INCREASING THE USE OF E-LEARNING PLATFORMS IN TERTIARY LEARNING INSTITUTIONS FOR BLENDED DISTANCE PROGRAMMES IN ZAMBIA

BY

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A Dissertation Submitted to The University of Zambia in Partial Fulfilment of the Requirements for the Award of Master of Entrepreneurship and Innovation Management.

THE UNIVERSITY OF ZAMBIA

LUSAKA

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DECLARATION

I RODGERS HIMOONGA, do hereby declare that the work in this Study is solely mine. I further declare that this Research has not been previously submitted at any other university and that all referencing from other works have been acknowledged.

Signature: ..... Date: .....

APPROVAL

This Dissertation by Rodgers Himoonga is approved as a fulfilment of the requirements for the award of the degree of Master of Entrepreneurship and Innovation Management of The University of Zambia.

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ABSTRACT

As Zambia embarks on attainment of vision 2030 which spells that Zambia must reach a middle income status by the year 2030, highly skilled human capital to transform the social and economic landscape is necessary for poverty alleviation and enhancement of prosperity, the increase in the usage of e-learning platforms in tertiary learning institutions for blended distance programmes is a major leap to this attainment, hence the aim of this study. The main aim of the study was to increase the use of E- Learning platforms in the tertiary learning institutions for blended distance programmes. The objectives were to: (i) Describe the level to which e-learning platforms have been used by the tertiary learning institutions in Zambia. (ii) Identify the major challenges faced by tertiary learning institutions in increasing the usage of e-learning platforms in Zambia. (iii) Prescribe measures that would increase the usage of e-learning platforms in tertiary learning institutions in Zambia. The study was conducted at Evelyn Hone College, National Institute of Public Administration (NIPA) and Lusaka Business and Technical Colleges. The study covered five years time frame from 2015 to 2019 with regard to the environment surrounding e-learning platforms at the three institutions. The research used cross-sectional, pragmatic and mixed methods research design. In terms of sampling techniques, the study used Stratified Simple Random Sampling and Purposive or Judgmental Sampling. Each of the colleges was considered to be a stratum. The quantitative data was collected using two different Likert Scaled questionnaires for both lecturers and students while qualitative data was collected through focus group discussions. The quantitative data was analysed using Stata/SE 12.0 Package for Social Sciences researches and the qualitative data was analysed thematically. The study demonstrated that the level of use of the e-learning platforms in the three institutions of learning was relatively high with the following statistics, for lecturers; Evelyn Hone College (EHC) it was 28.89%, Lusaka Business and technical Colleges (LBTC) it stood at 57.77% and National Institute of Public Administration (NIPA) it was at 65.31% while for students it stood as follows; Evelyn Hone College (EHC) it was 14.52%, Lusaka Business and Technical Colleges (LBTC) it was at 21.43%, and National Institute of Public Administration (NIPA) it was at 65.83%. While the major bottlenecks to increasing the usage of e-learning platforms among colleges were inadequate training and lack of software and hardware facilities. In order to boost the utilisation of e-learning platforms, the colleges needed to make the e-learning platforms more user friendly (Ease of use), invest in appropriate hardware and software and alternative sources of power, and consider retraining the e-learning platforms users.

Key Words*: Evelyn Hone College, National Institute of Public Administration, Lusaka Business and Technical College*.

DEDICATION

I dedicate this work to Mum, Esther Muchimba Siabona who took care of me with immense interest in my academic development. Thank you Mum.

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ABBREVIATIONS AND ACRONYMS

ACMS	Innovative Campus Management System
Anx	Anxiety
ATT	Attitude Towards Technology
BI	Behavioural Intention
CBU	Copperbelt University
CFA	Confirmatory Factor Analysis
CIPD	Chartered Institute of Personnel and Development
CLE	Collaboration and Learning Environment
DOIT	Diffusion of Innovation Theory
EfEx	Effort expectancy
EHC	Evelyn Hone College
FC	Facilitating conditions
GNU	General Public License
ICT	Information Communication Technology
LBTC	Lusaka Business and Technical College
LCMS	Learning Content Management System
LMS	Learning Management System
MAPS	Model of Acceptance with Peer Support
MoA	Memorandum of Agreement
MPCU	Model of Personal Computer Utilisation
MTAM	Modified Technology Acceptance Model
NGOs	Non-governmental Organizations
NIPA	National Institute of Public Administration
ODL	Open and Distance Education
PC	Personal Computer
PDA	Personal Digital Assistant
PEU	Perceived Ease of Use

PEx	Performance expectancy
PR	Perceived risk
PU	Perceived usefulness
SE	Self-efficacy
SEM	Structural Equation Modeling
SN	Social Norms
SNS	Social Networking Sites
TAM	Technology Acceptance Model
TAM2	Technology Acceptance Model2
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
TTF	Task Technology Fit
TTTF	Theory of Task -Technology Fit
UTAUT	Unified Theory of Acceptance and Use of Technology
VLE	Virtual Learning Environment
ZRA	Zambia Revenue Authority

DEFINITION OF KEY TERMS

Learning	is a change in an organism's capacities or behaviour brought about by their own experiences (Davies, 2016). While Domjan in Houwer and Moors defines learning as an enduring change in the mechanism of behaviour (Houwer & Moors, 2013). Likewise and Lachman in Houwer and Moors too typify learning as a process that underlies behaviour (Houwer & Moors, 2013). Summarily, Learning in can be viewed as the process by which an animal (human or non-human) interacts with its environment and becomes changed by this experience so that its subsequent behaviour is modified (Barron et al., 2015).
Learning Management System (LMS)	stands for and it's a global term for a computer system specifically developed for managing online courses, distributing course materials and allowing collaboration between students and teachers (Epignosis, 2014).
An e-learning platform	is a set of interactive online services that provide learners with access to information, tools and resources to support educational delivery and management through the Internet (Ghirardini, 2011).

CHAPTER ONE: INTRODUCTION

1.1 Introduction

This chapter includes the research background, the statement of the problem, research objectives, research questions, the scope of the study, research rationale, challenges faced in the study, research structure and finally the chapter summary.

1.2 Background

Learning has been a central topic in psychological research virtually since the conception of psychology as an independent science (Ebbinghaus 1885; Thorndike, 1911). During the largest part of the previous century, it was even the most intensely studied topic in psychology. Also today, questions about learning are addressed in virtually all areas of psychology. It is therefore surprising to see that researchers are rarely explicit about what they mean by the term "learning". Even influential textbooks on learning do not always contain a definition of its subject matter (Bouton, 2007; Schwartz, Wasserman, & Robbins, 2002). Perhaps this state of affairs results from the fact that there is no general agreement about the definition of learning. To some extent, the lack of consensus about the definition of learning should not come as a surprise. It is notoriously difficult to define concepts in a satisfactory manner, especially concepts that are as broad and abstract as the concept of "learning". However, it may be unwise to conclude that definitional issues should thus be ignored. It is likely that all learning researchers carry with them some idea of what learning is. Without at least an implicit sense of what learning is, there would be no reason to devote one's time and energy to studying it. Addressing definitional issues in an explicit manner can thus help avoid misunderstandings and facilitate communication among teaching researchers (Houwer & Moors, 2013).

Technology has been appreciated as a basis for competitive advantage for various business sectors. The education sector has too utilised the e-learning technology and has recorded some progress in education accessibility. However, Kunda, Chembe & Mukupa in their paper titled "*Factors that influence Zambian higher education lecturers' attitude towards integrating ICTs in teaching and research*" brought out lack of adequate Internet bandwidth and lack of adequate hardware (insufficient number of computers) for lecturers and students as the major barrier and obstacle to integrating ICTs in researching, teaching and learning (Kunda, Chembe & Mukupa 2018).

Zambia Information and Communications Technology Authority (2016) indicated that out of ten provinces of Zambia, the population stood at 16 million. Out of this population, 11.6 million of the people had mobile telecommunication tools signifying a 74% mobile telecommunication penetration rate while the 6.1 million of the population uses mobile data which translates into 39% mobile data usage penetration rate.

As at 2016, the 6.1 million of the population which used mobile data was being supported by 38, 316 internet service providers nationwide. The above statistics provide evidence that mobile phones and internet had become major channels for education, creativity and self-expression for most of the citizens. However, 30% of the 6.1 million population who use internet are between the ages of 24 to 35 years. This 30% of the 6.1 million population translates into 1.83 million of the population of the internet users. Within the 1.83 million of internet users, only 18% (0.33 million) of the internet users, use it on educational activities such as research, studying, assessments and others.

1.3 Statement of the Problem

This research looked at the low usage of e-learning platforms at Evelyn Hone College (EHC), National Institute of Public Administration (NIPA) and Lusaka Business and Technical College (LBTC). Evelyn Hone and Lusaka Business and Technical Colleges use Astria e-learning platform while National Institute of Public Administration uses Moodle and they have been using these platforms for the past four years, two years and three years respectively by end of September 2019. Ideally, the three colleges after at most two years of having launched the platforms, all the staff (lecturers) attached on the distance programmes should have been able to use the e-learning platforms but only a few where able to use the e-learning platforms as of August 2019 as depicted in Table 1.1 below.

In the recent past, the above colleges at individual levels have made efforts to increase the use of e-learning platforms by investing millions of kwacha both in e-learning infrastructure development and staff training in order to increase the usage of these tools. However, despite this investment, the pace at which the e-learning platforms are being adopted is not impressive as expressed in Table 1.1 below.

As of December 2019, most of the local colleges and universities both private and government owned were using e-learning platforms to deliver their 100% distance and or blended distance programmes and had continued increasing their student population. This increase in student population in colleges and universities other than EHC, LBTC and NIPA, actually implied a reduction in the student population (market share) for EHC, LBTC and NIPA which might eventually lead to their respective closures. The effects of such institutional closures on both Government and employees of the three institutions can never be desired. Therefore, this study sought to increase the use of e-learning platforms among lecturers and learners on blended distance programmes at these three institutions.

In terms of literature, it is evident that there has been little effort made to increase the use of e-learning platforms both locally and internationally. Most of the studies done in the area of e-learning directed their energies on assessing whether lecturers and learners had intentions to use e-learning platforms and have not made adequate efforts to increase the utilisation of e-learning platforms in higher institutions of learning. Once more, this study focused on increasing the use of e-learning platforms at Evelyn Hone College (EHC), National Institute of Public Administration (NIPA) and Lusaka Business and Technical College (LBTC). As such, Table 1.1. summarises key data related to the problem statement.

Table 1.1: Summary of the Problem Statement Statistics

	EHC		NIPA		LBTC	
Parameter	Lecturers	Students	Lecturers	Students	Lecturers	Students
Targeted Population for adopting e-learning platform	61	189	80	247	65	30
Able to / Using e-learning Platform	8	-	16	-	26	-
Period under implementation (yrs)	4		3		2	

1.4 Research Aim

The aim of this research was to identify the major challenges faced in adopting e-learning platforms in the tertiary (colleges) learning institutions for blended distance programmes and suggest possible ways of increasing the usage of the e-learning platforms.

1.5 Research Objectives

The following were the objectives of the Research;

i) To describe the level at which e-learning platforms have been used by the tertiary (colleges) learning institutions in Zambia.
ii) To identify the major challenges faced by tertiary (colleges) learning institutions in increasing the usage of e-learning platforms in Zambia.
iii) To prescribe measures that would increase the usage of e-learning platforms in tertiary (colleges) learning institutions in Zambia.

1.6 Research Questions

The research was guided by the following over aching questions;

i) What is the level of usage of e-learning platforms on blended distance programmes in tertiary learning institutions?
ii) What are the major challenges faced by tertiary (colleges) learning institutions in increasing the usage of e-learning platforms?
iii) How can the e-learning platforms use be increased in tertiary (colleges) learning institutions?

1.7 Research Rationale

It is hoped that the findings of this research would change the perception that the learners as well as the lecturers have about E- learning which might lead to an improvement in the number of them using E- learning platform not only at the above mentioned institutions but also at other higher learning institutions. It is also hoped that the research findings will contribute greatly to the existing body of knowledge in the feild of E- learning thereby becoming the base line for future studies. However, the following are envisaged specific benefits from this research;

a) Colleges Management – there would be increased enrolments without any restrictions of a limited number of learners who should be in a class of any programme. Secondly, the increased use of the E-learning Platform would facilitate ease e-application processes for the potential students who may wish to apply for any programme at the Colleges. The other benefit is that management would have reduced administration costs for applications processes since the admission processes would be paperless and the responses would be on real time.

b) Lecturers – once there is increased use of e-learning platform, the training staff would be able to deliver training effectively for instance, a single assignment would be posted to many students at a goal unlike the current situation where a lecturer has to post manually an assignment to many students using their respective email addresses. The additional gain is that communication through the announcement function of the e-learning platform would be on real time. Further, the assessments done through a 100% online quizzes and tests would be objective since there would be no human interference in terms of marking.

c) Learners – the students would benefit from increased use of e-learning platform through increased interactions between them and their respective lecturers. Undoubtedly, there would also be elimination of costs associated with transport and accommodation since learners can achieve all the learning requirements from their respective homes or offices.

d) Researcher – the implementation of this project helped the researcher to understand the real causes of low e-learning platform usage and developed a solution to it. Finally, the project also facilitated the acquisition of the Master of Science in Entrepreneurship and Innovation Management.

e) The body of Knowledge – Validated the Modified Technology Acceptance Model (MTAM) developed by Soneka Patience and Phiri Jackson (Soneka & Phiri, 2019).

f) Governments – Research findings can be used in policy formulation on the adoption of e-learning platforms, new e-learning environmental initiatives and e-learning social changes.

1.8 Scope of the Study

The study was conducted at three learning institutions; that is, Evelyn Hone College (EHC), National Institute for Public Administration (NIPA) and Lusaka Business and Technical College (LBTC). The study covered the time frame of five years from 2015 to 2019 with regard to the environment surrounding e-learning platforms at the three institutions and blended distance programmes were of primary focus. However, the study's literature review was dominated by the literature published in the space of six years between 2013 to 2018.

1.9 Structure of the Dissertation

This dissertation was divided into six chapters. Chapter One is the Introduction which set the tone of the Research.

Chapter Two was Literature Review. This one is an extensive and comprehensive review of

relevant papers and journals, books and other academic materials on e-learning platform usage amongst tertiary learning institutions. The purpose of the chapter was to help the researcher acquire a thorough background understanding of Study and what other authors may have done in relation to the topic.

Research Methodology presented in Chapter Three, on one hand, looked at instruments used for data collection and analysis of this research based on past researches of similar topics. Finally, this chapter highlighted the justifications for final decision made on the selection of an appropriate research strategy and methodology used for this research.

On the other hand, Chapter Four brings out the research findings and analyses. This chapter presented the data collected as findings and analyses in relation to the chosen methodology in Chapter Two.

Finally, Chapter Five presents the discussion of the research findings in relation to the aims and objectives of this research while Chapter Six outlines the conclusions and recommendations based on research findings and analysis.

1.10 Chapter Summary

This chapter presents an overview of what the whole research was set to achieve by identifying the problem statement and the aim of the study, research objectives and their associated questions. Additionally, the ethical considerations, significance, scope and challenges faced in the study were presented. The structure of the research was presented prior to this summary. The next chapter carries out a critical review of literature and other relevant materials in relation to; "*Increasing the use of e-learning platforms in Tertiary Learning Institutions for blended distance programmes in Zambia*".

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Since the end of the 20th century, the phenomenon of learning has received increasingly more attention. There is a political focus on learning both nationally and internationally and a call for harnessing knowledge about learning and applying it more systematically to education (Dumont, Istance & Benavides, 2013). This development changed both the main purpose of education and its modes of delivery. This chapter provides literature from other researchers on this topic. The literature is predominantly composed of studies done in the space of six years between 2013 and 2018. This selection of literature's age was deliberate in order to improve the acceptability of the findings to current learning system. The major focuses of the literature were theories, models and knowledge gaps related to e-learning technology use outside an African context, within African and within a Zambia perspective.

2.2 Evolution of E- Learning

The development of the mobile technology brings a new era in E-Learning known as m-learning. Mobile learning can be defined as the portable and lightweight platform where the learner can engage in learning activity without having any geographical constraint. Mobile phones, smart phones, palmtops, handheld computers, Tablet PCs, laptops and media players aid mobile-learning technique (Kukulska-Hulme, 2005). In 1990s, 'Palm Pilot Personal Digital Assistants (PDAs), a handheld device was developed which performed multi tasks like calculator, calendar and notepad. When technology and 'learner-centred design' started developing, Mobile learning started to flourish simultaneously (Berge & Muilenburg, 2013).

Having gone through numerous and diverse evolutionary phases, e-learning is still evolving mutually alongside the upsurge in modern technology. Advancements in new technology make it practical to blend synchronous and asynchronous training into one. Modern e-learning methods are considered to be revolutionising contemporary learning systems. But history shows that education can only be developed by evolution and not by revolution (Daniel, 2014).

2.3 Current State of E- Learning

The global e-learning market, according to a report developed by the Global Industry Analysts, was estimated to reach US$107 billion by 2015 and was expected to rise by 23% by 2017 (Chuo, et al,.2015). The demand for LMS would grow from $2.65 billion in 2013 to $7.8 billion by end of 2018 (Pappas, 2015). With more than 500 providers of LMS on the market, only four

have market share higher than 5%. (Clarely & Mallon, 2012). These providers have a sum total of 9%, SAP with 8%, Oracle 7% and Cornerstone on Demand with 5% market share. Regarding the user base of LMS, Moodle has the highest number of users with 73.8 million; Edomo is second with 58 million followed by Blackboard, having around 20 million users (Pappas, 2015). Regarding the industry type, the educational sector has 21% share in the use of LMSs and it comprises the larger part of the LMS market. The industries that follow are: technology with 12%, manufacturing has 9%, consulting and healthcare have 7% and software development companies are at 4%, etc. (Medved, 2015). It is estimated that 80% of Higher education institutions in USA are offering at least several courses online and more than 50% are offering a significant number of courses online (Bichsel, 2013) while 32% of higher education students took an online course in 2011 (Allen & Seaman, 2013). In the same year, 77% of US corporations were using some form of e-learning to educate or train their employees.

In their 2015 survey, Learning and Development 2015, the Chartered Institute of Personnel and Development (CIPD) surveyed the growth of various E-Learning methods in organizations. The key findings of the survey are that, there will be 59% growth in 'E-Learning courses', 40% in 'Blended Learning', 36% in 'Virtual Classrooms and Webinars', 29% in 'Collaborative and Social Learning', 25% in 'Mobile Based Learning' and 11% increase in 'Gamified Learning', (CIPD, 2015).

2.4 Distance Learning in relation to E- learning

On one hand, Distance Learning is considered to be a formal interaction which uses one or more technologies to deliver instructions to students who are separated from the instructor and which support regular and substantive interaction between the students and instructors, either synchronously or asynchronously. Distance learning more often than not, incorporates technologies such as the internet; one-way and two-way transmissions through open broadcast, closed circuit, cable, microwave, broadband lines, fibre optics, satellite, or wireless communications devices; audio and video conferencing; or video cassettes, DVDs, and CD-ROMs, in conjunction with any of the other technologies (Clifford & Pond, 2012). In other words, distance learning is the acquisition of knowledge and skills through mediated information and instruction that encompasses all technologies and other forms of learning at a distance. Therefore, it can be concluded that distance learning is improved capabilities in knowledge and/or behaviours as a result of mediated experiences that are constrained by time

and/or distance such that the learner does not share the same situation with what is being taught (King, Young, Drivere-Richmond & Schrader, 2004).

Distance Education was defined by WVAdultEd Professional Development Program (2017) and in accordance with National Reporting System (NRS) Implementation Guidelines as a formal learning activity where students and instructors are separated by geography, time or both for the majority of the instructional period. Distance learning materials are delivered through a variety of media including but not limited to; print, audio recording, videotape, broadcasts, computer software, web-based programs and other online technology and instructors support distance learners through communication via mail, telephone, email, or online technologies and software.

Abbad et al (2009) defined E-learning to mean any learning that is enabled electronically. While E-learning, in the mind of OECD (2005) it is the use of information and communication technologies in diverse processes of education to support and enhance learning in institutions of higher education and includes the usage of information and communication technology as a complement to traditional classrooms, online learning or mixing the two modes. In essence, E-learning refers to the attainment and use of knowledge that are predominantly facilitated and distributed by electronic means. Many researchers have concluded that e-learning is the learning that depends on computers and networks and encompasses systems comprising of a variety of channels such as wireless and satellite, and technologies such as cellular phones (Arkorful, 2014).

Many writers have inter-changeably used many terminologies to refer to e-learning. Among many of these terminologies include; online learning, distance learning, distance education, computer-assisted instruction, computer-based instruction, technology-based instruction, technology-delivered instruction, computer-based simulation, and simulation games.
Brown, Charlier and Pierotti cited in Bell and Federman summarily defined "e-learning" as an application of a broad array of technological applications and processes that share a common feature of relying on some type of computer technology that promote learning (Bell & Federman, 2013).

However, E-learning can either be classified as Asynchronous E-learning or Synchronous E-learning. Firstly, Asynchronous E-learning is a form of self-study that is commonly facilitated by media such as email and discussion groups; supports work relationships among learners with teachers, even when participants cannot be online at the same time. As such, it is a key component of flexible e-learning. On the contrary, Synchronous E-learning allows for real-time interaction and just in-time responses between instructors and learners commonly supported by media such as video conferencing and chats. It has a potential to support e-learners in the development of learning-communities (Rym, Olfa & Mélika, 2013).

The major difference between traditional classroom instruction and distance education is the amount of face-to-face contact students have with an instructor and with other students. Students who are mainly distance learners do have some personal contact with their instructor, but not all contacts happen within the classroom. These students may enrol in a class, be pre-assessed, and receive orientation in the use of the curricula, but then accomplish most of their learning at home or somewhere else outside a classroom.

In the recent past, the Government of the Republic of Zambia has recognised the important role Open and Distance education (ODL) plays in human development, especially as regards the universal access to education and enhancement of instruction affordably, anywhere, anytime. As Zambia embarks on attainment of vision 2030 which spells that Zambia must reach a middle income status by the year 2030, highly skilled human capital to transform the social, economic landscape is necessary for poverty alleviation and enhancement of prosperity. In the wake of so many competing demands for the inadequate resource envelop for all sectors of national needs in Zambia, the Government is aiming at entrenching distance education as a medium of availing education and training to a greater number of the Zambian populace, especially those out of School. The Government has therefore included ODL in the development Plans and the education policies, (Open and Distance Learning Association of Zambia (ODLAZ, 2014).

2.5 E-learning Platforms

There are a variety of e-learning platforms with different levels of complexity, but their most common and important features include;

i. Learning content management – creation, storage and access to resources

ii. Curriculum mapping and planning – lesson planning, personalised learning experience and assessment
iii. Learner engagement and management – learner information and progress tracking
iv. Tools and services – forums, messaging system, blogs and group discussions.

Learning platforms are usually referred to as virtual learning environments (VLEs), learning management systems (LMSs) or learning content management systems (LCMSs). These terms are often used interchangeably (Ghirardini, 2011).

Ghirardini (2011) argues that the Virtual learning environments, or VLEs, usually are used to simulate traditional face-to-face classroom activities and facilitate teaching and learning with a strong collaborative component. Examples of VLEs include Moodle46 and Blackboard47 while a learning management system or LMS facilitates delivery and management of all learning offerings, including online, virtual classroom and instructor-led courses. It automates the learning courses and easily delivers training, manages learners and keeps track of their progress and performance across training activities which reduces administrative overhead.

In addition, the learning content management system (LCMS) focuses mainly on creating e-learning content. In other words, developers and administrators create content material, such as articles, tests, games, video and small units of digital content (content chunks), which then are rapidly assembled, reused and tailored into different courses according to learners' needs. LCMSs reduce development efforts and allow digital content to be easily repurposed.
Both LMSs and LCMSs are designed to manage course content and track learner performance and learning objects, but they differ in their purposes. While LMSs manage and track online activities, classrooms and all sources and events, LCMSs do not manage blended learning, but only the digital content, even at its lowest levels (Ghirardini, 2011).

Ghirardini (2011) states that new generation of platforms are modular and consist of "plug-ins" and "add-ons", software components that extend platforms' basic functionalities. For example, some LMS applications integrate plug-ins that extend performance management capabilities and support job competency data bases; while others include content management capabilities for central storage of all forms of content such as media assets and learning objects. Finally, enterprise resource planning software companies such as Oracle or SAP tend to extend their human resource offerings with LMS components.

Hosted vs. internally handled LMS

Ghirardini (2011) advances a notion that LMS platforms, both proprietary and open-source platforms, can be hosted externally by a vendor or handled internally within the organisation's IT structure. More often than not, the chosen modality depends on whether an organisation's policy is flexible or strict.

- Proprietary LMSs are licensed under exclusive legal right, restricted from modification, further distribution, reverse engineering and other uses. They are closed-source with licence costs per user.
- Open-source LMSs instead work under the terms of the General Public License (GNU). The licence is intended to guarantee freedom to share and change the program and ensures that it is free for all users.

Open-source software packages in e-learning include LMS and LCMS platforms, as well as course and media elements authoring tools.

The following section describes an array of e-learning platforms with their respective key features and functionalities.

2.5.1 Astria

According to The Copperbelt University (CBU) Memorandum of Agreement (MoA) (2018) signed between the University and The Astria Learning of Tampa, Florida of the United States of America, Astria Learning's origins are rooted in an understanding of the processes and problems that educational institutions face. The innovativeness and customer-centric approach delivered solutions through this platform support the improved delivery and quality of education around the globe.

Astria Learning presents several distinct management systems that work seamlessly together to deliver an effective experience for both personnel and students. For example, Astria Learning's Innovative Campus Management System (ACMS) provides an intuitive method of managing students throughout their educational journey. Their Payment Collection System accepts bank transfers, as well as debit and credit cards to make it easier to reach students of all backgrounds. Astria Learning's vibrant and expansive Astria Digital Library makes available over 172,000 e-books as well as millions of articles and journals. All of these robust and timely educational resources can easily be accessed at any time for research purposes or for further reading. This Learning Management System facilitates online distance learning (ODL) and engages students

in new and exciting ways to set them up for success in the ever-changing global business and educational environments. Astria Learning also simplifies the process of purchasing educational devices and literature such as tablets and laptops and e-books which are vital to the success of the students' learning.

2.5.2 MOODLE

Ghirardini (2011) states that Moodle55 is one of the widely used, free of charge and open-source learning platform. It was originally made for education, training and development environments to help educators create online courses with a focus on interaction and collaboration, although lately it has been extended to business settings as well. Moodle has more than one million users and almost 50 000 registered sites around the world. Numerous modules extend its functionalities for instance graphical themes, authentication and enrolment methods, games, activities and resources. Moodle runs without modification on Unix, Windows and MacOS.

Guragain, (2016) adds that Moodle is a learning platform that has been designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalised learning environments. The platform is an open source type that is very popular globally. The full form of MOODLE is Modular Object-Oriented Dynamic Learning Environment and it is developed using the PHP programming language. The platform is used in many countries around the world as it is available in various languages.

Moodle is a web application and can be downloaded from https://download.moodle.org/ for free by anyone. After downloading it, it can be installed on a web server and can be accessed using a web browser. It can also be edited to fit the ones need. The latest version of Moodle is 3.0.1.
On the main Moodle website https://moodle.org/, there is a demo section where one can understand how to use it. There are several benefits of using Moodle but the major one is that its orientation course is more structured. The instructor can create a quiz, create assignments and upload materials. The materials can be in form of audio or video files in addition to texts. Students can also track their progress from each chapter while using Moodle (Guragain, 2016).
Astria and MOODLE are the e-learning platforms being used by the Colleges which were sampled in this Research. However, there are a number of e-learning platforms available such as; Docebo, eFront, Dokeos and Claroline. Others include; ATutor, ILIAS, OLAT and Saka

CLE. All these platforms have common functionalities. Other e-learning platforms with similar features include LRN and Open Elms.

2.6 Theories of E- Learning

The technology and e-learning in particular, like any other field, have a number of related theories that lay a foundation to understanding their adoption. The following are theories that have been reviewed which relate to technology adoption;

2.6.1 Theory of Reasoned Action (TRA)

The theory of Reasoned Action was developed by Martin Fishbein and Icek Ajzen as an improvement over Information Integration theory (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). It was the first theoretical perspective to gain widespread acceptance in technology acceptance researches (Fishbein & Ajzen, 1975). TRA is a versatile behavioural theory and models the attitude-behaviour relationships. This theory maintains that individuals would use computers if they could see that there would be positive benefits (outcomes) associated with using them. Figure 2.6.1 presents the said Theory.

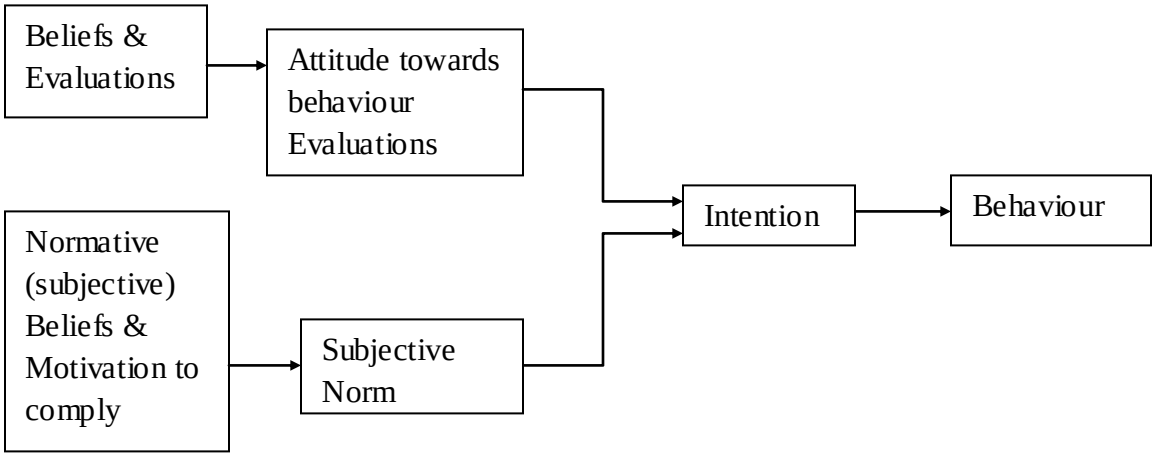

Figure 2.6.1: Theory of Reasoned Action

Source: Ajzen & Fishbein 2010 cited in Otieno, Liyayla, Odongo & Abeka 2016.

Theory of Reasoned Action (TRA) is a series of related concepts and hypotheses postulated by social psychologists to understand and to predict human behaviour. From the onset of TRA in behavioural research, it has been applied to study a wide variety of situations and is now regarded as one of the most influential theories about volitional human behaviour. It is based on the assumption that human beings usually behave in a sensible manner, as the name of the

theory suggest, they take account of available information and consider the implications of their actions. The theory postulates that a person's intention to perform or not to perform a behaviour is the immediate determinant of that action. Intention to adopt mobile phone payment technology in the rural communities for example can be seen to depend on the users' volitional behaviour. The new users of a technology normally take into account the available information about the new technology and consider implications of adopting or not adopting it. The information considered may be the cost implications, availability of support services, technical knowledge required to be able to adopt the technology and alternative ways of achieving the functions performed by the technology.

An attitude is a series of something that affects the way we think and behave while the subjective norms are behaviours that we perceive important people expect of us and our desire to comply with them (Otieno, Liyayla, Odongo & Abeka 2016).

Otieno, Liyayla and Odongo (2015) hypothesise that the stronger the intention to adopt a new technology, the more the person is likely to try applying this new technology and therefore the greater the possibility that the behaviour will actually be performed, thus the primary concern is with identifying the factors underlying the formation and change of behavioural intent. A person's intention to behave in a certain way is based on: their "attitude" toward the behaviour in question and their perception of the social pressures on them to behave in that way, that is, "subjective norms". The relative contribution of attitudes and subjective norms varies according to the behavioural context and individual involved. Attitudes are determined by the beliefs about the outcomes of performing the behaviour and the evaluation of these expected outcomes. The subjective norm is dependent on beliefs about how others feel the individual should behave and their motivation to comply with these expectations from others. This social pressure may have a bearing on the adoption of new technology. The subjective norm can be seen to play a key role in the decision to adopt a new technology or not in any given community. Since the theory of Reasoned Action can also be used in technology adoption and general research as a fundamental theoretical framework, some researchers have used it alongside other theories and models in technology adoption especially when attitudes and perceptions are involved. Attitude and subjective norm have been found to be important determinants of peoples' intentions to perform an action such as adopting and using a new technology and between the two constructs;

attitude is having a significant influence on the intention to adopt and to continue using the new technology (Otieno, Liyayla & Odongo, 2015).

Al- Aulame (2013) discusses that the Theory of Reasoned Action (Ajzen & Fishbein, 1980) considers being one of the earliest models developed to explain technology acceptance in the field of Psychology. The theory was developed to predict and explain the individuals' volitional behaviour and to understand their psychological determinants. The theory assumes that individuals are rational in nature and they will act based on the information available with individuals' behavioural intentions being the main determinant for their actions (Ajzen & Fishbein, 1980). The theory considers intentions as the main predictor of an individual's behaviour and any external effect towards behaviour will be through his/her intentions. Intention is viewed according to TRA Fishbein and Ajzen (1975) cited in Yousafzai et al. (2010) as having two determinants for people intentions; personal influence and social influence.

- The personal influence represents *attitude* which refers to the positive or negative evaluations of the behaviour performed by the individual (Ajzen, 1985)
- Social influence is *subjective norm* which can be defined as the degree to which a person believes that people who are important to him/her think that he/she should or should not perform the behaviour in matter (Ajzen, 1985).

The weight of these two determinates will differ based on the person performing the behaviour and on the intention being investigated. According to TRA, attitude is formed throughout the person's salient beliefs about a specific behaviour. These salient beliefs will connect the person's behaviour with the performance outcome.

Alsughayir and Albarq (2014) carried out a study that examined the applicability of the Theory of Reasoned Action (TRA) in a context of internet banking intention using Structural Equation Modeling (SEM). The study was intended to test whether the theory was acceptable or not in a new context among none western cultures. The simplified theory was tested using survey data from 350 respondents. Out of these, only 304 questionnaires were found to be usable whilst the rest were omitted owing to the incomplete responses or due to statistical circumstances. However, the results of the study suggested that compared to the TRA model, their generated model could create a much better understanding of actual internet banking behaviour among Saudi consumers in Riyadh. The results indicated that direct paths from attitude to actual

behaviour and when adding a path from SN to attitude would improve the predictive power of the model and convincing improvement in fit and more so than what had been established by the original TRA conceptual model.

According to Sheppard, Hartwick and Warshaw (1988) meta-analysis was done in 1980s on the TRA and it found that the theory had strong predictive utility. Still it was felt by some researchers including Professor Icek Ajzen that the theory was deficient in explaining behaviour especially of people who have little or feel they have little power over their behaviours. As a result, Professor Icek Ajzen added a new construct to the TRA. The new construct is the concept of perceived behavioural control which evolved the TRA into Theory of Planned Behaviour (TPB) (Ajzen, 1991).

2.6.2 Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (Ajzen 1985, 1991) is a successor of TRA and it introduced a third independent determinant of intention, perceived behaviour control (PBC). It is determined by the availability of skills, resources and opportunities as well as the perceived importance of those skills, resources, and opportunities to achieve outcomes (Kriponant, 2007). As Kriponant (2007) emphasised, by changing these three predictors (attitude, subject norm and perceived behaviour control), the chance that the person will intend to do a desired action can be increased and thus increases the chance of the person actually performing the behaviour.

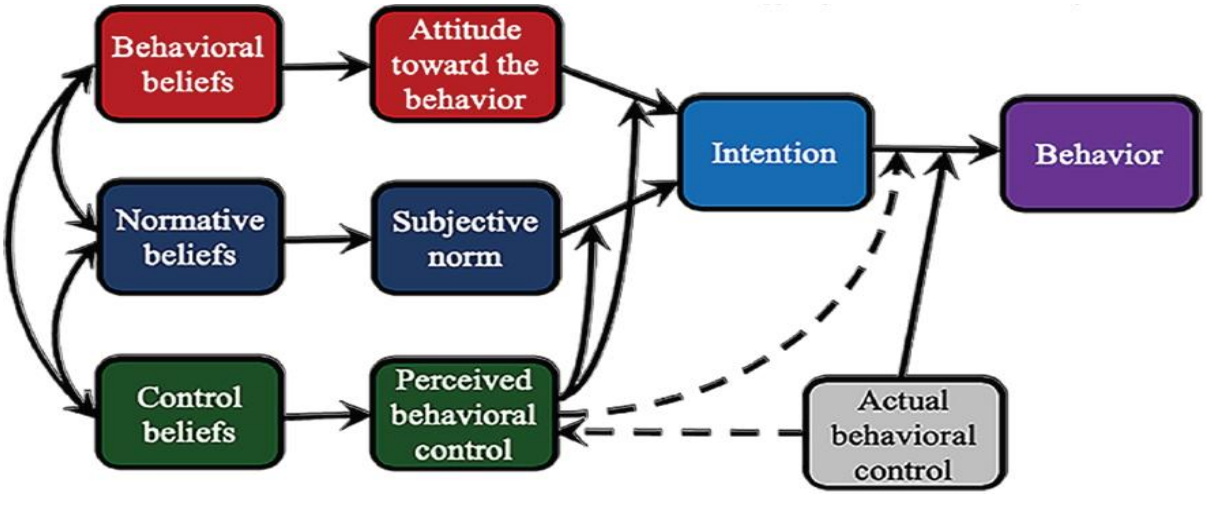

***Figure 2.6. 2: Theory of Planned Behaviour*; Source: Icek Ajzen, (2019)**

Al- Aulamie (2013) states that the Theory of Planned Behaviour is an extension of the Theory of Reasoned Action, developed by Ajzen (1985) to address the original model's limitations. The TPB introduced perceived behavioural control which will account for individuals' behaviour

under non-volitional control. Perceived behavioural control defined as the broken line shows that in some cases perceived behavioural control has stronger impact towards behaviour (Ajzen, 1991).

- Perceived behavioural control is also defined as an individual's perceived ability to perform the behaviour, which varies across situations based on factors that either assist with or obstruct the performing of the behaviour (Ajzen 1991, 2006).

Perceived behavioural control is developed based on control beliefs and the perceived power of the influencing factors. The Control beliefs are the beliefs an individual has about the extent of control they have over choosing to perform a particular behaviour, with regard to resources, abilities and barriers. Perceived behavioural control not only influences behavioural intent but also directly influences behaviour as the intention to perform the behaviour may be strong but a factor outside of the individual's control may obstruct the actual performance of that behaviour (Ajzen, 1991). Nonetheless, both the intention and perceived behavioural control are important in predicting individuals' behaviour. According to the TPB, for a person to carry out a successful behaviour, it depends on how much effort the person is willing to invest in the level of controls for instance knowledge, information and skills (Gist & Mitchell, 1992; Carr & Sequeira, 2007).

The Theory of Planned Behaviour has also been used to predict gambling behaviours. A survey was conducted to 80 college students which attempted to assess the utility of Ajzen's theory in predicting gambling behaviour and frequency. The results of this study supported the efficacy of using this theory to clarify gambling behaviour in the population. They found that perceived behavioural control and subjective norms predicted past gambling and subjective norms, attitudes and perceived behavioural control predicted the frequency of gambling behaviours (Cameron, et al. 2012).

Ajzen's Theory of Planned Behavior was recently applied also to social networking. Baker and White (2010) cited in Cameron, Ginsburg, Westhoff, & Mendez (2012) conducted a study examining the use of the Theory of Planned Behaviour to predict adolescents' use of social networking. A questionnaire was given to 160 students that measured the components of Ajzen's theory and then they were asked to report their social networking site use in the preceding week. Their study found support for the TPB's components of attitude, perceived behavioural control and group norms in predicting intentions to use social networking sites. The

purpose of this study was to assess the effectiveness of the Theory of Planned Behaviour in predicting college students' use of social networking sites (SNS). Social networking sites are defined as online products such as Facebook, Myspace, Twitter, or other websites which focus on maintaining and/or building relationships. The hypothesis was that a factor analysis would show items for each of TPB's components, would correlate within the component and the factor analysis would also lead to a regression model showing that SNS used as a planned behaviour conforms to Ajzen's conceptual model.

2.6.3 Theory of Task -Technology Fit (TTTF)

Strong, Deshaw and Bandy (1973)'s theory holds that Information Technology is more likely to have a positive impact on individual's performance and can be used if the capabilities of Information Technology match with the tasks that the user must perform (Goodhue & Thompson, 1995). TTTF consists of two major constructs, namely; Task Characteristics and Technology Characteristics as shown in Figure 2.6.3 below.

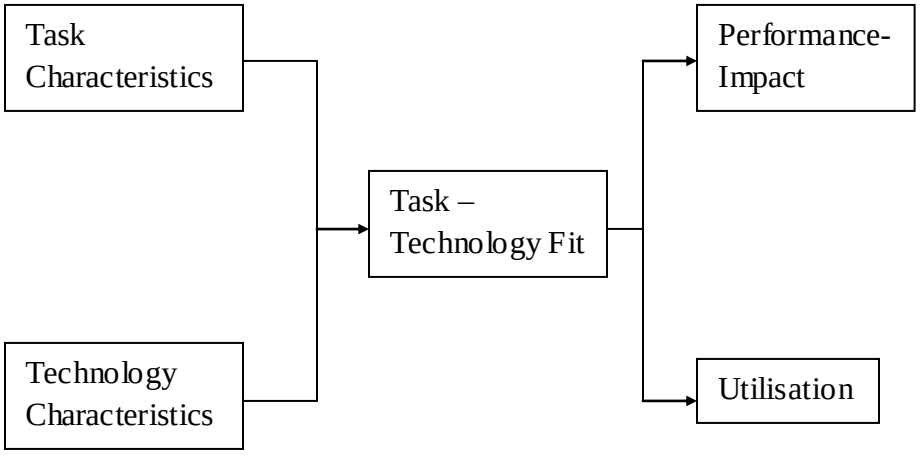

Figure 2.6. 3: Theory of Task-Technology Fit **(Source: Lai 2017)**

i. *Performance* - Performance is the accomplishment of a portfolio of tasks by an individual. High performance implies a high level of task-technology fit and satisfaction with the Information Technology (Goodhue & Thompson, 1995). High Task Technology Fit (TTF) increases the performance impact of the system.

ii. *Utilization* - Goodhue and Thompson (1995) presented precursors of utilization which included beliefs of using a system. They argued that TTF is the determinant of beliefs about the usefulness and importance of a system and the advantages gained from using a system.Utilisation is the behaviour of employing the technology in completing tasks.

Measures such as frequency of use or diversity of applications are used as operational phrases to refer to utilisation.

iii. *Task –Technology Fit* is the degree to which a technology assists an individual in performing his or her portfolio of tasks (Goodhue & Thompson, 1995). Task-Technology Fit means to create a match between the task characteristics and the technology characteristics, aiming to allow users to perform the task in a digital artefact effortlessly.

iv. *Task characteristics* - Refers to non-routineness (lack of analysable search behaviour) and interdependence (with other organisational units) of a task

v. *Technology characteristics* - The technology characteristics are described in two perspectives; Technical and Communication. In the technical view, technology characteristics refer to the capabilities of the system such as quality, reliability and functionality. In communication perspective, it refers to two modes synchronous/ asynchronous and proximate/distributed - reflecting respectively the time dispersion and the geographical dispersion (Song, 2010). Technology characteristic is alsodefined as the degree to which a electronic system or components from one vendor is able to communicate with the components from other vendors that is, interchangeability, compatibility and inter-relationships (Hossain, Standing & Chan, 2017).

Gehauer, Shaw and Gribbins (2006) stated that two large independent theories of TTF have emerged in the recent past. The first being initiated by Goodhue and Thompson (1995), established that TTF is an important concept in assessing and explaining Information Systems' success. The second, initiated by Zigurs and Buckland (1998), developed a systematic profile for the task-technology combination of group tasks and group support systems (GSS). While Goodhue and Thompson (1995) focused on individuals' use of Information Systems (IS) and presented a primarily positivistic research approach applicable to IS in general, Zigurs and Buckland (1998) focused on groups' use of IS and formulated fit profile applicable specifically to GSS.

Lai (2017) proposed a comprehensive technology-to-performance model that included characteristics of information technology, tasks, and of the individual user as explanatory variables for technology use and for individual performance. A simpler version of the technology-to performance model, referred to as the TTF model, found moderate empirical

support for the direct links between task and technology characteristics and user-perceived TTF. Results confirmed that TTF and usage together better explained the impact of information technology on individual performance (user-perceived accomplishment of individual tasks) than usage alone.

Al-Gharbawi (2016) stated that Task-Technology Fit (TTF) is another model which can be used to measure the effectiveness of information systems. This model is linking technology to performance. Task characteristics, individual characteristics, and technology characteristics are the determinants of Task-Technology Fit (Goodhue, 1997). Hence, TTF model indicates that if a technology provides features that fit the requirements of the task, then the performance will be increased (Irick, 2008).

Goodhue and Thompson (1995) suggest that the Task-Technology Fit (TTF) theory can be the basis for a strong diagnostic tool which can be used to evaluate whether Information systems (IS) and services in a given organisation are meeting user needs. It has been widely used since they first introduced it in 1995, mainly with quantitative methods in the form of opinion polls and laboratory experiments when researching how well an Information System (IS) handles the required task on a grading scale. The model has been improved in different ways over the years.

According to Lai (2017), Task-technology Fit (TTF) emphasises on individual impact. Individual impact refers to improved efficiency, effectiveness, and/or higher quality. Lai also assumed that the good fit between task and technology will increase the likelihood of utilisation and also to increase the performance impact since the technology meets the task needs and wants of users more closely. This conceptual model is suitable for investigating the actual usage of the technology especially testing of new technology to get feedback. The Task-Technology Fit is good for measuring the technology applications already released in the marketplace like in the google play store or apple store app (iTunes) and others.

D'Ambra, Wilson and Akter (2013) in their study on how well the use of e-books meets the requirements of academics, they used the task-technology fit (TTF) model to explore the inter-relationships of e-books, the affordances offered by smart readers, the information needs of academics, and the "fit" of technology to tasks as well as performance. They proposed that the adoption of e-books would be dependent on how academics perceive the fit of this new medium

to the tasks they undertake as well as what added-value functionality is delivered by the information technology that delivers the content. The study used content analysis and an online survey, administered to the faculty in Medicine, Science and Engineering at the University of New South Wales, to identify the attributes of a TTF construct of e-books in academic settings. Using exploratory factor analysis, preliminary findings confirmed annotation, navigation and output as the core dimensions of the TTF construct. The results of confirmatory factor analysis using partial least squares path modeling supported the overall TTF model in reflecting significant positive impact of task, technology and individual characteristics on TTF for e-books in academic settings; it also confirmed significant positive impact of TTF on individuals' performance and use, and impact of using e-books on individual performance.

2.6.4 Unified Theory of Acceptance and Use of Technology (UTAUT)

Researchers have proposed and tested several competing models such as the technology acceptance model (TAM) and models based on the theory of planned behaviour (TPB) to explain and predict user acceptance and use of Information Technology (IT). Venkatesh, Morris, Davis, and Davis (2003) synthesised these models into the unified theory of acceptance and use of technology (UTAUT). UTAUT identifies four key constructs; the performance expectancy, effort expectancy, social influence and facilitating conditions and four moderators that is, age, gender, experience and voluntariness are related to predicting behavioural intention to use a technology and actual technology used primarily in organisational contexts. According to UTAUT, performance expectancy, effort expectancy, and social influence were theorised and found to influence behavioural intention to use a technology, while behavioural intention and facilitating conditions determine technology use. Moreover, various combinations of the four moderators (gender, age, experience and Voluntariness of Use) were theorised too and found to moderate various UTAUT relationships.

UTAUT's five constructs also embraces other models constructs such as perceived usefulness, extrinsic motivation, job-fit, relative advantage and outcome expectations form the performance expectancy in the UTAUT model while effort expectancy captures the notions of perceived ease of use and complexity. As for the social context, Venkatesh et al. (2003) validation tests found that social influence was not significant in voluntary contexts.

Figure 2.6.4 below presents the Theory's constructs and their relationships.

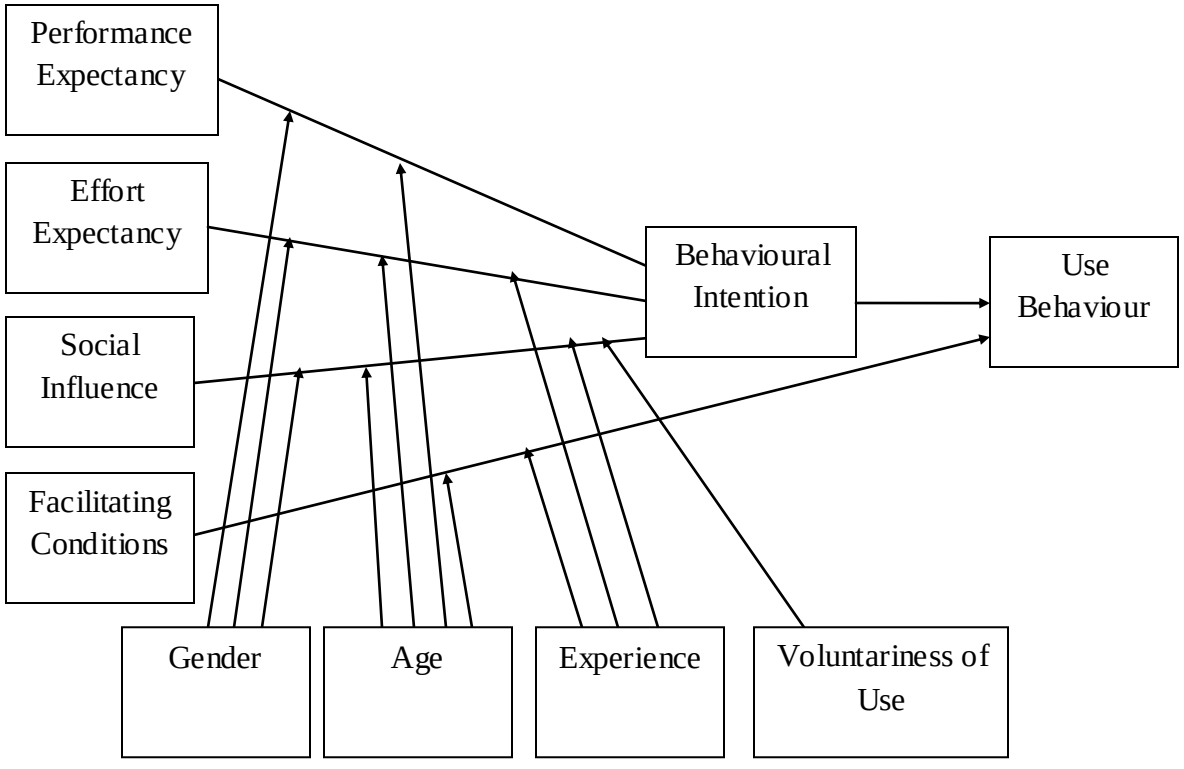

Figure 2.6. 4: UTAUT Model **(Source: Venkatesh et al. 2003)**

In longitudinal field studies of employees' acceptance of technology, UTAUT revealed that 77 percent of the variance in behavioural intention to use a technology and 52 percent of the variance in technology use.

Although researches consider UTAUT to have reached its practical limit of explaining individual technology acceptance and use decisions in organizations (Venkatesh et al., 2003), UTAUT-based research has thrived (Venkatesh et al., 2012). Specifically, research has applied UTAUT as is, applied it with other theories, or extended it to study a variety of technologies in both organisational and non-organisational settings. The continued growth of UTAUT-based research has partly arisen due to the proliferation and diffusion of new ITs such as enterprise systems (Sykes, 2015; Sykes, Venkatesh, & Johnson, 2014), collaboration technology in knowledge-intensive firms (Brown, Dennis, & Venkatesh, 2010), mobile Internet for consumers (Thong, Venkatesh, Xu, Hong, &Tam, 2011; Venkatesh et al., 2012), (Hong, Thong, Chasalow & Dhillon, 2011), e-government for citizens (Chan, Thong, Venkatesh, Brown, Hu, & Tam, 2010), and health IS in the healthcare organisations and society. IT has penetrated almost every aspect of human endeavour and various individuals in various contexts now use it. While the past decade has generated a large number of new ITs and associated studies based on UTAUT, in analysing the literature, it was found that the IS discipline is at a crossroads regarding what

the future holds for UTAUT and in particular, the possible theoretical contributions from further research into technology acceptance and use. It is believed that systematically evaluating the contributions of the existing UTAUT-based studies can reveal the utility of UTAUT and the limitations of existing UTAUT-based research from which one can then develop a new framework of technology acceptance and use with a view toward charting promising future research directions.

A study was carried out that aimed at determining the applicability of the Unified Theory of Acceptance and Use of Technology (UTAUT) model within a South African higher education setting and it intended to clarify the factors that were influencing students' intentions to make use of two digital technologies: an eBook and SLMS. 738 ICT students completed a questionnaire to gauge their responses to Performance expectancy (PEx), Effort expectancy (EfEx), Facilitating conditions (FC), Self-efficacy (SE), Anxiety (Anx), Attitude towards using technology (ATT) and Behavioural intention (BI). Statistical analysis was used to develop and assess a model of the factors that were affecting BI. Structural equation modeling was used and the goodness-of-fit test indicated that the model was supported by the data. PEx, FC and EfEx showed high practically significant relationships with BI. SE and ATT as mediators of the model were confirmed, however, gender as moderator did not reflect the original findings of UTAUT (Liebenberg, Benade & Ellis, 2018).

Tan (2013) explored Taiwanese college students' needs for English E-learning websites. The study used the unified theory of acceptance and use of technology to investigate and explain Taiwanese college students' acceptance of English E-learning websites. After analysis, the results demonstrate that performance expectations, effort expectancy, and social influence have positive effects on behaviour intentions and facilitating conditions; behavioral intentions also have positive effects on use behaviour. The conclusion was if students believed that English E-learning websites could help them increase their performance and that they are easy to use, then there could have been an increase in their intention to use English E-learning websites. The analysed data suggested that web designers needed to improve knowledge management functions and user interfaces to be easier to operate.

2.7 Models that Foster Technology Acceptance and Use

Given the varied continuum of these models, the researcher focused on the seven models that emphasise on the acceptance and adoption of technology (the Acceptance and Use of Technology). The following are some of the models reviewed;

2.7.1 The Model of Personal Computer Utilisation (MPCU)

The Model of Personal Computer (PC) Utilisation fits the Information System perspective to forecast individual acceptance and personal computer (PC) utilisation. Since MPCU model assesses actual behaviour (personal computer usage), it excludes behaviour intention from the proposed model. Furthermore, habits are also not included in the model because habits have a tautological relationship with current use in the context of PC utilisation. MPCU specifically evaluates the direct influence of affect, facilitating condition, long-term consequences of use, perceived consequences, social influences, complexity and job fit on behaviour (Taherdoost, 2017).

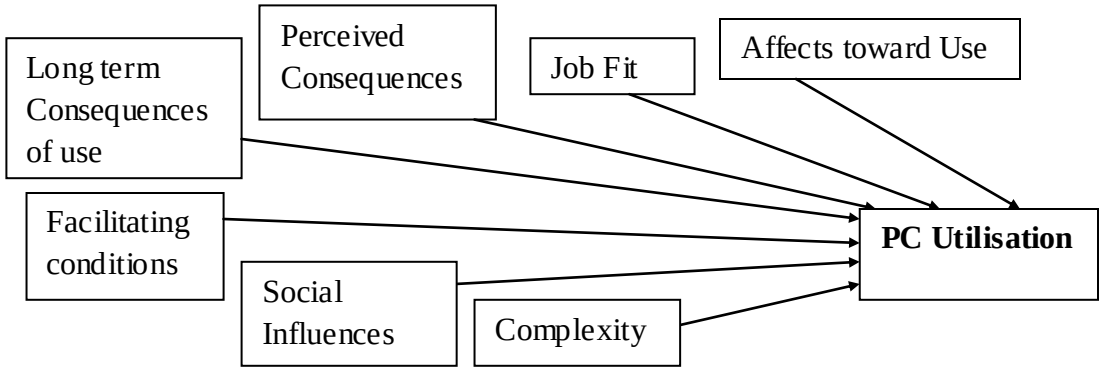

***Figure 2.7. 1: The Model of Personal Computer (PC) Utilisation*; Thompson et al. 1991**

The model is based on the Theory of Human Behaviour by Triandis (1977) which differs in some ways from the Theory of Reasoned Action because it makes a distinction between cognitive and affective components of attitudes (Sharma & Mishra, 2013)**.** Beliefs belong to the cognitive component of attitudes. According to this theory "Behaviour" is determined by what people would like to do (attitudes), what they think they should do (social norms), what they have usually done (habits) and by the expected consequences of their behaviour. This theory primarily deals with extent of utilization of a PC by a worker where the use is not mandated by the organisation but is contingent on the option of the user. According to Sharma and Mishra (2013), the theory posits that the use of computer by the worker is likely to be influenced by several factors such as his feelings (affect) toward using PCs, prevalent social norms regarding

use of PC at the work place, general habits related to use of the computer, consequences expected by the user of the PC and extent of conditions that are present at the workplace for facilitating use of PC.

The definitions of the constructs used in the model are given in Table 2.8.1 below;

Table 2.7.1 Definitions of the Constructs

Construct	Definition
Job Fit	The extent to which an individual believes that using a technology can enhance the performance of his or her job
Complexity	The degree to which an innovation is perceived as relatively difficult to understand and use
Long Term Consequences	Outcomes that have a pay-off in the future
Affect Towards Use	Feelings of joy, elation, pleasure or depression, disgust, displeasure, or hate associated by an individual with a particular act.
Social Factors	Individual's internalisation of the reference group's subjective culture and specific interpersonal agreements that the individual has made with others in specific social situations.
Facilitating Conditions	Provision of support for users of PCs may be one type of facilitating condition that can influence system utilisation.

Source: Thompson et al. (1991) cited in Sharma & Mishra, (2013)

Thompson, Higgins and Howell (1991), conducted a study to help them better **u**nderstand the factors that influenced the use of personal computers. Their study used a competing theory of behaviour proposed by Triand is (1980). Responses were collected from 212 knowledge workers in nine divisions of a multi-national firm in United States of America, and the measures and research hypotheses were analysed using partial least squares (PLS). The results showed that social norms and three components of expected consequences (complexity of use, fit between the job and PC capabilities, and long-term consequences) have a strong influence on utilisation. These findings confirm the importance of the expected consequences of using PC technology, suggesting that training programs and organisational policies could be instituted to enhance or modify these expectations.

2.7.2 Model of Acceptance with Peer Support (MAPS)

According to Sykes et al. (2009) who is cited in Sharma and Mishra (2013), the Model of Acceptance with Peer Support (MAPS) provides an integration of earlier research that was focused on individuals with relevant constructs of social network in a way that helps to extend the scope of earlier theories. Sharma and Mishra postulate that there are two types of social ties. The first tie between employees relates to obtaining help from employees that can result in

extension of knowledge for using the system. The second tie between employees is related to providing assistance and help to co-workers for enabling them to better understand the configuration and deployment of the system. These ties are labeled as "get-help" and "give help" ties. The duo proposed two new constructs, namely, "network density" and "network centrality" that relate to the concept of "get-help" and "give-help" in that order. The theoretical backing for these constructs was drawn from earlier research carried out in social network and were posited as key predictors of system use. These constructs are further extended as "valued network density" and "valued network centrality" by taking into account the extent of the resources, information and knowledge available in the system. It is inferred that these constructs can act as additional predictors.

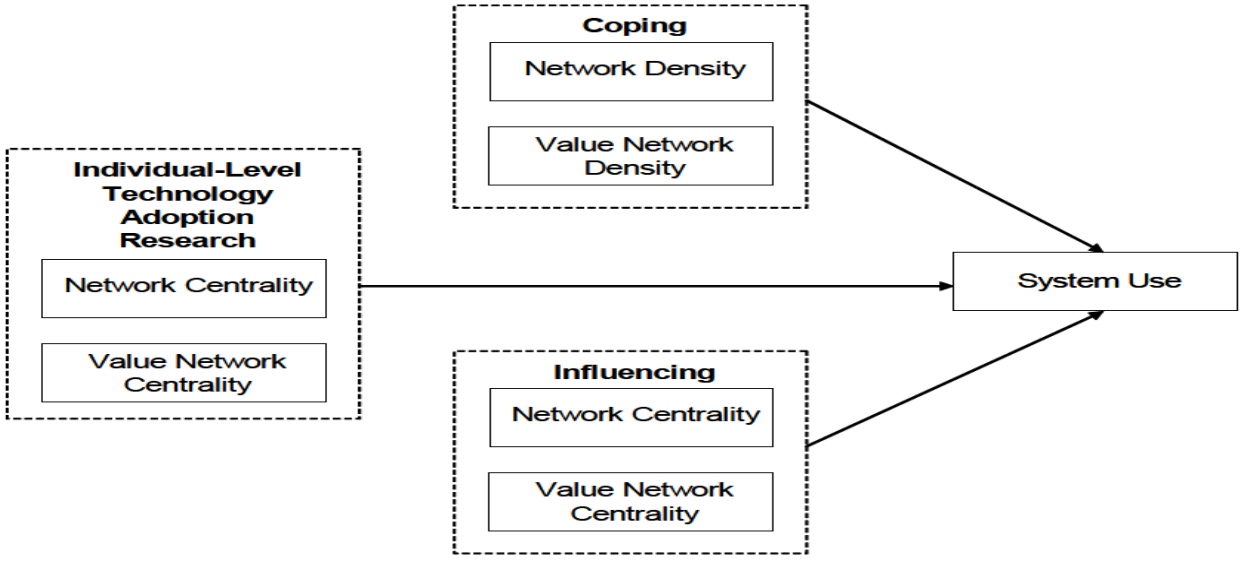

***Figure 2.7. 2: Model of Acceptance with Peer Support*.Source: Sykes et al. (2009)**

Table 2.7.2 -The definitions of Constructs

Construct	Definitions
Behavioural Intention	Behavioural intention is defined as a person's subjective probability that he will perform some behaviour
System Use	System use is defined as the frequency, duration and intensity of an employee's interactions with a particular system.
Facilitating Conditions	Facilitating conditions is defined as the degree to which an individual believes that an organisational and technical infrastructure exists to support use of the system.
Network Density	Network density describes the connectedness of a network and is defined as the actual number of ties in a network as a proportion of the maximum possible number of ties.
Network	Network Centrality is defined as the extent of an individual's involvement in

Centrality	assistance exchanges with co-workers. An individual's centrality has been linked influence, involvement in innovation and attitudes toward new technology.
Value network Centrality	Value network centrality refers to peers' perceptions of the level of system-related resources controlled by a focal employee.
Value network Density	Value network density refers to the connectedness of a focal employee to others, weighted by the perceived strength of the tie and control of system-related information (such as system features, upcoming releases, demo dates), knowledge (such as lips and tricks, short cuts, process sequences) and other tangible resources (such as training resources, manuals, tutorials) that are needed for effective use of a system.

Source: Sykes et al., (2009) cited in Sharma and Mishra, (2013)

Sykes, Venkatesh and Gosain, (2009) conducted a social network study in a supplier-focused business unit of a large multinational company in Finland. The study took 3-month long which comprised of 87 employees in this business unit. The data were collected with a survey administered before the use of the new system that is, immediately after training. System use was measured over the course of the 3-month period immediately after training, with use being average time of use per week over the course of the 12 weeks. The researchers used UCINET Version 6.29 to analyse the socio-metric data**.** The results of the study confirmed MAPS that social network constructs can significantly enhance researchers' understanding of system use over and above predictors from prior individual-level adoption research.

2.7.3 Technology Acceptance Model (TAM).

Davis (1989) proposed a TAM derived from the Theory of Reasoned Action (TRA). It posits that two particular beliefs, namely perceived usefulness and perceived ease of use are of primary relevance to computer/information technology acceptance behaviours.

- Perceived usefulness - is the degree to which a person believes that using a particular system would enhance his or her job performance
- Perceived ease of use - is the degree to which a person believes that using a particular system would be free of effort

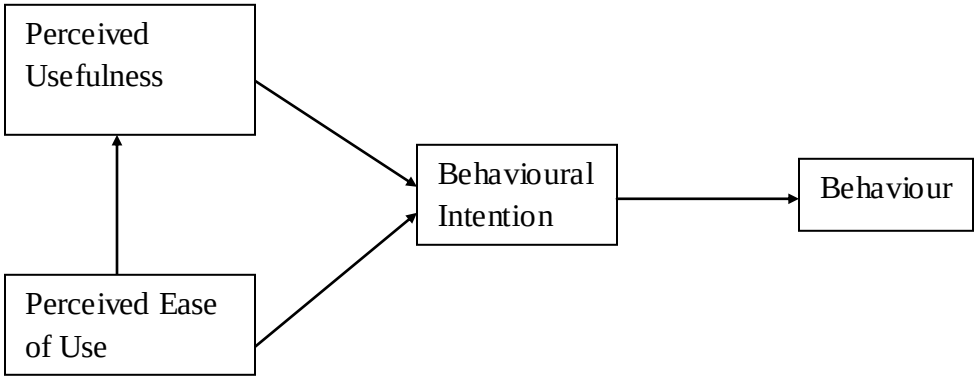

Figure 2.7. 3: Technology Acceptance Model (TAM) **(Davis, 1989).**

Hsia (2007), explains that TAM implies that an e-learning system with a high level of perceived usefulness is one for which a user believes that there is a positive user-performance relationship and there are many empirically evidences. Additionally, Hsia's research showed that individuals are more likely to use a new technology if they perceive that it is easy to use and there are many evidences to show that perceived ease of use will influence perceived usefulness. Therefore, Hsia's research hypothesised that the Perceived ease of use will have a positive effect on perceived usefulness of e-learning. Perceived ease of use will have a positive effect on the behavioural intention to use e-learning.

Perceived control**,** learner control generally refers to a mode of instruction in which one or more key instructional decisions are delegated to the learner. Learner control allows learners to determine their progress through a learning program and to choose learning activities that suit their personal preferences and needs. Consequently, a new construct, perceived control in the TAM was proposed to enhance people's understanding of a user's acceptance behaviour.

- Perceived control - is defined as the degree to which a person believes that he or she can control what and how to use a particular system (Hsia, 2007).

E-learning can delegate the learning decision to the user and then user feels that e-learning system is more flexible and customised than traditional classroom learning. Thus users will have more behavioural intention to use e-learning. It can be inferred, therefore that perceived control will have a positive effect on the behavioural intention too on the use of e-learning. Additionally, the higher level of perceived control one acquires online, the higher level of

perceived usefulness one gets from online learning. This implies that perceived control will have a positive effect on the perceived usefulness in an e-learning context (Hsia, 2007).

Al- Aulamie (2013) states that Technology Acceptance Model (TAM) developed by Davis (1989) is an intention-based model originated from the Theory of Reasoned Action (TRA) to explain and predict users' acceptance of information technology. Moreover, TAM has been used in many empirical studies as theoretical base for users' technology acceptance (Ong et al., 2004; Sun & Zhang, 2006). The theoretical model of TAM has helped in explaining and predicting user behaviour towards information technology (Park, 2009). TAM has a significant body of research and has wider acceptance in the information technology domain. The model has been proved to be an accurate predictor of users' intention and systems actual usage (Tang & Chen, 2011). However, this conceptual model has limitations of assuming that usage of information technology (IT) is volitional and that there are no barriers that would prevent an individual from using an IT tool if he or she chooses to use it (Mathieson, Peacock & Chin, 2015).

Akour and Dwairi (2012) used Davis (1989) pioneered technology acceptance model (TAM) in a highly dynamic and competitive educational industry in a developing Middle-Eastern country of Jordan. In this study, a survey was conducted among universities faculty members in Jordan. A total of 747 completed questionnaires were returned resulting in a response rate of 29.9 percent and was utilised in the study. A total of 11 hypotheses related to technology acceptance antecedents and consequences were examined by estimating multiple regression models. The study findings supported the technology acceptance model. The study confirmed that the technology acceptance –computer usage relationship is robust across diverse contexts.

Durodolu (2016) stated that Technology Acceptance Model (TAM) was gaining popularity for understanding the relationship between humans and technology through Perceived Usefulness (PU) and Perceived Ease of Use (PEU). The foremost rationale for adopting the TAM in the study by Durodolu was to present a foundation for ascertaining the impact of external variables on internal beliefs, personal abilities, attitude, mind-set and intention in attaining Information Literacy (IL) skills. Durodolu asserts that TAM is an information system theory that propagates stages to be followed by information seekers or learners in the acceptance, inculcation and utilisation of new technology to achieve information literacy skills. Durodolu's study evaluated the TAM's main variables for Information Literacy acquisition such as; Perceived Usefulness

(the intention to use, user training, computer experience, system quality) and Perceived Ease of Use (computer self-efficacy, perception of external control, ease of use, internet self-efficacy, efficacy of library use, computer anxiety, information anxiety, perceived enjoyment and objective usability, behaviour and intention). The outcomes of the study provided a deeper understanding and development of TAM as an appropriate model for Information Communication and Technology for Development (ICT4D)/social informatics/community informatics studies and for explaining the relationship between Information Literacy skills and technology acceptance. Durodolu's study identified resistance to information systems as a main reason for the failure of adoption of new technology in attaining information literacy. The study postulated that appropriate instruction and training on the use of technology and application to real life situation can lead to better information literacy.

Al- Aulamie (2013) carried out a research to explain students' acceptance of learning management systems (LMSs) in Saudi Arabia. The research aimed to investigate the viability of TAM constructs in a nonwestern country. Moreover, due to the cultural impact of the Saudi Arabian culture towards genders, the research addressed the moderating effects of gender towards LMSs acceptance. The TAM variables of perceived usefulness, perceived ease of use and behavioural intention were used. In the validation and examination of model, a questionnaire was used for data collection from three universities over six weeks electronically. The research applied structural equation modeling for statistical analysis using IBM AMOS. The research results confirmed the applicability of the model to explain the Saudi students' acceptance of LMSs. Furthermore, the research results showed that the extrinsic variables were stronger predictors of students' perceived usefulness, perceived ease of use and behavioural intention and that males' and female's perception towards the LMS was significantly different and the male students' acceptance towards LMSs was higher than females.

2.7.4 Modified Technology Acceptance Model (MTAM - E-Tax Adoption Model)

Soneka and Phiri (2019) developed an Electronic Taxation Adoption Model. The model has a premise on the original TAM. The two (Soneka and Phiri) authors developed their model in the Zambian Taxation context when they tested the original TAM within the Zambian electronic taxation environment.

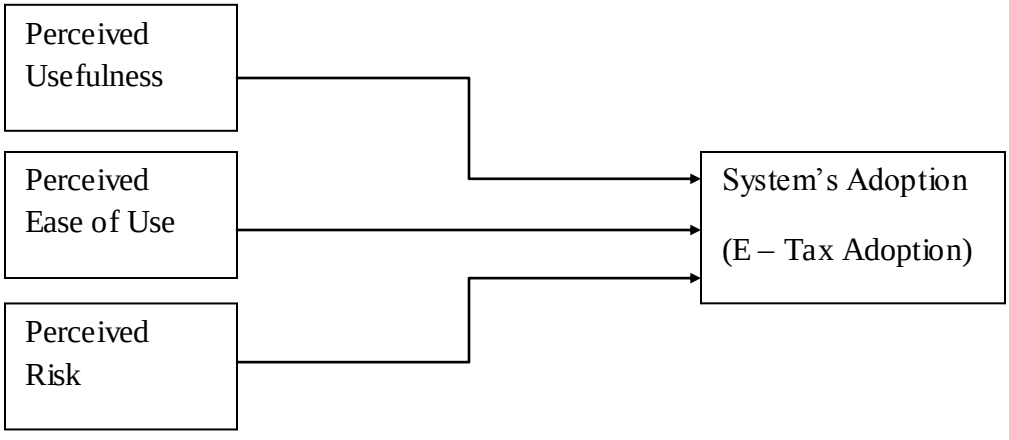

Figure 2.7. 4: Modified Technology Acceptance Model (MTAM - E-Tax Adoption Model).

Source: Soneka and Phiri (2019).

The model's constructs have already been defined in the section of original TAM above. However, two outstanding features of this Model are that it ignores the Behavioural Intention of the system's adoption as hypothesised in the original TAM and an additional construct of "perceived risk" was added to it. The Modified Technology Acceptance Model (MTAM) postulates that the original TAM's two constructs together with "perceived risk" actually are determinants and capable of leading to the actual use of an electronic system as seen above in the model.

Soneka and Phiri (2019) carried out a study whose objective was to assess the factors that influenced the level of e-tax systems adoption in Zambia. The study focused on TaxOnline system used by domestic taxes division in Zambia under Zambia Revenue Authority (ZRA). The study was conducted in rural Zambia and the researchers used Technology Acceptance Model (TAM) as the conceptual guide. The sample size was purposively selected from various taxpayers who were coming through to Zambia Revenue Authority Solwezi internet bureau.100 semi structured survey questionnaires were distributed with 100% response. The data collected was analyzed using descriptive statistics and results showed that E-tax system in Zambia was useful, easy to use and also secure.

The researchers recommended that more awareness and taxpayer education needed to continue in order to bring everyone on E-Filing and E-Payment which is the process of submitting returns over the internet using an approved E-Tax system.

2.8 Review of Studies done in relation to E-learning.

The following section outlines reviews of studies related to e-learning outside an African context, within Africa and Zambia in particular.

2.8.1 Related Studies on E-Learning External to the African Context

Table 2.8.1 below presents gaps in literature based on studies related to e-learning platforms outside an African context.

Table 2.8.1: Gaps in literature on E-Learning External to Africa

Sn	Title of the Research	Authors, Year Published & Jurisdiction	Key Results	Gap/Critique
1	A Literature Review: Acceptance Models for e-learning Implementation in Higher Institution	Assegaff, S., (2014), Indonesia	The study found that the most used conceptual model for measuring e-learning technology acceptance was TAM.	The research just considered the most frequently used model rather than the most effective for e-learning adoption
2	Are Students Ready to Adopt E-Learning? A Preliminary E-readiness Study of a University in the Gulf Region	Abdallah, T. & Lansari, A., (2011), United Arab Emirates	Study findings indicated that there was a high acceptance level of e-learning adoption in at Zayed University. Results also show that a fairly high percentage of students thought that e-learning could contribute positively to their learning experience.	The research did not look at the use of e-learning instead it just looked at preparedness for e-learning adoption.
3	E-Learning in Postsecondary Education	Bell, B. S. & Federman, J. E., (2013), United States of America	The meta-analysis revealed no significant overall difference between e-learning and traditional instruction in terms of overall achievement, but more negative	The research did not detail the factors that make e-learning in post secondary education effective and the conceptual framework of the research did not show clearly the antecedents of effective of e-learning.

			student attitudes toward synchronous e-learning and higher dropout rates in asynchronous e-learning.	
4	Exploring students acceptance of e-learning using Technology Acceptance Model in Jordanian universities	Al- Adwan, A., Adwan, A. & Smedley, J., (2013), United Kingdom	The study indicated students' acceptance of e-learning as well as important factors that contribute to its successful use.	The research used the original TAM as its conceptual frame work, however, the original TAM is not an ideal conceptual framework to measure technology adoption because of its assumptions.
5	Academics' e-learning adoption in higher education institutions: A matter of trust	Martins, J. T. & Nunes, M. B., (2016), Portugal	The trust factors of Grounded Theory - Individual & Institutionalised change and integration lead to the overcoming of e-learning adoption barriers.	Grounded Theory as a methodology is used in research without reference to literature review, however, Martins & Nunes used literature review together with the Grounded Theory which may have led to biasness and prior knowledge of what other researchers may have developed in terms models or theories.
6	E- Learning of Andalusian University's Lecturers. Gender	Tena, R. R., Almenara, J. C. & Osuna, J. B., (2016), Turkey	The study confirmed that the majority of teaching staff at the universities did not consider the use of different platforms to be a problem, and that the success of the experience is dependent on the support and attitudes of the university. Additionally, there were significant differences between the lecturers in terms of gender in two areas: male lecturers	The research was purely quantitative which led to biasness since it left out the lecturers' feelings, attitudes and their individual perspectives which are multiple realities.

			had more knowledge of the tools, and female lecturers made more use of them.	

2.8.2 Related Studies done on E-Learning in the African Context

Table 2.8.2 below presents gaps in literature based on studies related to e-learning platforms in an African context.

Table 2.8.2: Gaps in literature on E-Learning in Africa

Sn	Title of the Research	Authors, Year Published & Jurisdiction	Key Results	Gap/Critique
1	The Current State of E-learning at Universities in Zimbabwe: Opportunities and Challenges	Chitanana, L. & Madzima, D. M. K., (2008), Zimbabwe	Results indicated that e-learning at most of the universities was still at its infant stage. The results also revealed e-learning challenges like lack of infrastructural development, support and pedagogical considerations for e-learning. Finally, the Universities invested more and promoted administrative software at the expense of Learning Management Systems (LMS) software that support teaching and learning.	It was an exploration research as opposed to pragmatic research which could have sought solution to a low use of e-learning platform
2	Evaluating Usability of E-Learning Systems in Universities	Kiget, N. K., Wanyembi, G. & Peters, A. I., (2014), Kenya	Results showed that user friendliness of IT has a strong positive relationship with the use of Learner Management Systems.	The study looked at user friendliness only and was a case study of one of the public Kenyan universities whose results cannot be generalised to all Kenyan universities due to its narrow sample size.
3	The nature of E-learning adoption by stakeholders	Ansong, E., Boateng, R., Boateng, S. L. & Anderson, A. B., (2017),	Study results showed that e-learning was yet to receive a university-wide adoption and that the prevalent activity	The study only employed the positivist paradigm that assumes an objective reality which ignores the effects of both the researchers and research

	of a university in Africa	Ghana	on the e-learning platform was "viewing marks and grades." While other activities were less popular with the users of the e-learning system.	contexts (multiple realities).
4	Barriers to e-Learning in a Developing Country: An Explorative Study	Esterhuyse, M. & Scholtz, B., (2015), South Africa	The study revealed that the most prominently perceived barriers/risk to e-learning include the personal sacrifice of time required, Internet speed and the lack of on-demand assistance available when learning through the use of electronic media.	It was an exploration study on barriers to e-learning, the study needed to go further to remove or propose ways of removing the barriers. The focus group also was opportunistic as the participants were unaware that a focus group had been planned for the day's activities thereby leading to biased results.
5	Comparative Study of Challenges Affecting Adoption of E-Learning for Capacity Building in Public Service Sectors of Kenya and South Africa.	Yegon, K., Ongus, R. & Njuguna, A., (2014), Kenya & South Africa	The study revealed that infrastructure problem, lack of funds and lack of policies favouring the use of e-learning & provision of reliable e-learning portals to the government employees were hindering e-learning adoption.	The study overlooked the need to finding lasting solutions to challenges affecting e-learning.
6	Determinants of E-Learning Adoption in Universities: Evidence from a Developing Country	Ansong, E., Boateng, R., Boateng, S. L. & Effah, J. B., (2016), Ghana.	Overall the determinants of e-learning adoption in the University of Ghana are IT infrastructure, Perceived ease of use, Expected benefits, Organizational compatibility, Competitive pressure, Educational partners, Content of the course and E-learning curriculum.	The study only employed the positivist paradigm that assumes an objective reality which ignores the effects of both the researchers and research contexts and did not suggest how the antecedents of e-learning use can be harnessed to improve e-learning adoption.
7	Barriers and strategies on	Kisanga, D. & Ireson, G.,	Highlighted barriers on e-learning adoption	The research just looked at barriers and strategies of

	adoption of e-learning in Tanzanian higher learning institutions: Lessons for adopters.	(2015), Tanzania	include; poor infrastructure; financial constraints; inadequate support; lack of e-learning knowledge and teachers' resistance to change	adopting e-learning without suggesting ways of increasing the use of e-learning.
8	Model of Information and Communication Technology (ICT) Acceptance and Use for Teaching Staff in Sub-Saharan Africa Public Higher Education Institutions	Ouedraogo, B., (2017), Sub-Saharan Africa.	The paper's outcomes show that the construct "performance expectancy" of ICT (expected utility and expected results) positively affects the teachers' acceptance of ICT	The researcher used the UTAUT which has more strength in measuring the antecedents of the behavioural intention as opposed to measuring the predictors of the actual use of an electronic system.
9	E-learning Opens Door to the Global Community: Novice Users' Experiences of E-learning in a Somali University	Omer, M., Klomsri, T., Tedre, M., Popova, I., Klingberg-Allvin, M. & Osman, F., (2015), Somalia	The results showed that students have a very positive attitude towards e-learning and they perceived that e-learning enhanced their educational experiences	The researchers also used the UTAUT which measures the constructs that measure behavioural intention as opposed to measuring the determinants of actual use of an electronic system.
10	E-Learning and students' motivation: A research study on the effect of e-learning on higher education.	El-Seoud, M. S. A., Taj-Eddin, I. A. T. F., Seddiek, N., El-Khouly, M. M., Nosseir, A., (2014), Egypt.	The results showed that the use of interactive features of e-learning increases the motivation of the undergraduate students for the learning process.	The researchers carried out an experimental study, but experimental studies need a Controlled Spacemen (study) for comparisons purposes, and this Egyptian study lacked this Controlled Study.
11	Predicting the adoption of e-learning management system: A case of selected private universities in Nigeria.	Nicholas-Omoregbe, O. S., Azeta, A. A., Chiazor, A. I., (2017), Nigeria	The study showed that Attitude, Social Influence and Technology Culturation are strong determinants of intention to adopt e-learning, while Performance Expectancy and Power do not significantly lead to Behavioural	The researchers used the UTAUT which measures the determinants of behavioural intention instead of measuring the determinants of actual use of an electronic system.

			Intention to adopt e-learning.	
12	Determinants of e-learning adoption in universities: Evidence from a developing country.	Ansong, E., Boateng, S. L. & Boateng, R. (2017), Ghana	The results indicated some differences in the e-learning adoption factors for students, instructors, and administrators.	The research was based on quantitative paradigm but the data collection tool and a sampling method used were a mismatch (questionnaire-purposive sampling) which violated the principle of consistency of the design matrix.
13	Challenges of e-learning technologies in Nigerian university education.	Thomas, O. A. & Omotoke, O. O., (2015) Nigeria	The research revealed Connectivity, Equipment, Software, Training as major challenges of Nigerian Universities	The research was explorative in nature as opposed to be pragmatic – seeking to increase the use of e-learning in Nigerian Universities

2.8.3 Related studies on E-Learning in the Zambian Context

Table 2.8.3 below presents gaps in literature based on studies related to e-learning platforms within a Zambian perspective.

Table 2.8.3: Gaps in literature on E-Learning in Zambia

Sn	Title of the Research	Authors, Year Published & Jurisdiction	Key Results	Gap/Critique
1	Emerging e-learning technologies and Zambian education system: A focus on rural areas	Phiri, W & Mbobola, A., (2018), Zambia	The study revealed that there was significant improvement in academic performance due to use of e-learning at 95% confidence interval	It was an experimental study which took four years which may have led to biasness due to varying environments over the four year period of the study.
2	Use of social media among University of Zambia lecturers in teaching and learning	Mwalimu, E. C., Mulauzi, F. & Mwiinga, T. M., (2018), Zambia	The study results indicated that Lecturers particularly the younger ones were leading in using social media platforms for teaching and learning purposes	The study looked at lecturers' intention to use social media in their lectures by use an original TAM & it did not make any effort to increase the use of social media.

3	A Study of the Enablers and Challenges in the Implementation of e-Learning Policies in Technical Education, Vocational and Entrepreneurship Training Colleges in Zambia	Konayuma, G. S., (2015), Zambia	The results revealed that the e-learning stakeholders (college managers, lecturers & students) had different levels of experience and knowledge of e-Learning.	The study did not seek to increase the implementation of e-Learning Policies in Technical Education, Vocational and Entrepreneurship Training Colleges

2.8.4. Summary of Identified Gaps in the Previous Related Studies

This study endeavoured to increase the use of e-learning platforms in the tertiary leaning institutions in Zambian. The above review was done to understand the past models and theories; and efforts made to increase the use of e-learning platforms in the tertiary leaning institutions outside Africa, within Africa and Zambia in particular. However, the review brought out the following needs;

1. Among the reviewed studies, it is evident that there has been less effort made by the researchers toward the increase of use of e-learning platforms in the Zambian educational sector, instead, most of the studies concentrated on assessing the intentions to adopt the electronic systems.
2. Secondly, most of the researchers employed both theories and models whose intent is determining intentions of the systems' users to use the electronic systems. The most frequently employed theories and models include; Theory of Reasoned Action, Theory of Planned Behaviour and Technology Acceptance Model in its variant forms.

This research sought to meet the above gap of the need to "increase the use of e-learning platforms" in tertiary learning institutions in Zambia by adopting the Theory of Reasoned Action coupled with Modified Technology Acceptance Model (MTAM) developed by Soneka and Phiri (2019) in the Zambian environment. This model ascertains the use of the electronic systems in the Zambian context.

2.9 Benefits and Challenges of E Learning

The followings section outlines the dual facets of e-learning particularly the gains and pitfalls.

2.9.1 Benefits of E- Learning

According to Nischal and Guragain (2016) E-learning has many advantages. With the combination of a well-organised e-learning system and a highly motivated student, one can achieve great success in a short period of time. Some of the major gains of e-learning are enumerated below:

a) Convenient for students

E-learning materials are self-placed and can be accessed any time when the learner wants. They do not require the learner to be physically present in a classroom. Students can also download and save the learning materials for future purposes from the system.

b) Lower cost

E-learning is usually a cost-efficient way of learning for most students as they can choose from a large range of courses and make the selection depending on their needs. It can also be cost-efficient for many universities because once the learning platforms are set up, they can be reused for many sessions.

c) Up-to-date learning materials

The study materials in e-learning systems can be updated more frequently than in the classroom-based education systems. Once the study materials are placed in the system, they can be updated without changing the whole materials and the materials can be available and reused for longer periods.

d) Flexible way of learning

E-learning is a flexible way of learning for many students. Most of the study materials are stored for the students to access whenever they want. Students can also choose between an instructor-led and a self-learning system. In e-learning systems it is also possible for students to skip over the study materials they already know and choose the ones they want to learn.

e) World-wide learning society

E-learning systems help in creating a worldwide learning society as anyone can access the study materials regardless of the geographical location. Some systems allow the learners to contribute to the study materials this means adding for updated information to the existing study material.

f) Scalable e-learning systems

The number of students in virtual classes or e-learning systems can be very few or really high without causing any significant difference in the total cost.

g) Higher degree of freedom for students

One may find it difficult at times to learn new ideas. E-learning systems provide the possibility for students to learn the same material repeatedly until they are satisfied. The video and audio

materials used in e-learning make the whole learning process more fun. This will help students to remember the things they learn for a long period of time. E-learning materials can also be accessed whenever wanted, thus the repetition makes the retention easier.

2.9.2 Challenges of E- Learning

Like any other system, e-learning also has some drawbacks. Being flexible is not always good as it may cause laziness and thus reduce efficiency. Some of the major disadvantages of e-learning according to Nischal and Guragain (2016) include;

a) Low motivation

Students with low motivation may not achieve the set goals most of the time, as there is no one to look over. Students are themselves responsible for the routine and organisation of the course, thus leading to laziness and low motivation at times. Lack of a fixed schedule and deadlines may lead to students dropping out of the course prematurely.

b) Technology-dependency

The study materials in e-learning are delivered using computer applications. For some people just to learn how to use those applications might take a long period of time. There are also other factors such as poor Internet connection and machine mal-functioning which may make the learning process tedious and time consuming.

c) Compatibility issues

As there are many learning systems available, sometimes the study materials prepared by using one system may not be compatible with another. For example, mobile devices such as iPads block the flash videos from being played in their browsers. Access to websites may not be free in all places as some countries impose restrictions on the number of websites that can be accessed.

d) Reliability of the content

The content available on the Internet might not always be reliable. There are people who mislead the readers and feed wrong information. So the readers must be careful while searching for the information and check the reliability of the content before learning it.

e) Social isolation

Lack of a real classroom or classmates might not be good for some students. Students might feel socially isolated at times due to lack of real people around them while learning.

f) Expenses management

In the long run, e-learning is usually a cheaper option but still for the first time, it might prove too expensive for some institutions. Buying new equipment like computers, projectors or new

software all at once might not always be easy for new or small institutions. Also the cost of developing training materials is high compared to the traditional methods.

g) Disadvantages disabled students

While developing new study materials or study environments companies usually target at large user groups. They might not always think about disabled students such as visually impaired students who might not benefit from the E-learning technology platform. The development costs may be high if the learning institutions developed e-learning platforms that are capable of accommodation all the needs of all potential learners.

h) Not effective in all cases

In some cases, face-to-face Learning process might be more effective than learning online as e-learning lacks two-way communication.

2.10 Factors Affecting the Adoption of E-Learning in Developing Countries

Ansong, Boateng and Boateng (2017) highlight the following as the fundamental factors affection e-learning adoption;

a) **Organizational Factors**

These are the internal social mechanisms of the institution. The e-learning papers reviewed showed that organizational factors which are categorised into organizational compatibility, expected benefits or perceived usefulness, size of the institution, and human and financial resources.

b) **Environmental Factors**

In this context, the environment of a university or college includes other competing universities/colleges, agencies such as non-governmental organizations (NGOs), governments, local authorities, ministries and others. All these entities have an influence in one way or the other on the affairs of the learning institution's e-learning adoption.

c) **The Nature of the Programmes Offered**

The factors that relate to the characteristics of the programmes offered using the e-learning systems affect the adoption of e-learning. The characteristics under the nature of the programmes being offered include; content and the e-learning curriculum.

d) **Technological Factors**

The technological factors are made up of the internal and external technologies that are relevant to the organisation as postulated. Technology in this context does not only refer to the actual software and hardware features of the platform but also how well this technology is adapted to the ideal practices of teaching and learning. These characteristics under the technological factors are grouped into perceived usefulness, perceived ease of use and perceived risk of use.

2.11 Chapter Summary

This chapter on Literature Review put focus on; providing an understanding of the key terms relating to the subject matter, evolution of the E- Learning, current state of E- Learning, distance learning as related to E- learning, E-learning platforms, theories of E- Learning, models that foster technology acceptance and use, review of studies done in relation to E-learning, benefits and challenges of E Learning, factors affecting the adoption of E-Learning in developing countries and, the conceptual framework of the study. It therefore provides a snapshot of the studies undertaken with regard to the subject matter and as such highlighting the gaps that exist as one of the premises for this research. The next chapter looks at the research methodology employed in the study.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This Chapter presents the research design and methodology. It outlines ethical issues and all the activities that were undertaken in this study from the selection of study setting; target population and sample size determination and the sampling techniques. It further explains the instruments of data collection and the software that was used in data analysis.

3.2 Ethical Considerations

The research was subjected to challenges such as; cultural beliefs that required certain information not to be given out by respondents, biasness, emotional stress on part of respondents and lack of voluntarism. The research was totally for academic purposes; thus any consequent result was treated as such. In addition, the code of ethics was upheld. This entailed that consent was sought from the respondents; influence of any form was avoided. The researcher respected the rights and confidentiality of respondents.

3.3 Research Design

This was a cross-sectional, pragmatic and mixed methods study. The study used both qualitative and quantitative research design to investigate on how E-Learning platform use could be increased in tertiary learning institutions for blended distance programmes at Evelyn Hone College (EHC), National Institute for Public Administration (NIPA) and Lusaka Business and Technology College (LBTC).

This being a pragmatic study, pragmatism stands in contrast to positivist and anti-positivist views of scientific discovery. On one hand, positivism (inductive and deductive research) emphasises the objective, law-like properties of a brute reality independent of observation (Donaldson, 1992). On the other hand, Wicks and Freeman (1998) states that anti-positivism (interpretivism, constructivism, retroduction) emphasise on the creative role of active and subjective participants. For a pragmatist, it can be seen that the mandate of science is not to find truth or reality, the existence of which are perpetually in dispute but to facilitate human problem solving. According to pragmatist philosopher John Dewey, science is expected to overthrow the notion, which has ruled philosophy since the time of the Greeks and that the office of knowledge should uncover the real antecedents of a phenomenon, rather than to base on

people's judgments to gain the kind of understanding which is necessary to deal with problem in question.

The process of undertaking this pragmatic study was first to identify a problem and view it within its broadest context and this outlook could lead to a better understanding of the problem and ultimately solve the problem of *low use of E-Learning Platforms in Tertiary Learning Institutions for Blended Distance Programmes.*

The research design presented in Table 3.1 below outlines the summary of the research over-arching questions with their respective objectives, sampling procedures and data collection and analysis tools used in the study

Table 3.1: Research Design Matrix

RESEARCH QUESTIONS	R - OBJECTIVES	POPULATION & SAMPLING	DATA COLLECTION TOOLS	D - ANALYSIS METHODS
What is the level of usage of e-learning platforms on blended distance programmes in tertiary learning institutions?	To describe the level to which e-learning platforms have been used by the tertiary (colleges) learning institutions in Zambia	• Population – 672 of lecturers & learners on blended distance programmes. • Simple random sampling • Sample sizes per stratum (institution) - Sample sizes, $n = N/(1+N(e)^2)$	Self-administered questionnaires to – lecturers & learners on distance programmes.	• Uni - variate analysis – frequencies. • Bi-variate analysis – Regression & Chi-Square • Multi-variate analysis – Regression & Chi-Square
What are the major challenges faced by tertiary (colleges) learning institutions in increasing the usage of e-learning platforms?	To identify the major challenges faced by tertiary (colleges) learning institutions in increasing the usage of e-learning platforms.	• Population of stake-holders – lecturers & managers on blended distance programmes. • Non-randomised expert sampling – Purposive Sampling • Sample size – small & subjective to the researcher's judgement & maximum variation per institution.	Focus Group Discussions composed of – lecturers & managers on distance programmes.	• Content analysis. • Thematic analysis
How can the e-learning platforms use be increased in tertiary (colleges) learning institutions?	To prescribe measures that would increase the usage of e-learning platforms in tertiary (colleges) learning institutions in Zambia.	• Population of stake-holders – lecturers & managers on blended distance programmes. • Non-randomised expert sampling – Purposive Sampling • Sample size – small & subjective to the researcher's judgement & maximum variation per institution.	Focus Group Discussions composed of – lecturers & managers on distance programmes	• Content analysis. • Thematic analysis

3.4 Philosophical Assumptions of the Study

Following the pragmatic paradigm approach adopted for the research which took the route of mixed methods, this approach sets the tone of the philosophical assumptions.

The research embraced both Realist and Nominalist Ontologies while the Epistemology was also dual, which was Positivistic and Humanistic. The adopted Human Nature philosophy was Deterministic and Voluntarism whilst Methodological Assumption was Nomethetic and Ideographic.

The justification for the above philosophical assumptions was based on the fact that the use of a conceptual framework, questionnaires and quantitative analysis promoted positivism which is in the realm of objectivity while the use of focus group discussion, voluntarism of the respondents to answer the questionnaires and a thematic approach to data analysis of qualitative data fostered the nominalism which is in the area of subjectivism respectively.

3.5 Pragmatism for this Research

In this research titled "Increasing the use of e-learning platforms in Tertiary Learning Institutions for blended distance programmes in Zambia", the researcher adopted and used *Functional Pragmatism* in constructing a solution for low usage of e-learning platform for tertiary learning institutions. This pragmatism was chosen because it gives freedom to the researcher to formulate a solution using both realities (single or multiple). It is for this reason that pragmatism, on one hand, rejects positivism, on grounds that no theory or conceptual framework can satisfy its demands (objectivity, falsify-ability, the crucial experiment, etc.). On the other hand it rejects anti-positivism, because virtually any theory or conceptual framework would satisfy it.

3.6 Pedagogy for the Study

The pedagogical models applied to e-learning are supported by the following attributes; learning is a social process, learning in group is fundamental to achieving knowledge, distance is unimportant, teaching and learning can be segregated in time and space. This study is based on distributed learning through e-learning platforms.

3.7 Conceptual Framework

This section outlines the adopted model for this research.

3.7.1 Modified Technology Acceptance Model (MTAM)

Figure 3.1 below, shows how internet experience over the years can create perceived usefulness, Perceived ease of use as well as perceived Risk. The model is a variant of TAM and was derived from TAM by Soneka and Phiri in 2019. Soneka and Phiri (2019), put up a notion that the more experience a person has with Internet the more they will create usage and interest in using electronic systems and will have a perceived ease of use as well as a reduction in perceived Risk. When these constructs are positive, it is hypothesised that E- Learning adoption will be made easier and faster.

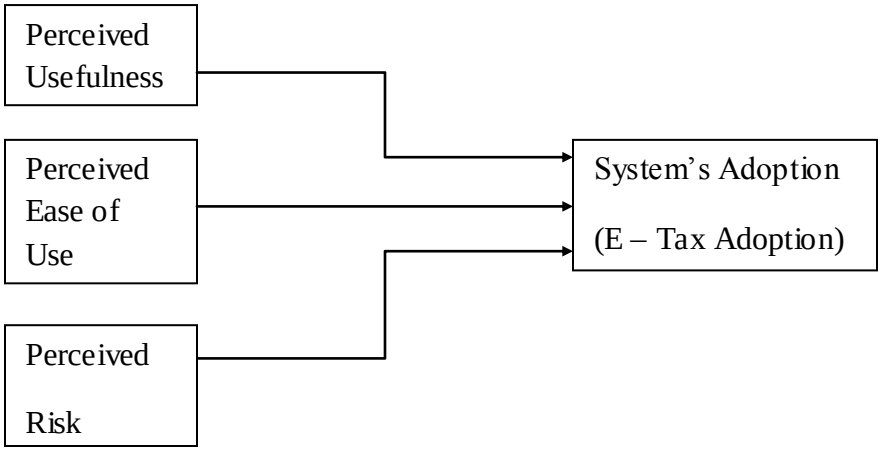

Figure 3. 1 Modified Technology Acceptance Model (MTAM); **Source: Soneka and Phiri (2019)**

i. Perceived usefulness (PU) - This was defined by Davis (1989) as the degree to which a person believes that using a particular system would enhance his or her job performance. This will mean that if a person believes that the use of E- learning will impact their work positively then they will easily adopt it. The new system must prove that it will improve the current state of operations in order for it to be adopted.

ii. Perceived ease-of-use (PEU) - Davis (1989) defined this as the degree to which a person believes that using a particular system would be free from effort. This will mean that a person will only adopt something that makes their life easier. They will only adopt a system that will need less of their human effort in delivering work. The risk that is attached with the use of the system must be reduced. People would not want to risk their life, carrier as well as Job in the name of adopting a system. Therefore, a system that is being introduced must be fully checked and tested to increase the acceptance levels.

iii. Perceived risk (PR) - The extent to which an individual believes that a particular system will subject them to a physical, functional, social, time, financial, opportunity and or information loss (Patel & Connolly, 2015)

3.8 Justification for the Use of the Modified Technology Acceptance Model (MTAM)

Among many reasons for selecting the above model to guide this research, included but not limited to the following;

i. The model is one of the latest versions of original TAM
ii. The MTAM was developed in the Zambian electronic adoption context.
iii. The need to test it whether it can also be applied in the e-learning adoption as claimed by the developers that it can be used in adopting e-taxation system in Zambia.
iv. The model posits a trio of factors that they are antecedents of the actual use of an electronic system.
v. TAM has extensively and intensively been applied in various electronic adoption studies in the past as evidenced from a sample of researches in Table 3.2 below.

Table 3.2: Researches that have used TAM as their conceptual Model

Title	Authors	Year Published	Area of study
Testing technology acceptance model in developing countries: The case of Jordan.	Akour, I. A. & Dwairi, M. A.	2012	Education
Enhanced technology acceptance model to explain and predict learners behavioural intentions in learning management, University of Bedfordshine	Al-Aulamie, A.	2013	Education
An enhanced technology acceptance model for e learning systems in high tech companies- Chung Hua University, Taiwan	Hsia, J.	2007	Education
The application of technology acceptance model (TAM) e-purchase intention among health tourist in Thailand.	Phatthana, W.	2011	Health
TAM-Based study of website user behaviour—using web 2.0websites as an example.	Wu, M., Chou, H., Weng, Y., & Huang, Y.	2011	Business
Extension of technology acceptance model by using system usability scale to assess behavioural intention to use e-learning.	Revythi, A. & Tselios, N.	2015	Education
Technology acceptance model (TAM) as a predictor model for explaining agricultural experts behavior in acceptance of ICT.	Alambaigi, A. & Ahangari, I.	2015	Agriculture

The researcher used the above modified model of TAM by Soneka and Phiri (Soneka & Phiri, 2019) to guide this research. The selection of this model was based on the fact that many past electronic adoption researches used and validated the following TAM constructs in addition to using other constructs; Perceived Usefulness, Perceived Ease of Use and Perceived Risk

constructs as key determinants of electronic systems adoption. The Table 3.3 below depicts these researches which used these constructs.

Table 3.3: Researches that used Constructs of TAM & others.

CITATIONS	RESEARCH TITLE	AMONG MANY MODELS' CONSTRUCTS USED INCLUDE THE FOLLOWING
(Crabbe et al., 2009)	Sustained usage of mobile baking	Perceived usefulness Perceived ease of use Sustained usefulness
(Koksal, 2016)	Behavioural intention to adopt mobile banking	Perceived usefulness Perceived ease of use Perceived financial cost
(Alalwan et al., 2016)	Intension to adopt mobile banking	Perceived usefulness Perceived ease of use Perceived risk
(Mortimer et al., 2015)	Consumer intention to use mobile banking	Perceived usefulness Perceived ease of use Perceived risk
Cudjoe et al., 2015)	M-banking and consumer behaviour adoption	Perceived usefulness Perceived ease of use Perceived financial cost
(Hanafizadeh et al., 2014)	Intention to use M-banking	Perceived usefulness Perceived ease of use Perceived risk
(ALSoufi & Ali, 2014)	Intention to use M-banking	Perceived usefulness Perceived ease of use Perceived risk
(Kazi & Mannani, 2013)	Intention to Adopt M-banking	Perceived usefulness Perceived ease of use Perceived risk
(Chitungo & Munongo, 2013)	Intention to Adopt M-banking services	Perceived usefulness Perceived ease of use Perceived risk
Cheah et al., 2011)	Behavioural intention to adopt mobile banking	Perceived usefulness Perceived ease of use Perceived risk

3.9 Target Population and Sample Sizes

The populations of major concern for the study composed of lecturers and students from Evelyn Hone College (EHC), National Institute for Public Administration (NIPA) and Lusaka Business and Technical College (LBTC) who were on blended distance programmes. The three colleges were selected as sample colleges based on the fact that they launched e-learning platforms, they are government institutions and they ran similar programmes.

The sample sizes from the three institutions for both categories of the targeted populations were calculated using the Yamane Formula given below (Yamane, 1967). The formula takes into consideration the margin of error, the 95% confidence level, the population and the response distribution (Precision).

The determination of the sample size using Yamane sample determination Model was done as follows;

$$n = \frac{N}{1 + N(e)^2}$$

Where n required sample size
N the total population
e margin of error used was estimated at 5% or 0.05

Table 3.4 below gives both the targeted populations and their associated sample sizes based on Yamane Formula.

Table 3.4: Targeted Populations, Sample Sizes and Response Rates' Summary

	Blended Distance Programmes					
	EHC		NIPA		LBTC	
Parameter	Lecturers	Students	Lecturers	Students	Lecturers	Students
Frame population for data collection	61	189	80	247	65	30
Sample sizes based on Yamane Formula	53	128	67	153	56	28
N0 of questionnaire responded to	45	126	49	120	45	28
Response rates	84.9 %	98.4%	73.1%	78.4%	80.4%	100%

The researcher did not use the sample size determination tables because the tables can only give the sample sizes of populations which are in the multiples of 5, but Yamane Formula Model can generate a sample size for any size of the population which could be in form of even or odd numbers though it uses a fixed margin of error which is 5%.

3.10 Sample Sizes and Sampling Techniques

The sample sizes for each population category and for each college (Stratum) were determined using the Yamane Formula Model and the actual sizes of the samples with their associated response rates are presented in Table 3.4 above.

In terms of sampling techniques, the study used two techniques, namely; Stratified Simple Random Sampling and Purposive or Judgmental Sampling. Each of the colleges was considered to be a stratum. The quantitative data was collected using two different Likert Scaled questionnaires for both lecturers and students, see Appendices 1 and 2. The simple random

sampling technique gives every member of the sampling frame an equal chance to be picked as a sample item. The Excel package was used to assign random numbers to all lecturers and students at each college. Each lecturer or student in their respective population frame stood an equal chance of being assigned any random number. Then the names of both lecturers and students were re-arranged using excel in accordance with the newly assigned random numbers in an ascending order, then the first number of lecturers and students equal to the sample sizes were picked to be a sample for a particular category (either lecturers or students).

The qualitative data particularly for the third Research Question was obtained using Purposive Sampling through focus group discussions, see Appendix 3. The members of the focus group are normally picked based on the judgment of the researcher. In this particular case, the researcher picked the members of staff who were included in the focus group discussions based on their positions of a lecturer for blended distance programmes, manager for blended distance programmes and expert knowledge.

In a focus group discussion, the researcher poses questions to the discussants and he or she moderates the conversation while recording the discussion. The advantages of using questionnaires is that they are objective while the focus group discussions, the researcher selects the discussants to participate in the discussions and he or she directs discussants in the area of his or her interest during the discussions. Questionnaires, though, may pose a challenge of lack of flexibility especially the Likert Scaled questionnaires whilst the focus group discussions may be subjective and are prone to biasness. Despite a few setbacks of using questionnaires and focus group discussions, many researchers used them and have proved to be more effective especially for mixed methods researches such as this one.

3.11 Data Collection Procedures

The data type collected was predominantly of primary in nature. This data was both quantitative and qualitative.

The quantitative data was collected using Likert Scaled self-administered questionnaires, for which lecturers had their own questionnaire and students had their own. Permission was sought from the respective colleges to collect data through the ethical clearance and through a specific letter which was addressed to NIPA where the researcher had challenges to get authorisation, see Appendices 4 and 5. The coded questionnaires were distributed to both lecturers and students

during August-September 2019 Residential School for the three colleges and were collected during the same period.

For qualitative data, focus group discussions were used and Focus Group Discussion Guide, see Appendix 3. The members of the focus group discussions were picked based on position as lecturer for blended distance programmes, position of manager/administrator for blended distance programmes and Information Technology Expertise. The discussions were firstly recorded using the recorders and then were transposed into statements and these statements were grouped into themes in readiness for analysis. These focus group discussions were conducted during August-September 2019 Residential School for the three colleges. Table 3.5 below depicts numbers and sexes of the discussants.

Table 3.5: Numbers and Sexes of Focus Group Discussants

	EHC	NIPA	LBTC
	Lecturers	Lecturers	Lecturers
Female	1	3	1
Male	3	1	4
Total	4	4	5

3.12 Data Processing and Analysis

The Collected data were carefully complied, sorted, edited, classified, coded and verified to enhance accuracy, relevance and reliability.

3.12.1 Data Processing

The data from two sets of questionnaires and transposed statements of focus group discussions were read, checked and edited for completeness.

3.12.2 Data Analysis

Collected data was compiled, summarised and analysed using Stata/SE 12.0 Package for Social Sciences researches. Stata/SE 12.0 Package for Social Sciences researches was used because it is user friendly in that it is easy to compute frequencies and present the computed data in different graphical forms such as frequency tables, histograms, pie charts, and so forth. Qualitative data were analysed by grouping the responses into common themes, coded and then analysed thematically. With respect to the analysis of open ended questions, the reading of all the responses was done to allow grouping of the responses according to similarity of themes.

3.13 Challenges faced in the Study

a) The researcher had difficulties in getting authorisation from National Institute for Public Administration to collect data from the College, see Appendix 4

b) The restrictions of the study to the selected colleges formed one of the many limitations of the study as far as the generalisation of the study results was concerned

3.14 Chapter Summary

The components covered under this research methodology encompasses issues of research design, philosophical assumptions of the study, pragmatism for this research, pedagogy for the study, adopted theory and model for this research, target population and sample sizes, sampling techniques, data collection procedures, and data processing and analysis as well as challenges faced in the study. The next Chapter seeks to explain the research findings on the basis of the foregoing undertakings.

CHAPTER FOUR: RESEARCH FINDINGS

4.1 Introduction

This Chapter presents the findings of the study. The findings are presented in tabular and figure formats for easy understanding. Frequency tables and figures are presented first for lecturers and students, followed by the cross tabulations, thereafter; regression and correlations. The final part of Chapter shows the qualitative analysis phase.

The overall response rate for the study for lecturers and students combined stood at 91% for all the three institutions of learning; but at individual college level, the response rates stood as follows; NIPA had 85%, LBTC had 92% and EHC had 97%. The aim of the study was to establish learners' and lecturers' perspectives on the adoption of e-learning platform for distance programs and increase the use of e-learning platforms among them.

4.2 Demographic characteristics of respondents

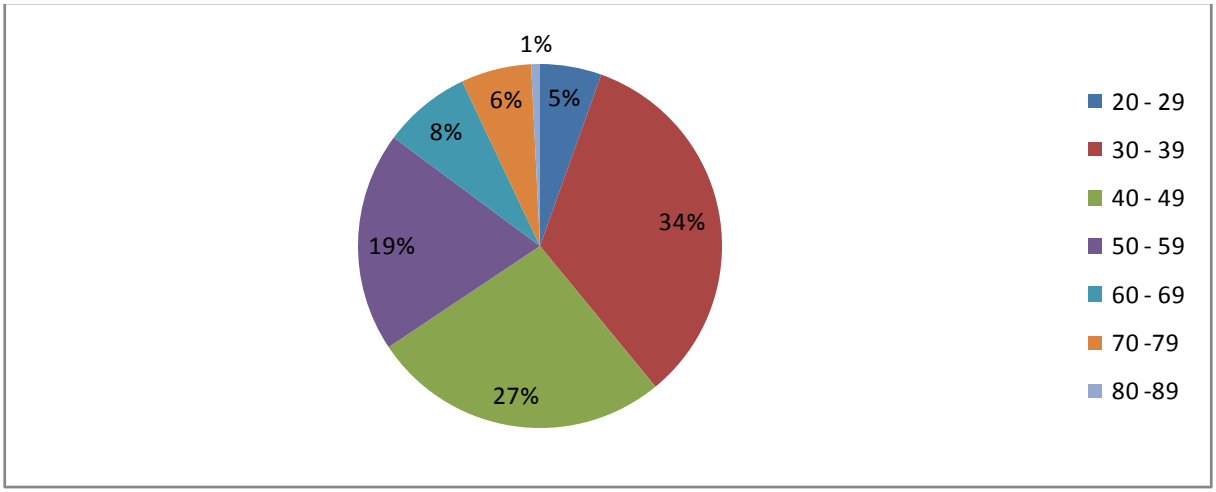

Figure 4.2. 1a: Age categories for lecturers

Figure 4.2.1a shows the age groups for lecturers from all the three institutions. The age group with the highest percentage was for those in the age category of 30 to 39 years with 43% and the lowest was age category 80 to 89 years with 1%.

Table 4.2.1a Age category for lecturers in years by institution

Age category in years	EHC	LBTC	NIPA	Total
20 - 29	1	5	1	7
%	*14.29*	*71.43*	*14.29*	*100.00*
30 - 39	16	12	15	43
%	*37.21*	*27.91*	*34.88*	*100.00*
40 - 49	8	8	18	34
%	*23.53*	*23.53*	*52.94*	*100.00*
50 - 59	7	9	9	25
%	*28.00*	*36.00*	*36.00*	*100.00*
60 - 69	3	4	3	10
%	*30.00*	*40.00*	*30.00*	*100.00*
70 - 79	1	5	2	8
%	*12.50*	*62.50*	*25.00*	*100.00*
80 - 89	0	0	1	1
%	*0.00*	*0.00*	*100.00*	*100.00*
Total	**36**	**43**	**49**	**128**
%	***28.13***	***33.59***	***38.28***	***100.00***

Table 4.2.1a shows age category for lecturers in years by institution. Of the modal age category, EHC had the largest proportion of 37.2%.

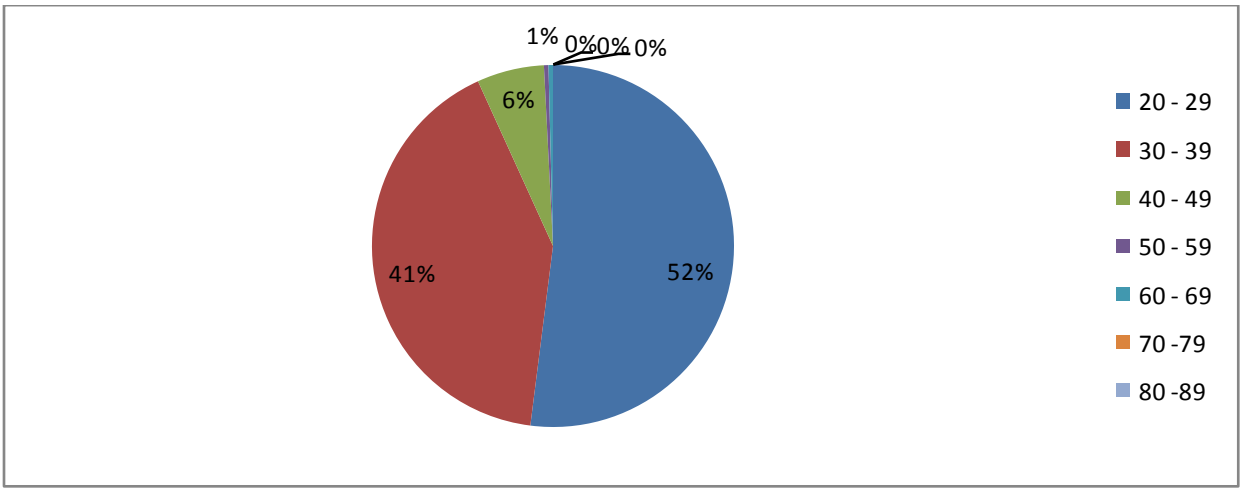

Figure 4.2.1b: Age categories for students

Figure 4.2.1b shows age groups among students the mode age group was 20 to 29 years with 52% followed by 30 to 39 years with 41%.

Table 4.2.1b Age category in years among students by institution

Age category in years	EHC	LBTC	NIPA	Total
20 - 29	1	5	1	7
%	*14.29*	*71.43*	*14.29*	*100.00*
30 - 39	16	12	15	43
%	*37.21*	*27.91*	*34.88*	*100.00*
40 - 49	8	8	18	34
%	*23.53*	*23.53*	*52.94*	*100.00*
50 - 59	7	9	9	25
%	*28.00*	*36.00*	*36.00*	*100.00*
60 - 69	3	4	3	10
%	*30.00*	*40.00*	*30.00*	*100.00*
70 - 79	1	5	2	8
%	*12.50*	*62.50*	*25.00*	*100.00*
80 - 89	0	0	1	1
%	*0.00*	*0.00*	*100.00*	*100.00*
Total	**36**	**43**	**49**	**128**
%	***28.13***	***33.59***	***38.28***	***100.00***

Table 4.2.1b shows age category in years among students by institution.

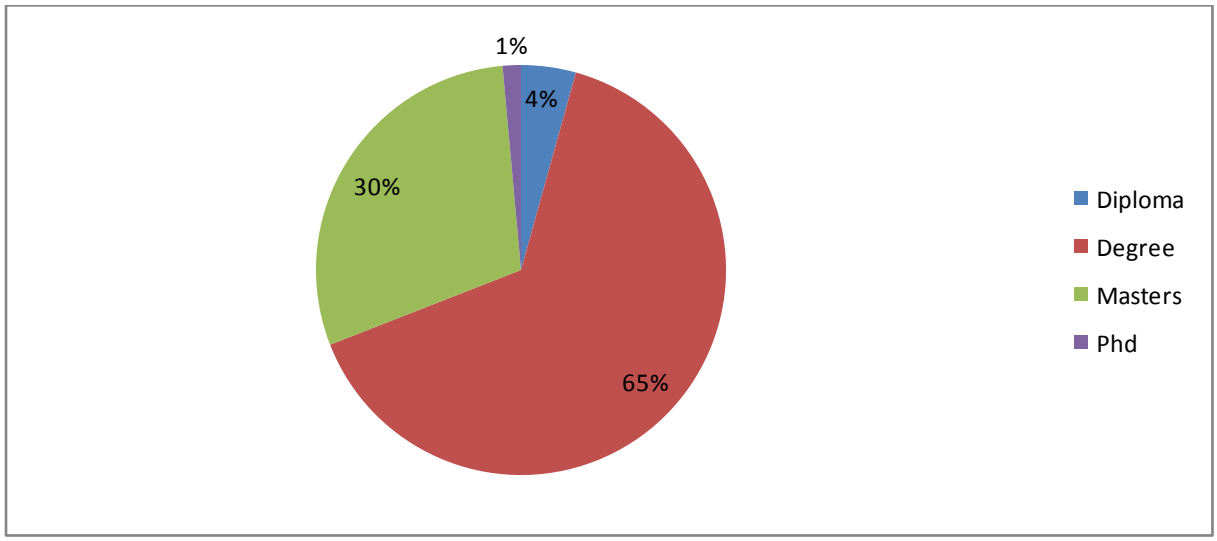

Figure 4.2.2a: Educational attainment by lecturers

Figure 4.2. 2a shows Educational attainment by lecturers; Degree was the mode with 65% and the lowest was PhD with 1%.

Table 4.2.2a Educational attainment by lecturers

Educational attainment	EHC	LBTC	NIPA	Total
Diploma	1	4	1	6
%	*16.67*	*66.67*	*16.67*	*100.00*
Degree	23	29	38	90
%	*25.56*	*32.22*	*42.22*	*100.00*
Masters	19	12	10	41
%	*46.34*	*29.27*	*24.39*	*100.00*
PhD	2	0.00	0	2
%	*100.00*	*0.00*	*0.00*	*100.00*
Total	**45**	**45**	**49**	**139**
%	***32.37***	***32.37***	***35.25***	***100.00***

Table 4.2.2a shows educational attainment by lecturers in the three institutions. Of the modal educational attainment, NIPA represented the largest proportion of 42.2% followed by LBTC with 32.2%. Masters' was the second most frequent educational attainment among the lecturers with a proportion of 29.3%.

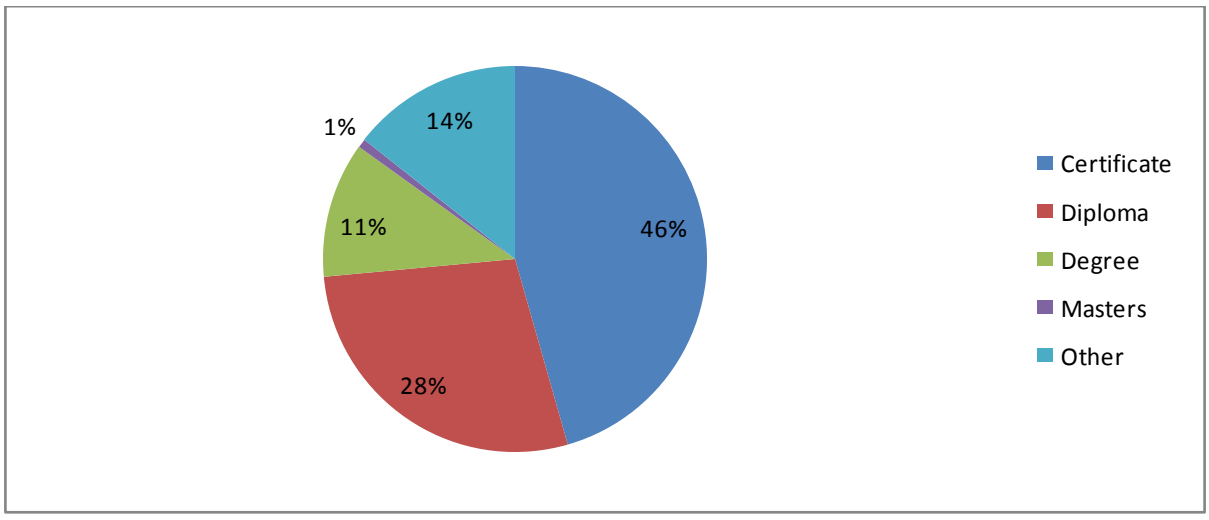

Figure 4.2.2b: Educational attainment by students

Figure 4.2.2b shows educational attainment by students in all the three institutions; the mode was certificate with 46% and the lowest was masters with 1%.

Table 4.2.2b Educational attainment by students by institution

Educational attainment	EHC	LBTC	NIPA	Total
Certificate	*49*	*22*	*53*	*124*
%	*39.52*	*17.74*	*42.74*	*100.00*
Diploma	*27*	*5*	*44*	*76*
%	*35.53*	*6.58*	*57.89*	*100.00*
Degree	*9*	*1*	*21*	*31*
%	*29.03*	*3.23*	*67.74*	*100.00*
Master	*0.00*	*0.00*	*2*	*2*
%	*0.00*	*0.00*	*100.00*	*100.00*
Other	*39*	*0.00*	*0.00*	*39*
%	*100.00*	*0.00*	*0.00*	*100.00*
Total	***124***	***28***	***120***	***272***
%	***45.59***	***10.29***	***44.12***	***100.00***

Table 4.2.2b shows educational level attained by students among institutions. Of the modal educational attainment, NIPA again represented the largest proportion of 42.7% followed by EHC with 39.5%. Diploma was the second most frequent with a proportion of 27.9% of the total respondents.

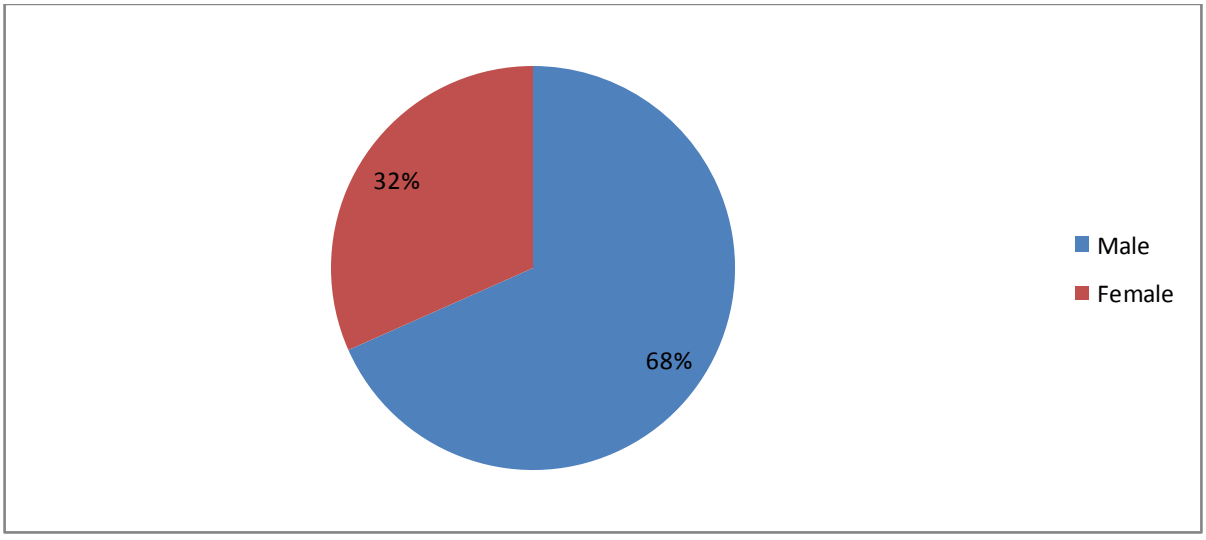

Figure 4.2. 3a: Sex of lecturers

Figure 4.2.3a show sex of the lecturers; male had 68% while female had 32% in all the three institutions.

Table 4.2.3a Sex of lecturers by institution

Sex	EHC	LBTC	NIPA	Total
Male	36	30	29	95
%	37.89	31.58	30.53	100.00
Female	9	15	20	44
%	20.45	34.09	45.45	100.00
Total	**45**	**45**	**49**	**139**
%	**32.37**	**32.37**	**35.25**	**100.00**

Table 4.2.3a shows sex of lecturers by institution. Of the total lecturers interviewed, the largest proportion was from NIPA (35.25%) while EHC and LBTC had equal proportions of 32.37% each.

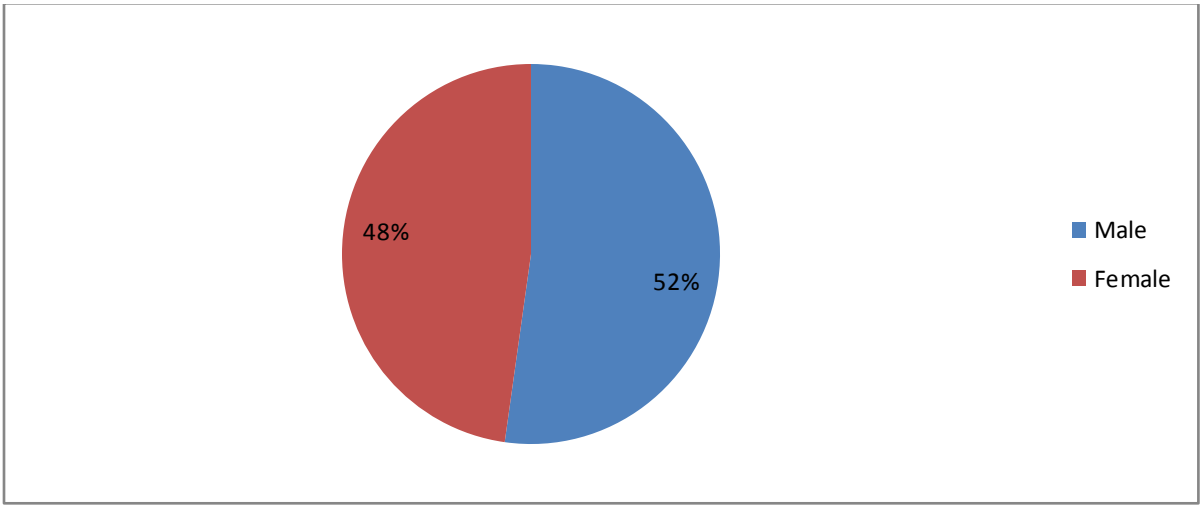

Figure 4.2.3b: Sex of students

Figure 4.2.3b shows sex of students for all the three institutions male students were 52% and female were 48%.

Table 4.2.3b Sex of students by institution

Sex	EHC	LBTC	NIPA	Total
Male	54	27	61	142
%	*38.03*	*19.01*	*42.96*	*100.00*
Female	70	1	59	130
%	*53.85*	*0.77*	*45.38*	*100.00*
Total	**124**	**28**	**120**	**272**
%	***45.59***	***10.29***	***44.12***	***100.00***

Table 4.2.3b shows sex of students by institution. Of the total students interviewed, the largest proportion was from EHC (45.59%) followed by NIPA with a proportion of 44.12%.

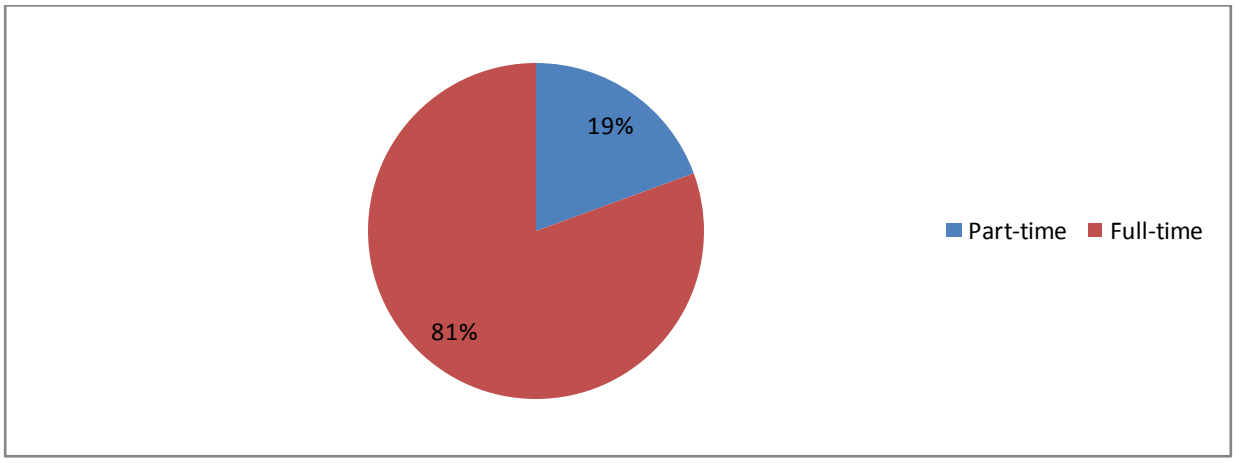

Figure 4.2. 4*: *Nature of employment among lecturers

Figure 4.2.4 shows nature of employment among lecturers in all the three institutions full time were 81% and 19% were part time.

Table 4.2.4 Nature of employment among lecturers in the three institutions

Nature of engagement	EHC	LBTC	NIPA	Total
Part time	4	14	9	27
%	14.81	51.85	33.33	100.00
Full time	41	31	40	112
%	36.61	27.68	35.71	100.00
Total	45	45	49	139
%	32.37	32.37	35.25	100.

Table 4.2.4 shows nature of employment among lecturers in the three institutions. Of the lecturers that were in full-time employment, the majority were from EHC (36.61%), followed closely by NIPA (35.71%). On the other hand, more than half of the lecturers in part-time employment were from LBTC (51.85%) followed by NIPA (33.33%).

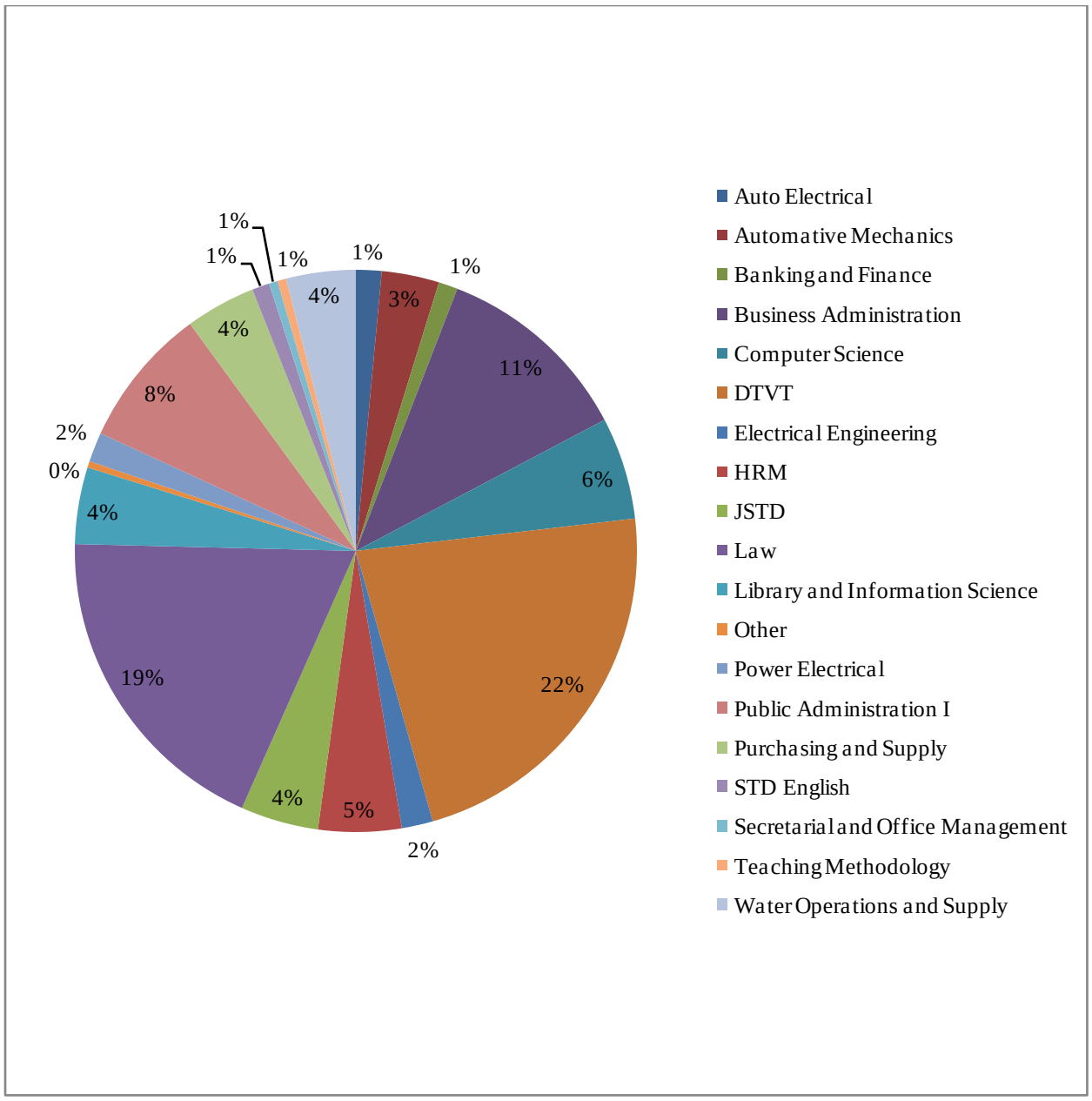

Figure 4.2. 5: Number of students per Program of study

Figure 4.2.5 shows programs of study for all the three institutions. The mode is Computer Science with 14% followed by Purchasing and Supply with 12.1% and so on.

Table 4.2.5 Number of students by Programs by institution

Program	EHC	LBTC	NIPA	Total
Auto Electrical	0	4	0	4
Automotive Mechanics	0	6	0	6
Banking and Finance	0	0	20	20
Business Administration	0	0	12	12
Computer Science	34	4	0	38
DTVT	6	0	12	18
Electrical Engineering	0	0	0	0
HRM	23	0	0	23
JSTD	7	0	0	7
Law	0	0	16	16
Library and Information Science	0	4	13	17
Other	0	2	6	8
Power Electrical	0	5	0	5
Public Administration I	0	0	15	15
Purchasing and Supply	16	0	17	33
STD English	20	0	0	20
Secretarial and Office Management	8	0	4	12
Teaching Methodology	10	0	5	15
Water Operations and Supply	0	3	0	3
Total	**124**	**28**	**120**	**272**

Table 4.2.5 shows number of students by programs by institution. Of the modal course taken, 89.5% were from EHC while the rest (10.5%) were from LBTC. None of the NIPA students interviewed took Computer Science.

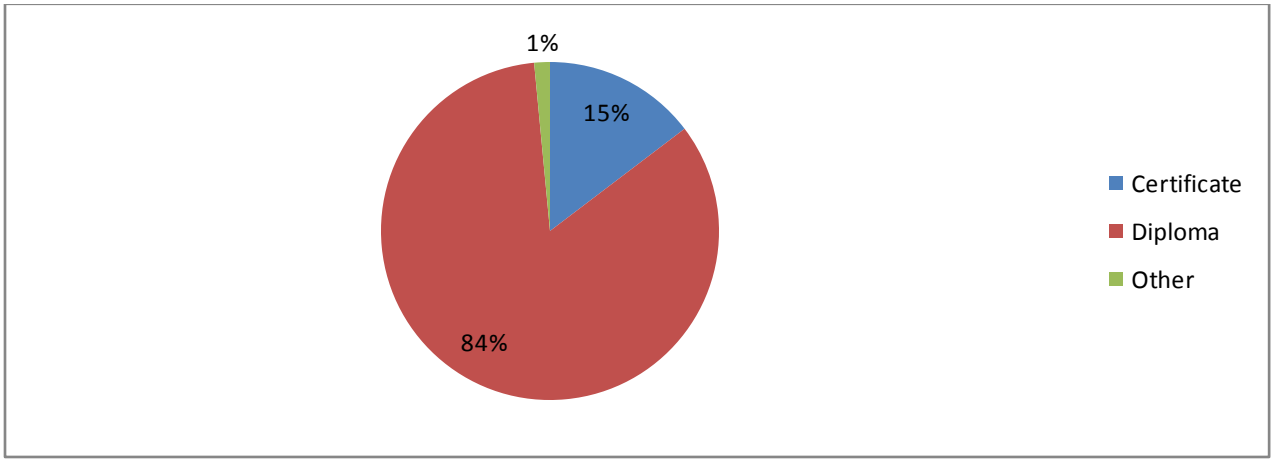

Figure 4.2. 6: Level of program of study

Figure 4.2.6 shows level of program of study the mode was diploma with 84% and the lowest is other programs with 1%.

Table 4.2.6 Level of program of study by institution

Level of program	EHC	LBTC	NIPA	Total
Certificate	4	25	10	39
%	10.26	64.10	25.64	100.00
Diploma	114	3	106	223
%	51.12	1.35	47.53	100.00
Other	0	0	4	4
%	0.00	0.00	100.00	100.00
Total	**118**	**28**	**120**	**266**
%	**44.36**	**10.53**	**45.11**	**100.00**

Table 4.2.6 shows level of program by institution. Of those that did diploma, the majority (47.53%) were from NIPA.

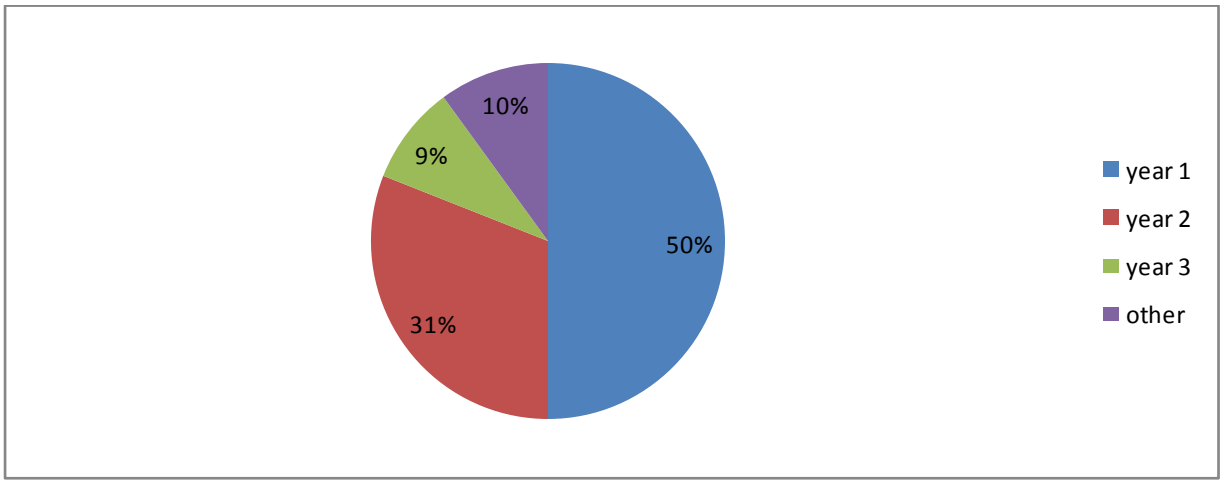

Figure 4.2. 7*: *Students' year of study

Figure 4.2.7 shows students' year of study; the mode is first year with 50% and the lowest is year three with 9%.

Table 4.2.7 Students' year of study by institution

Year of study	EHC	LBTC	NIPA	Total
1	21	24	44	89
%	23.6	26.97	49.44	100
2	10	3	42	55
%	18.18	5.45	76.36	100
3	0	0	12	12
%	0	0	100	100
Other	0	0	19	1
%	0	0	100	100
Total	**31**	**27**	**117**	**175**
%	**17.71**	**15.43**	**66.86**	**100**

Table 4.2.7 shows students' year of study by institution. Of the modal year of study (year 1), the largest proportion belonged to NIPA (49.44%) followed by LBTC (26.97%).

4.3 Respondents' perceptions on e-learning platform

4.3a Lecturers' Perceptions

Table 4.3a.1 Perceived ease of use of the E-learning platform among lectures

E-learning platform is fairly easy to use	Frequency	Percentage
Strongly Agree	8	5.76
Agree	110	79.14
Neutral	13	9.35
Disagree	7	5.04
Strongly Disagree	1	0.75
Total	**139**	**100.00**
E-learning platform is convenient for my studies		
Strongly Agree	10	7.19
Agree	47	33.81
Neutral	69	49.64
Disagree	11	7.91
Strongly Disagree	**2**	**1.44**
Total	**139**	**100.00**
E-learning platform interface is well designed for anyone with basic computer skills		
Strongly Agree	4	2.88
Agree	82	58.99
Neutral	34	24.46
Disagree	15	10.79
Strongly Disagree	4	2.88
Total	**139**	**100.00**
E-learning platform has challenges in usage		
Strongly Agree	3	2.16
Agree	49	35.25
Neutral	55	39.57
Disagree	26	18.71
Strongly Disagree	6	4.32
Total	**139**	**100.00**
E-learning platform is fairly easy to use for assessments		
Strongly Agree	11	7.91
Agree	87	62.59
Neutral	23	16.55
Disagree	14	10.07
Strongly Disagree	4	2.88
Total	**139**	**100.00**

Table 4.3a.1 shows perceived ease of use of the E-learning platform among lecturers; corresponding frequencies and percentages are present in the table.

In Table 4.3a.1 above, the statement "**E-learning platform is fairly easy to use**" is a key determinant of the perception of lecturers on ease of use of the e-learning platform, as such it was analysed further in Figure 4.3.1 and Table 4.3a.2 below.

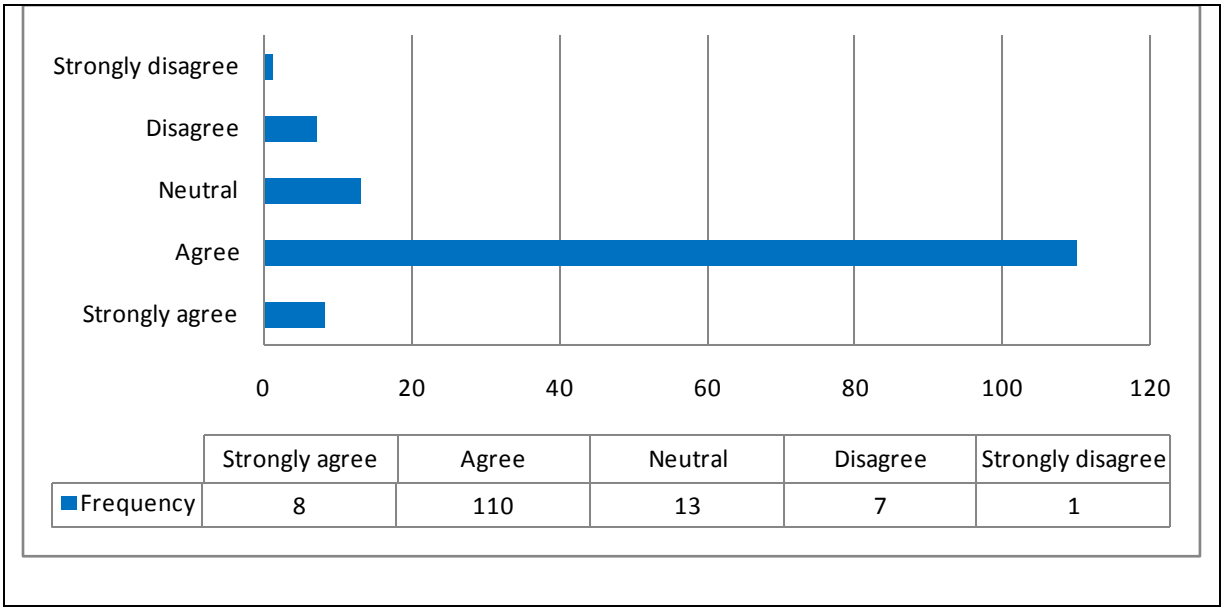

Figure 4.3. 1 E-learning is easy to use - Lecturers

Figure 4.3.1 shows lecturers' perspective on the ease of use of the e-learning platform.

Table 4.3a.2 Perception of Ease of use of e-learning platform among lecturers by institution

Institution		**E-learning platform is fairly easy to use – Lecturers**					
		Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**Total**
EHC	Frequency	7	21	9	7	1	**45**
	%	15.56	46.67	20.00	15.56	2.22	**100.00**
LBTC	Frequency	1	41	3	0	0	**45**
	%	2.22	91.11	6.67	0.00	0.00	**100.00**
NIPA	Frequency	0	48	1	0	0	**49**
	%	0.00	97.96	2.04	0.00	0.00	**100.00**
Total	Frequency	**8**	**110**	**13**	**7**	**1**	**139**
	%	**5.76**	**79.14**	**9.35**	**5.04**	**0.72**	**100.00**
Chi-Square Test		**Value**		**d.f.**		**Asymp. Sig. (2-Sided)**	
Pearson Chi-square		46.624[a]		8		0.004	

Table 4.3a.2 shows a P –value that is less than 5% ($\alpha = 0.05$) which indicates a statistically significant relationship between the perception of ease of use of the e-learning platform and institutions of learning based on lecturers' perception.

Hypothesis : H_0 : The perception of lecturers on the ease of use of e-learning platform across institutions is not different.

H_1 : The perception of lecturers on the ease of use of e-learning platform

across institutions is different.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule : If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.004

Conclusion :There is enough evidence that shows that the perception of lecturers on the ease of use of e-learning platform across institutions is different. In addition, this 0.004 P–value is also indicating a statistically significant relationship between the perception of lecturers on the ease of use of e-learning platform and their respective institutions. Therefore we reject the H_0.

Table 4.3a.3 Perceived risk of the E-learning platform

Electricity Outage negatively affects the use of E-learning platform	**Frequency**	**Percentage**
Strongly Agree	50	35.97
Agree	36	25.90
Neutral	29	20.86
Disagree	23	16.55
Strongly Disagree	1	0.72
Total	**139**	**100.00**
E-learning platform has relatively low internet security protection		
Strongly Agree	5	3.60
Agree	32	23.02
Neutral	65	46.76
Disagree	37	26.62
Strongly Disagree	0	0.00
Total	**139**	**100.00**
E-learning platform encourages plagiarism of academic work		
Strongly Agree	7	5.04
Agree	17	12.23
Neutral	57	41.01
Disagree	53	38.13
Strongly Disagree	5	3.60
Total	**139**	**100.00**
E-learning platform negatively affects learners' personal privacy		
Strongly Agree	3	2.16
Agree	22	15.83
Neutral	39	28.06

Disagree	61	43.88
Strongly Disagree	14	43.88
Total	**139**	**100.00**

Table 4.3a.3 shows perceived risk of the E-learning platform; corresponding frequencies and percentages are present in the table.

In Table 4.3a.3 above, the statement "**E-learning platform has relatively low internet security protection**" is a key determinant of the perception of lecturers on risk of using the e-learning platform, as such it was analysed further in Figure 4.3.2 and Table 4.3a.4 below.

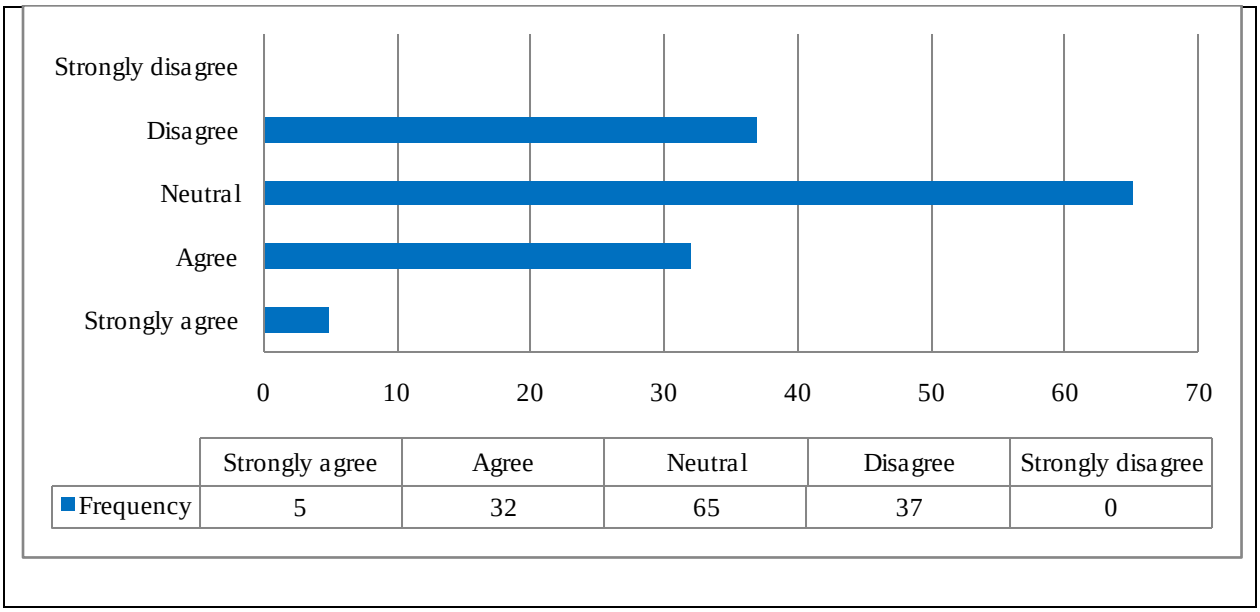

Figure 4.3. 2 E-learning platform has low internet security protection - Lecturers

Figure 4.3.2 above shows the lecturers' perceptions on internet risk provided by the e-learning platform.

Table 4.3a.4 Perceived risk of e-learning platform among lecturers by institution

Institution		**E-learning platform has relatively low internet security protection - Lecturers**					
		Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**Total**
EHC	Frequency	5	16	14	10	0	**45**
	%	11.11	35.56	31.11	22.22	0.00	**100.00**
LBTC	Frequency	0	6	18	21	0	**45**
	%	0.00	13.33	40.00	46.67	0.00	**100.00**
NIPA	Frequency	0	10	33	6	0	**49**
	%	0.00	20.41	67.35	12.24	0.00	**100.00**
Total	Frequency	**5**	**32**	**65**	**37**	**0**	**139**
	%	**3.60**	**23.02**	**46.76**	**26.62**	**0.00**	**100.00**
Chi-Square Test		**Value**		**d.f.**		**Asymp. Sig. (2-Sided)**	
Pearson Chi-square		33.6573		6		0.001	

Table 4.3a.4 shows a P -value that is less than 5% ($\alpha = 0.05$) which indicates a statistically significant relationship between the perception of risk of e-learning platform and institutions of learning based on lecturers' perception.

Hypothesis : H_0 :The perception of lecturers on risk associated with e-learning across institutions is not different.

H_1 : The perception of lecturers on risk associated with e-learning platform across institutions is different.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule :If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.001

Conclusion :There is enough evidence that shows that the perception of lecturers on risk associated with e-learning platform across institutions is different. In addition, this 0.001 Pvalue is also indicating a statistically significant relationship between the perception of lecturers on risk associated with e-learning platform and their respective institutions. Therefore we reject the H_0.

Table 4.3a.5 Perceived usefulness of e-learning platform-lecturers

E-learning is a creative complement to the standard method of learning but not a substitute to the standard method of learning	**Frequency**	**Percentage**
Strongly Agree	23	16.55
Agree	108	77.70
Neutral	5	3.60
Disagree	2	1.44
Strongly Disagree	1	0.72
Total	**139**	**100.00**
E-learning is more effective compared to the standard learning method		
Strongly Agree	5	3.60
Agree	32	23.02
Neutral	68	48.92
Disagree	24	17.27
Strongly Disagree	10	7.19
Total	**139**	**100.00**

E-learning platform is effective in my academic assessments i.e. sending and uploading of assignments to the platform		
Strongly Agree	9	6.47
Agree	97	69.78
Neutral	22	15.83
Disagree	10	7.19
Strongly Disagree	1	0.72
Total	**139**	**100.00**
E-learning makes learner-lecturer interaction more effective i.e. feedback on assignments, clarifications on lessons and general academic guidance		
Strongly Agree	10	7.19
Agree	72	51.80
Neutral	46	33.09
Disagree	8	5.76
Strongly Disagree	3	2.16
Total	**139**	**100.00**

Table 4.3a.5 shows perceived usefulness of the e-learning platform; corresponding frequencies and percentages are also presented.

In Table 4.3a.5 above, the statement "**E-learning is more effective compared to the standard learning method**" is a key determinant of the perception of lecturers on usefulness of the e-learning platform, as such it was analysed further in Figure 4.3.3 and Table 4.3a.6 below.

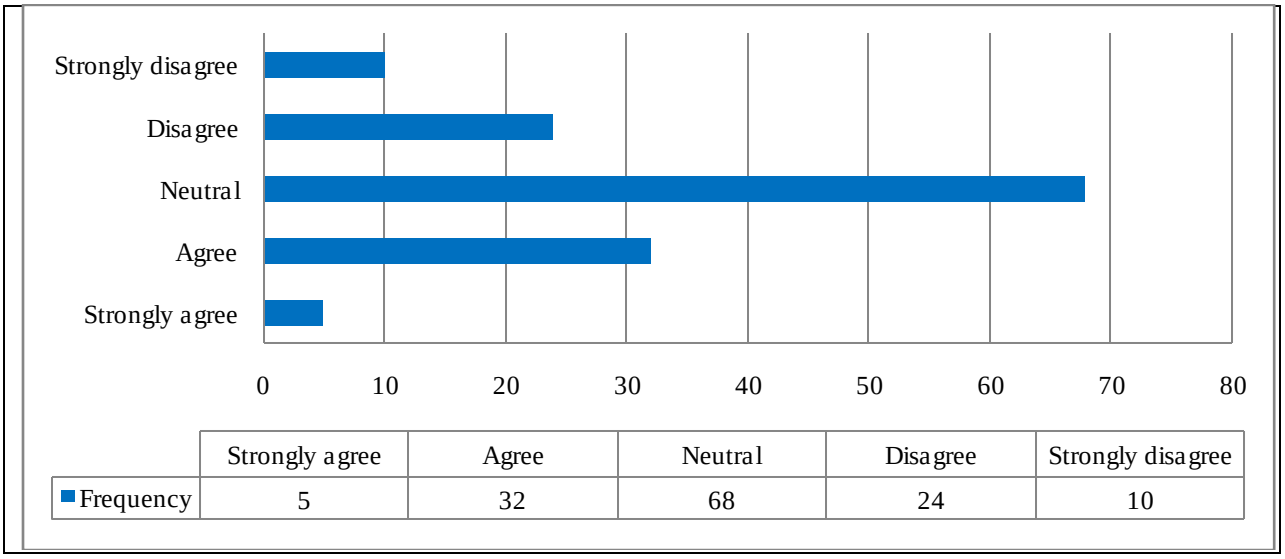

Figure 4.3. 3 Lecturers' perspectives on whether e-learning is more effective

Figure 4.3.3 shows Lecturers' perspectives on whether E-learning is more effective compared to the standard learning method.

Table 4.3a.6 Perceived Usefulness of e-learning platform among lecturers by institution

Institution		E-learning is more effective compared to the standard learning method					
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	**Total**
EHC	Frequency	5	5	11	15	9	**45**
	%	11.11	11.11	24.44	33.33	20.00	**100.00**
LBTC	Frequency	0	14	21	9	1	**45**
	%	0.00	31.11	46.67	20.00	2.22	**100.00**
NIPA	Frequency	0	13	25	19	1	**49**
	%	0.00	26.53	51.02	38.78	2.04	**100.00**
Total	Frequency	**5**	**32**	**68**	**24**	**10**	**139**
	%	**3.60**	**23.02**	**49.92**	**17.27**	**7.19**	**100.00**
Chi-Square Test		**Value**		**d.f.**		**Asymp. Sig. (2-Sided)**	
Pearson Chi-square		57.0644		8		0.000	

Table 4.3a.6 shows a P -value less than 5% ($\alpha = 0.05$) which indicates a statistically significant relationship between the perception of usefulness of the e-learning platform and institutions of learning based on lecturers' perception.

Hypothesis : H_0 : The perception of lecturers on the usefulness of the e-learning platform compared to the standard learning method across institutions is not different.

H_1 : The perception of lecturers on the usefulness of the e-learning platform compared to the standard learning method across institutions is different.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule :If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.000

Conclusion :There is adequate evidence that shows that the perception of lecturers on the usefulness of the e-learning platform compared to the standard learning method across institutions is different. In addition, this 0.000 P –value is also indicating a statistically significant relationship between the perception of lecturers on the usefulness of the e-learning platform and their respective institutions. Therefore we reject the H_0

Table 4.3a.7 Lecturers' perspective on E-learning adoption

There has been an increase in usage of the e-learning platform	Frequency	Percentage
Strongly Agree	11	7.91
Agree	90	64.75
Neutral	28	20.14
Disagree	10	7.19
Strongly Disagree	0	0.00
Total	**139**	**100.00**
There has been an increase in level of satisfaction and contentment for e-learning platform users		
Strongly Agree	5	3.60
Agree	40	28.78
Neutral	72	51.80
Disagree	21	15.11
Strongly Disagree	1	0.72
Total	**139**	**100.00**
There is need for improvement and revision of the e-learning platform to increase usage		
Strongly Agree	18	12.95
Agree	103	74.10
Neutral	12	8.63
Disagree	5	3.60
Strongly Disagree	1	0.72
Total	**139**	**100.00**
The current e-learning platform is sufficient for learner's requirements		
Strongly Agree	5	3.60
Agree	26	18.71
Neutral	83	59.71
Disagree	21	15.11
Strongly Disagree	4	2.88
Total	**139**	**100.00**
I frequently use the e-learning platform		
Strongly Agree	3	2.16
Agree	68	48.92
Neutral	33	23.74
Disagree	27	19.42
Strongly Disagree	8	5.76
Total	139	100.00
I spend a lot of academic time using the e-learning platform		
Strongly Agree	7	5.04
Agree	50	35.97
Neutral	43	30.94
Disagree	29	20.86
Strongly Disagree	10	7.19
Total	**139**	**100.00**

Table 4.3a.7 shows Lecturers' perspective on E-learning adoption; corresponding frequencies and percentages are presented in the table.

In Table 4.3a. 7 above, the statement "**I frequently use the e-learning platform**" is a key determinant of the perception of lecturers on their adoption of the e-learning platform, as such it was analysed further in Figure 4.3.4 and Table 4.3a.8 below.

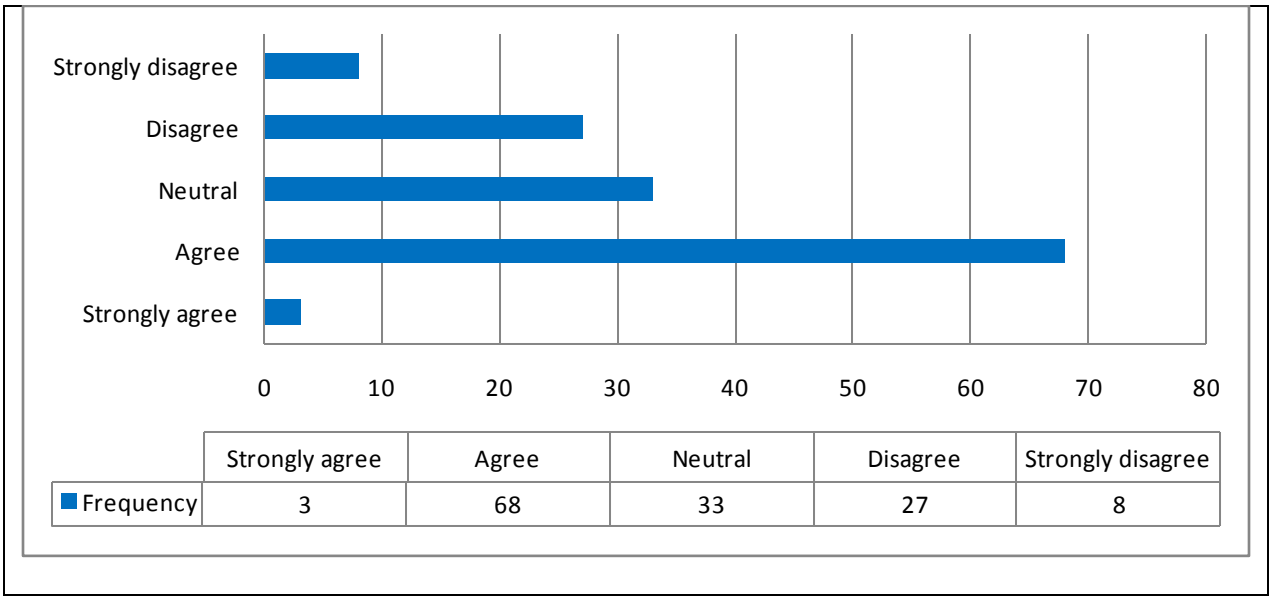

Figure 4.3. 4 I frequently use the e-learning platform

Figure 4.3.4 shows frequency of use of the e-learning platform among lecturers

Table 4.3a.8 Lecturers' perception on their adoption of e-learning platform by institution

Institution		**I frequently use the e-learning platform**					
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
EHC	Frequency	1	12	10	14	8	45
	%	2.22	26.67	22.22	31.11	17.78	100.00
LBTC	Frequency	2	24	9	10	0	45
	%	4.44	53.33	20.00	22.22	0.00	100.00
NIPA	Frequency	0	32	14	3	0	49
	%	0.00	65.31	28.57	6.12	0.00	100.00
Total	**Frequency**	**3**	**68**	**33**	**27**	**8**	**139**
	%	**2.16**	**48.92**	**23.74**	**19.42**	**5.76**	**100.00**
Chi-Square Test		**Value**		**d.f.**		**Asymp. Sig. (2-Sided)**	
Pearson Chi-square		34.8826		8		0.000	

Table 4.3a.8 shows a p -value that is less than 5% ($\alpha = 0.05$) indicates a statistically significant relationship between the perception of ease of use of the e-learning platform by institution of learning based on lecturers' perception.

Hypothesis : H_0 : The perception of lecturers of them having adopted e-learning platform across institutions is not different.

H_1 : The perception of lecturers of them having adopted e-learning platform across institutions is different.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule :If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

If the Pvalue is on the border line of α (i.e. very close to α), the results are treated as marginal results.

Sample Statistic: Pvalue = 0.000

Conclusion :There is adequate evidence that shows that the perception of lecturers of them having adopted e-learning platform across institutions is different. In addition, this 0.000 P –value is also indicating a statistically significant relationship between the perception of lecturers of them having adopted e-learning platform and their respective institutions. Therefore we reject the H_0

4.3b Students' Perceptions

Table 4.3b.1 Perceived ease of use of the E-learning Platform-Students

E-learning platform is fairly easy to use	**Frequency**	**Percentage**
Strongly Agree	26	9.56
Agree	232	85.29
Neutral	10	3.68
Disagree	3	1.10
Strongly Disagree	1	0.37
Total	**272**	**100.00**
E- learning platform is convenient for all my academic work		
Strongly Agree	6	2.21
Agree	73	26.84
Neutral	183	67.28
Disagree	9	3.31
Strongly Disagree	1	0.37
Total	**272**	**100.00**
The user interface for e-learning is well designed for any one no matter one's computer literacy level		
Strongly Agree	7	2.57
Agree	175	64.34
Neutral	69	25.37
Disagree	21	7.72
Strongly Disagree	0	0.00
Total	**272**	**100.00**

I have never experienced any challenges in using e-learning platform		
Strongly Agree	2	0.74
Agree	21	7.72
Neutral	133	48.90
Disagree	106	38.97
Strongly Disagree	10	3.68
Total	**272**	**100.00**

Table 4.3b.1 shows perceived ease of use of the E-learning platform among students; corresponding frequencies and percentages are also present in the table.

In Table 4.3b.1 above, the statement "**E-learning platform is fairly easy to use**" is a key determinant of the perception of students on ease of use of the e-learning platform, as such it was analysed further in Figure 4.3.5 and Table 4.3b.2 below.

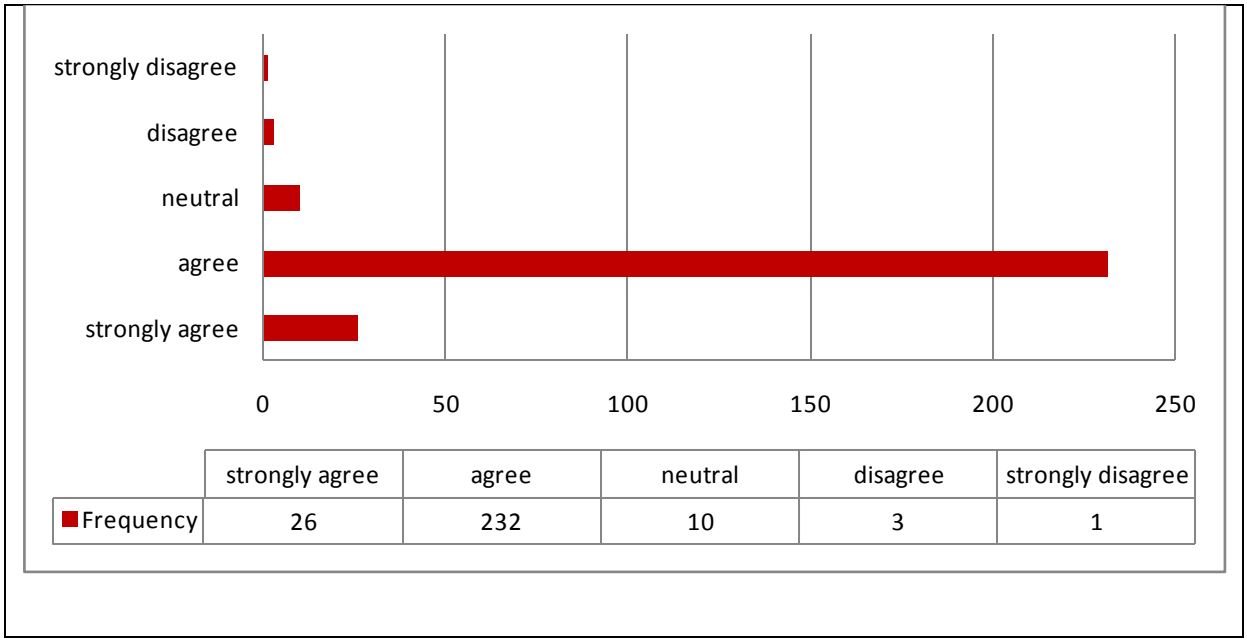

Figure 4.3. 5 E-learning platform is easy to use - students

Figure 4.3.5 above shows the responses from students on perceived ease of use of E-learning platform.

Table 4.3b.2 Perceived Ease of Use of E-learning platform among Students by Institution

Institution		E- learning platform is easy to use – Students					
		Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**Total**
EHC	Frequency	5	109	9	1	0	**124**
	%	4.03	87.90	7.26	0.81	0.00	**100.00**
LBTC	Frequency	6	19	0	2	1	**28**
	%	21.43	67.86	0.00	7.14	3.57	**100.00**
NIPA	Frequency	15	104	1	0	0	**120**
	%	12.50	86.67	0.83	0.00	0.00	**100.00**

Total	Frequency %	**26** **9.56**	**232** **85.29**	**10** **3.68**	**3** **1.10**	**1** **0.37**	**139** **100.00**
Chi-Square Test		**Value**		**d.f.**		**Asymp. Sig. (2-Sided)**	
Pearson Chi-square		37.6910		8		0.001	

Table 4.3b.2 shows a P -value less than 5% ($\alpha = 0.05$) which indicates a statistically significant relationship between the Perception of ease of use of the e-learning platform and institutions of learning based on students' perception.

Hypothesis : H_0 : The perception of students on the ease of use of e-learning platform across institutions is not different.

H_1 : The perception of students on the ease of use of e-learning platform across institutions is different.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule : If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.001

Conclusion :There is enough evidence that shows that the perception of students on the ease of use of e-learning platform across institutions is different. In addition, this 0.001 P –value is also indicating a statistically significant relationship between the perception of students on the ease of use of e-learning platform and their respective institutions. Therefore we reject the H_0.

Table 4.3b.3 Perceived risk of the E-learning platform

Electricity Outage negatively affects the use of E-learning platform use	**Frequency**	**Percentage**
Strongly Agree	59	21.69
Agree	95	34.93
Neutral	61	22.43
Disagree	57	20.96
Strongly Disagree	0	0.00
Total	**272**	**100.00**
E-learning platform has relatively low internet security protection		
Strongly Agree	1	0.37

Agree	46	16.91
Neutral	204	75.00
Disagree	21	7.72
Strongly Disagree	0	0.00
Total	**272**	**100**
E-learning platform encourages plagiarism of academic work		
Strongly Agree	2	0.74
Agree	59	21.69
Neutral	147	54.04
Disagree	64	23.53
Strongly Disagree	0	0.00
Total	**272**	**100.00**
E-learning platform negatively affects learners' personal privacy		
Strongly Agree	**1**	**0.37**
Agree	**40**	**14.71**
Neutral	**136**	**50**
Disagree	**93**	**34.19**
Strongly Disagree	**2**	**0.74**
Total	**272**	**100.00**

Table 4.3b.3 shows the perceived risk of the E-learning platform; corresponding frequencies and percentages are also presented in the table.

In Table 4.3b.3 above, the statement "**E-learning platform has relatively low internet security protection**" is a key determinant of the perception of students on risk of using the e-learning platform, as such it was analysed further in Figure 4.3.6 and Table 4.3b.4 below.

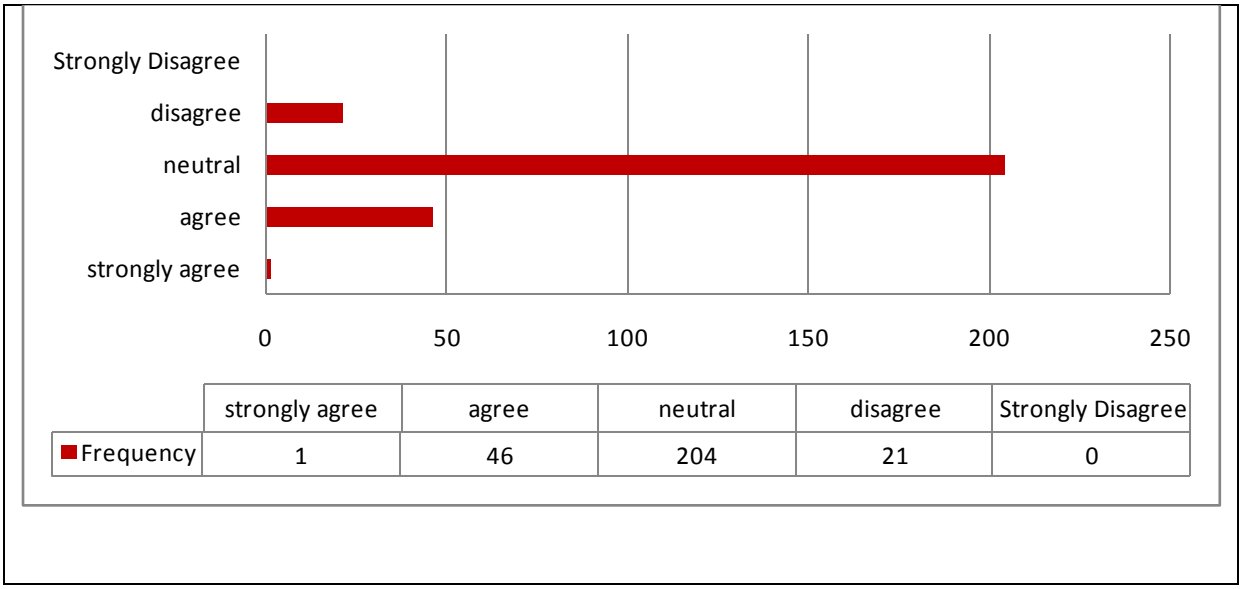

Figure 4.3. 6 Students' perspectives on Risk of E-learning platform **(E-learning platform has low internet security protection – students)**

Figure 4.3.7 above shows the students' perceptions on internet security provided by the e-learning platform.

Table 4.3b.4 Perceived risk of e-learning platform among students by institution

Institution		E-learning platform has low internet security Protection - Students					
		Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**Total**
EHC	Frequency	1	26	91	6	0	**124**
	%	0.81	20.97	73.39	4.84	0.00	**100.00**
LBTC	Frequency	0	11	12	5	0	**28**
	%	0.00	39.29	42.86	17.86	0.00	**100.00**
NIPA	Frequency	0	9	101	10	0	**120**
	%	0.00	7.50	84.17	8.33	0.00	**100.00**
Total	Frequency	**1**	**46**	**204**	**21**	**0**	**272**
	%	**0.37**	**16.91**	**75.00**	**7.72**	**0.00**	**100.00**

Chi-Square Test	**Value**	**d.f.**	**Asymp. Sig. (2-Sided)**
Pearson Chi-square	27.3365	6	0.003

Table 4.3b.4 shows a P -value less than 5% ($\alpha = 0.05$) which indicates a statistically significant relationship between the risk of e-learning platform and institutions of learning based on students' perception.

Hypothesis : H_0 :The perception of students on risk associated with e-learning platform across institutions is not different.

H_1 : The perception of students on risk associated with e-learning platform across institutions is different.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule :If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.003

Conclusion :There is enough evidence that shows that the perception of students on risk associated with e-learning platform across institutions is different. In addition, this 0.003P –value is also indicating a statistically significant relationship between the perception of students on risk associated with e-learning platform and their respective institutions. Therefore we reject the H_0.

Table 4.3b.5 Perceived usefulness of e-learning Platform-Students

E-learning is a creative complement to the standard method of learning but not a substitute to the standard method of learning	**Frequency**	**Percentage**
Strongly Agree	66	24.26
Agree	186	68.38
Neutral	19	6.99
Disagree	1	0.37
Strongly Disagree	0	0.00
Total	**272**	**100.00**
E-learning is more effective compared to the standard learning method		
Strongly Agree	3	1.10
Agree	54	19.85
Neutral	154	56.62
Disagree	55	20.22
Strongly Disagree	6	2.21
Total	**272**	**100.00**
E-learning platform is effective in my academic assessments i.e. sending and uploading of assignments to the platform		
Strongly Agree	5	1.84
Agree	186	68.38
Neutral	70	25.74
Disagree	11	4.04
Strongly Disagree	0	0.00
Total	**272**	**100.00**
E-learning makes learner-lecturer interaction more effective i.e. feedback on assignments, clarifications on lessons and general academic guidance		
Strongly Agree	9	3.31
Agree	102	37.50
Neutral	139	51.10
Disagree	22	8.09
Strongly Disagree	0	0.00
Total	272	100.00

Table 4.3b.5 shows the perceived usefulness of the e-learning platform; corresponding frequencies and percentages are also presented.

In Table 4.3b.5 above, the statement "**E-learning is more effective compared to the standard learning method**" is a key determinant of the perception of students on usefulness of the e-learning platform, as such it was analysed further in Figure 4.3.7 and Table 4.3b.6 below.

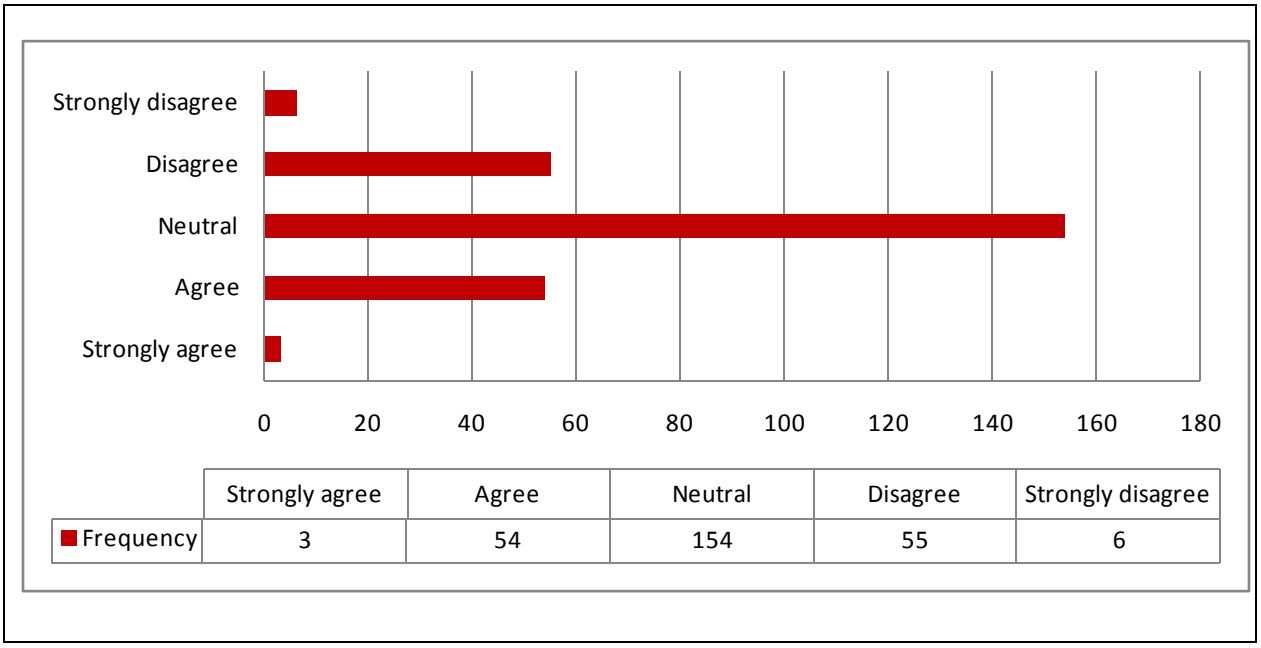

Figure 4.3. 7 Students' perspectives on whether E-learning is more effective

Figure 4.3.7 shows Students' perspectives on whether E-learning is more effective compared to the standard learning method.

Table 4.3b.6 Perceived Usefulness of e-learning platform among students by institution

Institution		**E-learning is more effective compared to the standard learning method**					
		Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**Total**
EHC	Frequency	1	20	57	40	6	124
	%	0.81	16.13	45.97	32.26	4.84	100.00
LBTC	Frequency	1	2	10	15	0	28
	%	3.57	7.14	35.71	53.57	0.00	100.00
NIPA	Frequency	1	32	87	0	0	120
	%	0.83	26.67	72.50	0.00	0.00	100.00
Total	**Frequency**	**3**	**54**	**154**	**55**	**6**	**272**
	%	**1.10**	**19.85**	**56.62**	**20.22**	**2.21**	**100.00**
Chi-Square Test		**Value**		**d.f.**		**Asymp. Sig. (2-Sided)**	
Pearson Chi-square		73.3808		8		0.000	

Table 4.3b.6 shows a P -value less than 5% ($\alpha = 0.05$) which indicates a statistically significant relationship between the perception of usefulness of the e-learning platform and institutions of learning based on lecturers' perception.

Hypothesis : H_0 : The perception of students on the usefulness of the e-learning platform compared to the standard learning method across institutions is not different.

H_1 : The perception of students on the usefulness of the e-learning platform compared to the standard learning method across institutions is

different.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule :If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.000

Conclusion :There is adequate evidence that shows that the perception of students on the usefulness of the e-learning platform compared to the standard learning method across institutions is different. In addition, this 0.000P –value is also indicating a statistically significant relationship between the perception of students on the usefulness of the e-learning platform and their respective institutions. Therefore we reject the H_0

Table 4.3b.7 The perception of Students on their adoption of E-learning platform

There has been an increase in usage of the e-learning platform	**Frequency**	**Percentage**
Strongly Agree	24	8.82
Agree	181	66.54
Neutral	66	24.26
Disagree	1	0.37
Strongly Disagree	0	0.00
Total	**272**	**100.00**
There has been an increase in level of satisfaction and contentment for e-learning platform users		
strongly agree	6	2.21
agree	85	31.25
neutral	178	65.44
Disagree	3	1.10
Strongly disagree	0	0.00
Total	**272**	**100.00**
There is need for improvement and revision of the e-learning platform to increase usage		
Strongly Agree	68	25.00
Agree	140	51.47
Neutral	57	20.96
Disagree	7	2.57
Strongly Disagree	0	0.00
Total	272	100.00
The current e-learning platform is sufficient for learner's requirements		
Strongly Agree	2	0.74
Agree	68	25.00

Neutral	176	64.71
Disagree	26	9.56
Strongly Disagree	0	0.00
Total	272	100.00
I frequently use the e-learning platform		
Strongly Agree	4	1.47
Agree	99	36.40
Neutral	88	32.35
Disagree	80	29.41
Strongly Disagree	1	0.37
Total	272	100.00
I spend a lot of academic time using the e-learning platform		
Strongly Agree	3	1.10
Agree	96	35.29
Neutral	83	30.51
Disagree	90	33.09
Strongly Disagree	0	0.00
Total	272	100.00
E-learning requires high concentration/intensity when using it		
strongly agree	6	2.21
agree	134	49.26
neutral	123	45.22
disagree	9	3.31
Strongly disagree	0	0.00
Total	**272**	**100.00**

Table 4.3b.7 shows students' perspective on their adoption of e-learning platform

In Table 4.3b.7 above, the statement "**I frequently use the e-learning platform**" is a key determinant of the perception of students on their adoption of the e-learning platform, as such it was analysed further in Figure 4.3.8 andTable 4.3b.8 below.

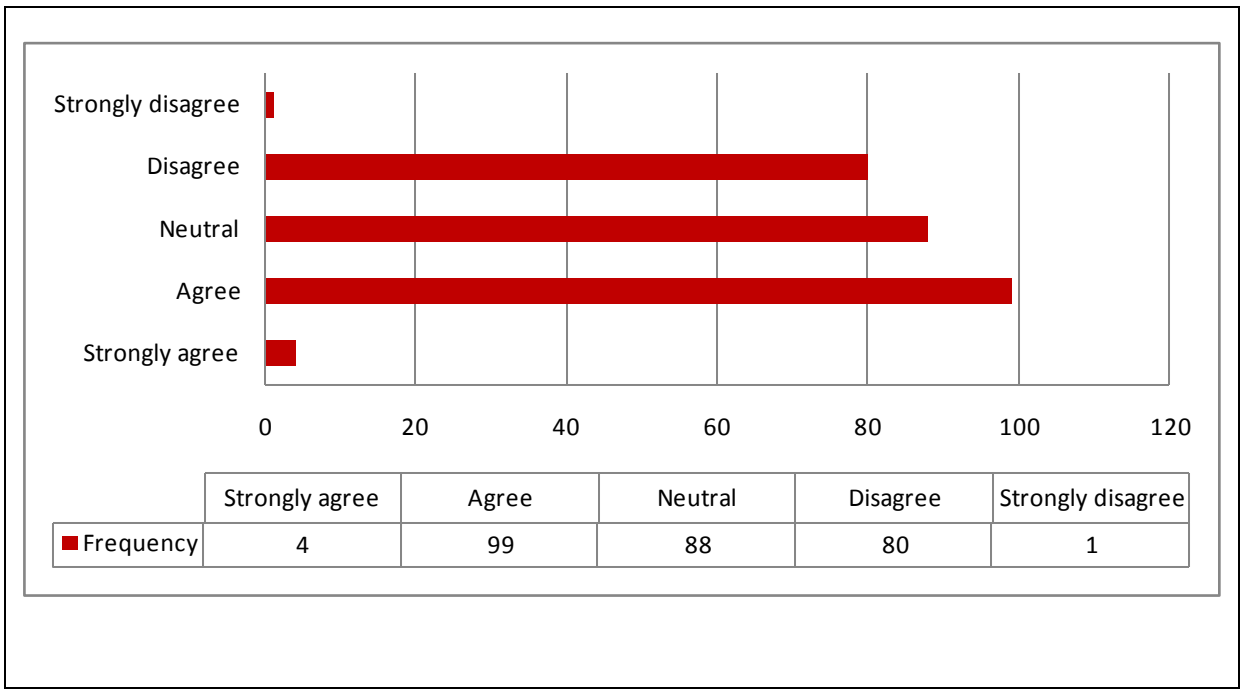

Figure 4.3. 8 I frequently use the e-learning platform

Figure 4.3.8 shows frequency of use of the e-learning platform among students.

Table 4.3b.8 Students' perspectives by institutions on their adoption of e-learning platform

Institution		**I frequently use the e-learning platform**					
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
EHC	Frequency	1	17	42	64	0	124
	%	0.81	13.71	33.87	51.61	0.00	100.00
LBTC	Frequency	2	4	7	14	1	28
	%	7.14	14.29	25.00	50.00	3.57	100.00
NIPA	Frequency	1	78	39	2	0	120
	%	0.83	65.00	32.50	1.67	0.00	100.00
Total	**Frequency**	**4**	**99**	**88**	**80**	**1**	**272**
	%	**1.47**	**36.40**	**32.35**	**29.41**	**0.37**	**100.00**
Chi-Square Test		**Value**		**df**		**Asymp. Sig (2-Sided)**	
Pearson Chi-square		120.5940		8		0.000	

Table 4.3b.8 shows a P -value less than 5% ($\alpha = 0.05$) which indicates a statistically significant relationship between the perception of adoption of the e-learning platform and institutions of learning based on students' perception.

Hypothesis : H_0 : The perception of students of them having adopted e-learning platform across institutions is not different.

H_1 : The perception of students of them having adopted e-learning platform across institutions is different.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule :If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.000

Conclusion :There is adequate evidence that shows that the perception of students of them having adopted e-learning platform across institutions is different. In addition, this 0.000P –value is also indicating a statistically significant relationship between the perception of students of them having adopted e-learning platform and their respective institutions. Therefore we reject the H_0

4.4 Logistic regressions for respondents

4.4.1 Logistic regressions for Lecturers

a) Logistic regressions for Lecturers – Males and Females

Frequent usage (proxy for adoption) of E-learning platform	**Odds ratio**	**P-value**	**Confidence interval**
Sex			
Male **(Reference)**	1	1	1
Female	2.116279	0.046	(1.01458 - 4.414277)

Hypothesis : H_0 :The sex of a lecturer does not influence the lecturer's adoption of e- learning platform.

H_1 : The sex of a lecturer does influence the lecturer's adoption of e-learning platform.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule :If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.046

Conclusion :There is enough evidence that shows that the sex of a lecturer has an influence on his or her adoption of e-learning platform. Therefore we reject the H_0.

Odds Ratio :Evidence from the above hypothesis shows that sex of a lecturer has a

influence on the lecturer's adoption of e-learning platform. In this particular case, a lecturer who indicates that he/she is female, her likelihood to adopt e-learning platform increases by 2.116279 in comparison to male lecturer.

b) Logistic regressions for Lecturers – Among Institutions

Frequent usage (proxy for adoption) of E-learning platform	**Odds ratio**	**P-value**	**Confidence interval**
Institution of learning (college)			
Evelyn Hone **(Reference)**	1	1	1
LBTC	3.368421	0.007	(1.404289 - 8.079719)
NIPA	4.633484	0.001	(1.936026 - 11.0893)

Hypothesis : H_0 :The Institution where a lecturer comes from does not influence the lecturer's adoption of e- learning platform.

H_1 : The Institution where a lecturer comes from does influence the lecturer's adoption of e- learning platform.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule : If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalues;

- Lusaka Business and Technical College (LBTC) = 0.007
- National Institute of Public Administration (NIPA) = 0.001

Conclusion :There is enough evidence that shows that the institution where a lecturer comes from has an influence on his or her adoption of e-learning platform. Therefore we reject the H_0.

Odds Ratios :Evidence from the above hypothesis shows that the institution where a lecturer comes from has an influence on the lecturer's adoption of e learning platform. In the above cases, a lecturer who indicates that he/she is from Lusaka Business and Technical College (LBTC), his or her likelihood to adopt e-learning platform increases by 3.368421 while the one who

indicates that he/she is from National Institute of Public Administration (NIPA), his or her likelihood to adopt e-learning platform increases by 4.633484 when both are compared to a lecturer from Evelyn Hone College respectively.

c) Logistic regressions for Lecturers – Part and Full Time

Frequent usage (proxy for adoption) of E-learning platform	**Odds ratio**	**P-value**	**Confidence interval**
Nature of employment (Lecturer)			
Part time **(Reference)**	1	1	1
Full-time	0.4491525	0.075	(0.1859382 - 1.084974)

Hypothesis : H_0 : The Nature of employment **of** a lecturer (part time/full time), does not influence the lecturer's adoption of e- learning platform.

H_1 : The Nature of employment **of** a lecturer (part time/full time) does influence the lecturer's adoption of e-learning platform.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule: If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.075

Conclusion :There is enough evidence that shows that the Nature of employment **of** a lecturer (part time/full time) does not have statistical significant influence on the lecturer's adoption of e- learning platform. Therefore we fail to reject the H_0.

Odds Ratio :Although the evidence from the above hypothesis shows that the Nature of employment of a lecturer (part time/full time) does not have statistical significant influence on the lecturer's adoption of e- learning platform, a lecturer who indicate that he or she is a full time lecturer, his or her likelihood to adopt e-learning platform reduces by 0.4491525 when compared to a part time lecturer.

d) Logistic regressions for Lecturers - Usefulness of e-learning platform

Frequent usage (proxy for adoption) of E-learning platform	Odds ratio	P-value	Confidence interval
Usefulness of e-learning platform			
Agrees with usefulness of e-learning platform **(Reference)**	1	1	1
Disagrees with usefulness of e-learning platform	0.4628788	0.053	(0.2123586–1.008939)

Hypothesis : H_0 : The agreement of a lecturer that e-learning platform is usefulness, does not influence the lecturer's adoption of e- learning platform.

H_1 : The agreement of a lecturer that e-learning platform is usefulness does influence the lecturer's adoption of e- learning platform.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule: If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.053

Conclusion :There is enough evidence that shows that the agreement of a lecturer that e-learning platform is useful does not have a statistical significant influence on the lecturer's adoption of e- learning platform. Therefore we fail to reject the H_0.

Odds Ratio : Although there is evidence from the above hypothesis that shows that the agreement of a lecturer that e-learning platform is usefulness, does not influence the lecturer's adoption of e- learning platform, however, a lecturer who disagree that e-learning platform is usefulness, his/her likelihood to adopt e-learning platform reduces by 0.4628788 when compared to a lecturer who agrees.

e) Logistic regressions for Lecturers - Internet risk associated with e-learning platform

Frequent usage (proxy for adoption) of E-learning platform	Odds ratio	P-value	Confidence interval
Risk of E-learning Platform			
Agrees that there is internet risk with e-learning platform **(Reference)**	1	1	1
Disagrees that there is internet risk with e-learning platform	0.7326009	0.421	(0.3434897-1.562504)

Hypothesis : H_0 : The agreement of a lecturer that e-learning platform has Low Internet Security Protection does not influence the lecturer's adoption of e- learning platform.

H_1 : The agreement of a lecturer that e-learning platform has Low Internet Security Protection does influence the lecturer's adoption of e- learning platform.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule: If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.421

Conclusion :There is enough evidence that shows that the agreement of a lecturer that e-learning platform has Low Internet Security Protection does not have a statistical significant influence on the lecturer's adoption of e- learning platform. Therefore we fail to reject the H_0.

Odds Ratio :Although the evidence from the above hypothesis shows that the agreement of a lecturer that e-learning platform has Low Internet Security Protection does not have a statistical significant influence on the lecturer's adoption of e- learning platform, a lecturer who disagree that e-learning platform has Low Internet Security Protection, his/her likelihood to adopt e-learning platform reduces by 0.732600 when compared to a lecturer who agrees.

f) Logistic regressions for Lecturers - Ease of Use of E-learning Platform

Frequent usage (proxy for adoption) of E-learning platform	**Odds ratio**	**P-value**	**Confidence interval**
Ease of use of the e-learning platform			
Agrees that e-learning platform is easy to use **(Reference)**	1	1	1
Disagrees that e-learning platform is easy to use	0 .0747521	0.001	(0.0166407 - 0.3357957)

Hypothesis : H_0 : The agreement of a lecturer that e-learning platform is easy to use, does not influence the lecturer's adoption of e- learning platform.

H_1 : The agreement of a lecturer that e-learning platform is easy to use does influence the lecturer's adoption of e- learning platform.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule: If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.001

Conclusion :There is enough evidence that shows that the agreement of a lecturer that e-learning platform is easy to use, has a statistical significant influence on the lecturer's adoption of e- learning platform. Therefore we reject the H_0.

Odds Ratio :There is enough evidence from the above hypothesis that shows that the agreement of a lecturer that e-learning platform is easy to use, does influence the lecturer's adoption of e- learning platform, in the above case, a lecturer who disagrees that e-learning platform is easy to use, his/her likelihood to adopt e-learning platform reduces by 0 .0747521 when compared to a lecturer who agrees.

4.4.2 Logistic regressions for Students

a) Logistic regressions for Students - Ease of Use of E-learning Platform

Frequent usage (proxy for adoption) of E-learning platform	**Odds ratio**	**P-value**	**Confidence interval**
Ease of use of e-learning platform			
Student agrees that e-learning platform is easy to use **(Reference)**	1	1	1
Student disagrees that e-learning platform is easy to use	0.1176471	0.041	(0.0151573 - 0.9131446)

Hypothesis : H_0 : The agreement of a student that e-learning platform is easy to use, does not influence the student's adoption of e- learning platform.

H_1 : The agreement of a student that e-learning platform is easy to use does influence the student's adoption of e- learning platform.

Significance level:$\alpha = 0.05$ or 5%

Decision Rule: If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.041

Conclusion :There is enough evidence that shows that the agreement of a student that

e-learning platform is easy to use, has a statistical significant influence on the student's adoption of e- learning platform. Therefore we reject the H_0.

Odds Ratio :There is enough evidence from the above hypothesis that shows that the agreement of a student that e-learning platform is easy to use, does influence the student's adoption of e- learning platform, in this case, a student who disagrees that e-learning platform is easy to use, his/her likelihood to adopt e-learning platform reduces by 0.1176471when compared to a student who agrees.

b) Logistic regressions for Students - Internet risk associated with e-learning platform

Frequent usage (proxy for adoption) of E-learning platform	**Odds ratio**	**P-value**	**Confidence interval**
Low Internet Security Protection (E-platform risk) on e-learning platform			
Agrees that there is internet risk with e-learning platform **(Reference)**	1	1	1
Disagrees that there is internet risk with e-learning platform	1.980721	0.058	(0.9761079 - 4.019286)

Hypothesis : H_0 : The agreement of a student that e-learning platform has Low Internet Security Protection, does not influence the student's adoption of e-learning platform.

H_1 : The agreement of a student that e-learning platform has Low Internet Security Protection does influence the student's adoption of e-learning platform.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule: If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.058

Conclusion :There is enough evidence that shows that the agreement of a student that e-learning platform has Low Internet Security Protection does not have a statistical significant influence on the student's adoption of e- learning platform. Therefore we fail to reject the H_0.

Odds Ratio :Although there is evidence from the above hypothesis that shows that the

agreement of a student that e-learning platform has Low Internet Security protection does not have a statistical significant influence on the student's adoption of e- learning platform, however, a student who disagree that e-learning platform has Low Internet Security Protection, his/her likelihood to adopt e-learning platform increases by 1.980721 when compared to a student who agrees.

c) Logistic regressions for Students - Usefulness of e-learning platform

Frequent usage (proxy for adoption) of E-learning platform	**Odds ratio**	**P-value**	**Confidence interval**
Usefulness of e-learning platform			
Agrees with usefulness of e-learning platform **(Reference)**	1	1	1
Disagrees with usefulness of e-learning platform	0.6652731	0.177	(0.3683758 - 1.201459)

Hypothesis : H_0 : The agreement of a student that e-learning platform is useful does not influence the student's adoption of e- learning platform.

H_1 : The agreement of a student that e-learning platform is useful does influence the student's adoption of e-learning platform.

Significance level: $\alpha = 0.05$ or 5%

Decision Rule: If the Pvalue is greater than or equal to α, you fail to reject H_0

If the Pvalue is less than α, reject H_0

Sample Statistic: Pvalue = 0.177

Conclusion :There is enough evidence that shows that the agreement of a student that e-learning platform is useful does not have a statistical significant influence on the student's adoption of e- learning platform. Therefore we fail to reject the H_0.

Odds Ratio : Although there is evidence from the above hypothesis that shows that the agreement of a student that e-learning platform is useful does not have a statistical significant influence on the student's adoption of e- learning platform, however, a student who disagrees that e-learning platform is useful, his/her likelihood to adopt e-learning platform reduces by 0.6652731 when compared to a student who agrees.

4.5 Tables of correlations

Table 4.5a: Correlations between adoption and perceptions on e-learning platform by lecturers

Perceptions on E-learning	Adoption of E-learning	
	***Correlation is significant at the 0.05 level**	****Correlation is significant at the 0.01 level**
Ease of use		
Pearson correlation	0.4113*	0.4113**
Sig. (P-value)	0.000	0.000
n	139	139
Risk		
Pearson correlation	1	1
Sig. (P-value)	-	-
n	139	139
Usefulness		
Pearson correlation	0.4722*	0.4722**
Sig. (P-value)	0.000	0.000
n	139	139

Table **4.5a** above shows that Ease of use and adoption of e-learning platform have a weak positive linear relationship both at 0.05 and 0.01 level of significance. Risk of e-learning platform did not show any significant correlation with adoption of e-learning platform. The variable usefulness and adoption of e-learning platform have a weak positive linear relationship both at 0.05 and at 0.01 levels of significance among lecturers.

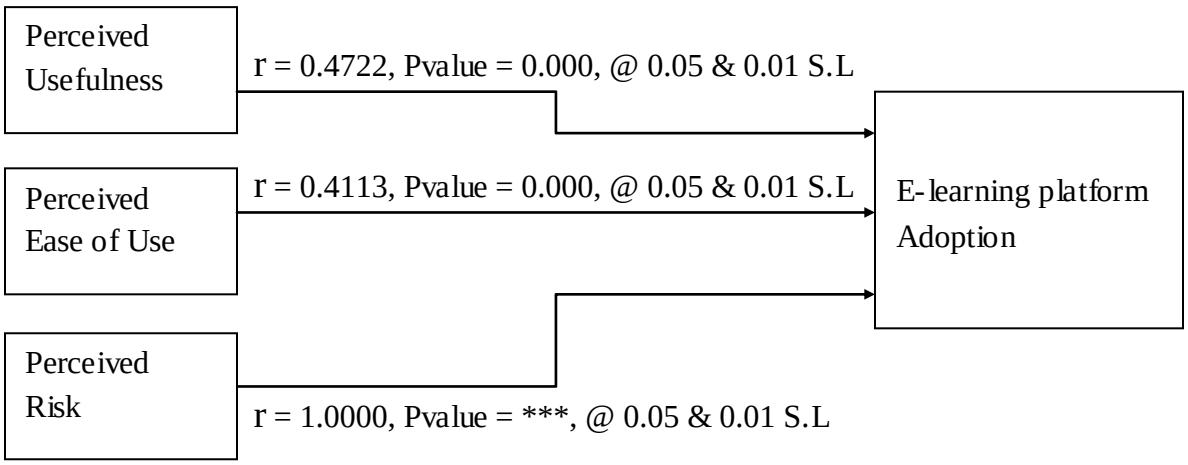

Figure 4.4. 1 Correlation to E-learning platform Adoption - Lecturers

Table 4.5b Correlations between adoption and perceptions on e-learning platform by students

Perceptions on E-learning (Independent Variables)	Adoption of E-learning (Dependent Variable)	
	***Correlation is significant at the 0.05 level**	****Correlation is significant at the 0.01 level**
Ease of use		
Pearson correlation	0.2871*	0.2871**
Sig. (P-value)	0.000	0.000
n	272	272
Risk		
Pearson correlation	- 0.1235*	1
Sig. (P-value)	0.0418	-
n	272	272
Usefulness		
Pearson correlation	0.4482*	0.4482**
Sig. (P-value)	0.000	0.000
n	272	272

Table 4.5b above shows that Ease of use and adoption of e-learning platform have a weak positive linear relationship both at 0.05 and 0.01 level of significance.

Risk of e-learning platform showed a weak negative linear relationship with adoption of e-learning platform at 0.05 level of significance, however, did not show any significant correlation with adoption of e-learning platform at 0.01 level of significance.

The variable usefulness and adoption of e-learning platform have a weak positive linear relationship both at 0.05 and at 0.01 levels of significance among students.

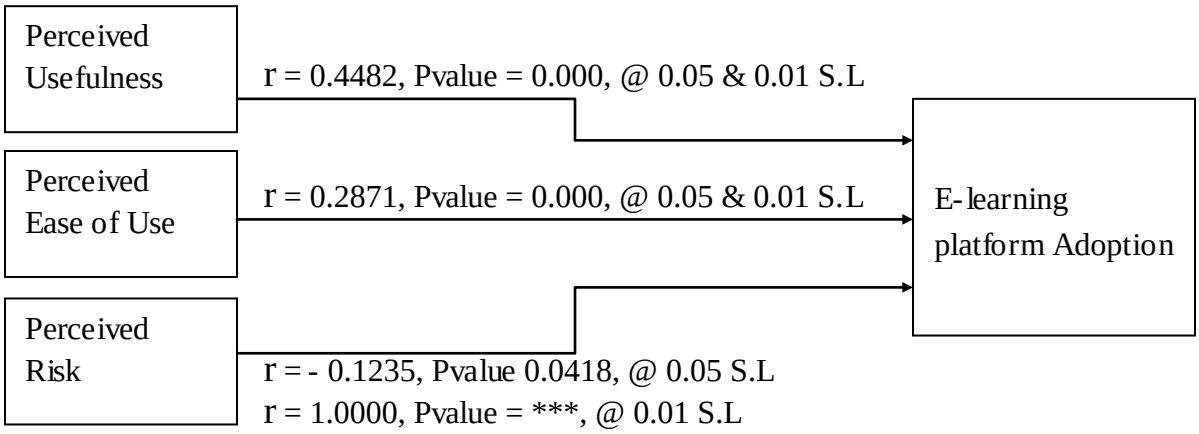

Figure 4.4. 2 Correlation to E-learning platform Adoption - students

4.6 Qualitative Analysis Phase

The identification of challenges often encountered with the e-learning platform use and solutions to counter the challenges is one of the key areas that this study sought to address; further another important aspect was to determine how the usage of the e-learning platform could be enhanced. Qualitative data was gathered from the three sites (stratum) using focus group discussions.

Table 4.6 Background information of participants

Background information of participants	**Sites**		
	EHC	**NIPA**	**LBTC**
i. Sex			
Male	2	1	4
Female	2	3	1
Total *(Sample)*	**4**	**4**	**5**
ii. **Education**			
Diploma	0	0	1
Degree	1	2	1
Masters	2	2	3
PhD	1	0	0
iii. **Age categories** (years)			
≤ 25	0	0	1
25 - 34	0	1	2
35 - 44	3	2	1
45 - 54	0	1	0
≥ 55	1	0	1
iv. Designation			
Head of distance learning program	1	1	1
IT specialist	1	1	1
Lecturers	2	2	3

The qualitative analysis revealed four over-arching themes related to challenges associated with e-learning platform use and measures that can be put in place in order to enhance its usage. Focus group discussions and in-depth interviews were used to collect information through the audio recording devices and thereafter transcription of the data was done and entered into atlas TI Version 8 for analysis.

Theme # 1: E-learning platform is still under development

In all the three focus group discussions it was recorded that the e-learning platform was still undergoing development. The system had challenges with adaptation to a given institution/college. The e-learning platform could not perform certain tasks yet that it was supposed to.

"……. It cannot be used for instance to upload transcripts so that we stop giving hard copy ones to students and many other functions until its fully developed and adapted to our college."

This was the notion that was shared throughout the focus group discussion in all the three sites that when it is fully developed, individual colleges could remove or add new features that fit their desires.

Theme # 2: Inadequate training for the use of the e-learning platform

The training program for both students and lecturers was not sufficient in terms of training resources and time. In all the three colleges the prevailing notion was that although the training took place it was not enough for people to fully appreciate the platform.

" ……. I am not that good in using computers and the trainers were too fast I couldn't really understand the use and the purpose of this e-learning."

The lack of adequate training facilities was another factor that was pointed out by the participants. It was recorded that many lecturers were sharing computers to use during the training sessions.

"…….. how can one understand given that during the training period some of us had to stand while learning and three or four people sharing one computer?"

Further, it was reported that some sessions were interrupted by power outages; this meant that such sessions had to be postponed. This impacted on the quality of the training on the use of the e-learning platform.

Theme # 3: Increase facilities to use on e-learning platform

Participants echoed the need for the colleges to purchase facilities that students and lecturers can use on the e-learning platform. Facilities such as computers and a reliable internet connection were still lacking in many learning institutions. The colleges needed also to invest in alternative sources of power such as Diesel or petrol powered generator sets and solar power in order to counter load.

Theme # 4: Retraining on the use of e-learning platform is needed

Participants reiterated the need for the institutions to consider retraining users; for the system to be fully utilised, the colleges needed to run intensive tutorials that would help people to gain knowledge on how the e-learning platforms are used. The notion that prevailed among the members was that the training needed to take into account that there were users that did not fully know how to use computers and such users would require special attention.

"….. trainers think that we all know how to use computers like they do; some of us need to be given more attention to understand and then we can increase how much we use it."

Further; it was recorded that people would begin to use the e-learning platform more as long as they fully understand its purpose and how it is operated when they are trained in a professional manner.

4.7 Chapter Summary

This chapter presented results from the data analysis of the quantitative results and the views collected from the focus group discussions. The next chapter carries out the discussion of the results obtained on the basis of what has been discussed in this chapter and those that precede it.

CHAPTER FIVE: DISCUSSION OF RESULTS

5.1 Introduction

This Chapter presents the discussion of the results obtained in the data analysis as well as the thematic observations from the focus group discussions. It sought to find any possible comparisons or contrasts with previous studies and was the basis of the recommendations made.

5.2 Reasons that account for the level of e-learning platforms usage in the colleges

The reasons that came out to account for the levels of e-learning platform usage in the three colleges were that; e-learning platform is easy to use, the platform was convenient for studies and assignments, e-learning platform was well-designed for anyone with basic computer skills, there was a perceived risks in using the e-learning platform (relatively low internet security protection, electricity outages having an effect, may encourage plagiarism and affect learners' privacy), and that the e-learning platform is useful (through providing creative compliment to the standard learning method, and that e-learning platform made learner-lecturer interaction more effective).

5.2.1 Perceived ease of use of the e-learning platform

On the basis of the responses from learners and lecturers, there was a statistically significant relationship between perceived ease of use of the e-learning platform with the institution of learning. About 84.9% of the lecturers *agreed (79.14 for 'Agree' and 5.76% for 'Strongly Agree')* that the platform is fairly easy to use. On the other hand, 94.86% of the students also *agreed (85.29% for 'Agree' and 9.56% for 'Strongly Agree')* that the platform is fairly easy to use. Similar results were obtained in the context of easy to use for studies and assessments. (see Tables 4.3a.2 and Table 4.3b.2). Goodhue and Thompson (1995) presented precursors of utilisation which included beliefs of using a system. This could be one explanation for this perception. Elkaseh, Wong, and Fung (2015), in a study on *The Acceptance of E-learning as a Tool for Teaching and Learning in Libyan Higher Education*, found that perceived enjoyment has a significant direct effect on perceived ease of use and perceived usefulness on both teachers & learners. The results also revealed that social influence has a direct effect on students' perceived ease of use and perceived usefulness of e-learning, but no significant direct effect on teachers' perceived ease of use and perceived usefulness of e-learning. In the same vein, Soneka and Phiri (2019) carried out a study whose objective was to assess the factors that influenced the level of e-tax systems adoption in Zambia. The data collected was analyzed using descriptive statistics and results showed that E-tax system in Zambia was useful, easy to use and also secure. The results of this study therefore have many elements in common with similar studies that have been undertaken in the past whose explanations could be used to provide the reasons for such an outcome.

With regards to convenience for studies and assignments; Omer, Klomsri, Tedre, Popova, Klingberg-Allvin, and Osman (2015), conducted a study where the results showed that students have a very positive attitude towards e-learning and they perceived that e-learning enhanced their educational experiences. The data analysis of this research however, revealed that about 50% of the lecturers remained neutral with only 41% agreeing that the e-learning platform was convenient for their studies. A larger proportion of the students was also neutral (67.28%), with a cumulative total of only 29% agreeing that it was convenient for all their academic work. This therefore means that there was no overwhelming evidence to show that e-learning platform was convenient for lecturers' studies and students' academic work. These findings confirm the importance of the expected consequences of using e-learning, suggesting that training programs and organisational policies could be instituted to enhance or modify these expectations as proposed by Thompson, Higgins and Howell (1991), in their study to help better understand the factors that influenced the use of PC technology.

In terms of the e-learning platform being well-designed for anyone with basic computer skills, the results for this variable indicated that over 60% of the lecturers agreed that the interface is well-designed for anyone with basic computer skills. On the other hand, over 66.9% of the students agreed to the same perception. The results of Kiget, Wanyembi and Peters (2014), in their study *Evaluating Usability of E-Learning Systems in Universities*, showed that user friendliness of IT has a strong positive relationship with the use of Learner Management Systems. The study looked at user friendliness only and was a case study of one of the public Kenyan universities whose results cannot be generalised to all Kenyan universities due to its narrow sample size. The results of the study could however be used to support the findings in this research.

Notwithstanding the above outcomes, significant proportions of both lecturers and learners indicated that they experienced challenges in using the e-learning platform. For instance, about 37.4% (see Table 4.3a.1) of the lecturers indicated having challenges in using the e-learning platform while about 8.5% (see Table 4.3b.1) of the learners indicated experiencing some challenges too. The majority for both the learners indicated a neutral stand point to this perspective which implies that while there were challenges experienced, they did not outweigh the perceived ease of use overall. Like any other system, e-learning also has some drawbacks. As Nischal and Guragain (2016) put it, the e-learning platform being flexible is not always as good as it may cause laziness and thus reduce efficiency. Some of the major challenges according to them are; low motivation, technology-dependency, compatibility issues, reliability of the content, social

isolation, expenses management, disadvantages disabled students, and none effective in all cases. In some cases, therefore, face-to-face Learning process might be more effective than learning online as e-learning sometimes lacks two-way communication.

5.2.2 Perceived risks in using the e-learning platform

The four key elements under this perspective were; relatively low internet security protection, electricity outages, possible plagiarism and affect learners' privacy. While there was a statistically significant relationship between the perception of risk of the e-learning platform and institutions of learning based on lecturers' and learners' perceptions; see Tables 4.3a.4 and 4.3b.4, the majority in both cases indicated a neutral stance to whether the platform had a relatively low internet security protection (46.8% of the lecturers were neutral and 75% of the students were neutral), with the second largest proportions falling on the end of 'Disagree' in both cases; see Tables 4.3a.3 and 4.3b.3. This therefore, means that the respondents did not perceive the e-learning platform to have a relatively low internet security protection. This finding indicates that the users are relatively satisfied with the performance and technological characteristics of the platform. High performance implies a high level of task-technology fit and satisfaction with the Information Technology (Goodhue & Thompson, 1995). The technology characteristics are described in two perspectives; Technical and Communication. In the technical view, technology characteristics refer to the capabilities of the system such as quality, reliability and functionality (Song, 2010).

As regards electricity outages having a negative impact on e-learning platform usage, 61.8% and 55.6% of lecturers and students *agreed,* respectively*;* see Tables 4.3a.3 and 4.3b.3. This outcome is pretty obvious especially owing to the fact that use of the e-learning platform involves Personal Computer (PC) utilization. According to Sharma and Mishra (2013), the use of computer by the worker is likely to be influenced by several factors such as his feelings (affect) toward using PCs, prevalent social norms regarding use of PC at the workplace, general habits related to use of the computer, consequences expected by the user of the PC and extent of conditions that are present at the work place for facilitating use of PC. The conditions present at the workplace or workstation may entail such things as power outages.

On whether the e-learning platform encouraged plagiarism, both the lecturers and learners reported 'neutral' responses on the most part (41% for lecturers and 54% for learners). This was followed by higher percentages for the response "Disagree" (41.7% for lecturers and 24% for students in that order); see Tables 4.3a.3 and 4.3b.3. The combination of these two results entails

that the respondents do not uphold the perception that the platform encourages plagiarism. In what could support this outcome, D'Ambra, Wilson and Akter (2013) in their study on how well the use of e-books meets the requirements of academics, used the task-technology fit (TTF) model to explore the inter-relationships of e-books, the affordances offered by smart readers, the information needs of academics, and the "fit" of technology to tasks as well as performance. They proposed that the adoption of e-books would be dependent on how academics perceive the fit of this new medium to the tasks they undertake as well as what added-value functionality is delivered by the information technology that delivers the content. It therefore means that the use of the e-learning platform enhances the quality of study and assignments

As regards the perception that e-learning platform negatively affects learners' personal privacy, 87.7% of the lecturers reported 'Disagree' while 28% reported 'Neutral'. On the other hand, 34% of the learners reported "Disagree" while 50% reported 'Neutral". This indicates that there is not much risk associated with usage of the e-learning platform; see Tables 4.3a.3 and 4.3b.3.

5.2.3 Perceived usefulness the e-learning platform

Perceived usefulness of the e-learning platform was measured through an exploration of whether; e-learning is a creative compliment to the standard method of learning, e-learning is more effective compared to the standard learning method, e-learning platform was effective in academic assessments, and that e-learning makes learner-lecturer interactions more effective.

All the variables, except the perception that e-learning is more effective compared to the standard learning method recorded responses that supported the claims as more than 50% of the respondents agreed; see Tables 4.3a.5 and 4.3b.5. It can therefore be said that both the learners and lecturers understand that E-learning is the use of information and communication technologies to enable the access to online learning/teaching resources. This is with reference to Abbad et al (2009) who defined E-learning to mean any learning that is enabled electronically. It can be added that E-learning, in the mind of OECD (2005) is the use of information and communication technologies in diverse processes of education to support and enhance learning in institutions of higher education and includes the usage of information and communication technology as a complement to traditional classrooms, online learning or mixing the two modes. Many researchers have concluded that e-learning is the learning that depends on computers and networks and encompasses systems comprising of a variety of channels such as wireless and satellite, and technologies such as cellular phones (Arkorful, 2014).

5.3 Level of E-learning Platform Usage by Lecturers and Learners in the Colleges

The extent of e-learning platform usage was investigated through but not limited to measuring the increase in the usage of the e-learning platform; increase in the level of satisfaction and contentment for e-learning platform usage, frequent usage of the e-learning platform, whether users spent more academic time when using the e-learning platform, level of concentration when using the platform, whether there is need for improvement and revision of the e-learning platform to increase its usage and whether the then e-learning platform was sufficient for learners' requirements; see tables 4.3a.7 and 4.3b.7.

In seeking to find out if the e-learning platform is useful, the study sought to find out if learners and lecturers; frequently used the e-learning platform, spent a lot of academic time using the e-learning platform, and whether e-learning required high concentration/intensity when using it. The responses under all the all categories were in favour of the perceptions since 'Agree' scored the larger proportion of the responses from both the lecturers and learners respectively; see Tables 4.3a.8 and 4.3b.8. It can be said therefore that the extent of use of the e-learning platform usage in the three institutions of learning is relatively high.

5.4 Measures to Improve Usage of E-learning Platforms in Colleges

In a bid to advocate for improvement of e-platform usage in the institutions of learning, the queries made in the research included; whether there is need to improve and revise e-learning platform to increase usage, whether the current e-learning platform is sufficient for learners' requirements, ease of use of the platform, convenience for all academic work, whether the interface for e-learning is well/sufficiently designed for any one irrespective of their computer literacy levels and whether any challenges were being experienced in using the e-learning platform. To ensure an all-encompassing coverage in this area, a qualitative phase was also conducted to solicit the views of the respondents that were selected for the focus group type of interaction.

5.4.1 Quantitative Analysis Results

The quantitative phase discussion of the measures to improve the usage of the e-learning platform would thus entail a consideration of most if not all of the variables discussed in the previous sections of this Chapter. It is only when evidence of lack in capacities of the e-learning platform is expressed that one can consider discussing measures of improvement. In as much as the respondents expressed that; they frequently used the platform, that the platform is fairly easy to use, and that the platform was effective for their academic assessments and assignments, there were grey areas in many other issues. These grey areas included the evidence that; there was

expressed need to improve and revise the e-learning platform, the platform required a high concentration/intensity when using it, and that they experienced challenges when using the e-learning platform.

Moreover, on whether there has been an increase in the level of satisfaction for e-learning platform users, whether the current e-learning platform is sufficient for learner's requirements, whether there has been an increase in the usage of the platform, and whether the platform is more effective compared to the standard learning method, the respondents held a neutral opinion which may add to the notion that the e-learning platform really requires some improvement if not a lot of improvement. This therefore provides evidence for the need to implement measures aimed at improving the e-learning platform in the three institutions which case may be applied to other institutions of learning in Zambia.

5.4.2 Qualitative Phase Results

In all the three focus group discussions it was recorded that the e-learning platform was still undergoing development. It was expressed that the e-learning platform cannot perform certain tasks yet that it is supposed. The training program for both students and lecturers was not sufficient in terms of training resources and time. In all the three colleges the prevailing notion was that although the training took place it was not enough for people to fully appreciate the platform. The lack of adequate training facilities was another factor that was pointed out by the participants. It was recorded that many lectures were sharing computers to learn during the training sessions.

Further, it was reported that some sessions were interrupted by power outages; this meant that such sessions had to be postponed. This impacted on the quality of the training on the use of the e-learning platform. Participants echoed the need for the colleges to purchase facilities that students and lecturers can use on the e-learning platform. Facilities such as computers and a reliable internet connection are still lacking in many learning institutions. The respondents also indicated the need to invest in alternative sources of power such as Diesel or petrol powered generator sets and solar power in order to counter load-shedding.

Participants reiterated the need for the institutions to consider retraining users; the system to be fully utilised, the colleges must run intensive tutorials that will help people to gain knowledge on how it is used. The notion that prevailed among the members was that the training must take into account that there are users that do not fully know how to use computers and such users will

require special attention. Further; it was recorded that people will begin to use the e-learning platform more as long as they fully understand its purpose and how it is operated when they are trained in a professional manner.

5.5 Chapter Summary

The study demonstrated that the level of use of the e-learning platform usage in the three institutions of learning is relatively high and in as much as the respondents expressed that they frequently used the platform, that the platform is fairly easy to use, and that the platform was effective for their academic assessments and assignments, there were grey areas in many other issues. The next Chapter spells out the conclusions and recommendations.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The research sought to investigate how E-Learning platform use could be increased in tertiary learning institutions for blended distance programmes-A case of Evelyn Hone College, National Institute of Public Administration, and Lusaka Business and Technical College. The research was guided by the following objectives;

i) To describe the level to which e-learning platforms have been used by the tertiary (colleges) learning institutions in Zambia.
ii) To identify the major challenges faced by tertiary (colleges) learning institutions in increasing the usage of e-learning platforms in Zambia.
iii) To prescribe measures that would increase the usage of e-learning platforms in tertiary (colleges) learning institutions in Zambia.

The objectives guided the research to remain focused. From the results and findings of the research, the following conclusions have been formulated:

6.2 Conclusions

1. With regard to the first objective; the researcher concluded that the uses of e-learning platforms among the three Institutions was different and stood as follows; for lecturers; Evelyn Hone College (EHC) it was 28.89%, Lusaka Business and Technical Colleges (LBTC) it stood at 57.77% and National Institute of Public Administration (NIPA) it was at 65.31%. On aggregate, the usage of e-learning platforms for lecturers was relatively high. On the other hand, for students it stood as follows; Evelyn Hone College (EHC) it was 14.52%, Lusaka Business and Technical Colleges (LBTC) it was at 21.43%, and National Institute of Public Administration (NIPA) it was at 65.83%. Over all, the usage of e-learning platforms among students was relatively on average.
2. The findings under the qualitative data satisfied the second objective of this Research. It was inferred therefore that the following were the key bottlenecks to e-learning increased use; E-learning platforms were still under development, inadequate training for the use of the e-learning platforms, lack of adequate facilities to use on e-learning platforms and inadequate training on the use of e-learning platforms.
3. Additionally, it was also concluded that social influence has a direct effect on students' perceived ease of use and perceived usefulness of e-learning, but no significant direct effect on lecturers' perceived ease of use and perceived usefulness of e-learning.

4. The results of this study therefore had many elements in common with similar studies that have been undertaken in the past whose explanations could be used to provide the reasons for such an outcome.
5. There was not much risk associated with usage of the e-learning platform.

6.3 Recommendations

Based on the conclusions above, the following were the recommendations:

1. There is expressed need to improve and revise the e-learning platform to make them more user friendly, the platforms requires a high concentration/intensity when using them, and that the users experienced challenges when using the e-learning platform.
2. The colleges must also invest in alternative sources of power such as Diesel or petrol powered generator sets and solar power in order to counter load.
3. There is need for the institutions to consider retraining users for the e-learning platforms to be fully utilized and the colleges must run intensive tutorials that will help people to gain knowledge on how e-learning platforms are used. The notion that prevailed among the lecturers was that the training must take into account of the fact that there are users that do not fully know how to use computers and such users will require special attention.
4. The users need to be explained to on the purposes and benefits of e-learning platform so that they can own the platforms and use them as their personal academic tool.
5. There is evidence for the need to implement the above measures aimed at improving the e-learning platforms use in the three institutions, which may be applied to other institutions of learning in Zambia.

6.4 Chapter Summary

With the understanding of the above, the results of this research and thus the discussion have brought to light the conclusions brought forward and recommendations thereof. It can be said therefore that the objectives of this research have been met. More studies in this field should be encouraged to explore other factors that relate to the study.

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APPENDICES

APPENDIX 1: Research Questionnaire

L - Questionnaire ID: [ ]

UNIVERSITY OF ZAMBIA
SCHOOL OF BUSINESS GRADUATE STUDIES

STUDY TITLE

INCREASING THE USE OF E-LEARNING PLATFORMS IN TERTIARY LEARNING INSTITUTIONS FOR BLENDED DISTANCE PROGRAMMES IN ZAMBIA

Student
Himoonga Rodgers

SID: GSB151724
(0973 – 464 762)

DATA COLLECTION QUESTIONNAIRE

Tick where appropriate (√)

SECTION A: BIO DATA

Please tell us about yourself?

1. Your gender

Male	Female

2. What was your age on your last birthday? ……

3. What is the classification of your position?

Part Time Lecturer	Full Time Lecturer

4. What is the highest level of your previous education?

Certificate	Diploma	Degree	Master's Degree	Ph.D

SECTION B: RQ a - Perceived ease of use **(Tick √ *where applicable*)**

Perceived ease of use of e-learning platform	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
i. E-learning platform is fairly easy to use					
ii. E- learning platform is convenient for all my academic work					
iii. The user interface for e-learning is well designed for any one no matter one's computer literacy level					
iv. I have never experienced any challenges in using e-learning platform					
v. It is easy to mark and grade content/material (assignments) on the Platform.					

SECTION C: RQ b - Perceived risk **(Tick √ *where applicable*)**

Perceived risk of use of e-learning Platform	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
i. Electricity outage negatively affects e-learning platform use					
ii. E-learning platform has relatively low internet security protection					
iii. The level of internet protection available on e-learning platform is not adequate					
iv. E-learning platform encourages plagiarism of academic work					
v. E-learning platform negatively affects learners' personal privacy					

SECTION D: RQ b Perceived usefulness **(Tick √ *where applicable*)**

Perceived usefulness of e-learning platform	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
i. E-learning is a creative complement to the standard method of learning but not a substitute to the standard method of learning					
ii. E-learning is more effective compared to the standard learning method					
iii. E-learning platform is effective in my academic assessments i.e. sending and uploading of assignments to the platform					
iv. E-learning makes learner-lecturer interaction more effective i.e. feedback on assignments, clarifications on lessons and general academic guidance					

SECTION E: E-learning adoption **(Tick √ *where applicable*)**

Acceptance and use of the E-learning platform	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
i. There has been an increase in usage of the e-learning platform					
ii. There has been an increase in level of satisfaction and contentment for e-learning platform users					
iii. There is need for improvement and revision of the e-learning platform to increase usage					
iv. The current Astria e-learning platform is sufficient for learner's requirements					
v. I frequently use the e-learning platform					
vi. I spend a lot of academic time using the e-learning platform					
vii. E-learning requires high concentration/intensity when using it					

Thank you for answering my questionnaire.

APPENDIX 2: Research Questionnaire

S – Questionnaire ID: ☐

UNIVERSITY OF ZAMBIA
SCHOOL OF BUSINESS GRADUATE STUDIES

STUDY TITLE

INCREASING THE USE OF E-LEARNING PLATFORMS IN TERTIARY LEARNING INSTITUTIONS FOR BLENDED DISTANCE PROGRAMMES IN ZAMBIA

Student
Himoonga Rodgers

SID: GSB151724
(0973 – 464 762)

DATA COLLECTION QUESTIONNAIRE

Tick where appropriate (√)

SECTION A: BIO DATA

Please tell us about yourself?

1. Your gender

Male	Female

2. What was your age on your last birthday? ……..……...……

3. What is the highest level of your previous education?

Certificate	Diploma	Degree	Masters Degree	Ph.D

4. What programme are you currently doing? ……..……

5. What are you currently studying for?

Certificate	Diploma	Degree	Masters Degree

6. What is your current year of study?

1	2	3	4	Others

SECTION B: RQ a Perceived ease of use **(Tick √ *where applicable*)**

Perceived ease of use of e-learning platform	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
i. E-learning platform is fairly easy to use					
ii. E- learning platform is convenient for all my academic work					
iii. The user interface for e-learning is well designed for any one no matter one's computer literacy level					
iv. I have never experienced any challenges in using e-learning platform					

SECTION C: RQ b Perceived risk **(Tick √ *where applicable*)**

Perceived risk of use of e-learning Platform	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
i. Electricity outage negatively affects e-learning platform use					
ii. E-learning platform has relatively low internet security protection					
iii. The level of internet protection available on e-learning platform is not adequate					
iv. E-learning platform encourages plagiarism of academic work					
v. E-learning platform negatively affects learners' personal privacy					

SECTION D: RQ b Perceived usefulness **(Tick √ *where applicable*)**

Perceived usefulness of e-learning platform	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
i. E-learning is a creative complement to the standard method of learning but not a substitute to the standard method of learning					
ii. E-learning is more effective compared to the standard learning method					
iii. E-learning platform is effective in my academic assessments i.e. sending and uploading of assignments to the platform					
iv. E-learning makes learner-lecturer interaction more effective i.e. feedback on assignments, clarifications on lessons and general academic guidance					

SECTION E: E-learning adoption **(Tick √ *where applicable*)**

Acceptance and use of the E-learning platform	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
i. There has been an increase in usage of the e-learning platform					
ii. There has been an increase in level of satisfaction and contentment for e-learning platform users					
iii. There is need for improvement and revision of the e-learning platform to increase usage					
iv. The current Astria e-learning platform is sufficient for learner's requirements					
v. I frequently use the e-learning platform					
vi. I spend a lot of academic time using the e-learning platform					
vii. E-learning requires high concentration/intensity when using it					

Thank you for answering my questionnaire.

APPENDIX 3: Focus Group Discussion Guide

University of Zambia
School of Business Graduate Studies

INCREASING THE USE OF E-LEARNING PLATFORMS IN TERTIARY LEARNING INSTITUTIONS FOR BLENDED DISTANCE PROGRAMMES IN ZAMBIA

Himoonga Rodgers

Student no.: GSB151724

Supervisor: Dr. Jackson Phiri

FOCUS GROUP DISCUSSION QUESTIONS

1. What challenges do you often encounter when using the E- Learning Platform?
2. How are these challenges you indicated above being resolved?
3. How can e-learning platform use be increased in your tertiary learning institution?

Thank you

APPENDIX 4: Introductory Letter

THE UNIVERSITY OF ZAMBIA

Telephone: +260 211 250871
Email: gsb@unza.zm
Tel/Fax: +260 211 290863

Graduate School of Business
P. O. Box 32379
Lusaka, Zambia

4th June, 2019

The Registrar
National Institute of Public Administration
P.O. Box 31990
LUSAKA

RE: INTRODUCTORY LETTER FOR HIMOONGA RODGERS (GSB151724)

This letter serves to introduce **Himoonga Rodgers** student number **(GSB151724)** a bonafide student in our Master of Science (MSc) Entrepreneurship & Innovation Management Rails programme at the University of Zambia – Graduate School of Business (UNZA–GSB). In partial fulfilment of their Postgraduate studies, each student is required to undertake a Dissertation (Research) in the final year of study.

May you kindly assist the student in granting permission for him to collect data from your Institution. The research is purely for academic purposes and the student is ethically bound to treat the provided information with strict confidentiality.

Should you have any queries or would like further information about the student, please contact the UNZA–GSB on the above e-mail address or phone numbers.

Yours Faithfully,

Dr. Lubinda Haabazoka
DIRECTOR - GRADUATE SCHOOL OF BUSINESS

cc. Assistant Registrar – Graduate School of Business

UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
11 JUN 2019
DIRECTOR
UNIVERSITY OF ZAMBIA
P.O. BOX 32379, LUSAKA

APPENDIX 5: Letter of Approval

THE UNIVERSITY OF ZAMBIA

DIRECTORATE OF RESEARCH AND GRADUATE STUDIES

Great East Road | P.O. Box 32379 | Lusaka 10101 | **Tel:** +260-211-290 258/291 777
Fax: +260-1-290 258/253 952 | **Email:** director@drgs.unza.zm | **Website:** www.unza.zm

Approval of Study

31st May, 2019

REF NO. HSSREC: 2019-MAR-016

Mr. Himoonga Rodgers
University of Zambia
Graduate School of Business
Box 32379
LUSAKA

Dear Mr. Hamoonga,

RE: "HOW E-LEARNING PLATFORM USE CAN BE INCREASED IN TERTIARY LEARNING INSTITUTION FOR DISTANCE AND PARALLEL STUDENTS"

Reference is made to your resubmission. The University of Zambia Humanities and Social Sciences Research Ethics Committee IRB resolved to approve this study and your participation as Principal Investigator for a period of one year.

Review Type	**Ordinary /Expedited Review**	**Approval No. REF No. HSSREC: 2017-MARCH-007**
Approval and Expiry Date	Approval Date: 31st May, 2019	Expiry Date: 30th May, 2020
Protocol Version and Date	Version-Nil	30th May, 2019
Information Sheet, Consent Forms and Dates	• English.	To be provided
Consent form ID and Date	Version	To be provided
Recruitment Materials	Nil	Nil

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There are specific conditions that will apply to this approval. As Principal Investigator it is your responsibility to ensure that the contents of this letter are adhered to. If these are not adhered to, the approval may be suspended. Should the study be suspended, study sponsors and other regulatory authorities will be informed.

Conditions of Approval

- No participant may be involved in any study procedure prior to the study approval or after the expiration date.
- All unanticipated or Serious Adverse Events (SAEs) must be reported to the IRB within 5 days.
- All protocol modifications must be IRB approved by an application for an amendment prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address or methodology and methods. Many modifications entail minimal risk adjustments to a protocol and/or consent form and can be made on an Expedited basis (via the IRB Chair). Some examples are: format changes, correcting spelling errors, adding key personnel, minor changes to questionnaires, recruiting and changes, and so forth. Other, more substantive changes, especially those that may alter the risk-benefit ratio, may require Full Board review and approval. In all cases, except where noted above regarding subject safety, any changes to any protocol document or procedure must first be approved by the IRB before they can be implemented.
- All protocol deviations must be reported to the IRB within 5 working days.
- All recruitment materials must be approved by the IRB prior to being used.
- Principal investigators are responsible for initiating Continuing Review proceedings. Documents must be received by the IRB at least 30 days before the expiry date. This is for the purpose of facilitating the review process. Any documents received less than 30 days before expiry will be labelled "late submissions" and will incur a penalty.
- Every 6 (six) months a progress report form supplied by The University of Zambia Humanities and Social Sciences Research Ethics Committee IRB must be filled in and submitted to us. There is a penalty of K500.00 for failure to submit the report.
- The University of Zambia Humanities and Social Sciences Research Ethics Committee IRB does not "stamp" approval letters, consent forms or study documents unless requested for in writing. This is because the approval letter clearly indicates the documents approved by the IRB as well as other elements and conditions of approval.

Should you have any questions regarding anything indicated in this letter, please do not hesitate to get in touch with us at the above indicated address.

On behalf of The University of Zambia Humanities and Social Sciences Research Ethics Committee (IRB), we would like to wish you all the success as you carry out your study.

Yours faithfully,

Dr. Jason Mwanza
BA, MSoc, Sc., PhD
CHAIRPERSON
THE UNIVERSITY OF ZAMBIA HUMANITIES AND
SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE IRB

cc: Director, Directorate of Research and Graduate Studies
Assistant Director (Research), Directorate of Research and Graduate Studies
Assistant Registrar (Research), Directorate of Research and Graduate Studies
Senior Administrative Officer (Research), Directorate of Research and Graduate Studies

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APPENDIX 6: Letter of Acknowledgement for Possible Publication

jss@scirp.org <jss@scirp.org>

To:rhimoonga76@yahoo.com

Tue, Jun 16 at 6:25 AM

Dear Dr. Rodgers Himoonga Rodgers Himoonga ,

Thank you for submitting your paper to Open Journal of Social Sciences (JSS). Submission details are as follows:

Manuscript ID: 1763607
Title: INCREASING THE USE OF E-LEARNING PLATFORMS IN TERTIARY LEARNING INSTITUTIONS FOR BLENDED DISTANCE PROGRAMMES IN ZAMBIA
Author(s): Rodgers Himoonga Rodgers Himoonga
Submission Time: 2020-06-16 21:24:21
E-mail(s): rhimoonga76@yahoo.com
User Name: rhimoonga76@yahoo.com

It would be highly appreciated if you could pay attention to the followings and reply to us within 24 hours on receiving this email:

1.Agree to Conditions:1) All authors of the manuscript have read and agreed to its content and are accountable for all aspects of the accuracy and integrity of the manuscript; **2)**The submitted article must be the one presenting original work that is not being considered or reviewed by any other publication, and has not been published elsewhere in the same or a similar form.

2. Provide Author-Related Information: These include names, e-mails, and affiliations of co-authors; if ORCID is registered, please provide us with a 16-digit identifierwhich improves recognition for you and your research.

3. Suggest Reviewers: When submitting your article, you may be asked to suggest **4-8** potential peer reviewers. The editors will not necessarily invite your suggested reviewers but these suggestions can help speed up the peer review process. When suggesting reviewers, you may **1)** not need to know your suggestions personally; **2)**suggest those who know the subject well.

We appreciate your cooperation in understanding and agreeing with the above terms as well as providing necessary information. Thank you very much!

Looking forward to hearing from you soon...

For any question, please feel free to contact us.

Best regards,

Alice Yao
Editorial Assistant
JSS Editorial Office