextual information to the study, the statement of the research problem, purpose of the study, the objectives and key research questions. It has also given the significance of the study, the scope and limitations as well as defined the operational concepts and terms as used.

1.11 Chapter One Summary

This chapter provided background information to the study. It also outlined how the University of Nairobi had partnered with other government agencies such as the Judiciary to promote the utilization of freely accessible data. Additionally, the chapter provided study assumptions, the significance and scope, limitations of the study and lastly defined operational terms and concepts as applied in the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Contributions of Libraries in Promoting Open Data Initiatives in Kenya

This chapter examined literature connected to the topic under investigation as guided by the research objectives. It sought to evaluate the contributions of the library in promoting open data initiatives in Kenya, assess how varying levels of skills on data literacy and media literacy among university students has affected the use of open government data, find out if the inequality in internet connection in libraries has affected utilization of open government data and services, examine application of ICT tools in libraries in accelerating utilization of open government data and lastly develop a suitable model for supporting use of open government data in Kenya.

According to Chatwin and Arku, (2017:56) governments sharing of information with the public began in the year 1766 when Sweden made public dissemination of government records a constitutional right. As of today (2022), Open Government Partnership has grown to a membership of 77 countries and 76 local jurisdictions which work alongside thousands of civil society organizations (Open Government Partnership, (2022). According to this website, Kenya, Nigeria and Tanzania are among the growing list of signatory member states to OGP since its founding in 2011. Overall these initiatives have increased transparency and accountability in governance across Sub-Saharan Africa countries (Belle, 2018:3).

According to IFLA, (2018) libraries are instrumental in bolstering national development by enabling the public to unrestricted access to government data. The report particularly indicates that the library not only facilitates citizens' access to information but also helps the public to develop relevant skills and confidence to apply available information in improving their lives. The following are the key contributions of libraries in supporting open government initiatives in Kenya.

2.1.1 Open Data in Library Promoting Accountability and Transparency in Governance

Libraries are instrumental in enhancing partnership between government agencies and the public, improving public services and enhancing quality in decision making in and outside of government (Shao and Saxena, 2018; Chirchir, 2017:18; Luis, 2018:3). According to the IFLA, (2018) report, libraries have promoted accountability and transparency in government by enabling citizens who

do not have internet access to use the library to access eGovernment services. The same report further points out that in order to ensure that governments do escape responsibility for their actions, law libraries and other government information libraries have played a role of preserving essential documents which can help to hold leaders accountable.

On the other hand, a report by the World Bank asserts that open data found in libraries are helping governments, businesses and civil society organizations to drive sustainable development (World Bank, 2015). It is for this among other reasons that the IFLA, (2018) report calls on governments to support libraries by ensuring they are properly integrated into the activities of government ministries so that they can contribute towards realization of government development agendas.

2.1.2 Open Data in Library helping to build Empowered Civil Service

Parliamentary libraries are important in supporting elected representatives in reviewing draft legislations as well as holding the government accountable (IFLA, 2018). The same report further states that Parliamentary libraries provide elected representatives with valuable summaries, research and briefings that allow them to ask intelligent questions, check government operations, propose legislation amendments and provide alternative leadership. This way, open government data available in libraries helps in improving public service by giving citizens information that enables them to become active users of public service (AfDB, 2017:8).

2.1.3 Open Data in Library Fostering Innovation for Economic Development

Open data contained in libraries play a unique role in creating value for the national economy (Ayre and Craner, 2017). This data can also be used to innovate new products and services. Innovation can simply be defined as developing or inventing a new or original product that was not in the market before. An article entitled "Economic benefits of open data" points out that data holds a tremendous potential for societies and economies and can stimulate innovation which can in turn improve economic growth, better decision-making, increase transparency and efficiency of governments as well as promote higher quality of life for citizens (The economic benefits of open data. (2017). Likewise, Leviakangas and Molarius, (2020) postulate that open government data has the ability to stimulate an innovation driven economy which can help stakeholders in various sectors such as agriculture to understand how to implement sustainable practices that boost food productivity. Open data in library repositories have the potential to promote economic growth by

helping launch new businesses and products as well as optimize operations of existing companies besides improving the climate for direct foreign investment (AfDB, 2017:8).

2.2 Information Literacy Skills in Promoting use of Open Government Data

Competence in various information literacy skills such as media literacy and data literacy can significantly help in enhancing utilization of open government data. Information literacy is a fusion of various literacies (Ekong and Ekong, 2018). Examples of these information literacies include: Digital media, data and academic literacy among other forms of literacies (Salim et al. 2018). Even though all these sets of information literacy are important for increased access and usage of open data, this study only examines data literacy and media literacy, the two major competencies that have the ability to accelerate the use of open data.

2.2.1 Data and Media Literacy Skills Supporting Access to Open Government Data

There's no universally acceptable definition of data literacy (Burress et al, 2019:2). However, a number of organizations such as the Australian Bureau of Statistics, (2009) points out that data awareness, ability to understand, analyze and interpret statistical concepts and information are important data literacy competencies that should be mastered by the public for effective use of open data.

Even though there's limited effort by most academic libraries to implement data literacy programmes, these competencies are important in developing technical, computational and statistical abilities in individuals working or relating with open datasets on government information portals (Gray et al, 2018). However, The Human Impact of Data Literacy, 2020 points out that data literacy training should not only focus on the technical and computational skills needed for data processes, but also encompass other soft skills that help people to recognize the full value of data such as collaboration, curiosity, critical thinking and storytelling. It is for this reason that university libraries can lead in providing numerical education and training in their communities (Nelson and Megan, 2020). To this end, Burress et al. (2019) believes that empowered librarians can enable information users to interpret raw and published data and develop the ability to explain emerging ideas to information users.

On the other side, the National Association for Media Literacy Education (NAMLE) defines media literacy as "the ability to access, analyze, evaluate, create and act using all forms of communication (Media literacy basics. (n.d.). Media literacy plays a central role in enhancing citizens' access to open government data. Media literacy provides citizens with the competencies to distinguish between true and false information, enabling them to make informed decisions in all aspects of their lives (Freedom of expression, media and information literacy and digital competencies to support peace and human rights: Thematic paper, 2022). Additionally, ALA, (2020) report underscores the role of the library in teaching media literacy by asserting that librarians can better explain media literacy concepts to patrons if they themselves have a better understanding of media literacy. The same article further adds that free resources available for library staff to learn and broaden their understanding of media literacy should be actively embraced.

2.3 Internet Inequality in Library and its Effects on Access to Open Government Data

Internet connectivity in Kenya began in 1996. As of today, the library remains the single greatest provider of internet to most rural communities (UNECA, 2017:28). Realizing the essence of the internet to economic growth, the Kenyan government has significantly incorporated ICT into driving economic growth. Like in many other growing economies, the impact of ICT has been so tremendous including in the library where it has immensely contributed in turning the modern-day library into an intellectual center capable of catering for all information needs of its users and contributing to economic growth (Garg, 2013).

However, despite all this tremendous transformation, 26 percent of Kenya's population still cannot use freely available government datasets due to poor internet connectivity (Ndemo and Weiss, 2017:57). This basically implies that vital information provided by libraries in helping communities to apply or find jobs, stay healthy or improve agricultural productivity is still inaccessible (IFLA, 2018).

2.4 Application of ICT Tools in accelerating use of Open Government Data.

A study conducted to showcase the positive impact of ICT in education in South Africa in 2011 clearly indicated that students who had access to mobile devices and internet had better interaction with the coursework compared to those who did not. The study underscores the invaluable benefits of ICT in the education sector. Examples of ICT infrastructure found in modern libraries include,

computers, mobile devices such as laptop, mobile phone, iPad etc., internal and external storage devices such as flash disc, the internet, among many others. The use of these ICT tools in the libraries has greatly promoted effective collection, management and access to large volumes of data (Kareem et al, 2019:4).

Information communication technology has added value to the quality of data provided by the libraries (Adebayo et al., 2018). An EBSCO post, boldly indicates that libraries play a vital role in supporting attainment of development goals by supporting public access to information literacy skills, enabling access to open data and closing the gap on digital inclusion among many more (EBSCOpost, n.d.). At the core of this success is the improved ICT which has contributed to closing the gap on access to large volumes of data. However, despite the important role ICT plays in enabling libraries in sharing open datasets, the majority of the population have not fully benefited due to lack or insufficient skills in using ICTs to access open datasets. Mutegi, (2020) points out that the 2019 Schools' Improvement Program (SIP) out rightly indicates that even though most schools have been supplied with tablets and computers, majority of them have not utilized them to support teaching and learning.

2.5 Empirical Studies and Knowledge Gap

There's little empirical studies done in Kenya on promoting use of open government data. Majority of studies on this topic have been done in the developed Western countries. This study has identified gaps in the training of data literacy and media literacy, inadequate application of ICT in fast tracking use of open data, and need for developing a suitable model for supporting use of open data. The study therefore aims to address these challenges to ensure increased use of open government data in the library.

2.6 Theoretical Framework

Mensah et. al, (2020) argues that the purpose of a theoretical framework is to provide the organization of the study, make research findings meaningful and generalizable, establish orderly connections between observations and facts, guide the researcher in the interpretations of the results and lastly help to predict and control situations in research. Simply put, without a proper theoretical framework, a researcher may not be in a position to understand various underlying issues in the study.

2.6.1 Information and democracy Theoretical Framework

This study is anchored on Information and democracy theory proposed by German Scholar and Philosopher Jürgen Habermas in 1929. This theory proposes that whereas there is a lot more information in circulation today, information lobbyists have managed its presentation and packaging to persuade people in favor of certain positions (Webster, 2006). The same author further says that information lobbyist (including government agencies) play a key role in the creation of information. Proponents of this theory argue that freely available information leads to a better informed society (Webster, 2006).

Another theory that supports this study is the Information for All Programme (IFAP) which advocates for universal access to information in fastracking sustainable development. The model underpins the use of ICT tools in promoting access to information and is grounded on the belief that Information is vital for fastracking sustainable development, promoting transparency and accountability in government and increasing public participation and opportunities. Whereas both Information and governance theory and IFAP promote use of open government data in supporting development, this study leans heavily towards the Information and Governance Theory because it advocates for public access and use of government information for various purposes including participation in decision making processes.

2.7 Conceptual Framework

This model predicted that application of ICT use of Internet in library, understanding how the integrated library system works and improved training of patrons in media and data literacies could result in improved use of open government data. Using this model, the researcher showcased the relationship between the independent, intervening and dependent variables, and how they all contribute to increased use of open government data in library. These relationships have been discussed in chapter four. Figure 2.1 shows the conceptual framework.

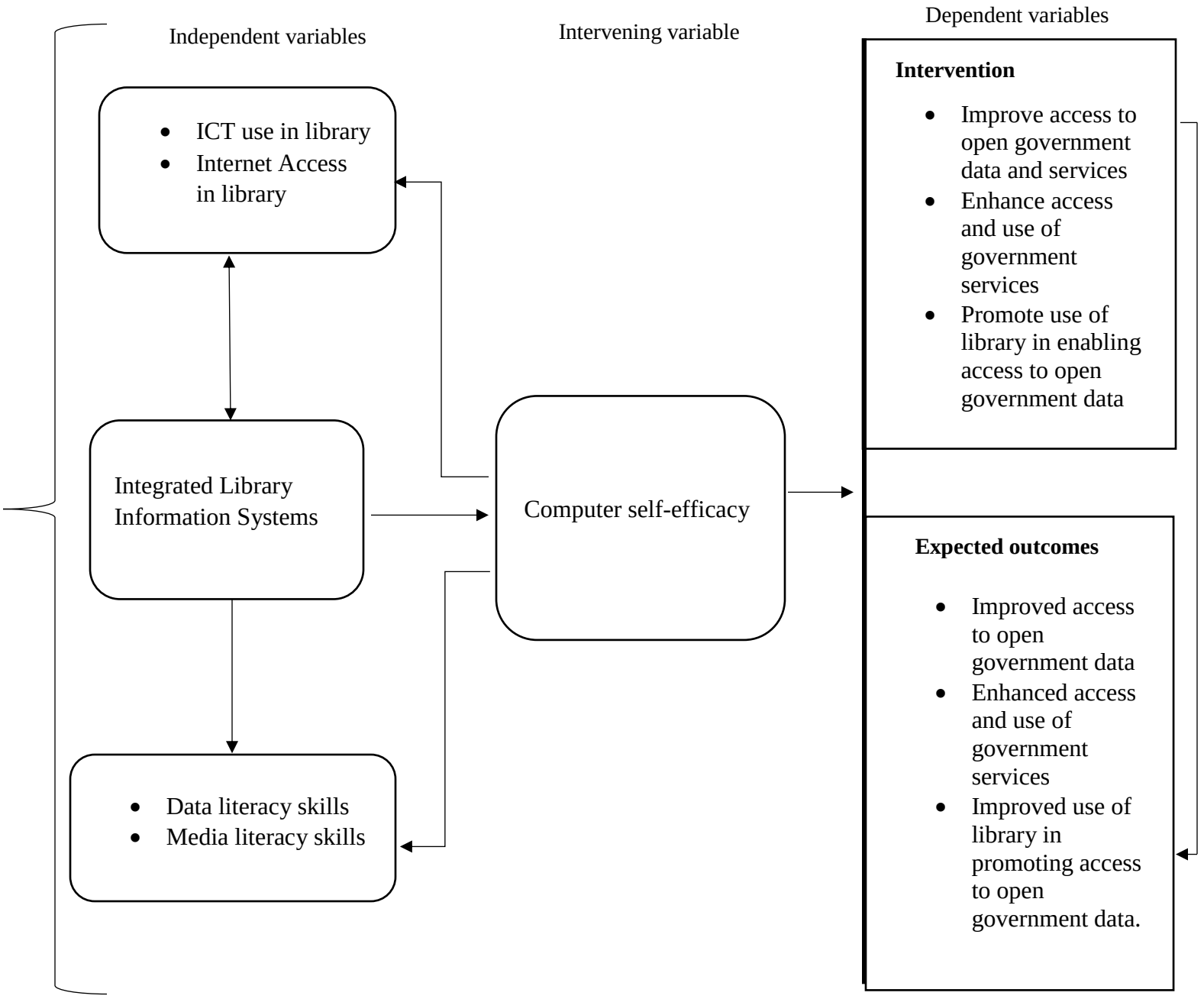

Figure 2.1: Conceptual Framework (Source: Researcher, 2022)

2.7 Chapter Two Summary

This chapter elaborated on literature reviewed. First, it evaluated the contributions of library in promoting open data initiatives. Secondly, it discussed the extent to which varying levels of data literacy and media literacy skills among university students had affected the utilization of open data. Additionally, the study sought to establish whether inequality in internet access at both the Jomo Kenyatta Memorial Library and Mahatma Gandhi Graduate Library had affected access to open data. Lastly, the study analyzed literature related to applications of various ICT tools in libraries in promoting the use of public data in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

The chapter has discussed the research methods used. Research methods are the techniques a researcher uses to carry out an investigation, and they include sampling techniques, development of data collection tools, administration of tools, organization of data and procedure of data analyses among many others (Wang et al., 2018). This section describes all these techniques in detail. A design as used in research refers to a systematic scientific process that facilitates full description of the different research components together in order to better address the research questions (Wang et al., 2018). This study is highly qualitative. Document analysis was used to describe qualitative data using illustrative quotes. The study adopted qualitative research design because it allowed the researcher an opportunity to fully describe various phenomena under investigation and their characteristics in detail by use of words/text. The study also used quantitative elements in calculating the percentages and frequencies as well as representing the same using tables and charts. The study used different elements of quantitative design to measure various naturalistic data.

3.2 Location of Study

This study was conducted at University of Nairobi Main campus which is located along the University way opposite the Central Police station. The university has an estimated students' population of 84,000 studying courses ranging from certificates to PhD. The choice of this location was relevant considering the fact the university has invested incredible resources in bettering access to information in the two university libraries.

3.3 Target Population

Population as used in research refers to an entire group of individuals who possess similar characteristics that are of concern to the researcher (Asiamah, et al., 2022). The sample population was drawn from students and library employees from both the Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate Research library. The collective sample was 164 respondents

consisting of (140) students, (20) middle level library employees and (4) senior library administrators.

3.4 Sampling Technique

The study adopted use of simple random sampling and purposive sampling methods in identifying appropriate samples as further discussed below.

3.4.1 Simple Random Sampling

Simple random sampling provided all participants equal chances of participating in the study. This study primarily targeted continuing students at different levels of study at the University of Nairobi who had accessed Jomo Kenyatta Memorial Library and Mahatma Gandhi Graduate library to use available open government data. The sampling techniques was used to arrive at the right sample of 160 students' participants. To achieve the right sample size, the researcher tasked (4) research assistants to randomly identify potential participants from among students at different levels of study ranging from the first year to postgraduate level who were to fill the questionnaires.

3.4.2 Purposive Sampling

The study also used purposive sampling technique to arrive at 24 library staff participants comprising (20) middle-level library staff to fill the questionnaire and (4) senior library administrators to participate in direct personal interview. Purposive sampling method was particularly suitable because the researchers relied on his personal judgment that the selected persons were best suited to provide needed information on the topic under investigation.

3.5 Sample Size

A sample selected to participate in this study shared common attributes that were of interest to the researcher. It was from this sample that the researcher made inferences and generalizations about the target population. In the first group of respondents selected through simple random sampling, all the (140) students' participants were continuing learners at the University of Nairobi who had undergone some form of library orientation and were skilled in searching and retrieval of information. In the second group of respondents selected through purposive sampling, all the (20) middle level library staff and (4) senior library administrators were presumed to be knowledgeable in using various integrated library systems. According to Sim et al., (2018), the sample size of a

qualitative study should be proper and sufficient for explaining the studied occurrence, irrespective of the sampling method used.

3.6 Data Collection Instruments

Interview guides and semi-structured questionnaires were deployed to collect primary data. The choice of questionnaires and interview guides allowed the respondents to express their views and experiences on the topic under investigation (Wang et al., 2018).

3.6.1 Questionnaires

In the first phase, semi-structured questionnaires were developed and distributed to 160 continuing students identified through simple random method at the University of Nairobi. To ensure maximum reach for the targeted population, 4 research assistants were tasked to randomly identify and distribute questionnaires to potential respondents as indicated in tables 3.1.

YEAR OF STUDY	TARGET POPULATION	SAMPLE SIZE
First	30	30
Second	30	30
Third	40	30
Fourth	40	30
Postgraduate	20	20
TOTAL	**160**	**140**

Table 3.1: Sample size for University students (Source: Researcher, 2022)

In the second phase, the researcher personally distributed semi-structured questionnaires to 20 middle-level library staff at both the JKLM library and Mahatma Gandhi Graduate Research library. Because the population of middle-level library staff at the University of Nairobi was

relatively smaller, the researcher adopted the use of entire population in the study. The use of 20 respondents therefore met the minimal requirement for a qualitative study as indicated in table 3.2.

NAME OF LIBRARY	POPULATION SAMPLE	SAMPLE SIZE
Jomo Kenyatta Memorial library	10	10
Mahatma Gandhi Graduate library	10	10
TOTAL	20	20

Table 3.2: Sample size for University library staff (Source: Researcher, 2022)

3.6.2 Interview Guide

Four (3) senior library administrators and a librarian in the School of Economics were invited via email to participate in direct personal interview. The researcher adopted direct personal interview in collecting primary data because he presumed the selected participants held vast information on the topic under investigation. Table 3.3 shows the sample size for senior library administrators selected to participate in direct personal interview.

LIBRARY ADMINISTRATOR	FREQUENCY
Director of Library and Information Services	1
Deputy Director of Library and information Services (In charge of Planning)	1
Librarian at the School/Department of Economics	1
Head of Teaching Faculty	1
TOTAL	4

Table 3.3: Sample size for interview library respondents (Source: Researcher, 2022)

Preparation of the interview guide involved developing a set of questions. To guarantee validity and reliability of data collected, the researcher asked the second supervisor to review the questions and provide objective assessment of the entire process. The review process was meant to ensure the interview questions were free from bias.

3.7 Research Instruments

3.7.1 Piloting

After the initial examination of the questionnaires and interview guide by an independent external auditor, they were pre-tested to identify items that could be misunderstood by the respondent. To ensure validity and reliability of questionnaires, a piloting exercise was conducted at the Technical University of Kenya, a week earlier. During this exercise, (10) questionnaires were randomly distributed to a group of students in order to ascertain the authenticity of data collected. Additionally, a pretest on the effectiveness of interview guides was conducted at the same institution. The pre-test exercise was essential to eliminate obvious spelling mistakes, the inaccuracy of information contained therein and possible poor question formation that could have affected the quality of data collected. The choice of the Technical University of Kenya was appropriate because the researcher wanted the instruments tested on participants who were in a similar academic environment to where they would finally be deployed.

3.7.2 Validity

To ensure validity of data collected, the researcher used the objectives to formulate the research questions on the questionnaire. Questionnaires were then reviewed by my second supervisor. A pilot study to test the suitability of the questionnaires and interview guide was carried out prior to their deployment.

3.7.3 Reliability

To ensure reliability of instruments, the researcher subjected both the questionnaires and interview guides to pre-testing exercises at the Technical University of Kenya. Additionally, my second supervisor reviewed and refined key research questions on both the interview guide and questionnaire.

3.8 Ethical Consideration

Various ethical aspects were considered during the study. First, the researcher used authentic peer-reviewed journals in developing the literature as guided by the key objectives. Secondly, the researcher ensured the anonymity of respondents by allowing them an option to indicate their names on the questionnaires. Thirdly, the researcher assured respondents of their privacy and confidentiality by informing them that the information volunteered was purely for academic purpose. Lastly, the researcher sought for informed consent from all respondents to use data collected for analysis purposes.

3.9 Data Collection Procedure

In order to fast-track the distribution and collection of questionnaires, the researcher recruited four (4) research assistants. The researcher personally administered questionnaires to middle-level library staff working in the two libraries. Additionally, the researcher personally interviewed the senior library administrators.

3.10 Data Analyses and Interpretation

Peer reviewed journals were used to develop the literature for the study. The researcher strictly followed all the procedures in the development of primary data collection tools. To uphold validity and reliability of data collected, a project supervisor reviewed and refined the content in the instruments. Additionally, the researcher obtained research authorization letters and documents. Qualitative data was analyzed through descriptive words/text while quantitative data was analysed through graphs, tables and charts.

3.11 Chapter Three Summary

The chapter discussed the research methods deployed in the study. The section also discussed the research design, location of study, target population and sampling procedure, the various data collection instruments and lastly showcased the process undertaken to ensure validity of research instruments.

CHAPTER FOUR

DATA PRESENTATION, ANALYSES AND INTEPRETATION

4.1 Introduction

This chapter presented data analyses and discussions based on research objectives which were to: Evaluate the contributions of libraries in promoting open data initiatives, assess how varying levels of skills on data literacy and media literacy among university students had affected the use of open government data, find out if the inequality in internet connection in library had affected utilization of open government data, examine whether the application of ICT tools had accelerated the utilization of open data and lastly develop a suitable model for promoting the use of open government data. Findings were presented using graphs, tables and charts with explanations given in descriptive format using words.

4.2 Response Rate of Respondents

As shown in chapter three earlier, both simple random sampling method and purposive sampling method were used. The sample size for respondents chosen to fill questionnaires was 160 respondents which consisted of (140) continuing students and (20) middle-level library staff drawn from both the Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library. In total, 160 questionnaires comprising (140) for university students and (20) for middle level library employees were administered on August 8, 2022. Out of the 160 questionnaires distributed to these two groups, 138 comprising (121) for university students and (16) for middle-level library employees were returned for analysis.

On the other hand, as shown in the previous chapter three, (3) senior library administrators and one (1) librarian from the School of Economics were identified and asked to participate in direct personal interviews. Out of the 4 participants invited to participate in a direct personal interview, two (2) accepted the offer. The researcher conducted a direct personal interview with the Deputy Director of Library and information Service and a librarian from the School of Economics on August 2, 2022. The discussion was aimed at identifying the contributions of libraries in promoting utilisation of open government data. The use of the direct personal interviews provided the respondent an opportunity to provide his opinions and thoughts on the topic under investigation.

The overall response rate for this study was therefore 138 participants translating to 85%. Whereas scholars have no mutual agreement on the exact number of participants that would constitute a suitable representation in a qualitative study, MCDSARE, (2020) argues that a sample should have a proper size in order to answer the research's questions and achieve the study's purpose. A choice sample of 138 respondents was therefore deemed adequate by the researcher to represent the target population at the University of Nairobi and suitable for providing qualitative analyses for this study. Table 4.1 shows the cumulative response rate for both questionnaires and interview guides.

RESPONDENTS	**PARTICIPANTS**	**RESPONSE**	**PERCENTAGE %**
University students	140	121	86
Middle level library staff	20	16	80
Interview participants	4	2	50
TOTAL	**164**	**139**	**85**

Table 4.1: Response rate of respondents in the study

Table 4.2 shows the questionnaire response rate for both the Jomo Kenyatta Memorial Library and Mahatma Gandhi Graduate Library.

RESPONDENTS	**DISTRIBUTED**	**RESPONSE**	**PERCENTAGE %**
Jomo Kenyatta Memorial Library	70	65	93
Mahatma Gandhi Graduate Library	70	56	80
TOTAL	**140**	**121**	**86**

Table 4.2: Response rate per library at the University of Nairobi

4.3 Profile of Respondents

Respondents in the study provided their background information that helped the researcher to better understand how various demographic factors such as age of respondents and their gender had affected how they interacted with open government data in the library. These factors are further discussed below.

4.3.1 Age of Respondents

The age brackets of 137 respondents comprising (121) students and (16) library staff at the University of Nairobi were examined to determine how respondents at different age-groups used open government data available in the library. The study revealed that all respondents within targeted age groups had used the library to access open government data and services at some point. Analyses indicated that 71 respondents aged between 18 – 24 years had used open government data while 56 respondents aged 25 - 34 had also used open government data. Additionally, 8 respondents aged between 35 - 44 years used open government data while only (2) respondents aged over 45 years and above used open government data. The study clearly showed that respondents aged between 18 - 34 years were the major users of public government information and therefore considered of interest for this study. Table 4.3 shows age brackets and number of respondents involved in the study.

RESPONDENTS' AGE GROUP	FREQUENCY	PERCENTAGE (%)
18 - 24	71	52
25 - 34	56	41
35 - 44	8	6
45 and above	2	1
TOTAL	**137**	**100**

Table 4.3: Age bracket and number of respondents involved in the study

4.3.2 Gender Distribution

Questionnaire responses received from both students and middle-level library employees showed that more female respondents filled and returned their questionnaires for analyses in comparison to their male counterparts. Out of the 121 students' respondents who returned their questionnaires

for analyses, (63) were female while (58) were male. On the other hand, out of the 16 questionnaires received from middle level library staff from both the Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library, (11) were filled by female respondents while (5) were filled by male respondents.

4.4 Contribution of Libraries in Promoting Open Government Data Initiatives in Kenya

The first objective was to evaluate the contributions of the library in promoting open government data initiatives. Using the questionnaire, university respondents were to rank contributions of libraries in promoting open government data initiatives using metrics such as excellent, satisfactory and fair. Respondents were asked to rank the library in promoting key open government data initiatives such as promoting transparency and accountability, enhancing public service, promoting innovation and economic development, improving government efficiency, improving public participation and decision making and enabling citizens to understand about their human rights. Table 4.4 provides responses rating of library in supporting open government data initiatives.

RATING	OGD INITIATIVE	FREQUENCY	PERCENTAGE (%)
Excellent	Promoting transparency and accountability in governance	33	27
Satisfactory	Enhancing public service through empowering civil servants	37	31
Moderate	Fostering innovations and economic development	29	24
Fair	Promoting public participation in decision making processes	22	18
TOTAL	**-**	**121**	**100**

Table 4.4: Library rating on various OGD initiatives in Kenya

Out of the 121 respondents who returned their questionnaires for analyses, (33) participants rated the contributions of library as ‘excellent’ in promoting transparency and accountability in governance while (37) respondents ranked the library as ‘satisfactory in enhancing public service through empowering civil servants with important information. On the issue of fostering

innovations and economic development, (29) respondents rated the library as 'moderate' in promoting sustainable development programmes while (22) respondents rated the library efforts as 'fair' in promoting public participation in decision making processes.

The analyses clearly indicated that the library played a central role in promoting open government data initiatives in Kenya. To begin with, 33 respondents indicated that the library had enabled patrons' increased access to government data such as budgets, education, population and census data among other forms of data; which had enabled them to scrutinize government activities and therefore hold their leaders accountable. The Director of Library and Information Services (In charge of Planning) at the University of Nairobi had this to say, *"Increased use of open government data will help key government agencies such as the Judiciary to digitize their data and avoid too much physical records and therefore realize increased efficiency."* Nyalwal, G. (2022, August 02). Personal communication [Personal interview]. Additionally, responses showed that the library had played a significant role in promoting accountability in government as well as increased public trust by allowing information users an opportunity to access government information on different issues, a move that had empowered the public. The findings strongly validated previous study by IFLA, (2018) which pointed out that the library was increasingly playing an essential role in national development by empowering the public to use open data.

Moreover, 37 respondents said that the library had empowered civil servants by providing them access to information which had enabled them to explain to the public about current government activities and development goals especially during public political campaigns; a move that informed their decisions before heading into the 2022 general elections. This finding strongly agreed with IFLA, (2018) report which pointed out that open government data contained in libraries provided public servants with invaluable summaries, research and briefings which allowed them to ask intelligent questions and respond to queries raised by the public on government operations. Additionally, the study also validated the findings by the World Bank, (2015) which found out that open data found in libraries was helping governments, businesses and civil society organizations to drive sustainable development within communities.

Additionally, when asked to explain how the library benefitted various sectors of the economy such as Agriculture, 29 respondents said that the library had actively provided information to farmers on how to better their agricultural activities. According to this group of respondents, the

information provided enabled farmers to gain better skills on animal husbandry, improve management of their harvest to minimize spoilage as well as improve access markets for their farm produce. Lastly, on the issue of public participation, 29 respondents indicated that open government information obtained from the library had enabled them to participate in decision making processes a move that had promoted people-centered governance keen on addressing the needs of citizens such as protection of public right to access quality education, improved public health services as well as better infrastructure. This finding boldly established that the library had contributed to realisation of open government initiatives despite witnessing some challenges.

4.5 Data Literacy and Media Literacy Skills and Use of Open Government Data

The second objective was to assess how varying levels of skills on data literacy and media literacy among university students had affected the use of open government data in the library.

4.5.1 Findings on Media literacy Skills in Supporting use of Open Government Data

First, to establish respondents' skills in media literacy, the study evaluated respondents' practical skills in using different multimedia technologies to locate and interpret public information materials such as subscribed e-books and journals, audio books and hypertext in the computer networked environment. Respondents were asked to list different multi-media technologies they had used to access and interpret data in the library. Out of the total 121 responses, only 66 agreed to have some level of competence in using various multi-media technologies to interpret data. Further analyses showed that 23 respondents knew how to use hypertext to access information in a networked computer environment, 15 respondents could use graphics and images to interpret public data, 24 respondents could use audio and video to analyze data while 9 respondents could use a combination of all multimedia formats to interpret public data. The findings demonstrated that majority participants could not use multi-media technology to analyze public data due to lack or insufficient skills in media literacy. Figure 4.2 shows the responses on using different multi-media technologies in library while interacting with open public datasets.

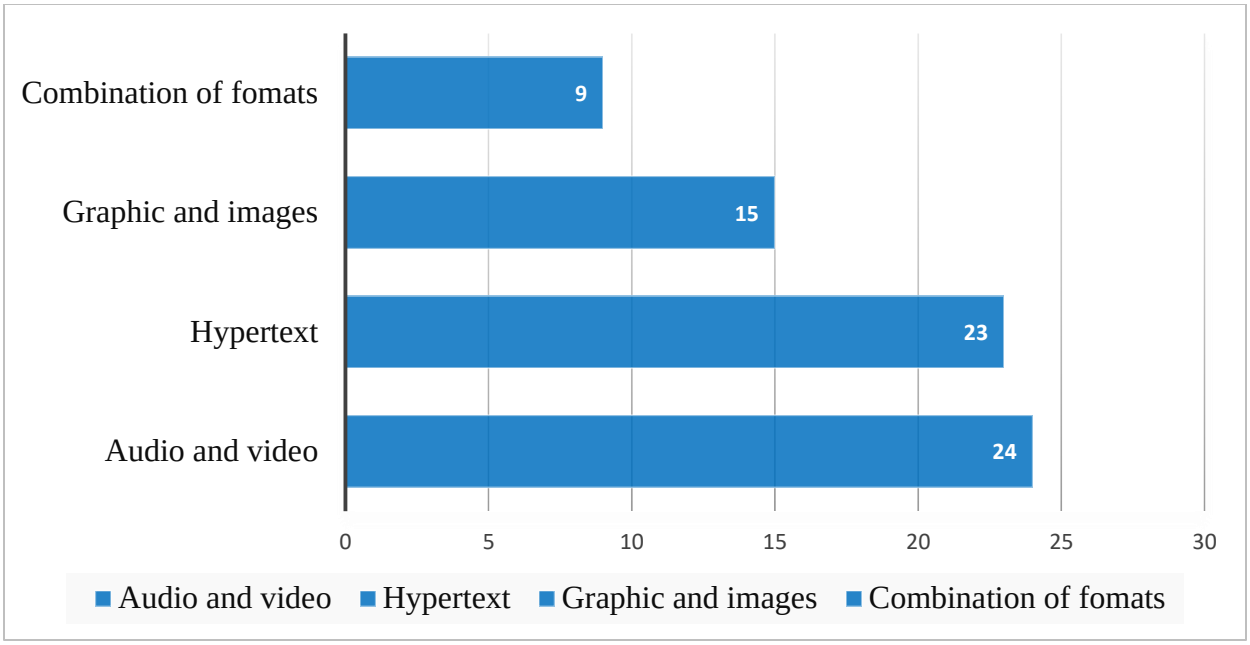

Figure 4.1 Responses on the use Multimedia technologies in library

The study revealed the need for more training on media literacy targeting both university students and library employees to enable respondents to adequately interact with open government data available in the library. One hundred and twenty one (121) respondents were asked to list all the multimedia formats they had used to access information in the library. Out of the 121 responses (66) respondents agreed to have used various multimedia technologies to access or interpret data. Cumulatively, respondents mentioned having used audio and video, hypertext and graphics and images to access public data.

The study further asked 16 middle-level library employees to indicate the various multimedia technologies their respective libraries used to access multimedia content. Out of the 16 responses, (6) indicated having used audio books while (3) reported having used hypertext to access or interpret public data, an indication that the University of Nairobi had not invested heavily in multimedia technologies in its libraries. The finding underscored ALA, (2020) report which lauded the role of the library in teaching media literacy by asserting that librarians could only explain media literacy concepts to other information users if they themselves had a better understanding of media literacy.

4.5.2 Findings Data Literacy Skills in Supporting Access to Open Government Data

Secondly, to establish respondents understanding of data literacy, the study evaluated respondents' ability to interpret arithmetical data. Respondents were asked to list arithmetical courses they had been taught that could enable them to interact with data requiring data analyses skills. Table 4.4 shows the number of respondents' taught arithmetical courses in order to interpret large and complex open government datasets.

YEAR OF STUDY	COURSE TAUGHT	FREQUENCY	PERCENTAGE (%)
Post Graduate students	Scientific Data analysis	14	12
Fourth Years students	Statistics	68	56
Third Years students	Basic Mathematics	29	24
Second Years and First Years students	Introduction to Database Management	10	8
TOTAL	**-**	**121**	**100**

Table 4.5: Responses on teaching of statistical courses for promoting use of OGD.

The study showed that 14 respondents at the post graduate level had been taught Scientific Data analysis course and were therefore able to use this skill to interpret open government data of similar nature. Additionally, the study revealed that 68 respondents who were in their fourth year of studies had learned Statistics and therefore were capable of analyzing huge open government datasets. On the other hand, 29 respondents who were in their third year of studies noted that they had been taught basic Mathematics and therefore could analyze huge datasets to some extent. On the flip side, only 10 respondents in their first and second years of study indicated having been taught an arithmetical course such as Introduction to Database Management and were therefore not adequately trained to analyze mathematical data.

On further probe, respondents who were in their third year of studies decried the depth of teaching of arithmetical courses noting that the teaching was not sufficient enough to help them to efficiently interact with huge and complex data commonly available on open government portals.

This finding clearly showed that the teaching of data literacy was not given prominence among respondents pursuing social science at the University of Nairobi, a move that had hampered their ability to effectively use available open data that required arithmetical skills.

The finding boldly validated findings by Burress et al., (2019) which showed that the majority of university students were not in a position to evaluate data or use it in decision making due to poor arithmetical skills. This study therefore found a gap in the training of both media literacy and data literacy despite the important role the two forms of information literacy play in accelerating usage of public government information. The Director of Library and Information Services (In charge of Planning) at the University of Nairobi had this to say, *"The University of Nairobi lacks a suitable structure in conducting data and media literacy. At the moment the university offers Information Literacy as a general course. Secondly the university offers orientation to students on how they can use available data apart from other short courses conducted by library staff with skills that boarder on Information Literacy. However, it is worth noting that these skills do not meet the requirements for students to attain comprehensive ability in data literacy and media literacy.* Nyalwal, G. (2022, August 02). Personal communication [Personal interview].

4.6 Findings on the impact of Internet on the use of open government data

The third objective was to find out if the inequality in internet connection in libraries had affected utilization of open government data. Respondents were asked to mention possible solutions in addressing the internet inequality in libraries in order to promote equitable access and utilization of open data in libraries. Out of the 121 questionnaire responses, (113) respondents indicated that the rapid growth of the internet including the use of 4G technology had quickened usage of publicly accessible government data in libraries while (8) respondents reported not knowing whether the internet had any impact on the increased usage of open data in the library. On the flip-side, (36) respondents said that the cost of internet whenever they could not access the library Wi-Fi was still a hindrance to using open government data available in the library.

Whereas Ndemo and Weiss, (2017) found out that 74 percent of Kenyans were using the internet, this study found that the percentage of information users using the internet had risen slightly. Out of the 121 respondents whose views on internet inequality were analyzed, 113 translating to 93 percent agreed to having used the internet in the library. Fifty five (55) respondents from the Jomo Kenyatta Memorial library and (58) from the Mahatma Gandhi Graduate library noted that the

internet in the library was ‘very useful’ and had played a crucial role in enabling internal networking of computers as well as allowing patrons to use available open government data in the library. Additionally these respondents further agreed that both the Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library had fast internet which enabled patrons to easily use publicly accessible government data.

The increase in the number of information users using internet in the library could be attributed to the latest improved infrastructural development undertaken by both the Jomo Kenyatta Memorial Library and the Mahatma Gandhi Graduate library to improve library services. In an interview, the Deputy Director of Library and Information Services said that the University of Nairobi had enhanced users’ access to the internet at both the Jomo Kenyatta Memorial Library and the Mahatma Gandhi Graduate. Nyalwal G. (2022, August 02). Personal communication [Personal interview]. This finding largely authenticated the study by Garg, (2013) which found out that the internet had transformed the modern-day library from an old-fashioned book-store house into an intellectual center capable of catering for all information needs of its users. The study found no significant inequality in internet access between users at Jomo Kenyatta Memorial library and those at Mahatma Gandhi Graduate library, implying both facilities had improved their internet bandwidth to enable patrons to efficiently use available open government data.

However, in order to mitigate potential internet inequality, respondents were asked to indicate whether they agreed, disagreed or were 'Not sure’ on suggested solutions in addressing the internet inequality in the library. Table 4.6 below shows the responses on potential solutions to addressing internet inequality in libraries.

Statement				Respondents
	Agree	**Disagree**	**Not Sure**	**Total**
Increasing the library annual budgetary allocation	102 (84)	18 (15)	1 (1)	121
Expansion of the internet bandwidth including	94 (78)	25 (21)	2 (1)	121

adopting 4G internet technology				
Upgrading ICT hardware infrastructure	87 (72)	34 (28)	0(0)	121
Adopt the use of wireless technologies (Wi-Fi)	106 (87)	7 (6)	8 (7)	121
Collaborations between libraries and government agencies	103 (85)	11 (9)	7 (6)	121

Table 4.6 Responses on addressing inequality in internet access in the library

One hundred and two (102) respondents called for increasing the library annual budgetary allocation while (94) others called for expansion of the internet bandwidth including adopting 4G internet technology. Additionally, 87 respondents called for upgrading ICT hardware infrastructure i.e. using modern computers in libraries while 106 respondents said libraries should adopt the use of wireless technologies (Wi-Fi) instead of over relying on outdated cable-intensive internet typologies. One hundred and three 103 respondents called for more collaborations between libraries and government agencies as a way of addressing internet disparities in libraries.

4.7 Application of ICT Tools in Promoting use of Open government Data/Services

The fourth objective was to examine whether application of ICT tools in library had accelerated utilisation of government data and services. Respondents were asked to select multiple options from the list provided all the open data sources they had accessed and the nature of services they had received. Out of 121 respondents only (21) said they had used the University of Nairobi's open data portal to access information on issues such as promoting accountability in governance, enhancing public service, promoting innovation and economic development and improving government efficiency among others. Additionally, respondents indicated having used the library facilities at the University of Nairobi to access other key government portals containing open. Out of the 121 respondents (117) said they had used the ecitizen portal https://www.ecitizen.go.ke/ to access key government services such as applying for Criminal Investigation Department (CID) clearance, application of passport and registration or renewal of mandatory personal documents

such as the National Identity card. A hundred and eight (108) respondents agreed to have used the Kenya Revenue Authority Itax portal https://www.kra.go.ke/ to submit their returns or applying for compliance certificate.

On issues directly related to students' academic welfare, 116 respondents reported to have used the Higher Education Loans Board portal https://www.helb.co.ke/ to access higher education loans, apply for scholarships and clearance forms, while 22 respondents indicated having used the ICT Authority of Kenya portal https://www.opendata.go.ke/ to search for important government information on topics such as Agriculture and food production, health information and services, population and census among others. Table 4.7 shows responses on open government sources accessed by respondents.

OPEN DATA SOURCE	DATA/SERVICE ATTAINED	FREQUENCY
https://uonlibrary.uonbi.ac.ke/basic-page/open-data-sources	• Contains links to other sources of open government in Kenya • Contains links to sources of open data in Africa • Contains links to International open data sources • Contains links to open data from international bodies' .i.e. United Nations.	21
https://www.ecitizen.go.ke/	• Application of CID clearance form • Application for passport/renewal • Application/renewal of National Identification card.	117
https://www.kra.go.ke/	• Submit tax returns • Application of tax clearance forms.	108

https://www.helb.co.ke/	• Application for education loans • Application for scholarships • Application of compliance certificates.	116
https://www.opendata.go.ke/	• Searching for national government data on different projects. • Checking ministerial spending • Checking County governments' projects and funds allocation.	22

Table 4.7 Responses on open government sources accessed by respondents.

These findings demonstrated that 83% of participants did not know about the links on university library containing open data sources. The Director of Library and Information Services (In charge of Planning) at the University of Nairobi had this to say*, "Whereas open data is still a new phenomenon at the university, the university has provided a link on the library portal where information users can access open data sources. Using this portal information users can access large quantities of open data in Kenya and globally as well. It is regrettable however that nearly 80 percent of library staff teaching, non-teaching and students are not aware of this link. There's need therefore for the Director Corporate Affairs and the Director of Library and Information services to work together with the chair of Master of Library and Information Sciences (MLIS) to market the open data link to ensure for wider use by both students, teaching and non-teaching staff at the University of Nairobi*. Nyalwal, G. (2022, August 02). Personal communication [Personal interview].

In order to provide a clear explanation of how ICT tools at the university library had promoted the use of open data, the study further analyzed views of 16 middle level library staff to ascertain how information users in library interacted with available open government data. Sixteen (16) middle-level library employees were asked to explain the nature of services they had provided to students needing help to access open government data at the library. Fourteen (14) out of (16) middle-level

library staff respondents acknowledged having helped patrons at the library to access e-government services such as applying for education loans, remitting tax returns and applying for new or renewal of important documents such as driving license and passports (as showcased in the table above). These findings validated the previous study by IFLA, (2018) which showed that libraries had promoted accountability and transparency in government by enabling citizens who did not have internet access to use the library to access eGovernment services.

Asked to explain further how ICT infrastructure in the library had enhanced access to available open government data at both the Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library, all the 16 respondents noted that the use of mobile phone, laptop and other portable devices to access data had greatly enhanced the way patrons interacted with open government data. This finding largely validated the study Kareem et al, (2019) which pointed out that the use of ICT tools in the library had contributed to increased patrons' access to large volumes of open data. This study validated findings by Adebayo et al., (2018) which showed that information communication technology has added value to data and services provided by libraries to various groups of information users. Furthermore, the findings underpinned the positive contributions of ICT tools in libraries in promoting utilisation of freely accessible government data.

4.8 Relationship between Independent, Intervening and Dependent variables

The fifth objective of this study was to develop a suitable conceptual framework for promoting use of open government data in Kenya. This model predicted that application of ICT in library, use of Internet in library, understanding how the integrated library system works and improved training of patrons in media and data literacies could result in improved use of open government data. This section has described the relationships between the independent, intervening and dependent variables as outlined on the conceptual framework in chapter two.

4.8.1 Relationship between Computer Self-efficacy and ICT use + Internet in Library

This conceptual framework predicted that computer self-efficacy was central in promoting increased use of ICT tools and the internet in using open government data. Computer is one of the ICT infrastructure used by patrons to access open government data. To ascertain the usefulness of computer self-efficacy as an enabler in promoting wider use of open government data, the study analysed the views of a librarian at the School of Economics and the Director of Library and

Information Services (In charge of Planning). The Director of Library and Information Services (In charge of Planning) had this to say: *"Improved ICT infrastructure and fast internet has enhanced the way patrons use open data in the university library. Both the Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library have fast internet which can be accessed using Wi-Fi technology. However, there's need for the library to offer training to patrons that will enhance their efficacy in using ICT (including computers) to access open data. Additionally, the library should provide modern computers and increase Wi-Fi access in order to ensure more information users can access open data sources."* Nyalwal, G. (2022, August 02). Personal communication [Personal interview]. Additionally, a librarian at the School of Economics at the University of Nairobi had this to say, "*Our library has fast internet which allows students to access any information they want. However, as you can see in this room we still have old desktop computers which are old and outdated. The university should invest in modern computers to enhance the way patrons use available open data. Additionally there's need for the library to provide periodical patrons' training on computer and other ICTs use to enhance the usage of available open data sources"* Wafula, M. (2022, August 02). Personal communication [Personal interview]. The finding therefore clearly indicated that computer self-efficacy was central in promoting increased use of ICT tools (mobile phones, laptops and other portable ICT devices) and the internet in promoting use of open government data in the library.

4.8.2 Relationship between ILS and Computer Self-efficacy

This conceptual framework forecast that an integrated library system could not function without information users having basic computer skills that allowed them to search for open government data using OPAC and other library systems. Integrated library system (ILS) refers to a library program designed to manage, integrate and centralize multiple library functions and services (Chow and Bucknall, 2012). On the other hand, while computer self-efficacy refers to the ability of information users to use the computer. The study analyzed the views of a middle level library employee at the School of Economics in the Old Wing of Mahatma Gandhi library to ascertain how librarians at the University of Nairobi used various information programs installed on library computers to collect, manage and integrate open government data.

A librarian at the School of Economics had this to say: *"Our library at the School of Economics uses Vsmart, an integrated library system that allows students to login in before they can access*

information. With this system librarians in all campuses can also easily track how users are accessing information including open data in the library. With this integrated library system, users are expected to login using their accounts information which is provided by the library ICT department in order to access large volumes of data on the library portal. Whereas librarians at the University of Nairobi are skilled in using Vsmart in tracking information retrieval, managing circulation and loaning, enabling online public access catalog (OPAC), cataloging and acquisitions of information materials, there's need for introduction of refresher courses targeting both librarians and patrons to help them to improve their computer usage skills in accessing library services using ILS." Wafula, M. (2022, August 02). Personal communication [Personal interview]. The findings therefore clearly demonstrated that the use of open government data in the library is dependent on both librarians and patrons having basic computer applications skills and continuous learning on the use of various integrated library systems available at the library. This finding underscored the essential role integrated library systems play in promoting utilisation of open government data in libraries as indicated in figure 4.5 below.

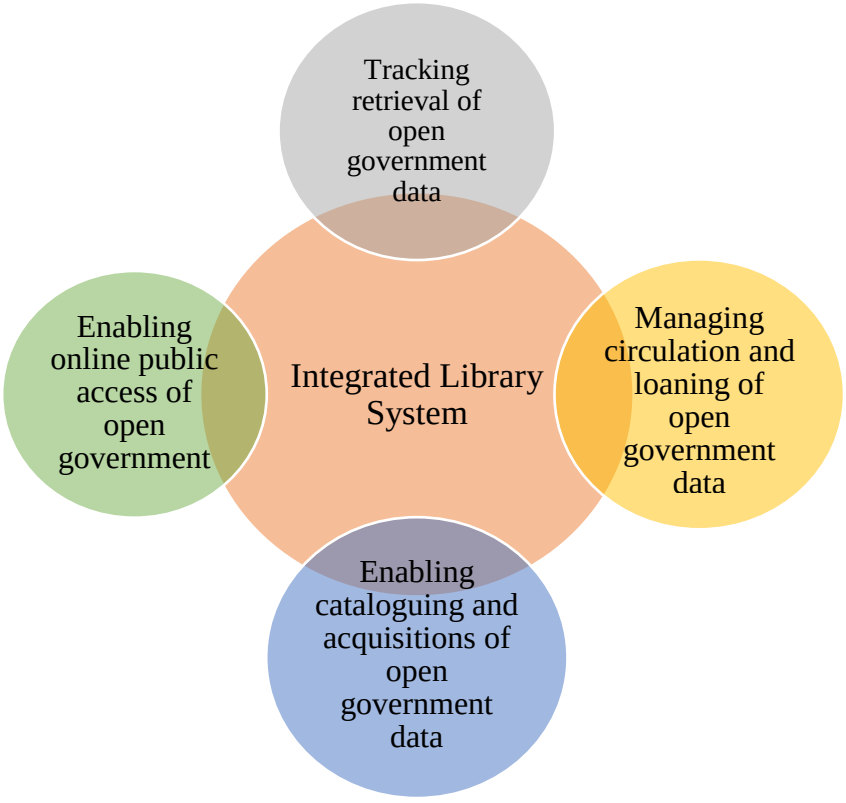

Figure 4.2 Integrated library system support to OGD in library

4.8.3 Relationship between Data and Media Literacy and Computer Self-efficacy

The conceptual model predicted that the use of open government data in the library was dependent on patrons' improved computer self-efficacy. In this regard, the study hypothesized that improved computer training skills would enable patrons to use multimedia tools and their acquired arithmetical skills to interpret large volumes of open government data. The study analyzed the views of a librarian at the School of economics and a senior library administrator at the University of Nairobi to establish whether deficiency in computer self-efficacy had affected the way patrons used multimedia formats to access open government datasets. A Librarian at the School of Economics in the old wing of Mahatma Gandhi library had this to say. *"We have a lot of information materials here in our old wing of Mahatma Gandhi library, School of Economics. Initially, most of students would ask for help in accessing these public information materials. However, due to improved computer skills among students overtime, majority can use their mobile phones and personal computers without needing much help from librarians. However some users still ask for help because they have not been effectively instructed on how to use OPAC in the library. At a personal level I cannot tell you that as a librarian that I have grasped this technique well because most information materials in the School of Economics are in printed version. Librarians at the University of Nairobi also need continuous computer skills training that will enable them to guide students on how to use different multimedia formats such as videos and audio to access and interpret open data.* Wafula, M. (2022, August 02). Personal communication [Personal interview]. The findings indicated that the use of open government data in the library was dependent on patrons' improved computer self-efficacy in the areas of media literacy and data literacy.

4.8.4 Relationship between ICTs and Internet in library and ILS operations

In determining the mutual relationship between use of ICT and Internet library as complementary components of ILS, this study hypothesized that ILS could not function independently from ICTs and the internet in library and vice versa. Integrated library system (ILS) refers to a library program designed to manage, integrate and centralize multiple library functions and services (Chow and Bucknall, 2012). As a library program/software, ILS cannot work independently but is dependent on ICT hardware such as computers, laptops and mobile phones among other devices. As a software/program, integrated library system is installed in ICT library server. A librarian then uses

its interface to perform daily library operations such as cataloging and acquisitions of information materials with the aid of internet. Therefore, to determine the usefulness of internet and ICTs in library in supporting ILS operations, this study analysed the views of (16) middle-level library staff who were asked to mention how the internet had facilitated library services. The first respondent had this to say, "*The internet plays an important role in enabling information users to access library information at their comfort while within the library or hostel using library software such as OPAC."* On the same issue, the second respondent had this to say "*The library as a physical place can only reach a few people but when information users access it via the internet using their personal computers or mobile phones, the library reaches many users*." On the other hand, the Director of Library and Information Services (In charge of Planning) had this to say: *"Improved ICT infrastructure at Mahatma Gandhi Graduate library has boosted the way information users use available data. With the aid of Indian government, Mahatma Gandhi Graduate library has invested heavily in new ICT tools compared to Jomo Kenyatta Memorial library. There's need for the university to replace old desktop computers at the Jomo Kenyatta Memorial library to enable more users to access materials at the library."* Nyalwal, G. (2022, August 02). Personal communication [Personal interview].

The findings therefore demonstrated that both ICT, the internet and ILS function together to facilitate patrons access to open government data. Furthermore, out of the 121 respondents whose views on internet use in library were analyzed, (113) translating to 93 percent agreed to having used the internet in the library and noted that the internet was 'very useful' and had played a crucial role in enabling internal networking of computers as well as allowing patrons to use available open government data in the library. This study therefore demonstrated that application of ICT in library together with the use of internet complements the operations of the integrated library system and that none of them can be of value independently from the other.

4.8.5 Relationships between Data +Media literacy Skills and ILS

The conceptual framework predicted that improved use of integrated library system in managing open government data was dependent on information users' improved training on data literacy and media literacy. To ascertain relevance of data literacy skills and media literacy skills in bolstering use of integrated library system in fostering use of open government data, this study evaluated the views a librarian at the School of Economics and the Director of Library and Information Services.

The respondents were asked to explain whether the library effectively taught patrons on how to use media tools in interpreting arithmetical open government datasets. A librarian at the School of Economics at the University of Nairobi had this to say: *Data literacy is not taught as a course to students at the School of Economics. However this may not affect many students in this Faculty because they have been taught Mathematics and Statistics to a great length and can use this skill to interpret open government data. Students seeking data using OPAC and Vsmart have been trained but we still provide help whenever one requests for it"* Wafula, M. (2022, August 02). Personal communication [Personal interview].

On the other hand the Director of Library and Information Services (In charge of Planning) had this to say, *"Information literacy is taught as a common course at the University of Nairobi. However, there's need for improved teaching of both Information literacy as a course to all students irrespective of their areas of specialization. Such skills will help students to use media tools and statistical skills to access and use open data that is available in the library portal."* Nyalwal, G. (2022, August 02). Personal communication [Personal interview]. This findings did not find a clear linkage on how defiency in data literacy and media literacy skills impacted patrons' use of integrated library system in accessing open government data in the library.

4.8.6 Relationships between Intervention and Expected Outcome

This study hypothesized that the interventions suggested on the model would result in the expected results which in the ideal situation would promote increased patrons use of open government data in the library. This study found no clear relationship between the invention and the expected outcomes implying the expected outcome could suffice.

4.8.7 Summary and Conclusion on Relationships on the Conceptual Framework

Qualitative data analysed did not adequately support the assumption that improved use of integrated library system in facilitating access and use of open government data was dependent on information users' having improved training on data literacy and media literacy. Additionally, there was no clear relationships between the intervention and the expected outcome. However, all the other variables were adequately supported. This conceptual framework therefore unequivocally demonstrated that computer self-efficacy was central in promoting increased use of ICT tools and the internet in accelerating use open government data, that an integrated library system could not

function without information users having basic computer skills, that the use of open government data in the library was dependent on patrons' improved computer self-efficacy and lastly, that ILS could not function independently from ICTs and the internet and vice versa. Figure 4.3 below illustrates the proposed model that could be used to promote use of open government data in Kenya.

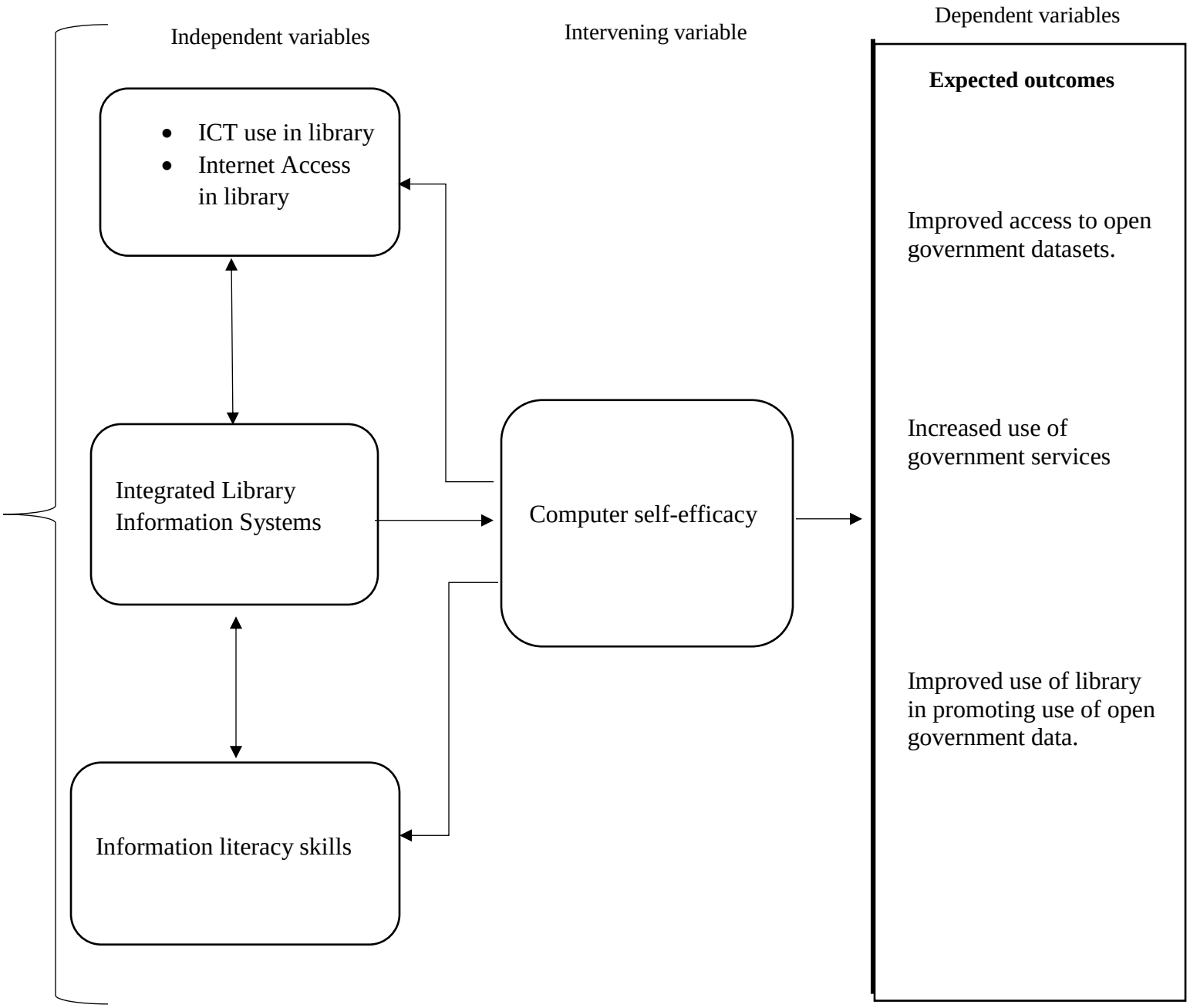

Figure 4.3: Proposed Model for supporting use of OGD (Source: Researcher, 2022)

4.8.7.1 Description of the Proposed Model for supporting use of OGD in Kenya

This model demonstrates the key elements that can support use of open government data in the library. The integrated library system is at the center of supporting use of open government data. However, for this goal to be achieved its imperative for both patrons and librarians to be computer literate. This diagram shows that increased computer literacy will support patrons' use of ICT tools as well as the internet in library. Additionally information users with basic skills on Information literacy will be able to search and use open government datasets using ILS. The outcome of this model shows improved access to open government datasets, increased use of government services and improved use of library in promoting use of open government data.

4.9 Chapter Four Summary

The chapter has discussed findings on the contribution of libraries in promoting use of open government data in Kenya by exploring how Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library have promoted open data initiatives**.** The study has proposed a model that can be adopted to promote use of open government data in Kenya.

CHAPTER FIVE

SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study examined the contribution of libraries in promoting use of open government data in Kenya by exploring how University of Nairobi's Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library have promoted use of open government data. The objectives of this study were to:

1) Evaluate the contributions of the library in promoting open data initiatives in Kenya.
2) Assess how varying levels of skills on data literacy and media literacy among university students has affected the use of open government data.
3) Find out if the inequality in internet connection in libraries has affected utilization of open government data and services.
4) Examine application of ICT tools in libraries in accelerating utilization of open government data.
5) Develop a suitable model for supporting use of open government data in Kenya

5.2 Summary of key findings

5.2.1 Contribution of Library in Promoting Open Data Initiatives

The first objective was to evaluate the contribution of libraries in promoting open data initiatives in Kenya. This study established that the library had significantly contributed to realization of open government initiatives such as promoting accountability in government, empowering civil servants to explain government activities and policies and promoting innovation and economic development among others.

5.2.2 Media and Data Literacy in supporting use of Open Government Data

The second objective was to assess how varying levels of skills on data literacy and media literacy among university students had affected the use of open government data.

5.2.2.1 Media Literacy Skills in Promoting use of Open Government Data

The study established that there exists a gap in the training of media literacy. Out of the 121 responses only (66) respondents agreed to have had some level of competence in using various multimedia technologies to access or interpret open government data. Cumulatively, respondents mentioned having used audio and video, hypertext and graphics and images to access public data. Findings clearly indicated that 45 percent respondents lacked the competence to interact with open government data in multimedia formats due to inadequate skills in media literacy.

5.2.2.2 Data Literacy Skills in Promoting use of Open Government Data

The study revealed the need for more training skills on data literacy to enable respondents to adequately interact with open government data available in the library, especially the need for introduction of Mathematics and Statistics targeting all university students to enable them to interact with open government data needing arithmetical skills.

5.2.3 Internet Inequality in Libraries

The third objective was to find out if the inequality in internet connection in libraries had affected utilization of open government data. This study found no significant inequality in internet access between users at Jomo Kenyatta Memorial library and those at the Mahatma Gandhi Graduate library, implying both facilities had improved their internet bandwidth to enable patrons to access open government data in the two libraries.

5.2.4 ICT Tools for Accelerating use Open Government Data

The fourth objective was to examine whether application of ICT tools in libraries had accelerated the utilization of open government data and services. This study emphatically established that the use of mobile phone, laptop and other portable devices to access information had greatly enhanced the way patrons interacted with open government data in the library.

5.2.5 Developing a Suitable Model for Promoting use of Open Government Data

The fifth objective was to develop a suitable conceptual framework for promoting use of open government data in Kenya. Having tested the relationships between the independent, intervening and dependent variables, this study has developed a conceptual framework that can be used to promote use of open government data in Kenya.

5.3 Conclusion

This study concluded that open government data initiatives had gained momentum in Kenya including at the University of Nairobi where both the Jomo Kenyatta Memorial library and Mahatma Gandhi Graduate library had actively promoted use of open government data despite experiencing myriad challenges.

5.4 Recommendations

From the findings, the study recommended the following:

- To fastract the contributions of the library in promoting citizens' participation in advancing good governance, this study suggests more partnerships between libraries and other stakeholders (both public and private) to promote accountability and integrity in governance.
- On addressing the gaps in the training of media literacy, this study suggests the introduction of compulsory Media literacy courses to be taught alongside the general Information literacy by the library staff targeting all university students. On addressing the gaps in the training of data literacy this study calls for introduction of basic Mathematics and Statistics targeting all university students irrespective of their areas of specialization.
- On ensuring 100 percent access to the internet at the university libraries, the study calls for more collaborations between the university and the government. The study also recommends for the university to diversify its revenue sources to supplement yearly budgetary allocations in order to revamp old or damaged ICT infrastructure.
- On Promoting increased use of ICT infrastructure to access public data, this study recommends partnerships with local, regional and global partners who might be willing to provide portable ICT devices to all university students. The study also recommends for customization of such ICT devices to include in-built libraries providing access to open government data. The Director of Library and Information Services (In charge of Planning) at the University of Nairobi had this to say, *"The University of Nairobi should phase out aging desktops computers at the Jomo Kenyatta Memorial Library and replace them with modern computers.* Nyalwal G. (2022, August 02). Personal communication [Personal interview].

- Lastly, the study calls on the library to leverage on emerging technologies including the social media to market links containing sources to open data. The Director of Library and Information Services (In charge of Planning) at the University of Nairobi had this to say, *"The System Librarian should strive to develop digital content that enhance marketing strategies through social media. This will ensure increased visibility of open data links at the university library portal to the wider audience. Additionally, the university should open its Facebook page, have a WhatsApp link as well as a LinkedIn account.* Nyalwal, G. (2022, August 02). Personal communication [Personal interview].

5.5 Suggestions for Future Studies

The researcher strongly suggests the following potential areas for further studies:

- There's need for research on the impact of data literacy and media literacy on the use of open government data in Kenya. This will reveal the extent to which the two forms of literacy can enhance public data in the global data-driven knowledge economy.
- The study also suggests research on the use of emerging technologies to fast-track sharing of open government data among the millennials at the University of Nairobi. This study will provide a true representation of how millennials interact with available open government data in Kenya.
- Finally this study suggests more research on opportunities for enhancing government-library collaborations and partnerships to accelerate utilisation of open government data. This study will enable librarians to understand how to engage other stakeholders in promoting use of open government data.

5.6 Chapter Five Summary

This chapter has provided the summary of the research findings on the topic under investigation. It has also provided the conclusion and recommendations on potential areas that need redress to ensure the library contributes towards increased use of open government data in Kenya.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

Oscar Mudega
Department of Library and Information Science
University of Nairobi
P.O. Box 30197
Nairobi, Kenya.

Dear respondent,

INTRODUCTION LETTER FOR RESEARCH

My name is Oscar Mudega, a postgraduate student pursuing a Master degree in Library and Information Science. I am conducting a study on **THE CONTRIBUTIONS OF LIBRARIES IN PROMOTING USE OF OPEN GOVERNMENT DATA IN KENYA**. **CASE OF THE UNIVERSITY OF NAIROBI.**

This study is guided by key objectives such as, to evaluate the contributions of libraries in promoting open data initiatives; to assess how varying skills on various information literacies in students has affected the use of open government data; to find out if the inequality in internet access in library has affected access and utilization of freely available government data and lastly, to examine the application of key ICT tools in library in accelerating utilization of freely available government data.

You have been designated to participate in this study. Any information or opinions volunteered will be held in confidentiality and shall be used for academic purpose only.

Yours Faithfully

Oscar Mudega

C54/1158/2018

APPENDIX II: RESEARCH AUTHORISATION LETTER

UNIVERSITY OF NAIROBI
FACULTY OF ARTS AND SOCIAL SCIENCES

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

Telephone: +254 20 3918223/3147
Telegram: Varsity
Fax: +254 20 2245566

P.O. Box 30197- 00100 GPO
Nairobi, Kenya.
dept-lis@uonbi.ac.ke

Our Ref: C54/11558/2018

9th February, 2022

Director General,
National Commission for science, Technology & Innovation
P. O. Box 30623-00100, Nairobi

Dear Sir/Madam,

RE: RECOMMENDATION FOR OSCAR MUGESI MUDEGA, REG NO: C54/11558/2018

The above named is a bonafide student at the University of Nairobi undertaking a Master of Library and Information Science (MLIS). He is currently in the process of collecting data as part of the requirements for the course.

His topic is **"Examining the contribution of libraries in promoting the use of open Government data in Kenya: Case of the University of Nairobi library."**

Any assistance accorded to him will highly be appreciated.

Regards,

Dr. Elisha Makori
Ag. Chairperson, Department of Library & Information Science (DLIS)

APPENDIX II: NACOSTI LETTER

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **341590**

Date of Issue: **17/February/2022**

RESEARCH LICENSE

This is to Certify that Mr.. Oscar Mugesi Mudega of University of Nairobi, has been licensed to conduct research in Nairobi on the topic: Examining the contribution of libraries in promoting the use of open government data in Kenya: case of the University of Nairobi library for the period ending : 17/February/2023.

License No: **NACOSTI/P/22/15830**

341590

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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E-mail: dg@nacosti.go.ke / registry@nacosti.go.ke
Website: www.nacosti.go.ke

APPENDIX IV: QUESTIONNAIRE FOR UNIVERSITY STUDENTS

BACKGROUND INFORMATION

Name (Optional) …….……..……...

1) Student Indicate year of study ☐

Indicate gender…….……..……..

Your age bracket (Choose from the list below)……

1) 18 – 24 Years
2) 25 – 34 Years
3) 35 – 44 Years
4) 45 and Above Years

EVALUATING CONTRIBUTION OF LIBRARIES IN SUPPORTING OPEN DATA INITIATIVES

1. Select from the list provided 5 main factors that you think have contributed to the increased utilization of open government data in libraries today.

DEVELOPMENT OF OGD	MULTIPLE RESPONSE OPTIONS
Growth of Internet and ICT	
Advancement in Technology and innovation	
Mobile phone revolution	
Competition from private the sector	
Enhanced customer care services	

Explain the reason(s) for your selection of the above option

……

……

2. From the options provided below, how would you rank the library in promoting the listed open government data initiatives in Kenya (where 3: Excellent 2: Good and 1: Fair).

LIBRARY IN PROMOTING OGD INITIATIVES	3	2	1
Promoting transparency and accountability			
Enhancing public service			
Promoting innovation and economic development i.e. in agriculture			
Improving government efficiency/reputation			
Improving public participation and decision making/			
Enabling citizens to understand about their human rights			

Explain the reason(s) for your selection of the above option

……

……

3. Using the options provided, what key requirements should libraries put in place to improve the use of open government data? (Where 3: Important 2: Not Important and 1: Don't Know).

REQUIREMENTS FOR LIBRARIES	3	2	1
Improve staff training and capacity building			
Improve internet speed			
Increase library-government co-operation			
Promote inter-library sharing of OGD materials			
Enhance mobile phone use in information sharing			
Adopt use of social media in information sharing			

Explain the reason(s) for your selection of the above option

……

……

4. Select from the options provided at least 3 career competencies library staff/employees need to accelerate the use of open government data in Kenya.

CAREER COMPETENCIES	TICK WHERE APPROPRIATE
Training and capacity building	
Motivation at work	
Team work	
Enhanced organizational culture	

Explain the reason(s) for your selection of the above option

……

……

IMPACT OF INFORMATION LITERACY ON USE OF OPEN GOVERNMENT DATA

5. Rate your skills in using Online Public Access Catalog (OPAC) in searching the internet for open government datasets (Where 3: Highly Skilled 2: Semi-Skilled and 1: No Skill).

INFORMATION LITERACY SKILL	3	2	1
Locating online government data			
Evaluating online government data			
Using online open government data			
Communicating online open government data			

6. Select from the list provided 3 most effective ways of refining the training of data and media literacy among students in order to boost the utilization of open government data.

INFORMATION LITERACY SKILL	TICK WHERE APPROPRIATE
Promote active and practical learning	
Provide free learning resources	
Incorporate mathematics and statistics in leaning	
Adopt use of various media and ICT tools	
Encourage questions about data interpretation	

Explain the reason(s) for your selection of the above option

……

……

……

7. Mention any 3 fundamental data literacy courses that different faculties/schools at the University of Nairobi can teach in order to improve usage of open government data.

a)

b)

c)

8. Mention any 3 fundamental Media literacy courses different faculties at the University of Nairobi can teach to bolster usage of open government data

a)

b)

c)

9. List down different multi-media technologies you have used to access and interpret data in library.

……

INTERNET CONNECTION INEQUALITY IN LIBRARY AND ITS IMPACT ON THE USE OF OPEN GOVERNMENT DATA

10. How useful is the library in promoting the use of open data (Where 4: Very Useful 3: Fairly Useful and 1: Not Useful).

BENEFITS OF INTERNET IN LIBRARY	3	2	1
Internal networking of computers			
Inter-library information sharing			
Platform for discussion on OGD issues			
Government-library information sharing			

Explain the reason(s) for your selection of the above option

……

……

11. State 4 possible solutions in addressing internet inequality in libraries in order to promote equitable access and utilization of open data in libraries.

a)	
b)	
c)	

12. Indicate how frequently you have accessed information on the listed portals (Where 3: Most Frequent 2: Once I a While accessed and 1: Never accessed).

	3	2	1
Helb Portal			

E-citizen portal			
University of Nairobi Digital Repository			
ICT Authority Portal			
Kenya Revenue Authority portal			

13. Explain the nature of service (s) you attained in the above selected open government portal.

- Helb portal

- NTSA portal

- E-citizen portal

- ICT Authority portal

APPENDIX V: QUESTIONNAIRE FOR MIDDLE-LEVEL LIBRARY STAFF

BACKGROUND INFORMATION

Name of library:

1) Jomo Kenyatta Memorial Library ☐
2) Mahatma Gandhi Graduate library ☐

Profession/occupation …….……..……...

2) Librarian ☐
3) Support staff ☐

Gender …….……..……..

Your age bracket (Choose from the list below)……

5) 18 – 24 Years
6) 25 – 34 Years
7) 35 – 44 Years
8) 45 and Above Years

APPLICATION OF ICT IN PROMOTING UTILIZATION OF OPEN GOVERNMENT DATA

1. Explain how the nature of services they had provided to students needing helping to access open government data at the library.

……
……
……

2. Mention 4 ICT tools you have used to access and use open government data.

a)	
b)	
c)	
d)	

3 Mention the relevance of integrated library system in supporting access and use of open government data in library.

……
……
……

4. What needs to be done to ensure students attain practical skills in using integrated library system to access information?

……
……

……
……

5. Mention key skills needed for ensuring computer self-efficacy among information users in the library

a)	
b)	
c)	
d)	

6. Indicate multimedia technologies you have used in the library to access multimedia content.

……
……
……

APPENDIX VI: INTERVIEW SCHEDULE FOR LIBRARY ADMINSTRATORS

Background Information

1) Name of academic institution ……
2) Profession in the organization ……
3) Position within the organization ……

1. What role does the library play in promoting the use of open government data in Kenya?

   ---

2. What are the key requirements that libraries need to put in place to accelerate use of open data available in libraries?

   ---

3. What are some of the strategies the University of Nairobi can adopt to improve training of data literacy and media literacy in order to promote use of open government data?

   ---

4. What has the University of Nairobi done to address the inequality in internet access in order to promote use of open government data in libraries?

   ---

5. What are the benefits of open government data partnership initiatives between the University Of Nairobi and other partners including the government

   ---

6. What needs to be done to enhance the use of ICT tools in libraries in supporting access and usage of open government data?

   ---

7. How can the library leverage on emerging technologies to accelerate the use of open data