

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

---

8-2020

## The Role of Information and Communication Technology (ICT) in Securing Books in Irish Academic Libraries.

Emmanuel Oguche

Dublin Business School Ireland, emmanueloguche29@yahoo.com

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Collection Development and Management Commons](#), [Computer Engineering Commons](#), and the [Scholarly Communication Commons](#)

---

Oguche, Emmanuel, "The Role of Information and Communication Technology (ICT) in Securing Books in Irish Academic Libraries." (2020). *Library Philosophy and Practice (e-journal)*. 6595.  
<https://digitalcommons.unl.edu/libphilprac/6595>

**The Role of Information and Communication Technology (ICT) in Securing Books in Academic Libraries.**

Emmanuel Oguche

10540647

Dissertation submitted in partial fulfilment of the requirements for the degree of  
Master of Science (MSc) in Information and Library Management

at Dublin Business School

Supervisor: Matthew Nolan

August 2020

## Contents

<b>Declaration</b> .....	5
<b>Acknowledgements</b> .....	6
<b>Abstract</b> .....	7
<b>Chapter 1: Introduction</b> .....	8
<b>1. Background</b> .....	8
<b>1.2 Research Aims</b> .....	9
<b>1.3 Scope and Contribution</b> .....	10
<b>1.4 Research Question</b> .....	10
<b>1.5 Background of Selected Academic libraries Under Study</b> .....	11
<b>1.5.1 Dublin Business School Library (DBS)</b> .....	11
<b>1.5.2 Athlone Institute of Technology (AIT)</b> .....	11
<b>1.5.3 Trinity College Library (TCD)</b> .....	11
<b>1.5.4 University College Dublin (UCD)</b> .....	11
<b>1.5.5 Dublin City University (DCU)</b> .....	12
<b>1.6 Operational Terms and Abbreviation</b> .....	12
<b>1.7 Dissertation Structure</b> .....	12
<b>1.8 Literature Review</b> .....	13
<b>1.8.1 Literature Introduction</b> .....	13
<b>1.8.2 Academic Libraries</b> .....	13
<b>1.8.3 ICT and Academic Library</b> .....	16
<b>1.8.3.1 Use of ICT Gadgets to Protect books from Book Theft and Mutilation</b> .....	21
<b>1.8.4 Library Security</b> .....	24
<b>1.8.4.1 Book Theft and Mutilation</b> .....	27
<b>1.8.5 Conclusion</b> .....	30
<b>Chapter 2: Methodology</b> .....	31
<b>2.1 Methodology Introduction</b> .....	31
<b>2.2 Research Design</b> .....	31
<b>2.2.1 Research Philosophy</b> .....	31
<b>2.2.2 Research Approach</b> .....	32
<b>2.2.3 Research Strategy</b> .....	33
<b>2.2.4 Time Horizon</b> .....	34
<b>2.3 Sampling- Selecting Respondents</b> .....	34

2.4	Data Collection .....	36
2.5	Data Analysis .....	38
2.6	Research Ethics .....	39
2.7	Limitation of Methodology.....	40
<b>Chapter 3: Results.....</b>		<b>41</b>
3.1	Introduction.....	41
3.2	Book security .....	42
3.3	Reason behind book theft and mutilation.....	43
3.4	Technology to ensure loaned books are returned correctly .....	44
3.5	ICT gadgets used in the libraries.....	45
3.5	Effectiveness of the gadgets.....	46
3.7	Suggestion for Improvement of ICT Gadget used .....	47
3.8	Summary.....	48
<b>Chapter 4: Discussion .....</b>		<b>50</b>
4.1	Introduction.....	50
4.2	Book security .....	50
4.3	Theft and mutilation.....	51
4.4	Technology for detecting mutilated books.....	52
4.5	ICT gadgets.....	54
4.6	Effectiveness of the gadgets.....	54
4.7	Improvement of ICT Gadget .....	56
4.8	Conclusion and Suggestions for Further Research.....	57
<b>Chapter 5: Reflection on Learning Experience.....</b>		<b>60</b>
5.1	Introduction.....	60
5.2	Dissertation Choice .....	60
5.3	Literature Review .....	61
5.4	Research Design .....	62
5.5	Data Collection Analysis.....	62
5.6	Learning Style .....	63
<b>References.....</b>		<b>64</b>
<b>Appendix.....</b>		<b>68</b>
1.	Interview Questions .....	68
2.	Information and Consent sheet.....	69

**Consent Sheet** ..... 71

**3. Ethics Approval form** ..... 72

## **Declaration**

I declare that this dissertation that I have submitted to Dublin Business School for the award of Master of Science (MSc) in Information and Library Management is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.'

Signed: Emmanuel Oguche

Student Number: 10540647

Date: 25/08/2020

## Acknowledgements

This research work was successful only by the grace of God in his infinite mercies; he spared my life to complete this program.

My profound gratitude goes to my project supervisor Mr Matthew Nolan, whom in spite his schedule and personal commitment, find out time to read, correct, and guide me with useful suggestions in completing this thesis. Regards to my lecturers and library staff that supported me all through the program.

Let me acknowledge my late parents Mr & Mrs Oguche Akubo Uneku and my lovely siblings Benjamin, Innocent, Elizabeth, Ufedo, Samuel, Victoria, Charles and Isaac. They encouraged and supported me in making this thesis a reality I love you all and wish you more blessing in all you do.

My regards also go to friends, colleagues, librarians that participated in research and everyone who contributed in one way or the other in the course of this research.

## Abstract

This study was to examine how effective are the ICT gadgets used in securing books in academic libraries and what technological approach will the libraries adopt in the future to ensure books are secured from mutilation and theft. The study was also to understand why students steal or mutilate books. A semi-structured interview was the qualitative research design used to collect data from six librarians. It was discovered that the libraries had adopted the use of ICT security gadgets like Radio-Frequency Identification (RFID) technology, surveillance cameras, self-service machine, magnetic strips. The combined use of these gadgets led to the drastic reduction of book theft, leaving the libraries with mutilation issues (the unwelcome by-product of an effective security system). There is no effective technology in the selected libraries to tackle the issue of book mutilation, which was discovered as the major threat to books in the libraries.



## Chapter 1: Introduction

### 1. Background

Book theft and mutilation in academic libraries did not start today. Researchers all over the world have identified book theft and mutilation as a major threat to academic libraries (Maidabino, 2013). Ekere (2014, p56) opined that the academic library is a significant agent in the chase for academic excellence in higher institution of learning. Academic libraries are there to foster the objectives of their parent institution, which are aligned with teaching, learning, research. The extent, to which an institution of higher learning is capable of carrying out its commendable objectives, depends on how well the institution's library has been supportive in terms of provision of all information material including book and non-book materials. The value of books in academic libraries makes them vulnerable to mutilation and theft (Forley, cited in Maidabino, 2013).

Academic libraries in Nigeria are seriously suffering from book theft and mutilation. This has prompted many researchers from Nigeria to look into the matter but to no avail. Abareh 2001 survey (cited in Maidabino, 2013) reveals that book theft and mutilation in academic libraries in Nigeria are majorly caused by self-interest, few copies of books, poor ventilation, limited reading space and poverty. Academic libraries are facing times of unparalleled change and unprecedented challenge. Academic libraries have moved from a considerable state of innovation to a stage of necessity. Academic libraries are operating in a climate of declining budgets and increasing cost of library materials; this has led library leaders to be under pressure to secure library materials due to resource scare environment the libraries find themselves (Curtis, 2015).

Electronic security systems (ICT gadgets) has been identified as a major tool that can reduce book theft and mutilation after it was tested in an academic library in America (Greenwood and Mckean,

cited in Saleem, Shabana and Sadik, 2013). There is also some other mechanism used in mitigating book theft and mutilation in academic libraries. However, it is highly recommended that ICT gadgets like RFID technology, heat sensor, surveillance cameras, panic alarms, door intrusion alarms, delay devices, metal detectors are used in securing library resources McGinty and Trapskin cited in Maidabino, 2013). However, Husain and Nazim (2015) argued that despite the notable benefits of using ICT gadget like RFID in securing library books, the researcher also pointed out that it is not the ultimate solution to book mutilation and theft as there are various ways to beat RFID.

In this study, the researcher will examine the role of ICT in securing books in some selected academic libraries in Ireland, types of gadgets used and how effective they are will also be assessed. Academic libraries in Ireland use various ICT gadgets in securing books compared to their counterpart in Nigeria that is seriously suffering from the effect of book theft and mutilation. The study will serve as a guideline in implementing advanced security measures in Nigerian academic libraries and the world at large.

## **1.2 Research Aims**

The aim of this research is to examine the role of Information Communication Technology (ICT) gadgets in securing books in some selected academic libraries in Ireland. The research will identify the types of mutilation and theft in the selected libraries and how effective ICT gadgets are in securing library books. In addition, the study will identify the various ICT gadgets used by these libraries and what are their plans in acquiring more gadgets.

### 1.3 Scope and Contribution

The scope of this research is based on the role of ICT in securing books in selected academic libraries in Ireland. The research will address the current literature gap that exists in academic library security. The research will also point out the specific role played by each of the ICT gadgets in the selected libraries. In addition, this research will serve as a prototype in setting a more sophisticated ICT oriented security systems in academic libraries in Nigeria. The findings of this study will enable the researcher to develop a proposal to the National University Commission (NUC) of Nigeria on how the use of ICT gadgets has affected book theft and mutilation, and how it can be replicated in academic libraries in Nigeria. Lastly, the output of this research will be beneficial to library administrators, and their parent institution on library security matters and will also serve as literature for further research.

### 1.4 Research Question

**How effective are the ICT gadgets used in the selected academic libraries in securing book, and what is the next level of ICT gadgets the libraries might use in reducing book theft and mutilation?**

The research question was developed from related literature on academic library security. Over the last decade, researchers have suggested the use of modern technology in libraries to enhance library security. However, they fail to dig deep on the role and types of gadget used by academic libraries.

In other to achieve the purpose of this study, academic librarians from selected third-level institutions in Ireland will be asked questions that will enable the researcher to ascertain the role played by ICT gadgets in their libraries and how effective they are.

## **1.5 Background of Selected Academic libraries Under Study**

### **1.5.1 Dublin Business School Library (DBS)**

Dublin Business School is the largest independent third-level college in Ireland and was founded in 1975. There are over 9000 students in the college —programmes in the college range from level 6 to level 9. The college offers courses in business, law, arts, and IT-related programmes. The library is located in the heart of Dublin and holds a collection of over 40,000 books and 34 prints journals.

### **1.5.2 Athlone Institute of Technology (AIT)**

The institute was established in 1970 by the Irish government. There are about 256 academic staff and around 5000 students, which includes both Irish and international students. According to the institute 2017/2018 annual report the institute offers about 13 programs. There are two libraries in AIT one is located on the main campus and the other located in their east campus. The library represents a "Third Space" for researchers, students and staff.

### **1.5.3 Trinity College Library (TCD)**

The college was established along with the library in 1592. It is known to be the largest academic library in Ireland. The library holds around 6 million printed scholarly materials. The library objective is to support teaching, learning and research of students, staff and researchers.

### **1.5.4 University College Dublin (UCD)**

University College Dublin (UCD) was previously known as Catholic University of Ireland. The Catholic University of Ireland was opened in 1854 and became UCD in 1908. There are over 1,482 academic staff and 32,000 students (Irish and International). There are 5 academic libraries in UCD

with over 800,000 printed materials. Services rendered in the libraries includes information literacy, lending, document supply, reference and other information services.

### **1.5.5 Dublin City University (DCU)**

Dublin City University (DCU) is one of the public universities in Ireland. It was established in 1975 under the name National Institute of Higher Education and was changed to its current name in 1989. O'Reilly library and Cregan library are the two libraries that cater to the information needs of about 16,000 students and staff. There are about 378,418 print books with the recent addition of about 5000 print books.

## **1.6 Operational Terms and Abbreviation**

AL – Academic Librarian

CCTV - Closed-circuit television

DBS – Dublin Business School

RFID - Radio-frequency identification

PL- Public library

ICT – Information Communication Technology which also means electronic gadgets

## **1.7 Dissertation Structure**

Chapter one provides background to the study, the rationale behind the research question, how research question emanated and how studies will support or improve existing arguments on academic library securities. Chapter two deals with the method and design used in collecting and analysing data for this study, how participants were selected. Chapter three shows findings from

the interview conducted with academic librarians. Data was structured in themes and subthemes. Chapter four deals with the analysis of findings, conclusion and suggestion for further research. Chapter five deals with the researcher's self-reflection on the dissertation and the master program at Dublin Business School.

## **1.8 Literature Review**

### **1.8.1 Literature Introduction**

Traditionally, libraries pose as a place where academic institutions store, access, and recover information for their respective students. Libraries, in the past, had appeared limited by the vulnerability of their physicality (hard copy), geography, funding, and security (as a result of theft and mutilation) (Aliyu, 2015). However, the advent of Information and Communication Technology (ICT) has since provided solutions to the above past limitations of libraries. In other words, ICT had gradually proven itself as the modern tool in which knowledge (both past and present) became secured and deemed more utilised, especially in academic institutions.

Thus, this study's literature review will interrogate the roles of ICT in relevance to its usage in academic libraries. The review will wield scholarly journals and books to validate its arguments. The study will explore modern ICT gadgets and their effectiveness or ineffectiveness in protecting books in libraries. By the end of the literature review, the roles of ICT in academic libraries would have become crystallised in light of inferred scholarly authors.

### **1.8.2 Academic Libraries**

According to Dold (2013), academic libraries stand as educational avenues where information embedded in books and other researched documents get stored for the purpose of data access,

retrieval, and analysis. In other words, Dold depicted academic libraries as a place where researched information about specific fields could become found to further research. Akor, Ekere and Akor (2019) also defined academic libraries as institutions primarily constructed for "educational, cultural, research, recreational and information needs of their users". Simply put, academic libraries offer appropriate data that span through different cultures and disciplines in order to further the research or knowledge of users. Akor et al. definition of academic libraries affirms that they mainly provide services that involve data access, recovery, analysis, storage, conveyance, and organisation.

Dawar and Shivarama (2016) described academic libraries as educational institutions that foster the collection, processing, and dissemination of information to students and staff who want to advance or broaden their research. The authors reasoned that library users mostly require access to relevant data speedily to further their respective study or educational development. Thus, the services provided by academic libraries aid students and staff in their provision and storage of relevant data that would ease their learning experience and optimise their educational development. For example, a student without the help of academic libraries would mostly depend on the class teaching of lecturers. On the other hand, students that have the aid of academic libraries get the unique chance to broaden their knowledge and research extensively, irrespective of class teachings or virtual learning.

Akor et al. (2019) opined that academic libraries play a primary role in making available appropriate resources and services that embody the acquisition, management, storage, and organisation of information to students, staff and researchers. Jama'a (2014) disclosed that academic libraries provide information to academic users of "diversified age groups, socio-

political, economic backgrounds and cultural interests have to converge to utilise all the available resources that are relevant to their individual needs" (cited in Akor et al., 2019).

In light of the statement above, Ajie (2019) revealed that academic libraries stand as educational establishments that offer an avenue in which people (students, staff and researchers) could get stress-free access to information that broadens their knowledge and understanding concerning their curriculum. In other words, academic libraries offer its users a unique opportunity to rapidly develop and advance their knowledge concerning different subjects in their respective fields through the provision and storage of relevant books and other academic resources. Thus, Ajie (2019) and Dawar and Shivarama (2016), reiterated that academic libraries stand as educational facilities where learners could go to achieve their research and other scholarly endeavours successfully.

In addition, Gabbay and Shoham (2019) describe academic libraries as educational establishments that facilitate the circulation of relevant information to researchers and scholars. In other words, the above depiction of academic libraries showed them as tools through which educational institutions foster the spread of information for researchers and scholars. Gabbay and Shoham definition did not just describe what academic libraries entail, but their study also conveyed a significant role provided by libraries in the circulation of information.

Adamu and Abdullahi (2018) disclosed that academic libraries stand as educational avenues that foster the access and retrieval of relevant information through the provision of cataloguing systems. In other words, the research above provided another definition of the subject by depicting the cataloguing systems in which they operate. The authors' definition above showed that academic libraries manage a method of storing information called cataloguing to ensure that learners in



educational institutions get easy access to relevant data to further their research and other scholarly endeavours.

Husain and Nazim (2015) disclosed that academic libraries pose as libraries attached to universities that provide two fundamental functions—to advance the research of the university students as well as the faculty and to sustain the institutions' curriculum. In other words, academic libraries offer a means by which students and universities' faculty members could effectively develop their academic prowess. Husain and Nazim's definition of academic libraries depicts it as an educational establishment that promotes research for both students and universities members in other while broadening their knowledge about their respective curriculums.

### **1.8.3 ICT and Academic Library**

Libraries, like most spheres of academics, have undergone a substantial metamorphosis due to the introduction of information and communication technology in recent years. Khan (2016) affirmed the statement above by saying that libraries have become transformed by the advent of information and communication technology (ICT). The services most affected by ICT include cataloguing, reference services, serial controls, circulation management, access, collection development and resources security (Aliyu, 2015). In other words, the introduction of information and communication technology has made it easy for people to get access to books faster without previous limitations of location.

One of the profound transformations encountered by educational institutions involves the introduction of information and communication technology (ICT) to academic libraries (Aliyu, 2015). The introduction of ICT into academic operations in libraries transcended them from physicality into the realm of digitalisation. Bhoi (2017) describes digital libraries as a unique form

of academic libraries that need the aid of a computer as well as a computer network to operate. Bhoi (2017) also disclosed that the digital library provides and processes information through digitalised means, as against the physical books and other manual resources that students could get from the traditional physical libraries.

The modern era brought about the use of new and productive means and tools to achieve effectiveness and advancement in every ramification. The means and tools employed could easily become depicted through the introduction of Information and Communication Technology (ICT). Aliyu (2015) stated that ICT entails a series of recovering, gathering, storing, evaluating, processing, and transmitting academic data through the use of the internet. In other words, the phrase ICT involves the analysis and processes of accessing and retrieving information through the use of technological innovation.

Information and Communication Technology (ICT) has rapidly transformed the way people access, organise, and manage data in recent years. The transformation of ICT could quickly become seen in the services and resources provided by the library. Nebeolise (2018) revealed that ICT has gradually evolved the services provided by academic libraries. The adoption of specific information retrieval applications, as well as the use of other technologies, brought about the significant transformation in libraries (Nebeolise, 2018). In other words, ICT facilitated means by which information services and provision could become user-friendly through its productivity and effectiveness to its users.

Patel (2018) affirmed that the adoption of ICT in academic libraries had transformed the ways that students and non-students view librarians and libraries. Patel revealed that in the past, people see librarians as ordinary storekeepers who try, but fail to protect the books of the library from theft

and mutilation. Patel also revealed that ICT, in its capacities in academic libraries, has efficiently ended their past close-access information services. The close-access resources and services provided by traditional libraries overtime became hampered by distance, time, and cost. However, the introduction of open access to information supplied in academic libraries has fostered a growth in education and every discipline (Patel, 2018).

The adoption of ICT to academic libraries provided them with advantages such as self-publishing. Library publishing or self-publishing has enabled educational institutions to share their available resources and services, without the consideration of cost, time, or geographical distance (Aliyu, 2015; Bhoi, 2017). Library publishing often becomes achievable through the collaboration by the library as well as the press of a university. The University of Pittsburgh poses as a notable institution that promotes library publishing services through its publications of peer-reviewed journals and open access monographs (Deliyannides and Gabler, 2013). The extension of the physical library to include publishing services stems from the growing need to depart from the traditional print publication, which impedes a person's data accessibility, especially in regards to budget and location.

McCready and Molls (2018) revealed that library publishing creates a means by which access to data by people does not become hampered by boundaries, rigid financial commitment, and shift in priority. In other words, the induction of information and communication technology into services and resources provided by libraries have since improved the way people get to access, organise, manage, and retrieve data. McCready and Molls' study also revealed that the advent of library publishing gave rise to an era in which the cost of getting information became flexible. Khan, (2016) echoed McCready and Molls' summation that the introduction of ICT into academic libraries has rendered less vulnerable to its erstwhile financial strain.

Furthermore, the traditional academic library often uses an old-fashioned way to catalog the books and other academic resources within the library; this system of storing information has proven as costly and time-consuming. Therefore, Bhoi (2017) revealed that the introduction of ICT into academic libraries also aided the erstwhile cataloging system by introducing the use of an online public access catalog (OPAC). The use of OPAC by academic libraries quickly reduced the cost of holding and collecting academic e-resources stored within it. Bhoi (2017) also revealed that OPAC removed the tediousness entailed in the cataloging of printed materials. Thus, academic libraries have since found the use of pen and paper unnecessary, while opting for the more user-friendly cataloging system from online e-resources (Bhoi, 2017; Ajie, 2019).

Also, Bhoi (2017) affirmed in his research that the invention of academic libraries with the use of ICT had eradicated the tediousness of manually rewriting or reprinting educational materials. Digitalised academic libraries, instead of the traditional way of reproducing the materials, introduced reprographic services which involve the reproduction of the said documents into digitalised documents (Bhoi, 2017). The transformation of the books into digitalised documents has proven to make the material more easily accessible to academic students and non-students, irrespective of their location or time.

Bhoi (2017) further stated that the reprographics services require the use of a scanner and computer software to aid the realisation of the photocopies. The introduction of reprographic services has reduced the probability of students stealing or mutilating books since they can now scan the chapter they need. Bhoi revealed that academic libraries have since provided students with the choice of photocopying parts of a book, journal, or articles from the library at little cost and at a lesser amount of time.

Another problem encountered by physical, academic library users involves the tediousness in retrieving relevant data from the stored ones (Nebeolise, 2013). In other words, students and other users might likely not find the documents they want from an academic library, not because they are unavailable, but because of the complications in finding them. Thus, Bhoi (2017) revealed that academic libraries' adoption of ICT eradicated the above tedious way of retrieving academic materials from the library by introducing the selective dissemination of information (SDI).

SDI, according to Bhoi (2017), involves the use of computer assistance to do the bulk of retrieving a user's needed materials from the said academic library. In other words, SDI in academic libraries could also become summed up as a useful information retrieval whereby a library user gets to retrieve relevant documents through his or her click of a computer. Bhoi (2017) further stated that the efficiency embedded in the use of selective dissemination of information (SDI) eradicated the long and tedious search of long-standing files for users of the present day digital library. Academic libraries' use of SDI has since enabled library users to gain access and retrieve data very quickly and without extra cost (Bhoi, 2017; Nebeolise, 2013).

The traditional physical, academic library use to have a tedious time in manually writing down bibliographies of each educational material stored in them. However, through the introduction of ICT to academic libraries, users, and educational institutions have gained easy access to the publishers of the book (Bhoi, 2017). Thus, the publishers, not the librarians, send their bibliographies for computation at said academic libraries. The bibliographic services performed by academic libraries often use the aid of computer software such as Mendeley, RefWorks, EndNote, and Zotero (Bhoi, 2017). The listed bibliographic software could easily aid a researcher or scholar to reference his or her research project without requiring the aid of manually writing them or searching for them.

In other words, the use of bibliographic services in digital libraries enables users to achieve effortless mastery of the erstwhile tedious act of referencing. Thus, the bibliographic services of academic libraries help the educational development of both the universities' faculty as well as the students involved.

Translation service in libraries has been affected by the introduction of ICT—this has enabled international students to learn in a different language (Bhoi, 2017). Nebeolise (2013) revealed that academic libraries that have adopted ICT offer translation services through the use of online software. For example, Google translator and Babelfish translator could translate online documents from various languages (Bhoi, 2017). An English student whose school is in Germany could then eradicate his or her translation difficulty in understanding specific academic papers or materials through the use of digital libraries. Academic libraries, thus, provide translation services (for example, from English to German) through the aid of the use of online software and computers.

### **1.8.3.1 Use of ICT Gadgets to Protect books from Book Theft and Mutilation**

Information and Communication Technology (ICT) came into existence around the 1980s and can be defined as "any electronic device that can be used for broadcasting telecommunication and mediated communications". Cell phones, RFID, CCTV and computers are examples of ICT gadgets (Parvez, 2011). Also, Azmi and Nishat (2008), defined Information Communication Technology (ICT) as the "integration of computing, networking and information processing technologies and their applications.

Book theft and mutilation is a severe concern in not just academic libraries but all types of libraries. The use of ICT security system has been adopted in many developed countries in checkmating security challenges in the library. Radio Frequency Identification (RFID) system, surveillance

cameras, perimeter alarm system, movement detector, electronic gates, and cloud computing technologies are some the gadget used in preventing book theft and mutilation in the library (Ogboniyomi, 2011). In a similar vein, Cruz cited in (Maidabino, 2013) attributed the use of electromagnetic security device in the library to protect library resources is a major technological approach that has been adopted worldwide. He added that all library collections are valuable. Therefore libraries should adopt the use of sophisticated ICT gadgets in protecting the library and its collection. McGinty and Trapskin cited in (Maidabino, 2013) listed the sophisticated ICT gadgets to be RFID technology, heat sensor, surveillance cameras, panic alarms, door intrusion alarms, delay devices and metal detectors.

The introduction of information and communication technology reinvented the services and advantages that students, staff and researchers could get from academic libraries. Patel (2018) disclosed that the traditional manual system of physical libraries has various limitations, such as the circulation of information. ICT effectively eradicated the problem of dissemination of knowledge in libraries through the invention of the barcode. Barcode denotes messages embedded in data encoded in a sequence of black and whites bars of different shapes and sizes within two of them (Shukla and Syuhlo, 2015). Shukla and Syuhlo (2015) invention of the barcode led to speed, reliability and accuracy in books circulation in libraries.

Shukla and Syuhlo's (2015) summation disclosed that barcode fostered rapid information and communication in recent years. The circulation process of data by academic libraries underwent a significant change by encasing relevant data that validate the verification of digital educational resources (Shukla and Syuhlo, 2015). In other words, the problem of verification and circulation necessitated the invention of the barcode, ensuring that academic libraries do not suffer from any dangers of theft and vandalism by students.

Academic libraries sometimes face the danger of theft or vandalism by their users. The act of mutilating academic resources for personal use could irreparably damage the said educational material, preventing its information from other students who might need it as well. Thus, academic libraries that have adopted ICT tools sometimes place closed-circuit television (CCTV) stands around them to see and catch any potential thief or book mutilator (Bhoi, 2017). Ajie (2019) also affirmed the use of closed-circuit television stands in libraries in order to deter the insecurity of theft and mutilation that had erstwhile faced traditional physical library. The Closed-circuit television placed in libraries also prevents staff and users alike from engaging in improper conduct that does not befit academic manners (Bhoi, 2017). Dhanalaksmi and Upp (2009) suggest that the use of CCTV in academic libraries have impacted the safety of library resources. Merely seeing it can put fear in the mind of the thief, but the shortcoming is that in a big academic library, the CCTV may not cover corners which are mostly where the notorious act is done.

The introduction of information and communication technology (ICT) into the services and day-to-day business of libraries have brought in improved innovations into the educational spheres. An example of innovation introduced into foster library services include the use of Radio Frequency Identification (RFID). The introduction of RFID promoted an era in which academic libraries could operate at user-friendly and faster mode (Bhoi, 2017). The introduction of RFID into libraries' resources also deter people from succumbing to theft and mutilation of the available academic books within the said library (Ajie, 2019). In other words, the introduction of RFID by libraries that had since opted for ICT aids enables them to eradicate the insecurity of theft and mutilation, which has since become the norm for traditional physical libraries (Bhoi, 2017; Ajie, 2019).



The use of Radio Frequency Identification (RFID) also prevents time wastage of users of the libraries while offering them with efficient services (Bhoi, 2017). In other words, RFID does not only deter users from theft, but it also helps them to save time. Thus, the introduction of RFID had since improved the outlook of libraries that adopted the innovations available in ICT services. In contradiction to the benefit of RFID, Dhanalaksmi and Uppa (2009) explained that if the RFID system is not upgraded or used with other sophisticated gadgets library users with an understanding of how it works will render the system useless and steal the book

#### **1.8.4 Library Security**

Safety of library materials is of great importance to academic libraries. Security and storage of library collections should be a top priority for library managers to prevent their books from theft or mutilation. Issue of securing books did not start today; it started since the emergence of writing (Akor, 2013).

Academic libraries are established to support teaching, learning, research and other services of its parent institution. For the rationale behind the establishment of academic libraries to be achieved, the library management must put in their best in protecting library collections from theft and mutilation (Aina, 2004). Udensi and Sadiku cited in (Akor 2013) added that academic library is a complex institution that holds a large number of quality materials to meet the continual information needs of students and staff; therefore, its collection should be protected from both theft and mutilation.

Academic libraries are set up to cater to the information needs of its institution. Libraries are the focal point of the institution. Users are from a diversified background which makes the use of the library different. Due to the diversification of users, the use of the library and its resources becomes

very high, which directly makes the library vulnerable to crime. Book theft, mutilation, defacement and vandalism of library resources have deprived many library users of their information need. The probability of successfully stealing or mutilating a book is high; this has encouraged more users into this criminal act. Why the need to tackle library security is important the library is also trying to protect its traditional role of serving users by not scaring users with critical security control (Ogbonyomi, 2011).

Academic libraries, like other professional institutions, could become vulnerable to various dangers, which may either lead to loss of educational data or loss of lives. Dawar and Shivarama (2016) disclosed seven categories in which insecurities could become classified; they include natural threats, intentional threats, unintentional threats, environmental threats, physical threats, site-support threats, and technical threats.

Dawar and Shivarama (2016) depict natural threats as insecurities that academic libraries could incur as a result of natural calamities, which include earthquakes, floods, storms, tornadoes, and other extreme temperatures. Natural threats often lead to loss of academic books and other educational resources, which may abruptly set back the educational development of the respective students.

Dawar and Shivarama (2016) portray intentional threats as calculated misconducts done by people such as identity or property theft, mutilation, and pillage. In light of the introduction of information and communication technology to academic libraries, intentional threat pertains to crimes done by people that result in loss of books and educational materials of academic institutions such as universities. In other words, intentional threats deal with the dangers that academic resources and data would likely face when tackling calculated crimes by criminals or vandals.

Unintentional threats, like the name implies, entail insecurities that an academic library might likely face due to accidents and other forms of accidental acts. The risks include unintentional dangers incurred as a result of tripped over the electric cord, unintentionally pouring water over books or other academic resources. For example, a person may create unintentional threats when his or her coffee spills over a book being read.

Dawar and Shivarama (2016) also disclosed the other four classifications of insecurities that may affect the resources and services provided by academic libraries. The researchers introduced different categories to lay more emphasis on the threats; they include:

Environmental threats, like the name implies, involve insecurities that could occur in libraries as a result of environmental factors. The environmental factors that may likely affect the security of libraries include lightning, fires, flooding, and dust. Ecological threats mostly affect traditional manual libraries since their stored information only appears in physical books, journals, magazines, minutes, and other academic resources (Dawar and Shivarama, 2016). For example, an academic library might incur damages to its books when it experiences a sudden struck of lightning, which might spark a fire to the books within the educational premises. In short, environmental threats could lead to the sudden destruction of academic resources placed to advance the transmission of information in libraries (Ajie, 2019).

Physical threats, as described by Dawar and Shivarama (2016), portray insecurities that an academic library might likely incur as a result of physical factors such as theft, vandalism, mutilation, and any form of the careless act by people—either students or non-students. Akor et al. (2019) also affirmed that physical threats pose a threat to the academic resources and services in libraries, especially in traditional manually printed books and documents. In other words,

physical threats mostly affected libraries that had not adopted ICT in their information dissemination and processing. In other words, the digital library does not fall prey to the physical insecurities that might become incurred in academic libraries.

Site-support threats pose as insecurities that might likely affect academic libraries as a result of their geographical location. Site-support dangers embody vulnerabilities such as electrical power, climate control, and telephone (Dawar and Shivarama, 2016; Harkins, 2016). For example, academic libraries might face eventual destruction when its location experiences frequent electrical power irregularities. Dawar and Shivarama (2016) also disclosed that site-support threats could occur to both digital and manual libraries. Harkins (2016) went further to attest that site support threat could lead to an unexpected occurrence of damage to academic properties and people within academic libraries.

Another form of insecurity that academic libraries might likely face include line tapping, improper system processing, and using malicious software (Dawar and Shivarama; Ajie, 2019). The examples above showed that technical threats could also adversely affect the educational operations of academic libraries. For example, the infusion of malicious software to digital libraries might result in the loss of e-resources available within them. Technical threats could also affect the physical space when a technician carelessly runs a wire, which might spark a fire to damage physical books and other educational properties.

#### **1.8.4.1 Book Theft and Mutilation**

Mutilation and theft in the library have affected library users in search of the information and has also reduced the motivation of the library management in procuring more information resources in the library. The researcher explained how the security of the university library materials are

greatly affected by some desperate clientele who in the process of using the materials unlawfully remove some important pages of the materials they are using (Akor, 2013). Library security issues need immediate attention from the librarians and library administrators after a research was conducted on nine academic libraries in Benue State, Nigeria, discovered that theft of books and journals were more common in most of the libraries. It was discovered in the course of study that absenteeism of library staff, ICT gadget and security personnel contributed to insecurity of the libraries. Libraries cannot perform their role of supporting the curriculum, teaching and learning process in tertiary institutions if resources are not secured and are continuously vandalised (Amaakaven and Jam, 2006). Book theft and mutilation and its effect on services of Benue state polytechnic library Ugbokolo. He opined that the reason of theft and mutilation in libraries are caused as a result of few tables and chairs, inadequate collections, absence of proper loan policy, inadequate staff and staff attitude to duty and lack of photocopying services. He added that academic libraries are not just threatened by theft and mutilation but also by natural disaster (flood, fire and pest) and damages from the poorly ventilated environment or careless handling of library materials (Akor, 2013).

Academic libraries, like other professional institutions of the world, face their share of insecurities. The most common problems that have since affected academic libraries involve book mutilation and theft, which deprive the users (who may be researchers and scholars) the opportunity of gaining access or retrieval to their needed information. Akor et al. (2019) affirmed to the statement above when they said that books and other academic materials found in libraries—due to their penchant to appear 'valuable and expensive'—pose as targets of illegal acts such as book mutilation and theft. In other words, information stored in the library often comes in the form of rare or/and

expensive books that sometimes lure some of the users into nefarious activities in order to get their hands on them either by hook or by crook.

Akor et al. (2019) also disclosed that the insecurities incurred as a result of theft and book mutilations of library books often become too complicated to tackle: the perpetrator often become successful in his or her criminal acts. Akor et al. further stated that the said criminals and vandals often go beyond stealing books or other academic documents alone: they also steal other personal properties of the other users, which include phones, money, purse, laptops, and wallets. Akor et al. attested that thieves and vandals of library properties often indulge in their nefarious acts quite differently from one academic institution to the other. In other words, the thieves in one university might appear to only steal money, and other belongs while the thieves from other universities might only steal the library books for personal research or to resell them.

Studies have shown that users of the particular libraries often become the ones who had done most of the criminal acts done to the said academic library books (Akor et al., 2019; Nebeolise, 2013). The statement above meant that researchers and scholars who registered in the library often appear as perpetrators of the book mutilation and theft. Akor et al. also revealed that human factors should not only get the blame for the theft and mutilations that occur to library properties. There exist other unintentional factors that may result in the damages of books and other academic properties in the library.

Studies have since shown that, apart from human factors, natural factors often play a part in the mutilation and damages done to academic library books (Akor et al., 2019; Dawar and Shivarama, 2016). Akor et al. disclosed that natural elements such as lightning, earthquake, floods, and fire sometimes lead to the damages made by books and other academic properties. Dawar and

Shivarama (2016) further echoed Akor et al. (2019) summation that environmental influences also factor into the insecurities posed to academic books and other library properties. In other words, academic libraries would need to factor in both human and environmental elements in securing their academic books and properties.

Mutilation is the most unattended threat that library books are suffering from, library administrators have not seriously tackled this threat. As far back as 1973, it was discovered that after the installation of electronic gadgets in a library, there were increased cases of book mutilation. After a thorough investigation, it was revealed that since library users could not steal the book, they started ripping out vital pages from the book (Kesler, 1977). In a similar vein, Watstein (1983) added that book mutilation was an unwelcome by-product of the successful use of ICT security gadgets to prevent book theft.

### **1.8.5 Conclusion**

This literature review presented essential topics interwoven within the subject of finding the roles of information and communication technology (ICT) in the protection of books and other academic resources in academic libraries. The literature review depicted the role of academic libraries to their parent institution. The literature review further showed the existence of threats to libraries—both the traditional academic libraries and ICT-adopted academic libraries—which include theft, mutilation, cyber-attacks, and financial constraint, or low budgeting. The literature review, through the analysis and inputs from scholarly journals and books, validated the essential roles of information and communication technology in the protection of publications in academic libraries.

## **Chapter 2: Methodology**

### **2.1 Methodology Introduction**

"A research method is a strategy used to implement that plan. Research design and methods are different but closely related because good research design ensures that the data obtained will help in answering the research question more effectively" (DeBose, 2018).

In this chapter, the researcher describes the methods and procedures used in collecting and analysing data for this research. Interview was the primary instrument used to collect data for this thesis. To achieve the objective of this research on the roles of Information and Communication Technology (ICT) in securing books in academic libraries this chapter will be structured into; research design, sampling – selecting respondents, data collection, data analysis, research ethics and limitations of the methodology.

### **2.2 Research Design**

#### **2.2.1 Research Philosophy**

Education qualitative research design is known as Phenomenology (Creswell cited in Mariwilda, 2015). The rationale behind research philosophy is to orient readers of the series of assumptions made by the researcher to assess the research question thoroughly. Researchers at every stage of research make a series of assumptions knowingly and unknowingly (Burrell and Morgan cited in Saunders, Lewis and Thornhill, 2015, p.124). Crotty (cited in Saunder et al., 2015) explained that assumption could be epistemological (assumption about human knowledge), ontological (assumptions about realities encountered in research) and lastly, axiological (assumption about the extent and ways the researcher values's influence the research process).



The research question for this study is "how effective is the ICT gadgets used in the selected academic libraries in securing book and what is the next level of ICT gadgets the library might use in reducing book theft and mutilation"? Going by the research question, the most suitable philosophy is epistemology. Dudovskiy (2018) there are different branches of epistemology which are "pragmatism (accept concept to be relevant only if they support action), positivism (factual knowledge through observation), realism (relies on the idea of independence of reality from the human mind), and interpretivism (involves researchers to interpret elements of the study thus integrates human interest into a study)."

Interpretivism is a type of research philosophy that the interviewee knowledge of reality is a social construction by human actors, and it has nothing to do with natural science (Eliason; McIntosh cited in Chowdhury, 2014). The major reason why researchers adopt this philosophical style is that it bolsters the value of the qualitative data (Kaplan & Maxwell cited in Chowdhury, 2014).

### **2.2.2 Research Approach**

Most researchers using a qualitative method in their study usually, adopt the use of interpretative phenomenological analysis (IPA). It is frequently used because it examines the detailed and nuanced analysis of the lived experience of a small number of participants (Smith, Flower & Larkin cited in Tuffour, 2017). The research question for this study is "how effective is the ICT gadgets used in the selected academic libraries in securing book and what is the next level of ICT gadgets the library might use in reducing book theft and mutilation"?

Going by the research question, this study is qualitative because, it is most appropriate when the researcher is searching for reasons, motivations, and opinion. It helps to unravel a persisting problem (Defrazo, 2009). It also falls under a descriptive research category as it describes the

phenomenon being studied, "it is used in unravelling new meaning and describing what exists" (Dulock, 1993). Saunders *et al.*, (2015, p 175) added that descriptive research is mostly associated with research questions that start with 'How', 'What', 'Where', 'Who' or 'When'.

Data collected for this research is from selected academic libraries in Ireland; this makes it a case study research. Eisenhard and Graebner (2007), pointed out that a case study is most appropriate when the researcher is seeking to get substantive knowledge of something in a particular area.

### **2.2.3 Research Strategy**

In selecting the right strategy for any research, the research question must be considered. To produce a good study, the strategy used must be appropriate as not all methodology fits all research question. A research strategy is a series of plans that a researcher will take to ensure that the objectives of the research questions are answered. Basically, it is the link between the research philosophy, data collection and how the collected data will be analysed (Denzin and Lincoln cited in Saunder *et al.* .2015, p.177)

While quantitative research deals with numbers, figures and statistics, this study is qualitative, and it deals with language and interpretation. Interview, observation and focus groups are the most prominent data collection instruments used in qualitative research. The strategy adopted for the collection of data for this study is a simple semi-structured interview. The semi-structured interview was chosen because it gives the interviewee the chance to explain outside the question asked. Semi-structured also combines both advantages of structured and unstructured interview style, which makes it best for this study (Pollock, no date). The author added that in a structured interview respondent is tied to the question asked, which may affect the response while on the other hand, an unstructured interview is like a free-flowing conversation between the interviewer

and the interviewee. This style is also not adequate for this research, as some important questions might be left behind or the consent form may not cover some area of the conversation. Full details of the collection and analysing of data are located on session 3.4 and 3.5 this chapter.

#### **2.2.4 Time Horizon**

A researcher can adopt either a cross-sectional study or longitudinal study. A cross-sectional study which is also known as 'snapshot' is research done at a particular time frame while the longitudinal study is research done over a long period (Saunders et al. 2015, p.200). This study is about the journey so far on the role of ICT gadgets in securing books in academic libraries in Ireland. Going by Saunders et al. and research question the most suitable for this research is a cross-sectional study (snapshot). Another reason why cross-sectional is most suitable is that longitudinal study cannot be completed over the space of three months allocated for this research. Longitudinal is most suitable for diary-like research which is done over a long period.

### **2.3 Sampling- Selecting Respondents**

The selected academic libraries for this study are Dublin Business School Library, Athlone Institute of Technology Library, Trinity College Library, University College Dublin and Dublin City University. To get a more traditional perspective, the researcher added a public library in Kildare. According to Denscombe (2012, p.95) "when a research population is small, the researcher may decide to include all participants. However, Denscombe added that even in a fairly small-scale population, the participant should be selected based on their relevance to the research question".

The researcher adopted a non-probability sampling, which will allow the study to carry out purposive sampling, which is also known as judgement sampling. Purposive sampling is the act by which a researcher selects participants for research due to the role or quality of the individual or particular group (Etikan, Abubakar and Sunusi, 2016). In light of this, the researcher selected librarians that their daily routines deal with library ICT and book handling. Other members of the library would have one way or the other been important, but due to time constrain, the participants were those whose role matched the research question. Five academic librarians and one public librarian were selected—the reason a public librarian was selected is to get views from a more traditional library setting. In the event of consent withdrawal from any of the selected interviewees, another suitable librarian will be found as a replacement. Participants for the research were selected from the following roles below.

**The acquisition librarian** is selected due to the fact he/she is responsible for acquiring and preservation of books. The librarian that specialize in this area will provide well knowledge of how books are damaged in the library.

**Library assistant** that receives books after being borrowed and also who uses the RFID device will have a valid contribution to this dissertation. The participant can provide information about how books are mutilated. Information will useful in recommending ICT gadget for the library.

**System librarian** – this participant is well endowed with information about the library ICT gadgets so will be very important to get his view about how ICT is securing books and what are the future steps the library should take.

**Head Librarians** – in most small academic libraries, the head librarian has good knowledge of all the operations that happen in the library. Moreso head librarian stands a good position to answer questions like what is the next step of ICT gadgets the library will use in securing books.

The librarians for this study were selected from Athlone Institute of Technology, Trinity College Dublin, Dublin Business School, University College Dublin, Dublin City University and Kildare Public Library. To protect the identity of participants and to avoid their contribution been traced to their institutions, the researcher used generic abbreviation to analyse data collected.

## 2.4 Data Collection

"In-depth interviewing differs from survey interviewing. Suchman and Jordan cited in (Lucas, 2014), survey interview critics, show that interviews are interviewer/respondent co-productions. This implies that respondents' cognitive and affective access to information may depend upon the co-constructed context. Consequently, different interviewers may elicit different answers from the same respondent, a possibility that can destabilise confidence in interview results" (Lucas, 2014).

The instrument used for collecting data for this is study is a semi-structured interview. To avoid critics of a survey - interview stated by Suchman and Jordan, the researcher studied the interview questions, and a copy was also sent to the research supervisor for validation before commencing with the interview. The rationale behind the use of interview for this study has already been stated. This study is epistemological (assumption about human knowledge), an interview is the best method for enquiring individuals experience, view and opinion about something. The study is to examine how effective is the use of ICT gadgets in securing books in academic libraries.

Interviewing academic librarians will provide information on how effective the use of ICT gadgets have been over the years.

The interview was conducted over the internet using a personal computer and video conferencing software (zoom). The researcher would have preferred face to face interview as it is regarded as the 'gold standard' when adopting an interview as a data collection instrument but, due to the closure of all academic libraries in Ireland as a result 'COVID 19' pandemic the best alternative method according to Redlich-Amirav and Higginbottom (2014) is voice over internet protocol (VoIP), and social media are used when face to face is not feasible. The merit of using the VoIP and social media is that the researcher can capture a few expressions of the interviewee and the conversation can be recorded in mp4 format. The most recently used software for these are zoom, google meet and skype.

To ensure that this study adheres to General Data Protection Regulation (GDPR), a formal introduction to why, how and when the research will be conducted was sent to respondents (see appendix two). The researcher collected the emails of the respondents from the official website of their institutions, and an email of introduction with information form and consent sheet was sent to respondents. The researcher ensures the email sent was inline with netiquette protocol. Respondents that accepted to be interviewed were sent a private, secure zoom link, and the interview was recorded and stored on the researcher's google drive. The researcher also stated that the recorded interview was to allow better transcribing and will be retained until the study is graded.

## 2.5 Data Analysis

After the completion of the interviews, there is a need for systematic analysis of data, to help prevent bias in judgement and also help in gathering relevant data from the interview. Many researchers think they understand the information and can conclude immediately, but it is not so, as body language, voice and gesture to a particular question give more information (Kara, 2019).

This dissertation is a qualitative research that has adopted a semi-structured interview as an instrument for collecting data. The data collected was analysed using thematic analysis. 'Thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data. It is widely used in qualitative analytic method' (Boyatzis cited Braun and Clarke, 2006). Holloway and Todres cited in Braun and Clarke stated that thematic analysis should be the first option of every researcher doing qualitative research. This because using thematic analysis in a study, will endow the researcher with core skills that that will be essential when conducting other forms of qualitative analysis. Due to the flexibility of thematic analysis, Ryan and Bernard cited in Braun and Clarke (2006) argued it should be a method in its own right.

For proper analysing of data collected the researcher adopted the six-phases of thematic analysis stated in (Braun and Clarke, 2006) which are; 'Familiarising yourself with your data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. 'Nvivo a qualitative research software was used in achieving the six- phases of thematic analysis.

Nvivo is a software program developed for researchers who wish to use qualitative or mixed-method research. Interview is one of the key specialisations of the software. The usefulness of the

software includes analysing and organising audio, ability to import citation from referencing software and ability to playback video or audio for proper transcribing etc (Yeager, no date).

## **2.6 Research Ethics**

"A proper research must contain information on ethics. It is not just an option but a fundamental feature for quality research" (Denscombe, 2014, p.340). There are different ethical implications attached to any research method chosen. A good number of ethical issues can be predicted ahead of time and adequately taken care of during the design stage of the study (Saunders et al. 2005, p.249).

The major ethical issue in this study would have arisen if the researcher had succeeded in doing both observation and interview. In observation, the researcher intended to watch activities of users in the selected libraries, which will also include under 18 (minor) library users, this would have been a serious ethical issue to consider. The researcher, only instrument for collecting data was the interview, and all participants were above 18, so there was no ethical issue on age. The main ethical concern associated in this research was the recording of the interview, identity of interviewees and how the recorded interview will be retained. The researcher gave the reason why the interview will be recorded. Assurance was offered to participants that their identity will not be included in any part of the study and recorded interview will be stored on the researcher's Google Drive and will be permanently deleted after the research has been graded. It was stated on the information consent form that participants have the right to withdraw their consent at any time of the research if they feel uncomfortable. In the event of withdrawal of consent, the researcher has put in place plan B to replace the interviewee with another participant from the same college. Saunders et al. ethics



checklist was used to ensure that the research adheres to all ethics that are associated with qualitative research (2015, pp.246-261).

## **2.7 Limitation of Methodology**

Noting the limitation on every research is very vital. Researchers must identify limitations, explain their importance, how the limitations were managed and advice to future researchers on how to overcome such kind of limitations (Connelly, 2013).

The most significant limitation of this study was the sample size and target population. Under the amended university act 1997, there are about 11 universities in Ireland, 11 institutes of technology, 4 national institutions, 7 constituent colleges of Irish universities and 46 independent colleges. Academic librarians selected was not evenly distributed to the third level institutions in the country. The limitation was caused by the low response rate from librarians across the country, and the research was stipulated for three months. To overcome the limitation, the academic libraries selected were among the best in their category.

Another limitation experienced in this research was the instrument used in collecting data. The researcher had wished to adopt observation and interview as the instrument used in collecting data for this study. The researcher was unable to achieve this as all academic libraries were closed indefinitely due to the pandemic. Observation would have provided a clearer view of how book theft, mutilation and ICT gadgets in the selected libraries works. The researcher read several kinds of literature on the research topic to get a view of the subject matter.

## Chapter 3: Results

### 3.1 Introduction

This research aims to examine how effective are the ICT gadgets currently used in protecting books from theft and mutilation. Also, been investigated is the reason why the library users commit this crime and how it is being done. There were seven questions asked each was to allow the interviewee to share their experience, opinion and view on the subject matter.

This chapter is to present the findings of the interview conducted with the six interviewees. Five selected academic libraries and one public library in Ireland. The researcher adhered to the rules of a semi-structured interview which allows free-flow of conversation withing a giving set of questions. The interview questions are:

- What is the current situation on book security in the library?
- Why do you think users deface or steal books, and how is the act been done?
- What measure is in place to ensure that loaned books are correctly returned?
- What ICT gadgets is the library currently using to prevent book theft and mutilation?
- What makes a gadget effective?
- What gadget(s) can you suggest for the library?
- Does the library have plans for securing more security?

Qualitative findings are idiographic. Interviewees gave their everyday life experience on the effectiveness of ICT gadgets in securing books from theft and mutilation. The six phases of Braun and Clarke was applied in analysing data collected from the semi-structured interviews. The researcher familiarised with the data by reading and re-reading, respondents initial ideas were noted. The second phase was to generate themes, with the aid of Nvivo; the researcher was able to

code interesting features systematically. In phase three, codes were developed into themes. In phase four of the process, the researcher checked if the "themes work in relation to coded extracts and entire data set." A thematic map was also generated in this phase. In phase five, clear definitions and names were developed for each theme, while in phase six, the final analysis was put into the write-up of result (2006, p.87-93).

As severally stated in the research design, to ensure the anonymity of the respondents, their names and libraries name will be represented with AL1, AL2, AL3, AL4, AL5 and PL1. The sample size use also needs to be put into consideration that the researcher could not get more participant for the study due to the effect of the pandemic. This research can-not be used to conclude how effective ICT gadgets used for securing books are in academic libraries in Ireland. Rather it is a snapshot of the role of ICT in protecting books from theft and mutilation in the selected third level institutions.

### **3.2 Book security**

Book security was extensively discussed in the literature review. The question was very important since literature cited were within the last seven years this implies that the issue of book security that started since the onset of the library is still a major challenge to academic libraries all over the world.

Respondents' gave their view on the current situation of books in their library. Most views were attributed to the post ICT gadget stage of the library. While AL2, AL3 and AL4 all gave similar views. To better investigate the research question, the researcher included a library with a more traditional setting (public library), and the findings were still similar to that of the selected academic libraries in Ireland.

AL2 stated that *'well the book security in the library has improved very well after the use of ICT gadgets.'*

All the libraries have fully adopted the use of sophisticated ICT gadgets except AL1 which gave reasons that the college libraries can-not wait to adopt the use of sophisticated ICT gadgets and that what is in place now is just basic. AL1 added that the library would make use of the very best ICT gadgets as soon as the library transition phase is completed. The use of ICT gadgets has improved book security in the selected libraries.

### **3.3 Reason behind book theft and mutilation**

This was an interesting question because prevention is always better than cure. If the library can be able to fix the reasons why students steal or deface books, then it will go a long way in reducing crimes in the library. The case on book theft and mutilation in PL1 is different from academic libraries scenario. While there is no too much pressure on books in public libraries and with long loan period and no fine on overdue books, there is no case of book theft. PL1 stated that;

*'In my experience, I have never been privy to any person outright stealing books.'*

This perspective was different in an academic library setting has the interviews stated reasons why student commit this crime

*AL1' some users are destructive, trying to have material all to themselves; they do not know any better. Some highlight books with pen thinking it will be useful for other students, not knowing it could be a distraction to others. some students are just careless when handling books.'*

*AL2' students steal books to avoid paying fine if overdue.'*

AL3 *'there is serious competition in a department in the college, students of this department tear vital chapter to get the best mark in an essay.'*

AL4 *'high demand for books and there are only a few copies in the library.'*

AL5 *' The main reason why people would steal book will be if there is a fine on their account and the account is stopped. The next thing is to try to steal the book. We found out that if anything like that will happen, then it is probably ripping out pages rather than stealing the book. We do not have a problem with student defacing the book with colour makers to highlight pages that are important just that some-times they forget and use a pen on them.'*

The reason why students commit book theft and mutilation as gotten from the interviewees are to avoid fines, high demand for books, poor user orientation, class competition, and some are just naturally destructive.

### **3.4 Technology to ensure loaned books are returned correctly**

The researcher adopted epistemological philosophy in this study. One of the assumptions led to this question. The six interviewees all gave the same answer. Often literature on the use of electronic gadgets to protect library resources always makes use of the phrase "book theft and mutilation", but it is sad to say nothing much has been done on the book mutilation in academic libraries. The most notable device to ensure books are not mutilated in the library is the surveillance camera (CCTV). In the findings, books were mutilated at corners around the library, and defaulters were not caught. It becomes almost impossible to be caught if pages of books were ripped out from a loaned book. This question triggered the researcher to ask if there is any

technology to check if a book is intact when returned. Respondents from all four libraries gave their response;

AL1 *'no, for now, is a manual process.'*

AL2 *'no, we ensure there are regular user-education and the library perform a manual check for damaged books the during summer.'*

AL3 *'no that's not checked. We can't detect if the book has been defaced.'*

AL4 *'no, due to our large collection we couldn't check every book.'*

AL5 *'No technology is used.'*

This discovery was one of the highlights of this study has it is surprising that the libraries management are aware of the impact of mutilation on any library; still, this issue has not addressed. Borrowing a book from the library and taking pages from the book is the easiest way mutilation can be done. A well-mutilated book can render RFID technology useless.

### **3.5 ICT gadgets used in the libraries**

There are numerous ICT gadgets for book security in libraries. ICT gadgets are also known as electronic security. The researcher asked the question to know the types of devices currently used in the library. Before examining how effective these gadgets are, it is important to list the devices already used in the selected academic libraries.

Interviewees responses were:

AL1 *'the library is currently using magnetic strips, bibliotheca gates and self-service machines'*

AL2 *'the library is using RFID tags, RFID gates, CCTV, self-service machines.'*

AL3 *'the library is using RFID tag, RFID gates, CCTV.'*

AL4 *'the library is using RFID tags, RFID gates, magnetic tape, library management system, self-service, gate alarm and CCTV.'*

AL1 is yet to adopt the use of RFID technology but affirm that the library knows the importance of using RFID and will start using it as soon as the institution transition has been completed. RFID remains the most current and advance device used in these libraries for book security.

### **3.5 Effectiveness of the gadgets**

In the literature review, it was discussed how academic libraries worldwide had adopted the use of ICT gadgets in protecting the library resources from theft and mutilation. There is an argument about which gadget is more effective and which is not. This argument was among the series of the assumption that led to the research question. To better understand how effective are the ICT gadgets currently used in the selected libraries, respondents stated that;

*AL2 'there has been a drastic reduction of book theft in the library. When the library was using tape- like device, it was not effective, but since the use of RFID, the library security has improved tremendously.'*

*AL3 '90 % of the library collection have RFID tags which makes it easy for the library to track books within the library. This has helped in reducing book theft but definitely not mutilation.'*

AL2, AL3, AL4 and AL5 pointed out that the use of ICT gadgets had improved book security in their libraries. The most used book security device is RFID technology. AL3 did mention that RFID can-not stop users from mutilating book in fact is the books can-not be taken from the library

without authorisation what happens is that pages are ripped out, or the RFID tag is simply removed, and the book can be stolen. Findings show that the only technology in the selected libraries that can prevent users from mutilating books while in the library is the CCTV, and most of the libraries do not pay attention to it. AL2 stated that 'the security officer at the reception monitors the CCTV in the library. These security men are not trained on librarianship, and they come in shift as they are not direct employers of the college which means they have little or no knowledge on book mutilation.

Some of the highlights of the effectiveness of RFID is that it can trigger the alarm if the book is not checked out properly, works with the library management software to save information about who is borrowing and bibliography of the book. It can also be used to track the movement of books within the library. The by-product of the use of ICT gadgets in the library has resulted in book mutilation because this is the only way book theft can be done in the library.

### **3.7 Suggestion for Improvement of ICT Gadget used**

This question was to investigate further if the current security system was as effective as explained by the respondents. This question was also important to know the technological strategy of the libraries in protecting their print collection.

When asked what ICT gadget will the library acquire or due to the current situation what ICT gadget will they suggest the library should make use in combating book theft and mutilation. All interviewees mentioned that RFID technology system is effective in protecting the books in the library, and the library does not have any plan for using any other technology.

*AL2, 'the current system in place is working perfectly, I do not think there is any plan to acquire more ICT gadgets.'*



Most of the libraries were suffering from mutilation. Since there was no technology in place to check if a book is mutilated, it makes it difficult for the libraries to know if they are actually mutilated. AL5 pointed out that they discovered that when books are returned that they discover some pages of the book were missing. AL3 explained how a particular department in the college was constantly ripping out pages of books and wished if there could be some technology.

### **3.8 Summary**

Findings from data collected shows that the security of books in the selected libraries has improved tremendously since the use of ICT gadgets. It also reviews that the major reasons behind book theft and mutilation is that class competition, to avoid fine if overdue, high demand and few copies of books and lastly some students are naturally destructive. The interviewees did affirm that book theft was not a major issue since the use of ICT gadgets like RFID, but it has now shifted to mutilation since the books can-not be stolen from the library. Students rip out pages from a book, and this act is carried out in corners where the CCTV can-not reach. The libraries only rely on user-education programs and library marketing promotions to educate users on how to handle library books. The fate of loaned books remains unknown as there is no technology to check the daily high numbers of books returned. ICT gadgets used in the library for book security are RFID gate, RFID tag, CCTV, self-service machine and magnetic strips. It was discovered that RFID is the most effective technology for book security in the selected libraries. RFID can track book within the library, can set off the alarm if not properly checked out, it also works with other security gadgets and software to store details of whoever is borrowing the book and also details of the book. As it seems at the moment, the libraries conduct user education and marketing promotions to

educate users on how to handle books because there is no available technology to detect if a book is mutilated.

## **Chapter 4: Discussion**

### **4.1 Introduction**

This chapter is to interpret findings from the data collected and how it fits previous research cited in the literature review. The main of this research is to examine how effective ICT gadgets currently used in the selected libraries are in securing books. The research sub-questions are to investigate the reason behind book theft and mutilation, types of electronic gadgets used in the library. In addition to this, the researcher will discuss the strength and weakness of the study. Furthermore, suggestions for future research will also be taken into account.

The discussion will revolve around the themes developed during the analysing of collected data.

The themes are:

- Book security
- Theft and mutilation
- Technology for detecting mutilated books
- ICT gadgets
- Effectiveness of the gadgets
- Improvement of ICT gadgets

### **4.2 Book security**

Book security was extensively discussed in the literature review. The question was very important since the literature cited was within the last seven years. This implies that the issue of book security that started since the onset of the library is still a major challenge to academic libraries all over the world. Maidabino (2013) stated that book theft and mutilation happens every day at least in every

library around the world. Martell cited in (Maidabino, 2013) also described book security as a worrisome situation facing academic libraries, and it is high time library managers adopt good mechanism in protecting its resources. Interviewees all acknowledged that there had been a significant improvement in book security since the adoption of ICT gadgets. The response of the interviewees validated Bhoi's (2017) statement of how the introduction of ICT into libraries has improved innovation into educational spheres, adding that the use of RFID has deterred library users from committing a crime in the library.

Although AL1 has not fully adopted the use of ICT gadgets but repeatedly stated that the library would use all available electronic security gadgets as soon as the library's new building is completed. This implies that the importance of ICT gadget in improving book security in libraries can-not be overemphasised. The above statement can be compared to the statement of Greenwood and McKean cited in (Saleem, Shabana and Sadik, 2013) that the use of electronic security gadget has been noted to be the major tool that can reduce book theft and mutilation in libraries. In a similar vein, Cruz cited in (Maidabino, 2013) also affirm that the use of electromagnetic (ICT) gadgets in protecting library book has proven to be the backbone of book security in libraries.

### **4.3 Theft and mutilation**

Prevention is always better than cure. It was necessary to know the reason behind the perpetual criminal activities that happen in the library. Maidabino (2013) stated that libraries could only do their best to secure the resources in the library that even the use of RFID does not guarantee 90% protection of books in the library. Interviewees pointed out that some students rip out pages of books due to class competition to avoid other students in the class from getting access to the book. Another reason was the high demand for books, and some are fine related issues. The interviewees

described some students as naturally destructive while some deface book due to poor library orientation. Most of the reasons why students steal or deface books was validated by Akor (2013) which stated that library users steal and deface book due to few tables and chairs, few copies, absence of proper loan policy, inadequate staff, and staff attitude.

Dawar and Shivarama (2016) explained that book theft and mutilation could be caused by natural, physical, intentional, unintentional, environmental, site-support and technical threats. It could be traced that the selected libraries are suffering from intentional, unintentional and physical threat. Intentional threat is any deliberate misconduct done by students that could result in the loss of some vital pages of the book or the entire book. They explained unintentional threats to be when there is loss of pages or the entire book as a result of students poor user education, while a physical threat is vandalism of library books through a physical attack. In the findings, it was discovered that students write on books because they do not know it is wrong; this can be classified as an unintentional threat. Students ripping out pages from a book or removing the RFID tag can be classified under (intentional/physical threat).

#### **4.4 Technology for detecting mutilated books**

Since the successful use of ICT security gadgets in protecting books, it was noted that the new trend was mutilation. Kesler (1977) and Watstein (1983) attributed that book mutilation was an unwelcome by-product of ICT security gadgets in libraries. The more effective the library security gadgets are, the more there might be cases of mutilation in the library. This can be juxtaposed to the findings that selected libraries are mostly suffering mutilation and not book theft since that is the only way books can be taken out of the library by ripping out vital pages of the book. It was also discovered that the only ICT gadget in the library that can prevent book mutilation is the use

of CCTV which the interviewees affirm are not that effective as there are many corners in the library that can-not be seen with the CCTV. AL2 even stated that the CCTV in the college is not even monitored by a trained library professional who can detect when the act is done. This supports the position of Dhanalaksmi and Uppala (2009) that one of the shortcomings of surveillance camera is that in big academic libraries, CCTV may not cover some areas, which is the strategy used by users when defacing or mutilating books. Books are mutilated right in the library, what will then be the faith of the book when it is borrowed from the library? Forley (cited in Maidabino, 2013) did mention how library books are of great value and as a result, make them very vulnerable to theft and mutilation. Respondents were aware of the value of books in their libraries and the negative effects of book mutilation and still only opting for marketing promotions and user-education knowing full well that some students can be naturally destructive.

The probability of successfully mutilating a book is high. This has encouraged more users into this criminal act. As long as library books remain a vital part of student success and there is no effective technology to deter students from performing this act, it will always remain a big issue to book security (Ogbonyomi, 2011). The statement of Ogbonyomi is a replica scenario of what the libraries were facing as no technology in the library could effectively detect if a book has been mutilated. This discovery was one of the highlights of this study as it is surprising that the libraries management are aware of the impact of mutilation on any library; still, this issue has not been addressed. In the 21st Century, there should be gadgets that can detect if a book has been mutilated. Borrowing a book from the library and ripping out pages from the book is the easiest way mutilation can be done.

#### **4.5 ICT gadgets**

As stated in the literature review, there is a lot of ICT security gadgets that can be used for securing books in the library. The theme "ICT gadget" can be interchanged with electronic gadget and electromagnetic device in this study, but they all mean the same thing. The gadget used by an academic library might be different from what another library uses since libraries adopt what could tackle the type of threat the library is facing. Cruz cited in (Maidabino, 2013) affirm that the use of electromagnetic security devices is now a common thing in most academic libraries of the world. There was evidence to back the statement from Cruz as all six libraries have adopted the use of ICT gadgets in securing books.

McGinty and Trapskin cited (Maidabino, 2013) listed library security gadgets to be RFID technology, metal detectors, delay devices, panic alarms, magnetic strips, bibliotheca gates and surveillance cameras (CCTV). In the findings, most of the ICT gadget used were among those listed by McGinty and Trapskin. This shows that academic libraries in Ireland have adopted the use of sophisticated ICT gadgets in securing their books. For libraries who were not using the most advanced book security gadget (RFID), they did mention that it is in their plan to adopt the use of RFID technologies fully. RFID remains the most current and advanced device used in these libraries for book security.

#### **4.6 Effectiveness of the gadgets**

In previous studies, researchers have all supported the use of ICT gadgets as a major tool in securing book. There is an argument as to whether if the gadgets used are effective or not. Ajje (2019) and Bhoi (2017) did mention in their studies how the use of surveillance camera (CCTV) has deterred library users from stealing or mutilating books. Dhanalaksm and Uppala (2009)

argued that although the use of CCTV cameras helps in preventing book theft and mutilation, it should be noted that there are locations in the library where the perpetrator of this crime carries out their operation. The criticism by Dhanalaksm and Upp supports the result of this study. In the findings, it was revealed that due to the size of the library students hide in corners to rip out pages of books or sometimes remove the RFID tag on the book. One of the interviewees did reveal that the control room for the library is located in the reception with the college security guard that knows little about library security. So the CCTV is not that effective in protecting the books in the library as no proper attention is given to it.

Another argument raised was on the use of RFID technologies. Ajie (2019) and Bhoi (2017), in their studies, described the introduction of RFID technologies in the library had changed the story of book security. Dhanalaksmi and Uppala (2009) did mention that unless other electronic security gadgets work properly or a new technology to tackle mutilation is invented, the RFID technology remains vulnerable to mutilation. The criticism by the researchers supports the findings on how effective is the use of RFID in securing books from theft and mutilation. It was noted that with the RFID the location of a book with a tag could be tracked and it also set off of the alarm if books are not properly checked out from the library. This makes it the most effective ICT gadget currently used in securing. The shortcoming of RFID remains that it can-not prevent mutilation, which is the major security challenge facing academic libraries. Since books can-not be stolen because of the RFID technology, the only option is to rip out important pages of the book, and that is why Watstein (1983) described mutilation as an unwelcomed by-product of an electronic security system.



#### 4.7 Improvement of ICT Gadget

The research sub-question was to know the next step of the ICT security gadget the selected libraries will be using to ensure their books are secured. Khan (2016) said academic libraries have metamorphosed from the normal traditional way since the introduction of Information Technology Communication (ICT). Aliyu (2015) added that one of the major services in the library that has been affected by ICT is the security of library resources. ICT is a trend that has come to stay so as long as library security challenges high, there will always be a need for improvement of current devices and also invent new gadgets to tackle the shortcomings of current devices. Akor et al. (2019) stated that academic libraries are the heart of any third level institution and play a primary role in making resources available to students, staff and researchers. For the library to achieve this goal, there must be adequate security in place to ensure the library resources are protected.

From the findings, the respondents acknowledged that the use of RFID has improved book security but as also led to book mutilation. Khan (2016) explained the impact of ICT on the library, and Aliyu (2015) specifically listed security section as one of the areas that have benefited from the use of ICT in the library. It is surprising that there is no technology in the library to prevent book mutilation, and the library administrators are not taking any technological approach to book mutilation that is the biggest threat to library. Akor et al. (2019) stated that books are one of the most important resources that make up the library, and the library is the heart of the college if truly this statement is correct why are the libraries not making any technological effort to prevent book mutilation is the library?

#### **4.8 Conclusion and Suggestions for Further Research**

The objective of this research was to examine how effective ICT security gadgets are in selected academic libraries in Ireland and what is the technological approach the library might use in the future to ensure library books are secured. Book theft and mutilation have been identified as a major threat to academic libraries all over the world (Maidabino, 2013). The use of electronic security systems (ICT gadget) has been identified as a tool that can be used to prevent book mutilation and theft in academic libraries (Greenwood and McKean cited in Saleem and Sadik 2013).

It is evident from the interview that academic libraries in Ireland have adopted the use of ICT gadgets in securing books from theft and mutilation. It is worth noting that most of the libraries have adopted the use of RFID technology, which was said to be the most effective security gadget currently available in the libraries. The interviewees mentioned surveillance cameras, self-service machines, library management system, magnetic strips and bibliotheca gates are the other security systems used in the selected libraries.

As demonstrated in the research, there are different reasons why library users steal or mutilate books. It was noted that competition, high demand, carelessness, poor user education and students been naturally destructive in nature was the reason behind the unending attack on library books. Furthermore, it was revealed that since of ICT security gadgets in the libraries most especially RFID technology there had been a drastic reduction of book theft in the library, and the current challenge now is book mutilation. There is no technological approach to stop the unending problem facing these libraries.

The strength of this study is underpinned on the fact that the researcher selected high prolific interviewees and adopted a qualitative approach. The semi-structured interview, which allows the researcher to collect vital data outside the outlined interview questions helped in digging out more findings. The researcher also ensured that the closure of academic library buildings did not hinder the use of recent scholarly literature. The limitation of this research is that the researcher could not use an observational as an additional instrument for collecting data. Observation would have allowed the researcher to gain the first-hand experience on how theft and mutilation are done and also test the effectiveness of the security gadgets used. In addition, the sample size was another limitation. Selected libraries were not evenly distributed among different types of third-level institutions in Ireland. In light of this, it is recommended that to achieve a better result in further studies it will be necessary to include more participants from an evenly distributed background and also the use of observation as an instrument in collecting data will help in tailoring the interview questions.

In this study, it was discovered that with the aid of RFID and other ICT security gadgets, there has been a reduction of book theft. This implies that the current technology used in the selected libraries in Ireland are effective in preventing book theft. The major concern is that the libraries are suffering from the unwelcome by-product of an effective electronic system. The libraries currently do not have any technological plan to stop or reduce book mutilation in the library. The researcher suggests if a study can be done to investigate the impact of mutilation on library books and also develop an electronic gadget that can prevent or reduce book mutilation. This study should be a mixed methodology of qualitative and quantitative. The target population should include both students and librarians. The researcher should come from a computer engineering background, or

any related field as data collected should be used to design a new device that will be able to prevent book mutilation.

## Chapter 5: Reflection on Learning Experience

### 5.1 Introduction

Reflective practice has become a household name in education and career development. An individual can evaluate their current skills and experiences; Reflective practices close the gap between theory and practical learning (Thompson and Pascal, 2012). For a better understanding of this chapter, the researcher decided to write in the first person as it relates to his journey through the completion of his master degree in Information and Library Management. Having completed a bachelor's degree in Library and Information Technology made me familiar with the library world, and that made the Master study a little daunting.

Travel is itself is a form of education, so I decided to take an adventure to study outside my continent, which was the first time to leave my country. Starting the Master program late coupled with me trying to adjust to a new culture, speaking style, finding accommodation and piled up assignments made me restless, but the saying "*no pain no gain*" was my motivating theme. Coming to Dublin Business School was a whole new level, lecturers are like colleagues very supportive and always available to help. We were twelve in the class, and that is the most amazing set of people have ever met in my life. They accepted me despite being the last to start the course, and they made sure I am not disadvantaged in any way.

### 5.2 Dissertation Choice

In my undergraduate, my final year project was "factor affecting the development of academic libraries in Nigeria." It was discovered that due to poor security, there was a high rate of book theft and mutilation in academic libraries in Nigeria. It was recommended that with the aid of information and communication gadgets in academic libraries, the rate of book mutilation and theft

would drastically reduce. Reading books in the library, I discovered that most of the books had been mutilated with paintings and permanent markers, which makes it very difficult to retrieve information. The dissertation topic was worth researching, bearing in mind that the purpose of any academic library is to support the teaching and learning of its parent institution. Lack of access to information in the library may diminish the purpose of why the library was set-up. Another rationale behind the topic is that I have an interest in working in an academic library.

### **5.3 Literature Review**

The literature review chapter of this dissertation was to orient readers towards previous research carried out on library security and other related topics. It focused on how my research will add to previous research, how and why the addition of my research is important. Literature review shows how the research question was derived. It also shows how this research is linked to previous research and build the argument of why this research should be undertaken. The literature review was structured from a generic theme to a more specific theme.

Gathering literature for this research was not easy, as most works used were electronic resources, and this was because of the closure of all libraries in Ireland to prevent the spread of the novel virus called corona. Literature was gathered from the college library electronic database, google scholar, other free scholarly online database and bibliographies of other books helped in searching and retrieving of related works.

My supervisor emphasised that I read and analyse at least ten related research publications on my topic to help me understand the research question as this would give a greater understanding of the subject and a better focus moving forward. This advice gave me a clearer view of the task ahead and what type of questions that will help me collect data for the dissertation.

## 5.4 Research Design

Research and methodology were familiar terms, but I never knew it was this important to research work until during my master degree. During my undergraduate project, research and methodology section was the easiest. It was three-page section and nothing new in the section as I only reproduce a similar design from the previous study, not knowing why the researcher adopted that style.

During the research proposal module, I discovered how important this section could be, and you must put into consideration many factors before choosing the research design and methodology for your research. The success of every research lies with the methodology used. I intended to carry out some additional approach, but due to the lockdown of academic libraries as a result of 'COVID 19' pandemic, I had to adopt an approach that will be doable and suitable to my research.

## 5.5 Data Collection Analysis

Collection of data analysis was one of the first stages of my dissertation. I was a bit nervous because colleges were physically closed, meaning everything is strictly online. Contacting participants was a huge task everybody was very busy, and only a few did reply back. The deputy librarian at Dublin Business School, my supervisor and a visiting lecturer from Athlone Institute of Technology came to the rescue as they supported me in getting contacts of librarians from other academic libraries that I can interview.

This was my first time using the interview as an instrument for data collection. To make things worse, the interview had to be carried out over a new technology (zoom). The interviews went well, and my interviewees were excellent as their contribution was scholarly. This made it easy for me to analyse with the aid of Nvivo software. This was my first time using the software, but with the aid of tutorials videos, I was able to analyse data collected.

The whole experience was lovely, and it allowed me to network with other librarians from top academic libraries in Ireland. As an upcoming academic librarian, the skills I got from collecting and analysing data will me become a professional librarian after studies.

## **5.6 Learning Style**

The term learning style is used to describe or explain how every student learns differently. Many students adopt different learning style; the most important thing is to know what works best for you (Manolis *et al.*, 2013).

There was a major shift in teaching style in Ireland. In undergraduate, everything was manual lecturers read note while the students write. I was conversant with this method, so it was easy for me to write, and it also helped me in assimilating what the lecturer was teaching. Coming to Ireland, where all my assessments and lectures note was online, and the speaking style was a little bit fast, so I had to rely majorly on my moodle for reading and understanding. Moodle was another technology I found useful and interesting as materials, lecture notes and reading list are all available for every course.



## References

- Adamu, R. and Abdullahi, S. (2018) 'Using Information Communication Technologies (ICTs) for Safeguarding the Libraries from Threats of Insurgency in Nigeria', *Sryawa Publications*, 2(2), pp. 1–11.
- Aina, L. (2004) 'Library and information science text for Africa', *South African Journal of Libraries and Information Science*, 71(1). doi: 10.7553/71-1-663.
- Ajie, I. (2019) 'A Review of Trends and Issues of Cybersecurity in Academic Libraries', p. 21.
- Akor, P. (2013) 'Security Management for Prevention of Book Thefts in University Libraries. A Case Study of Benue State University Library, Nigeria', *Library Philosophy and Practice (e-journal)*. Available at: <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2403&context=libphilprac>.
- Akor, P., Ekere, J. and Akor, S. (2019) 'The Use Of ICT for Security and Theft Prevention in Two University Libraries in NigeriaThe Use Of ICT for Security and Theft Prevention in Two University Libraries in Nigeria.', *Library Philosophy and Practice (e-journal)*, p. 41.
- Aliyu, M. (2015) 'Improving Library and Information Services: use of appropriate Information Communication Technology in Nigerian libraries', *Information Impact: Journal of Information and Knowledge Management*, 6(2), pp. 181–192. doi: 10.4314/ijikm.v6i2.
- Amaakaven, F. and Jam, Z. (2006) 'A Survey Of Security Problems In Academic Libraries In Benue State', *Zaria Journal of Librarianship*, 9(1), pp. 4–10.
- Azmi, R. and Nishat, F. (2008) 'Impact of Information and Communication Technology LIS: major shifts and practices', *6th International CALIBER University of Allahabad, Allahabad*.
- Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology*, 3(2), pp. 77–101. doi: 10.1191/1478088706qp063oa.
- Chowdhury, M. (2014) 'Interpretivism in Aiding Our Understanding of the Contemporary Social World', *Open Journal of Philosophy*, 04(03), pp. 432–438. doi: 10.4236/ojpp.2014.43047.
- Connelly, L. (2013) 'Limitation Section', *Medsurg Nursing; Pitman*, 22(5), pp. 326–336.
- Curtis, B. (2015) 'Academic Libraries And Innovation.', *Journal of Library Innovation*, 6(1).
- Dawar, V. and Shivarama, J. (2016) *Digital Information Security For Academic Libraries*, *ResearchGate*. Available at: [https://www.researchgate.net/publication/335389774\\_Digital\\_Information\\_Security\\_For\\_Academic\\_Libraries](https://www.researchgate.net/publication/335389774_Digital_Information_Security_For_Academic_Libraries) (Accessed: 16 July 2020).

DeBose, K. (2018) *Research Guides: Research Methods Guide: Research Design & Method*. Available at: <https://guides.lib.vt.edu/researchmethods/design-method> (Accessed: 8 July 2020).

Deliyannides, T. and Gabler, V. (2013) 'The University Library System, University of Pittsburgh: How & Why We Publish. In: *Library Publishing Toolkit*.', *IDS Project Press, Geneseo*, pp. 97–96.

Denscombe, M. (2012) *Research Proposals: A Practical Guide*: Open University Press. Available at: <https://www.dawsonera.com:443/abstract/9780335244072>.

Denscombe, M. (2014) *The Good Research Guide: For Small-Scale Social Research Projects*: Open University Press. Available at: <https://www.dawsonera.com:443/abstract/9780335264711>.

Dhanalaksmi, M. and Uppala, M. (2009) *RFID Based Library Management System*. India (Proceedings of ASCNT). Available at: <https://www.gaorfid.com/RFID-PDF/RFID-based-Library-Management-System.pdf>.

Dold, C. (2013) 'The Role of Librarians in Academic Success', *Journal of Systemics, Cybernetics and Informatics*, 11(2), pp. 1–5.

Dudovskiy, J. (2018) 'The Ultimate Guide to Writing a Dissertation in Business Studies: A Step-by-Step Assistance', *Research-Methodology*. Available at: <https://research-methodology.net/research-philosophy/epistemology/> (Accessed: 9 July 2020).

Dulock, H. (1993) 'Research Design: Descriptive Research', *Journal of Pediatric Oncology Nursing*, 10(4), pp. 154–157. doi: 10.1177/104345429301000406.

Ekere, F. (2014) 'Administration of academic libraries: A book of readings', in *Administration of academic libraries: A book of readings*. 2nd edn. Enugu: Praise House Publisher.

Etikan, I., Abubakar, M. and Sunusi, R. (2016) 'Comparison of Convenience Sampling and Purposive Sampling', *American Journal of Theoretical and Applied Statistics*, 5(1), p. 1. doi: 10.11648/j.ajtas.20160501.11.

Gabbay, L. and Shoham, S. (2019) 'The role of academic libraries in research and teaching', *Journal of Librarianship and Information Science*, 51(3), pp. 721–736. doi: 10.1177/0961000617742462.

Harkins, M. W. (2016) *Managing Risk and Information Security*. Berkeley, CA: Apress. doi: 10.1007/978-1-4842-1455-8.

Husain, S. and Nazim, M. (2015) 'Use of different information and communication technologies in Indian academic libraries', *Library Review*, 64(1/2), pp. 135–153. doi: 10.1108/LR-06-2014-0070.

Kara, H. (2019) *Use your interview data*. 1st edition. Thousand Oaks, CA: SAGE Publications (Little quick fix).

Kesler, E. G. (1977) 'A Campaign Against Mutilation.', *Journal of Academic Librarianship*, 3(1), pp. 29-29–30.

Khan, J. (2016) 'Impact Of Information Communication Technology On Library And Its Services'. Zenodo. doi: 10.5281/ZENODO.158975.

Lucas, S. (2014) 'Beyond the existence proof: ontological conditions, epistemological implications, and in-depth interview research', *Quality & Quantity*, 48(1), pp. 387–408. doi: 10.1007/s11135-012-9775-3.

Maidabino, A. (2013) 'Theft and mutilation of print collection in university libraries: A critical review of literature and proposed framework for action', *Annals of Library and Information Studies (ALIS)*, 59(4), pp. 240-246–246.

Manolis, C. *et al.* (2013) 'Assessing experiential learning styles: A methodological reconstruction and validation of the Kolb Learning Style Inventory', *Learning and Individual Differences*, 23, pp. 44–52. doi: 10.1016/j.lindif.2012.10.009.

Mariwilda, P. (2015) 'Phenomenology in Educational Qualitative Research: Philosophy as Science or Philosophical Science?', 1(2), pp. 101–110.

McCready, K. and Molls, E. (2018) 'Developing a Business Plan for a Library Publishing Program'. Available at: [https://scholar.google.com/scholar\\_url?url=https://www.mdpi.com/2304-6775/6/4/42/pdf&hl=en&sa=T&oi=gsb-gga&ct=res&cd=0&d=3328535920610125460&ei=5lMQX6LRKt28ygTTwqb4BA&scisig=AAGBfm3LftPnWZzWecOYf5-MugmHkOnH\\_w](https://scholar.google.com/scholar_url?url=https://www.mdpi.com/2304-6775/6/4/42/pdf&hl=en&sa=T&oi=gsb-gga&ct=res&cd=0&d=3328535920610125460&ei=5lMQX6LRKt28ygTTwqb4BA&scisig=AAGBfm3LftPnWZzWecOYf5-MugmHkOnH_w).

Nebeolise, L. (2018) 'The Impact of Information and Communication Technology (ICT) Compliant Librarians on Library Services Delivery in Academic Library: The Case of National Open University of Nigeria (Noun) Library', *International Journal Of Educational Benchmark (Ijeb)*, 10(1), pp. 118–129.

Ogbonyomi, A. L. (no date) 'Security and Crime Prevention in Academic Libraries: A Case Study of the Kano State College of Education, Kano, Nigeria', p. 6.

Parvez, A. (no date) 'Development In Library Services With The Advent Of Ict Based Products & Services: A Continuous Process', P. 9.

Patel, K. (2018) *Impact of ICT in Library and Society - Library & Information Science Network*. Available at: <http://www.lisbdnet.com/impact-of-ict-in-library-and-society/> (Accessed: 16 July 2020).

Pollock, T. (no date) *The Difference Between Structured, Unstructured & Semi-Structured Interviews*, Oliver Parks Consulting LLC - Technology Sector Recruitment Experts. Available at: <https://www.oliverparks.com/blog-news/the-difference-between-structured-unstructured-amp-semi-structured-interviews> (Accessed: 10 July 2020).

Redlich-Amirav, D. and Higginbottom, G. (2014) 'New Emerging Technologies in Qualitative Research', p. 14.

Saleem, A., Shabana, T. and Sadik, B. (2013) 'Application and Uses of Information Communication Technology (ICT) in Academic Libraries: An Overview', *International Journal of Library Science*, 2(3), pp. 49–52. doi: 10.5923/j.library.20130203.01.

Saunders, M., Lewis, P. and Thornhill, A. (2015) *Research Methods for Business Students*: Pearson Education. Available at: <https://www.dawsonera.com:443/abstract/9781292016641>.

Shukla, A. and Syuhlo, S. (2015) 'ICT Application in Academic Libraries', in. Available at: [https://www.researchgate.net/publication/327231430\\_ICT\\_Application\\_in\\_Academic\\_Libraries](https://www.researchgate.net/publication/327231430_ICT_Application_in_Academic_Libraries).

Thompson, N. and Pascal, J. (2012) 'Developing critically reflective practice', *Reflective Practice*, 13(2), pp. 311–325. doi: 10.1080/14623943.2012.657795.

Tuffour, I. (2017) 'A Critical Overview of Interpretative Phenomenological Analysis: A Contemporary Qualitative Research Approach', *Journal of Healthcare Communications*, 02(04). doi: 10.4172/2472-1654.100093.

Watstein, S. (1983) 'Book Mutilation: An Unwelcome By-Product of Electronic Security Systems', *Library & Archival Security*, 5(1), pp. 11–33. doi: 10.1300/J114v05n01\_02.

Yeager, K. (no date) *LibGuides: Statistical & Qualitative Data Analysis Software: About NVivo*. Available at: <https://libguides.library.kent.edu/statconsulting/NVivo> (Accessed: 22 April 2020).

## Appendix

### 1. Interview Questions

1. What is the current situation on book security in the library?
2. Why do you think users deface or steal books, and how is the act been done?
3. What measure is in place to ensure that loaned books are correctly returned?
4. What ICT gadgets is the library currently using to prevent book theft and mutilation?
5. What makes a gadget effective?
6. What gadget(s) can you suggest for the library?
7. Does the library have plans for securing more security gadgets?

## **2. Information and Consent sheet**

### **PROJECT TITLE**

The Role of Information and Communication Technology (ICT) in securing books in Academic Libraries.

I am Emmanuel Oguiche with student no. 10540647. I am a master student of Information and library management at Dublin Business School. My dissertation is on the Role of Information and Communication Technology (ICT) in securing books in Academic Libraries. The objective of this study is to assess the ICT gadgets currently used and what plans does the library have in future in acquiring more ICT gadgets. This dissertation will be submitted to the department to Information and Library Management department in partial fulfilment of the requirement for the award of Master of Science (MSc) in Information and Library Management of Dublin Business School.

### **WHAT WILL HAPPEN**

In this study, you will be asked questions that will help understand the role of ICT in securing books in the library. This will be done through interview and will be recorded over a smartphone or a PC. The reason for recording is for better transcribing. All information will be stored in a secure database and will be retained till after the dissertation has been graded.

### **TIME COMMITMENT**

The interview will be a single session that will not take more than 20 minutes.

### **PARTICIPANTS' RIGHTS**

You may decide to stop being a part of the research study at any time without explanation required from you. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You have the right to omit or refuse to answer or respond to any question that is asked of you. You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome. A full de-briefing will be given after the study). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

### **CONFIDENTIALITY/ANONYMITY**

The data collected will not contain any personal information. All information will be treated confidential and will be analysed as "Librarian A, B or C". Data collected is to help me complete my dissertation, which is a requirement for the award of Master of Science (MSc) in Dublin Business School.

**FOR FURTHER INFORMATION**

My supervisor or I will be glad to answer your questions about this study at any time. You may contact me at [Emmanueloguche29@yahoo.com](mailto:Emmanueloguche29@yahoo.com)

## Consent Sheet

### PROJECT TITLE:

Role of Information and Communication Technology (ICT) in securing books in Academic Libraries.

### PROJECT SUMMARY:

This project is to examine the use of ICT in securing books in academic libraries and what are the plans in acquiring more of these gadgets. It is qualitative research that adopted interviews as the instrument for collecting data. Five academic librarians and one public librarian was selected from five top academic libraries and one public library in Ireland to give their opinion about the role played by ICT in their libraries.

By signing below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), and (4) you are taking part in this research study voluntarily (without coercion).

---

**Participant's signature**

---

**Participant's Name (Printed)**

---

**Student Name (Printed)**

---

**Student Name signature**

---

**Date**



### 3. Ethics Approval form

Student Details	
<b>Student Identifier:</b>	Emmanuel Oguche (10540647)
<b>Submission Date:</b>	27 August 2020
<b>Proposal Research Title:</b>	Role of Information and Communication Technology (ICT) in securing books in Academic Libraries: A case study of Dublin Business School Library.
<b>Brief Description of the research:</b>	This research is to assess how effective are the ICT gadgets used in the library in securing library books and what ICT gadget(s) does the library intend to acquire in the future.

Sampling	
<b>Population of interest: (brief description)</b>	Five academic librarians and one public librarian were chosen from Dublin Business School, Trinity College, Athlone Institute of Technology, University College Dublin, Dublin City University and Kildare Public library.
<b>Sample of interest: (brief description of size and how it is chosen)</b>	Five Librarians were selected according to the roles they play in the library. The roles include Acquisition, reader service, system librarian and head of the library.

Primary Research - Data Management	
<b>Is the data anonymised – how is this done?</b>	The data collected will be anonymised. "Academic librarian 1", "Academic librarian 2 ..." and "Public librarian 1" will be used in describing interviewees.
<b>How is data confidentiality maintained:</b>	Data will be analysed with the aid of Nvivo software and stored on my personal computer.
<b>Where will the data be stored:</b>	Data will be stored on google drive and will only be accessed through my personal computer.
<b>When will the data be destroyed:</b>	The day after the time period for appeal-of-grade period has expired. Or, the day after any grade appeals has been finalised and closed.

Specific Ethical Considerations	
<b>Detail any aspects specific to your proposal that will require further ethical approval e.g. interaction with under-18 year-olds, experiments requiring deception, anything that might cause respondents any distress, etc.</b>	Recording and retaining of interview. Anonymity

Student  
Signature: Emmanuel Oguche

Date  
Signed: 27/4/2020