

**TECHNOLOGY ACCEPTANCE MODEL IN UNDERSTANDING
UNIVERSITY STUDENTS' BEHAVIORAL INTENTION TO USE E-
LEARNING: A STUDY OF UNITED STATES INTERNATIONAL
UNIVERSITY - AFRICA**

**BY
BERNARD MBIRA**

UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

SPRING, 2018

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**BY
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**A Research Project Report Submitted to the Chandaria School of Business in
Fulfillment of the Requirement for the Degree of Master of Business Administration
(MBA)**

UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

SPRING, 2018

STUDENT DECLARATION

I, the undersigned declare that this is my original work and that it has not been submitted to any other College, Institution or University other than the United States International University - Africa for academic purposes.

Signed: _____

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This project report has been presented for examination with my approval as the appointed supervisor.

Signed: _____

Date: _____

Prof. Paul Katuse

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Date: _____

Dean, Chandaria School of Business

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ABSTRACT

The general objective of the study was to analyze the applicability of the Technology Acceptance Model (TAM) in understanding the behavioral intention to use e-learning among university students. The specific objectives of the study were to; examine the effect of perceived usefulness and e-learning intention; investigate the effect of perceived attitude on e-learning intention; and determine the effect of perceived ease of use on e-learning intention.

The research methodology, which was adopted was as follows. The study used an exploratory research design to explore or find out 'how' digital marketing has affected consumer privacy. The target population for the study comprised of United States International University – Africa (USIU-A) students of which 233 were sampled for the study. The study used simple random sampling technique to ensure that students at every level education are given an equal chance of participation in the study. A structured questionnaire was used to collect the relevant information from the students. This study used the quantitative method of data analysis, as such both descriptive and inferential statistics were used. Microsoft excel and Statistical Package for Social Sciences (SPSS) program version 21 were used to present and analyze the collected data.

The study showed that students find e-learning useful in timely completion of assignments and research papers and that e-learning has ensured that students can read more concerning their courses through e-learning. The study revealed that students have the ability to view course materials more frequently and this has improved their GPA. Students have learnt a lot when they use e-learning systems, and e-learning assists them to achieve predetermined learning objectives. Due to e-learning, it can be observed that students spend little study hours per week, and also spend little effort researching for term papers and assignments.

The study indicated that students did not use e-learning purely because it was a university/class requirement or because fellow students in the university/classmates used it, nor because their friends and classmates had convinced/compelled them to use it. They chose to use the e-learning platform because it facilitated their ability to study faster and organize their studies comprehensively. The study revealed that students do enjoy using

e-learning in their courses, and they did not find the actual use of e-learning quite unpleasant. However, students would find e-learning quite fun if certain attributes are improved.

The study revealed that students find e-learning easy to use and understand, as well as they find it being user-friendly. From the study it was noted that, students felt that they did not spend extra effort using e-learning because most of them are quite capable of using it without a challenge. This means that students are comfortable using e-learning and are not stressed sometimes while using e-learning. The study showed that students find e-learning material quite relevant for their course, and they prefer e-learning because it permits them to coordinate group work assignments and tasks.

The study concludes that students witness a reduction on the proportion of time they spend on academic subjects through e-learning platforms, and they love the idea of using e-learning since they were willing to use e-learning even if it is not a requirement or directed to do so by their lecturers. The study concludes that students find e-learning material quite relevant for their course, and they prefer e-learning because it permits them to coordinate group work assignments and tasks. It can be concluded that students feel that e-learning system complements their study or academic engagements, thus improving their studying behavior.

The study recommends the institution to ensure that the sequence of learning activities and resources have a defined structure that is adopted for all learning objects. It also recommends USIU-A to produce an e-learning resource that will contain a peer production that entails and includes the digital content created, edited, enriched and validated by students, and teachers who are of the same peer, in other words by people on the “same hierarchical level.”

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DEDICATION

It is with great humility that I dedicate this work to my family without whose support I would not have made it this far.

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LIST OF ABBREVIATIONS

AB:	Actual Behavior
AfDB:	African Development Bank Group
ANOVA:	Analysis of Variance
ATU:	Attitude Towards Usage
AU:	Actual Usage
AVU:	African Virtual University
BI:	Behavioral Intention
CET:	Coach Effectiveness Training
EA:	East Africa
EMS:	E-Learning Management System
EV:	External Variables
IBA:	International Business Administration
ICT:	Information Communication Technologies
IS:	Information Systems
IT:	Information Technologies
LCMS:	Learning Content Management System
LDS:	Learning Design System
LMS:	Learning Management System
PE:	Perceived Enjoyment
PEOU:	Perceived Ease of Use
PU:	Perceived Usefulness
SDT:	Self-Determination Theory
SI:	Social Influence
SPSS:	Statistical Package For Social Sciences
TAM:	Technology Acceptance Model
TPB:	Theory of Planned Behavior
TRA:	Theory of Reasoned Action
UK:	United Kingdom
USIU-A:	United States International University – Africa
UTAUT:	Unified Theory of Technology Acceptance and Use of Technology
WBLE:	Web-Based Learning Environment

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

E-learning is conceptualized as learning or acquisition of knowledge distributed, facilitated and supported through the utilization of information and communication technologies (Jenkins & Hanson, 2003). Maina and Nzuki (2015) clarify further that e-learning is primarily grounded on the internet; knowledge flows and information dissemination in form of network courses among others. E-learning Management System (EMS) have become one of the most imperative innovations for delivering education in many parts of the world, this has been smoothed by a speedy expansion of information technologies (IT) universally (Maina & Nzuki, 2015). Nonetheless, successful implementation and management of these systems is primarily based on its adoption. Chang, Yan and Tseng (2012) observe that according to a number of studies about information technology and systems have determined that the Technology Acceptance Model (TAM) can efficiently predict and explain users' intention and behavior.

As such, technology acceptance has continued to be a focus of academic analysis with several literature sources identifying various theories and models to conceptualize the phenomenon (Venkatesh & Bala, 2008; Park, 2009). These include the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB) and the Technology Acceptance Model (TAM) (El-Gayar, Moran, & Hawkes, 2011; Mohd, Yeow, Norhayati, Ahmad & Ahmad, 2012). The TRA, which has been used to study and conceptualize technology acceptance is centered in social psychology ideally on the expectancy-value analysis (El-Gayar, *et al*, 2011). TRA holds that an individual's approval of technology is a determined by the individual's intent, which implies his positive or negative sentiment about the technology (Chtourou & Souiden, 2010). The TPB is actually an extension of the TRA and incorporates perceived behavioral control into the assessment of technology acceptance. Another key model is the Unified Theory of Technology Acceptance and Use of Technology (UTAUT).

Davis (1989) proposed the Technology adoption model which suggest that people will embrace information technology if they believe that it will make them perform their job better (referred to as perceived usefulness) or that using a particular technology will be

free from effort (referred to as ease of use). He defined TAM as the “specifications of causal relationship between system design features, perceived usefulness, perceived ease of use, attitude towards using and actual usage behavior” (Mekic & Ozlen, 2014, p. 138). Several scholars have considered TAM as an expansion of theory of reasoned action (TRA) (Park, 2009).

Therefore, TAM aimed at conceptualizing the acceptance and application of information technology in various aspects and contexts (Davis, 1993). Initially, TAM examined technology acceptance with regard to six main aspects namely, behavioral Intention (BI) perceived usefulness (PU) and external variables (EV), perceived ease of use (PEOU), attitude (A), and actual behavior (AB), however, the first two were considered the key components (Davis, 1993). As Lee, Kim and Choi, (2012), PU implies the extent to which users anticipate the adoption of a given technology to facilitate their job performance. PEOU refers to the extent to which users consider the use technology to be easy to use. According to Tsai, Wang and Lu (2011) these two components influence the users’ attitude regarding the use of a given technology. On the other hand, PU and the latter (attitude) have a bearing on the users’ behavioral intention to use a given technology (Lee, *et al*, 2012). According to Tsai (2012), BI implies the users’ conscious intentions to use or not to use a given technology in the future while external variables are the externally controllable factors that influence the individuals’ PU and PEOU as well as the intention to use or not to use a given technology (Mekic & Ozlen, 2014).

Ever since Davis introduction of the TAM, the issue of technology acceptance has become one of the central issues for research in Information Systems research (Bagozzi, 2007). Since then, TAM as a model and as a concept has enjoyed much scholarly attention, including examination and re-examination, expansion and refining in tandem with some of the main technological transformations in that era. For instance, in 2010, Chtourou and Souiden (2010) expanded the TAM by adding a new variable, fun to the six that had originally been proposed by Davis.

This was as a result of the study that the two scholars conducted with an aim of examining ‘fun’ as a variable in consumer adoption of technological products (Mekic & Ozlen, 2014; Chuttur, 2009). Further, both perceptions determined the user’s attitudes

toward and intention to use the technology and related services. TAM further suggests that perceived directly effects user's intended behavior and perceived ease of use affects behavioral intentions indirectly through perceived usefulness (Mekic & Ozlen, 2014).

Several studies have been conducted globally to investigate the relevance of TAM in understanding e-learning acceptance among students. Farahat (2012) for instance conducted a study among Chinese students and highlighted the social influence on students' attitudes and on their actual behavior within online learning environment. Woodcock, Middleton and Nortcliff (2012) conducted a study in 2012 among students in the United Kingdom (UK) to assess their preference for using smartphones in learning and found that there is increasing need and dependence on e-learning for pedagogical practices by students.

In East Africa (EA), e-learning is being adopted for its assumed potential to facilitate the learning process. According to Mtebe (2014), The eLearning solutions are believed to have the potential to widen access, reduce costs, and to improve the quality of education in Africa. They are considered as having the potential for helping institutions meet the demands of a growing student population through technology-enhanced distance learning and complementing existing traditional face-to-face delivery (Mtebe, 2014; Maina & Nzuki, 2015).

As such, over the past few years, higher education institutions in Africa have been adopting various eLearning solutions to enhance education. As of 2006, 54 institutions in 27 African countries had adopted various eLearning solutions, of various types, for their campuses. Similarly, 74% of 447 users, across 41 African countries, were using various (Mtebe, 2014). eLearning solutions, 48% of them cell-phone-based, 36% involving shared resource computing, and 29% desktop virtualization (Isaacs & Hollow, 2012). Additionally, a recent eLearning Africa conference report, from 2013, states that 83% of the 413 respondents, from 42 African countries, were using laptops, 71% cellular phones, and 67% standalone computers for teaching and learning (Isaacs, Hollow, Akoh, & Harper-Merrett, 2013).

Regardless of the continued adoption of various eLearning solutions in Africa, their actual usage is reported to be low across the continent. Among East African institutions, for instance, there were only 60 users of the eLearning system installed at Makerere University, in Uganda (Mayoka & Kyeyune, 2012); fewer than 10 users at Kenya's University of Nairobi (Ssekakubo *et al.*, 2011); and 767 users at the University of Dar es Salaam. Studies have also revealed low usage of systems at the Open University of Tanzania (Mtebe, 2014) and the one at Maseno University, in Kenya (Unwin *et al.*, 2010). Low usage or non-use of eLearning solutions at institutions in East Africa is becoming a common place phenomenon.

1.2 Statement of the Problem

Various studies have been conducted related to consumer behavior and technology adoption in general and amongst student and/or Millennials. Chen, *et al.*, (2008) conducted a study to test four theoretical models including the Technology Acceptance Model in order to predict employee intentions to adopt smart phone technology in the logistics industry. Chen, *et al.*, (2008) concluded that various variables including self-efficacy, ease of use, usefulness, attitude, compatibility, observability, testability, task, individual, organization and environment positively affected behavioral intention for use of technology. Such studies have also attempted to apply how TAM explain e-learning acceptance and adoption.

According to Maina and Nzuki (2015), a significant number of Universities in Kenya are using e-learning management system as a platform to provide students with online learning. This enables students to obtain their education in parallel with pursuing their personal goals and maintaining their own careers, without a need to attend classes and be subjected to a rigid schedule. E-learning has continuously played a vital contribution to the progress of academic staff and students, and the improvement in the quality of teaching method and learning management system which have resulted in increased popularity of education in different educational institutions and organizations.

In lieu of this institutions and international agencies have been spending many thousands of dollars to pilot and implement various eLearning solutions in the region. According to Mtebe (2014), the African Development Bank Group (AfDB) provided a grant of \$15.6

million to African Virtual University (AVU) to build e-learning centers and train content developers at 31 partner institutions in Africa. Nonetheless, the initiatives from both institutions and international agencies, the degree of uptake and usage is low (Lwoga, 2012). Indeed, in Kenya, very few studies have applied the TAM to conceptualize and explicate the acceptance and implementation of e-learning in institutions of higher learning (Maina & Nzuki, 2015).

The current study applied the TAM to understand and explicated the university students' behavioral intention to e-learning. As such, it contributes to the current literature on the growth of e-learning in institutions of higher learning in Kenya. It also sought to answer three fundamental questions regarding the research topic: (i) how do students' perceived usefulness of IT affecting their intentions to use e-learning; (ii) how do students' perceive attitude towards of IT affecting their intentions to use e-learning; and (iii) how do students' perceive ease of use of IT shaping their intentions to use e-learning.

1.3 General Objective

The general objective of the study was to analyze the applicability of the Technology Acceptance Model in understanding the behavioral intention to use e-learning among United States International University - Africa students.

1.4 Specific Objectives

1.4.1 To examine the effect of perceived usefulness and e-learning intention.

1.4.2 To investigate the effect of perceived attitude on e-learning intention.

1.4.3 To determine the effect of perceived ease of use on e-learning intention.

1.5 Significance of the Study

The findings of this study may be importance to a number of stakeholders in the education industry including:

1.5.1 University Students

The study examined and discussed some of the inherent benefits associated with the use of technology in the leaning process. As such it facilitates students' understanding and appreciation of technology in their leaning process. In so doing the study also accords the students, the understanding of the various e-learning programs and platforms that they

may use in their learning process. Furthermore, the study provides the students with information regarding perceived usefulness, perceived ease of use and attitudes that affect their acceptance and use of e-learning technological application in their education process.

1.5.2 University Administration and Faculty

Examining the relationships between these variables provides those responsible for the management and development of online learning programs such as university administration and faculty with important information about how students perceive and react to online learning so that they can enhance the effectiveness of online learning and create mechanisms for attracting students to adopt it. The study may be relevant to the administration and faculty of USIU-A, and other universities in Kenya.

The information provided by the study has added to the knowledge of university administration and faculty regarding the importance of IT and specifically e-learning for their students. The study further contributes to the faculties' knowledge about the indispensable importance of e-learning for research and assignment completion for their students. Additionally, the study may assist the faculty to understand the effect of perceived usefulness, perceived ease of use and attitudes that affect their students' acceptance and use of e-learning technologies.

1.5.3 Vendors of Information and Technology Software and Hardware

Results of the study may be shared with vendors of IT software and hardware to guide their decision making regarding product development, local inventory management and appropriate product range for e-learning in the market. As such, the study may be crucial to the vendors as it may accord them information regarding e-learning trends in Kenya, information that may be indispensable to the vendors with respect to product improvement and marketing.

1.5.4 Researchers and Future Studies

This study has built on existing research around IT adoption in this case e-learning. It sheds light on an area where very limited research has been done and as such contributes to the literature. As such, the study provides vital information that future researchers and academicians may find significant while building literature for their own studies. The

study also touches on integral issues concerning adoption of technology and e-learning and the factors influencing their adoption, which may inspire new areas of research for other researchers. As such, this research adds to the existing literature through identifying factors affecting students' behavioral intention to learn online, and through introducing a conceptual framework that examines the influence of each factor on students' behavioral intention to use online learning platform.

1.6 Scope of the Study

The current study focused on the Technology Acceptance Model developed by Davis (1989) to conceptualize university students' behavioral intention to use e-learning. The study will aim at achieving three specific objectives; (i) To examine the effect of perceived usefulness and e-learning intention; (ii) To investigate the effect of perceived attitude on e-learning intention; (iv) To determine the effect of perceived ease of use on e-learning intention. The literature for the study comprised of relevant academic literature most of which were published over the past five years. Nonetheless, older sources were consulted where need arose. The study used quantitative research, as such primary data was collected from students at USIU-A, over a period not exceeding a week. The data collection instrument was a structured questionnaire.

1.7 Definition of Terms

Following are definition of key terms and concepts that will be used in the course of the study.

1.7.1 Behavioral Intention

Behavioral intention of use has been conceptualized as the mental or psychological states that reflects an individual's plan to participate in a purchasing action within a given time period (Edmunds, Thorpe, & Conole, 2012).

1.7.2 E-learning

E-learning is defined as learning or acquisition of knowledge distributed, facilitated and supported through the utilization of information and communication technologies (Jenkins & Hanson, 2003).

1.7.3 Perceived Usefulness

The magnitude to which an individual considers that using a particular system would enhance his or her job performance (Davis, 1989). In this case, perceived usefulness refers to the degree to which a person deems that using a Smartphone would enhance his or her job.

1.7.4 Perceived Ease of Use

The degree to which a person believes that using a particular system would be free from effort (Genova, 2010). In this case, Perceived ease of use, is the degree to which a person believes that Smartphone use would be effortless.

1.8 Chapter Summary

Chapter one has provided the general outline of the study by providing the background of the problem, the problem statement as well as the purpose and research questions. The chapter has also highlighted the significance of the study by identifying to whom, the study may be crucial and for what reasons. Additionally, the chapter has provided the scope of the study as well as the definitions of some of the major terms that were utilized or used throughout the study. In Chapter two, a review of existing literature on TAM and e-learning has been provided with particular focus on literature regarding three research questions. In Chapter three, the research methodology, which was used in the study has been highlighted, including the research design, the population, the sampling technique and the sample size, the research procedure and data collection method as well as the technique for data analysis. Chapter four provides the results and findings of the study using a variety of statistical methods principally the inferential and descriptive methods. In Chapter five, the summary of the study has been provided, the major results and findings of the study. It also provides a discussion of the major results and findings, the conclusion as well as the study recommendations.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

Chapter provides the review of literature on the applicability of the Technology Acceptance Model in understanding the behavioral intention to use e-learning. The focus of the literature review is on three areas as per the research objectives. These include; (i) effect of perceived usefulness and e-learning intention, (ii) effect of perceived attitude on e-learning intention, and (iii) effect of perceived ease of use on e-learning intention. The objective of the chapter is to provide and examine previous studies that have been conducted on the research problem regarding the three focus areas. The chapter also presents some of the underpinning arguments that scholars have provided regarding the research problem.

2.2 Effect of Perceived Usefulness and E-Learning Intention

2.2.1 Perceived Usefulness and E- Learning Intention

Dohan and Tan (2013) explain that perceived usefulness (PU) relates to the notion that technology is vital and helpful in task performance. Perceived usefulness can be conceptualized as the extent to which potential and current users of a given technology believe that using the technology enhances his or her job performance (Davis, 1989). With respect to the current context of the study (e-learning), PU is defined as the extent to which a student believes or considers using web-based learning environment (WBLE) would increase or facilitate his or her learning progress or process. Usta (2011) explains that web-based learning is also referred to as network-based or internet-based learning, and that it is a system which permits students to access course materials whenever they have access to the senkron, the internet of senkron communication tools in academic environments or education settings.

According to Hwa, Hwei and Peck (2015) e-learning can be conceptualized as the utilization of computer and computer-based applications to deliver instructions to students by way of internet, CD-ROM and intranet. As such, the basis of e-learning is the internet and related information communication technologies (ICT) (Garrison, 2011). It also involves the use of web-2.0 technologies such as social networking sites including twitter,

Facebook, Myspace, and blog as well as content sharing sites such as Flickr and YouTube (Neo, Neo, Lim, Tan & Kwok, 2013). Through e-learning institutions and firms can establish job or academic transferable skills and knowledge for knowledge improvement education and for performance improvement in firms.

Thus, in education, the application of e-learning facilitates the attainment of educational goals by both the student and the teacher (Hwa, *et al.*, 2015). Clark and Mayer (2011) explain that e-learning comprises of the use of instructional methods or techniques (such as practice and examples), multimedia elements (for instance, videos and pictures) to help learning through the delivery of content, which is pertinent to the learning goals. In e-learning both teachers and students are able to interact with each other through the use of information technology (IT) and the associated applications (Dohan & Tan, 2013).

Various types of e-learning systems are in use today including (i) Learning Content Management System (LCMS), (ii) Learning Management System (LMS) and Learning Design System (LDS) (Dohan & Tan, 2013). The focus of LMS is on the delivery of learning content, tracing learner's progress and evaluating their performance (Harman & Koohang, 2007). The focus of the LCMS is on the creation, management and the publishing of online content to be delivered through the LMS and LDS facilitates content developers to design and analyze the entire structure of the instructional sound learning programs (Dohan & Tan, 2013). The current study focuses on the LMS and examines how perceived usefulness, perceived attitude and perceived ease of use affects its use.

2.2.2 Link between Perceived Usefulness and E- Learning Intention

Perceptions about usefulness have been found to affect the behavioral intentions for actual use of a given system (Elkaseh, Wong & Fung, 2015a). According to Elkaseh, *et al.*, (2015a) PU results in a more optimistic attitude towards the actual use of a e-learning. Perceived usefulness is denoted by user's sentiments regarding the ability of e-learning to aid the accomplishment of tasks, result in expected learning outcome, and reduce the workload associated with nonuse.

2.2.2.1 Task Accomplishment

Selamat and Selladurai (2015) have defined task as the goal or the aim that the use of e-learning intends to accomplish by using the application. They explain further that task accomplishment comprises of several elements including faith, contemplation, and goal obsession. Faith is the amount of confidence or trust that someone has in something as such having faith in the potential benefits of e-learning allows individuals to accept and use e-learning in the academic engagements (Hallinger & Lu, 2013). Contemplation implies the mental picture of what potential users of e-learning perceive as the outcome of using the application (Selamat & Selladurai, 2015).

The fundamental question is often "What will I achieve in using e-learning?" As such, if the benefits for using e-learning to achieve a certain goal are considered to overshadow the efforts or costs of using e-learning then the normal consideration would be to accept in and if this is not the case then e-learning will be rejected. Consequently, it can be argued that teachers and students' decision to accept and use e-learning is contingent in their perception as to whether e-learning facilitates their quest to learning or teaching tasks. According to Selamat and Selladurai (2015), goal obsession implies the extent to which e-learning assists the learners to achieve their predetermined learning objectives.

Davis (1989) argued that a person's decision to use a given technology is a function of the extent to which they believe that the technology is capable of performing the job for which it is intended. In other words, people will tend to use a technology or an application if they believe that the application or the technology has the capacity to accomplish a task, or else they are likely to discard it. This implies that a technology that the users perceive as useful is one that according to Davis (1993) has a strong use-performance relationship. This is further implying that the increased use of the technology has a direct positive impact on task performance for the user of the technology. Aristovnik, Kerzic, Tomazevic and Umek (2016) found that one of the reasons why students accepted e-learning was because they perceived it as important in assisting the accomplishment their course assignments on time. They also found that students favored e-learning because it permitted them to view course materials frequently.

2.2.2.2 Learning Outcome

Sponselee, Schouten and Bouwhuis (2008) contends that personal needs are a significant decisive issue in an individual's decision or choice to use a given technological application. Olojo, Adewumi and Ajisola (2012) argue that a well-designed e-learning is capable of delivering anticipated outcomes to the students including motivating them to become more engaged in the learning programs and the course content. Others studies including that by to Elkaseh, *et al.*, (2015a) have found that acceptance of e-learning is sometimes based on the perception that e-learning provides greater efficiency as compared to classroom tutorials as students are able to acquire new skills, gain new knowledge and develop positive attitudes towards the course and the course material. Olojo, *et al.* (2012) found that e-learners demonstrate increased knowledge retention rates and better use of acquired knowledge as compared to conventional instructor-led techniques.

Therefore, a need is a critical factor in technology acceptance because it helps customers assess pre-usage and post-usage outcomes of a given technological application (Tsai, 2012). In other words, if there is no need to be met, then an individual will less likely require the technology (Sponselee, *et al.*, 2008). Olojo, *et al.*, (2012) examined the outcomes of e-learning and found that e-learning allows for grater leaner interactivity and enhances motivation, efficiency, cognitive effectiveness and flexibility in the learning style. Kulik, (2003) studied the impact of e-learning on students and found that students who utilized computer tutorials recorded higher scores in such subjects as the natural sciences, mathematics and social sciences than those who did not.

This observation was made with both primary and secondary school children. This implies that students would most likely accept e-learning if they perceived it to be useful to then in attain greater academic score as well as in aiding other aspects of their performance. Olson, *et al.*, (2011) found that students who used laptops delivered more quality work and that the students considered the availability of e-learning to increase their access to information as well as research and analytical skills. Harandi (2015) finds that due to the perceived potential benefits of e-learning both students and universities are accepting e-learning as an engagement with potential positive results for the learning process.

2.2.2.3 Workload Reduction

Individuals will tend to use a given technology when they perceive it as capable of being utilized advantageously (Davis, 1993). Perceived usefulness can be conceptualized as effectiveness and depends on the users' or potential users' personal needs for the technology (Sponseless, *et al*, 2008). Therefore, benefits and rewards that accrue to the user of a given technology drives technology acceptance (Gangwar, *et al*, 2014). The use of a technology provides the user some benefits that far outweigh the outcomes of not using the technology. In an organizational setting people sometimes not only want to complete a task, but they want to complete it in manner that accrues some benefits to the organization in general but also to them as individuals. This is because task completion can result in rewards and a feeling of sociological achievement.

In such cases, people will tend to use technology because they perceive it as benefiting them or capable of being used advantageously (Ting, *et al*, 2011). It has been observed that the smart mobile devices accord users ease of use through increasingly robust operating systems that support a variety of applications making easy the users various communicating and computing tasks (Alley & Gardiner, 2013). The usefulness aspect of a given technology can be further conceived within the cost-benefit paradigm, which is an offshoot of the behavioral decision theory. A model, which as Davis (1993) contends helps conceptualize peoples' choices to use or not to use a given technology on the basis of the multiplicity of decision-making strategies. It implies that when the potential benefits of using an e-learning outweighs the costs, then a person is more likely to adopt or accept the device (Chen, *et al*, 2011).

2.3 Effect of Perceived Attitude on E -Learning Intention

2.3.1 Perceived Attitude

Attitude is conceptualized as an individual's negative or positive feeling or sensation about performing a targeted or given behavior (Chang, *et al*, 2012). Attitude towards usage (ATU) implies the extent to which a person associates and evaluates the target system with her or his work (Elkaseh, *et al*, 2015a). E-learning is defined simply as the activity of learning through computers or other information systems (IS) (Elkaseh, *et al*, 2015a). At the root of attitude is awareness, hence positive attitude or sensation towards

information and communication technology (ICT) is generally appreciated as a prerequisite for its effective implementation (Edmunds, *et al.*, 2012).

Elkaseh, *et al.* (2015a) contends that studies have revealed that the several factors including satisfaction and attitudes that users have with and towards e-learning respectively, affect the success level of e-learning. Elkaseh, *et al.* (2015b) found that attitude is among the principal success factors when it comes to e-learning implementation in higher education. Thus at least these studies seem to suggest that there exists a positive relationship between perceived attitudes towards acceptance of e-learning.

2.3.2 Link between Perceived Attitude and E- Learning Intention

Measuring attitudes has an important role in analyzing consumer behavior because it is known the fact that there is a strong connection between attitude and behavior (Hsu & Lin, 2008). The two concepts are not similar; specialists have discovered that attitude indicates in a certain degree the possibility of adopting certain behavior (Park, 2009). Talking about e-learning, a favorable attitude of students shows a greater probability that they will accept the new learning system (Hsu & Lin, 2008).

There are two models which measure attitude, one developed by Rosenberg (1956) and the other by Fishbein (1967). The Rosenberg model is built on two variables: the perceived utility of the object and the value of importance, which refers to the extent to which is important for the consumer to obtain the advantages expected from using the object (Rosenberg, 1956). Adapting the Rosenberg model to the case of students' attitude towards e-learning, one can acquire a full indicator of a probable behavior using the utility perceived by the consumer – in this situation the student using an e-learning system – and the importance given by the consumer to this utility (Punnoose, 2012).

The Fishbein model offers a different perspective, proposing an analysis of attitudes through the consumer's beliefs and evaluations. The consumer's beliefs refer to the probability accepted that the object has certain features, whereas evaluations stand for the extent to which these features are important or not (Fishbein, 1967). The perceived utility from the Rosenberg model corresponds to the consumer belief in the Fishbein model.

Once the attitude measured, the connection with the behavior can be identified using TAM (Ajzen & Fishbein, 1980): behavior intention depends on the attitude towards behavior and on subjective norms. The attitude towards behavior is a result of consumer's beliefs and evaluations. The subjective norms represent "the person's perception about the opinions of close social environment regarding the option of adopting or not a certain behavior" (Ajzen & Fishbein, 1975). An extension for this theory was proposed by Azjen (1985) and is known as The Theory of Planned Behavior. Azjen's (1985) contribution consists of adding to the formula of TRA another concept – the perceived behavioral control which refers to an individual's perceived ease or difficulty of performing the particular behavior. It is assumed that perceived behavioral control is determined by the total set accessible control beliefs – an individual's beliefs about the presence of factors that may facilitate or impede performance of the behavior (Ajzen, 1991).

Several factors including student's perception about how useful e-learning is, how easy it is to use, who else is using it and why they are using it work to shape students attitude towards the acceptances of e-learning (Edmunds *et al.*, 2012). As such, social influence, perceived enjoyment and the general impression that the idea of e-learning places in the minds of students shape and inform their adoption or rejection of e-learning.

2.3.2.1 Social Influence (SI)

Sponselee, *et al.*, (2008) perceive social influence as a critical issue that encourage or discourage users to adopt or accepts a technology or a technological application. The information, opinions, perceptions and even behaviors of the those that form part of a user or potential users of a technology about a technology play a crucial role in their acceptance or reject of a technology (Bagozzi, 2007). The social influence is indeed a fundamental determinant in shaping people's attitudes towards the use as people are often apprehensive of how their peers perceive they're not using or using these devices (Arthur, *et al.*, 2006). For students using e-learning is a show of the extent to which one is exposed and in tandem with the technological revolution of the modern world.

Theory of Reasoned Action (TRA) holds that an individual's performance of a given activity is recognized by the person's behavioral intention (BI) to participate in an activity (Elkaseh, *et al.*, 2015a). Behavioral intention (BI) is determined by two factors; actual

usage (AU) and social influence (SI) (Elkaseh, *et al.*, 2015a). Tarhini, Hone, and Liu (2013) conceptualize SI as a person's perception or sensation that the majority of person he or she considers important to him/her consider he/she should not or should perform a given behavior. Several studies have applied SI as an important factor in the assessment of BI in the use of e-learning systems, these include (Park, 2009; Tarhini, *et al.*, 2013; Elkaseh, *et al.*, 2015a). Elkaseh, *et al.*, (2015a) observes that there is a lot of inconsistency in literature regarding the effect of SI on the behavioral intention of either acceptance or usage or e-learning or IS in general with some previous research confirming the relationship as positive and others failing to find any connection between them.

2.3.2.2 Perceived Enjoyment (PE)

Vankatesh (2000) defines enjoyment as the fun of using technology and perceived enjoyment as the degree to which the activity of utilizing a given system is considered to be fun aside from any performance outcome from use of the system. According to Hsu and Lin (2008) enjoyment is the extent to which an internet (in this case an e-learning) user participates in e-learning because they perceive the process as yielding enjoyment and fun. Perceived enjoyment (PE) is defined as the degree to which an activity of using a given technology is considered to be enjoyable in relation to any potential anticipated performance consequences (Elkaseh, *et al.*, 2015a).

Khalid (2014) explains that relation to e-learning, perceived enjoyment is the extent to which services or activities offered by LMS is considered enjoyable in their own right apart from the resultant performance consequences. In other words, PE is the inherent motivation element for the use of a given information systems (IS). Pikkarainen, Pikkarainen, Karjaluoto and Pahnala (2014) observe that several studies have found a positive relationship between PE and the intention to use IS. Moghavvemi, Sharabati, Paramanathan and Rahin (2017) provide two ways of conceiving perceived enjoyment; using e-learning and interacting with fellow students and enjoying helping others.

Enjoyment shapes the users intention to participate in e-learning. In other words, a learners likelihood to participate in e-learning would be informed by the extent to which they consider e-learning to be fun and enjoyable (Khalid, 2014). Individuals participate or

engage in activities in which they derive pleasure and enjoyment - that is the level of perceived enjoyment from participation in the activity (Maina & Nzuki, 2015). As e-learning is an activity aided by computers, PE is therefore a principal variable affecting acceptance and use of e-learning among students and teachers (Elkaseh, *et al.*, 2015a).

Saadé, Tan & Nebebe (2008) posited that intrinsic motivators representing a student's subjective feelings of joy, that play a critical role in explaining user acceptance and usage behavior of E-learning. Van der Heijden (2004) in which the study proposed that intrinsic motivator such as perceive enjoyment can influence user to use information system such as E-learning because the result show that perceive enjoyment has significant impact on student intention to use E-learning.

2.3.2.3 Behavioral Intention

Adoption or use of technology is interconnected to a positive attitude toward the system and the behavioral intention to use the system (Park, 2009; Tsai, Tung, & Laffey, 2013). Behavioral intention the primary purpose of this research is to understand the factor that drives the behavioral intention of students to use E-learning. Intention is an indicator to be used to capture the factor that influences a desired behavior. Theory of Reasoned Action (TRA) states that behavioral intention is the cognitive representation of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior (Punnoose, 2012).

It means behavior intention indicates how much effort that an individual should engage or commit in order to perform such behavior. The Technology Acceptance Model (TAM) is an adaptation of the Theory of Reasoned Action (TRA) to the field of Information Systems (IS). TAM is considered one of the well-known models related to technology acceptance and use; it has shown great potential in explaining and predicting user behavior of information technology (Khalid, 2014). According to Venkatesh, Moris, Davis & Davis (2002) suggests TAM as the most suitable model to explore the acceptance of E-learning because it was built on two fundamental elements which are perceived ease of use (PEOU) and perceived usefulness (PU) and these two elements are positively associated with behavioral intention to use a technology (Khalid, 2014).

2.4 Effect of Perceived Ease of Use on E-Learning Intention

2.4.1 Perceived Ease of Use

Davis (1993) defined perceived ease of use (PEOU) as the extent to which people believe that using certain system in E-learning contexts, PEOU is defined as the extent to which one believes using E-learning will be free of cognitive effort such as time, effort and money. It is because, E-learning provides the students the flexibility of learning from anywhere at any time at one's own convenience. It enables students to learn at their own pace (Khalid, 2014). PEOU is the extent to which a student regards or considers Web-Based Learning Environment (WBLE) as ease to operate and understand (Dohan & Tan, 2013). According to Moore (2012), the key mechanisms underpinning PEOU are system design and features, whereas the core mean underlying perceived usefulness is effort decreasing.

Venkatesh (2000) points out that user would form early perceptions of perceived ease of use of a particular system based on their general beliefs with regard to that system and its usages. E-learning set the stage for people who are geographically apart to come together to learn, collaborate, and share knowledge. Improvements in ease of use may not only be beneficial to influence intentions, but leads to actual use (Dohan & Tan, 2013). In other words, potential users are more likely to adopt and use E-learning if they deem it easy to use (Khalid, 2014).

2.4.2 Link between Perceived Ease of Use and E-Learning Intention

Perceived ease of use is comparable to self-efficacy (Davis, 1989; Jashapara & Tai, 2011). Furthermore, computer self-efficacy refers to the opinion of individuals in their ability to perform tasks competently using a computer (Compeau & Higgins, 1995). Therefore, a theoretical relationship exists between perceived ease of use and computer self-efficacy (Jashapara & Tai, 2011). Davis and Venkatesh (2004) noted that self-efficacy theory is the basis for the perceived ease of use construct in terms of how individuals consider the difficulty or easiness of performing a task. In an attempt to understand the perceptions of ease of use, Jashapara and Tai (2011) conducted a study in which the findings suggested that self-efficacy is an influential factor for perceptions of ease of use.

The perceived ease of use of information technology is the opposite of the complexity concepts in Tornatzky and Klein's (1982) meta-analysis of the theory of diffusion of innovations (Al-Jabri & Sohail, 2012). Tornatzky and Klein (1982) found that the rate of adoption is lower when the technology is more complex. Weigel *et al.* (2014) conducted a meta-analysis of diffusion of innovations and TPB, which demonstrated that the adoption of a technology has a negative association with its complexity (perceived difficulty of use). Additionally, in a study on the innovation characteristics that influence the adoption of e-government services by veterans, Lawson Body, Illia, Willoughby, and Lee (2014) found that it was more likely for veterans to adopt e-government services when the perceived complexity of use was lower. In support of the complexity and ease of use concepts, Davis and Venkatesh (2004) emphasized that ease of use perceptions reflect the degree of difficulty or easiness connected to using technology.

Terzis, Moridis, Economides, and Mendez (2013) examined user acceptance of computer-based assessment systems such as the Graduate Record Examination and the Graduate Management Admission Test in Greece and Mexico. The results of the study indicated that computer self-efficacy positively influenced ease of use, which significantly related to user acceptance of computer-based assessment systems. As a result, Terzis *et al.* (2013) suggested that the students who were competent in using computers probably found it easier to use computer-based assessment systems. Additionally, in an effort to understand the factors that influence user acceptance of e-government services in Jordan, Althunibat, Alrawashdeh, and Muhairat (2014) conducted a survey study and concluded that it is more likely for citizens to accept e-government when the perceived ease of use is greater. Furthermore, Hussain Chandio, Irani, Abbasi, and Nizamani (2013) investigated user acceptance of online banking information systems in Pakistan. The findings showed that perceived ease of use is a key determinant of user acceptance. Consequently, they suggested that systems should be easily accessible and user-friendly with simple language to boost perceived ease of use. Ong (2006) found that perceived ease of use had a significant influence on the behavioral intention of students to use E-learning. PEOU was theorized as a direct determinant of attitude towards use (ATU) by many researchers (Chang, *et al.*, 2012; Park, 2009).

2.4.2.1 No Extra Effort

The degree to which the user of a technology believes that the use of such a given technology will be free from extra effort if any at all is referred to as the “perceived ease of use” (Park, 2009, p.150). Certainly, the cost-benefit paradigm helps to bring to focus the cognitive trade-off surrounding issue of the effort that an individual applies in using a technology and the quality of the task outcome. Therefore, in most circumstances, as contends Yiong, Sam and Wah (2008) have argued that when the effort of using a technology outweighs its ability to perform a task, the user may find it worthwhile not using the technology. People would not see the point in using a technological application that takes more of their energy than they would otherwise expend not using the technology.

Poor internet services, software and infrastructure could affect the students' willingness to accept e-learning (Yiong, *et al.*, 2008) Therefore, a user-friendly system is important specially to assist students who have problems in using some of the e-learning tools. Moreover, students thought that the infrastructure of the technology and e-learning system should be upgraded (Vidanagama, 2016).

2.4.2.2 Perceived Competence

Bandura (1986) conceptualized self-efficacy as individual's perceptions of their competences to shape and perform courses of functions necessary to achieve designated kinds of performances. It is concerned not with the skills one has but with the perceptions of what one can do with whatever skills one has. Self-efficacy, then, is an individual's belief that he or she can perform a particular task or behavior and it is similar to the concept of competence within self-determination theory (SDT). Further, some experiments showed that positive feedback improved intrinsic motivation relative to no feedback or even to negative feedback (Roca & Gagne, 2007).

In addition, CET specifies that feelings of competence will not enhance intrinsic motivation unless they are accompanied by a sense of autonomy (Vidanagama, 2016). Roca and Gagne (2007) showed that only when people felt both competence and autonomous, successful performance improved intrinsic motivation. In the IS literature, computer self-efficacy refers to self-assessment of individual ability to apply computer

skills to complete the specified tasks (Clark & Mayer R.E. 2011). Thus, computer self-efficacy has been shown to influence perceived ease of use in prior studies (Vankatesh, 2000).

Internet self-efficacy may be distinguished from computer self-efficacy as the belief that one can successfully perform a distinct set of behaviors required to establish, maintain and utilize effectively the Internet over and above basic personal computer skills (Elkaseh, *et al.*, 2015a). Computer self-efficacy was found to influence perceived usefulness in previous studies (Clark & Mayer R.E. 2011). Since internet self-efficacy and computer self-efficacy are self-efficacy judgments, and previously computer self-efficacy and perceived ease of use have been found connected, we argue that it is reasonable to predict a relationship between internet self-efficacy and perceived ease of use.

2.4.2.3 Perceived Relatedness

SDT posits that the most significant antecedents of motivation are autonomy and competence although relatedness also plays an important role (Vidanagama, 2016). When activities are not inherently interesting or enjoyable, the main reason why the people perform them is because they are valued by relevant others to whom they feel connected (such as an organization, family or peers) (Vankatesh, 2000). According to SDT, although autonomy and competence have a strong influence on motivation, people are likely to endorse their group's goals more when they feel connected to group members. Thus, when individuals are in an autonomy-supportive context and they have a sense of relatedness their motivation is enhanced (Garrison, 2011).

The influence of subjective norms has been tested on continuance intention (Yiong, *et al.*, 2008), attitude (Vidanagama, 2016), perceived usefulness (Vankatesh, 2000), and satisfaction (Clark & Mayer, 2011). Khalid (2014) found that subjective norm was positively related to behavioral intention within the usage of a computing resource center for both experienced and inexperienced users. Yiong, *et al.*, (2008) found that subjective norm was not a significant antecedent of the individual's intention to adopt Internet banking. Dohan and Tan (2013) found that interpersonal influence exerts a stronger effect on satisfaction than external influence. In the present context, this means that perceived

relatedness should be positively related to perceived usefulness and perceived playfulness.

2.5 Chapter Summary

Chapter two has provided the literature review. The focus of the literature review was on three areas as per the research objectives. These include; (i) effect of perceived usefulness and e-learning intention, (ii) effect of perceived attitude on e-learning intention, and (iii) effect of perceived ease of use on e-learning intention. The objective of the chapter was to provide and examine previous studies that have been conducted on the research problem regarding the three focus areas. The chapter has demonstrated that while there are several studies and scholars that have attested to a positive relationship between the various elements of the TAM including, perceived usefulness, perceived attitude and perceived ease of use with e-learning, some have also found negative or no relations between these variables and e-learning. The next chapter, which is Chapter three provides the research methodology for the study.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the study's research methodology. The chapter provides information about the research design that the researcher adopted for the study. The chapter details the population for the study and defines and explicates the sampling design and the sample size. It is also in this chapter that the data collection method, the research procedure as well as the methods for data analysis have been defined and discussed.

3.2 Research Design

The general strategy adopted by the research to integrate varied attributes of the research, which are both coherent and logical is referred to as the research design (Blanche, Durrheim & Painter, 2006). By designing the research, the research guaranteed that the problem that the study seeks to investigate is effectively addressed. Consequently, a research design can be perceived as the blueprint of the study highlighting the data collection method, the scrutiny and measurement of the data. Saunders and Thornhill (2012) advice that the research design that researcher choses for a study should depend on the problem that the study intends to investigate. It follows then that the research problem defines the research design to be used to operationalize or investigate it. Without a relationship between the research problem under investigation and the research design chosen, the study would generate senseless results.

This study used a descriptive research design. A descriptive design seeks to highlights the nature of a phenomena or the relationship between and among its various parts (Blanche, *et al.*, 2006). Additionally, a descriptive study seeks to find out 'how' one event or phenomena affects another. Bless, Higson-Smith and Kagee (2006) explain that a descriptive research allows for the assessment of how event *X* affects even *Y* and that such an approach allows the researcher to test "factual hypothesis." Therefore, for the current study a descriptive design will permit the researcher to examine how the TAM explains the behavioral intention to use e-learning among university students. Specifically, it permitted the researcher to; examine the effect of perceived usefulness and

e-learning intention; investigate the effect of perceived attitude on e-learning intention; and determine the effect of perceived ease of use on e-learning intention.

3.3 Population and Sampling Design

3.3.1 Population

The larger pool of people, events and items from which the researcher draws the elements, individuals and cases for sampling is the population (Blanche, *et al.*, 2006 & Bless, *et al.*, 2006). It is also upon the population that the research extrapolates the results of the research. However, Bartlett, Kotrlik and Higgins (2001) advice that such a population should be homogeneous in that it must possess and exhibit the information of interests to the researcher. The research is valid if the findings it generates close links to the opinions, features and characteristic of the population (Bartlett, *et al.*, 2001).

This study focused on USIU-A students. The entire population of undergraduate students USIU-A was 5,270. The target population for the study comprised of student pursuing Bachelors of Science Degree in International Business Administration who were about 1,712. The choice for IBA students was based on two reasons; one, as a single cluster, they made up 32.49% of the entire population of undergraduate students hence they formed a representative unit for the rest the undergraduate students. Secondly, given their predisposition with issues in business they were more competent in answering questions regarding the three elements of the TAM, namely; perceived usefulness, perceived attitude and perceived ease of use on e-learning intention.

3.3.2 Sampling Design

To obtain germane sample for consideration and inclusion in the research, a significant number of individuals are selected from the population. Saunders and Thornhill (2012) explain that it is normally from this population that a researcher collects and infers information. It follows therefore that the validity of the study results is contingent on the suitability of the sampling design (Blanche, *et al.*, 2006). The sampling design comprises of the sampling frame, the sampling technique and the sample size.

3.3.2.1 Sampling Frame

A register or a list of individuals, cases and events from which the researcher obtains the sample is the sampling frame (Blanche, *et al.*, 2006). Bartlett, *et al.*, (2001) clarify more

that the sampling frame denotes to the source of the appropriate or correct population from which the survey sample is drawn. The researcher obtained a list of students that were enrolled in USIU-A from the Registrar's office located at the new student's center building within the campus. The list provided the sampling frame for the study. The sample distribution was categorized as indicated in Table 3.1. The categorization was deemed vital as it allowed the researcher to collect information from students from all levels and years of study.

3.3.2.2 Sampling Technique

Bartlett, *et al.*, (2001) explain that the study objectives determine the methodology for deriving sample for inclusion in the study. Blanche, *et al.*, (2006) adds further that the sampling process is not abstract but is guided by the scope and parameters of the study as well as the population and the objectives of the study. The current study used the stratified random sampling.

3.3.2.3 Sample Size

The sample size refers to the proportion of individuals that are chosen to participate in the study (Saunders & Thornhill, 2012). They comprise of the people that bear close characteristics with the population but which the researcher can access within the time and resource constraints. An appropriate sample size is obtained by applying a statistical formula recommended by Mugenda (2003). The population of final year students is currently estimated at two thousand students. Mugenda (1999) propose that the sample size of a population of less than 10,000 individuals can be given by the following formula:

1. Sample Size Calculation

$$\text{Sample Size} = (\text{distribution of } 50\%) / [(\text{margin of error}\% / \text{Confidence Level Score})^2]$$

2. Finite Population Correction

$$\text{Correct Sample} = \text{Sample size} \times \text{Population} / (\text{Sample Size} + \text{Population} - 1)$$

Where;

$$\text{Margin of error} = 0.05, \text{ Confidence level} = 1.645 \text{ (measured at } 90\%)$$

$$\begin{aligned} \text{Therefore: -} \quad \text{Sample size} &= [(0.5 \times (1 - 0.5)) / [(0.05/1.645)^2]] \\ &= 0.25/0.00092386... \\ &= 270.6038 \end{aligned}$$

True sample

$$\begin{aligned}\text{True Sample} &= 270.6038 * 1712 / 270.6038 + 1712 - 1 \\ &= 463273.7056 / 1981.6038 \\ &= 233\end{aligned}$$

The sample size for the study was thus 233 students and was distributed as shown on Table 3.1.

Table 3.1 Population and Sample Size Distribution

Academic Year	Distribution		
	Number of Students	Percentage	Sample Size
Freshmen	525	13.4	70
Sophomores	386	13.4	52
Juniors	323	13.9	45
Seniors	478	13.8	66
Total	1,712	13.6	233

Source: USIU-A Registrar's Office (2017)

3.4 Data Collection Methods

Blanche, *et al.*, (2006) and Bless, *et al.*, (2006) explain that data collection is the technique or strategy for obtaining or aggregating the information from the respondents. Data collection implies the method that the researcher uses whether it is the use of questionnaires, interview schedules, face-to-face interviews or telephone interviews or whether it is participation and observation (Thornhill & Saunders, 2000).

For this study, the researcher used structured questionnaires in which a combination of Likert scale questions were used to obtain data from the respondents. The questionnaire was categorized into four key parts each dealing with a particular set of questions all aimed at obtaining relevant responses. In total, the questionnaire comprised of 35 questions and it was estimated that it would take each respondent between 20 and 30 minutes to respond effectively to all the questions in the study. The questions were kept both short and precise to prevent respondent fatigue and to ensure proper understanding, on the part of the respondents of all the questions.

3.5 Research Procedures

According to Bless, *et al.*, (2006) research procedures are the processes and activities that the researcher undertakes when collecting data. The researcher performed the following set of the activities in the study. After developing the questionnaire, the researcher obtained a formal approval letter from USIU-A research office to present to USIU-A students amongst whom the study was conducted. After obtaining authorization for the study, the researcher first conducted a pilot study or a pre-test of the questionnaire and the feasibility of the study then adopted the questionnaire and the activities accordingly to ensure success of the data collection process.

After pilot testing, the researcher then proceeded to conduct the study and used research assistants to facilitate the process. The researcher presented the potential respondents with the questionnaires to fill in their responses. While the response period was estimated to between 20 and 30 minutes, the researcher had the option of leaving the questionnaires with the potential respondents who had busy schedules to fill the questionnaires at their convenient time.

The researcher made arrangements with the respondents who could not fill in the questionnaires promptly to come and pick them up at an agreed day and time. For those that were able to fill-in the questionnaires within 20 – 30 minutes, the researcher and the assistants waited and collected them. The entire data collection process was done in a period not exceeding one week. The one-week duration for data collection was appropriate to ensure that the data collection was not rushed too much while also ensuring that the data collection did not drag on for an unnecessarily longer period.

3.6 Data Analysis Methods

This study used the quantitative method of data analysis. To ensure easy analysis, the questionnaires were coded accordingly. The quantitative analysis comprised of both descriptive and inferential analysis. The analysis process involved the process of transforming a mass of raw data into figures and tables with frequency distribution and percentages to provide key answers to the research questions. Further associations between the variables were conducted by use of Statistical Package for Social Sciences (SPSS) program version 21, through which correlations were conducted among relevant variables to permit further interpretation of the data. Regression analysis was further

employed to examine the nature of relationship between the study variables using the following formula: $Y = \beta_1\chi_1 + \beta_2\chi_2 + \beta_3\chi_3 + \varepsilon$.

3.7 Chapter Summary

Chapter three, has highlighted and discussed the research methodology, which was used in the study, including the research design, the population, the sampling technique and the sample size, the research procedure and data collection method as well as the technique for data analysis. Chapter four provides the results and findings of the study using a variety of statistical methods principally the inferential and descriptive methods. In Chapter five, the summary of the study has been provided, together with the major results and findings of the study.

CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter provides the results and findings of the study using a variety of statistical methods principally the inferential and descriptive methods. The chapter is organized based on the flow of the questionnaire. Results have been presented in the form of tables and figures.

4.2 Response Rate and Biographical Information

4.2.1 Response Rate

Figure 4.1 shows the response rate of the study. It shows that out of the 233 questionnaires distributed, only 178 were valid, and 55 were void. This gave the study a response rate of 76.4%.

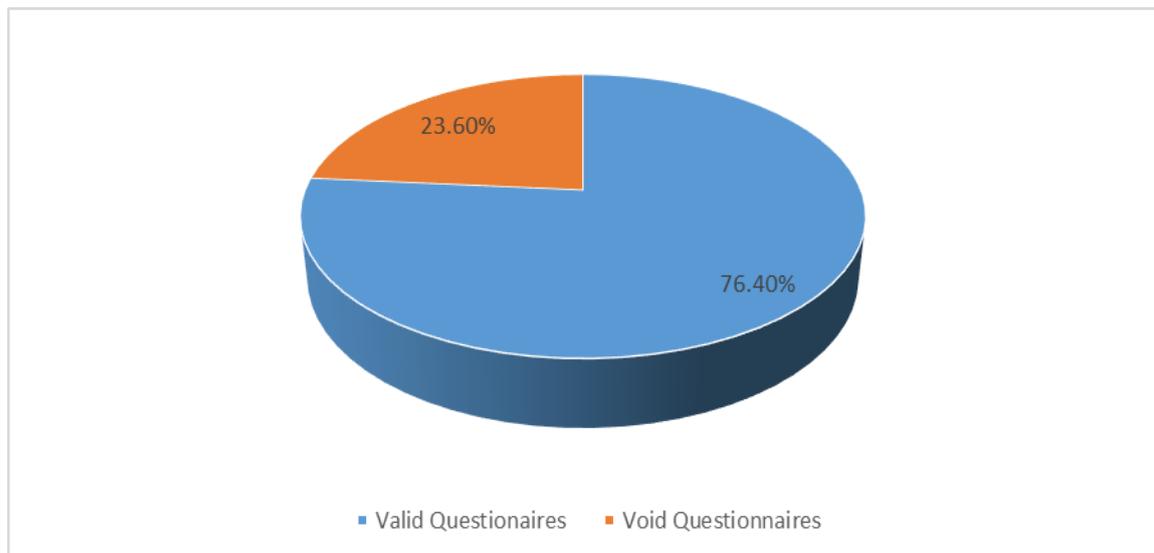


Figure 4.1 Response Rate

4.2.2 Year of Study

Figure 4.2 indicates that 30.9% of the respondents were seniors, 24.2% were sophomores, and 22.5% were equally juniors and freshmen respectively. This shows that all the students from each category were adequately represented making the study results conclusive.

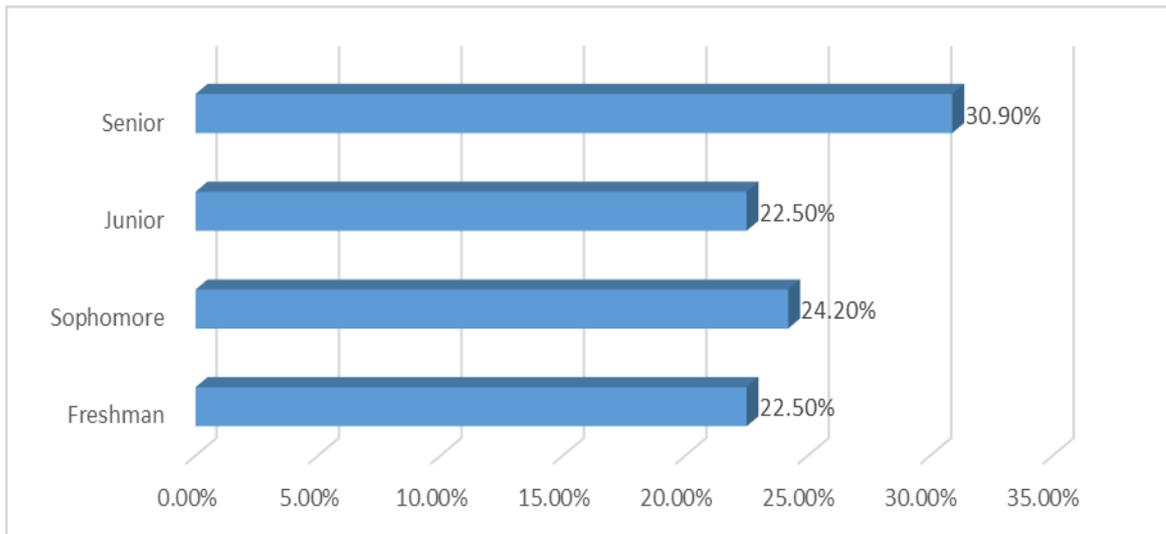


Figure 4.2 Year of Study

4.2.3 Age Category

Figure 4.3 indicates that 52.2% of the respondents were aged between 24-29 years, 39.9% were aged between 18-23 years, 5.1% were aged between 30-35 years, and 2.8% were aged between 36-41 years. This shows that majority of the students at USIU-A are aged between 24 and 29 years.

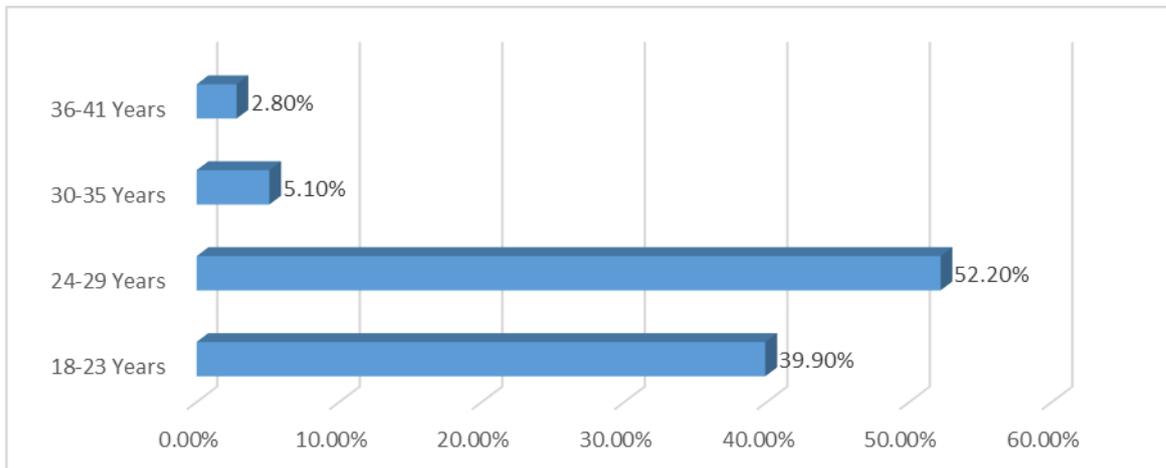


Figure 4.3 Age Category

4.2.4 Gender

Figure 4.4 shows that 65.7% of the respondents were male while 31.5% were female. From the above results it can be shown that male respondents were more willing to participate in the study compared to their counterpart.

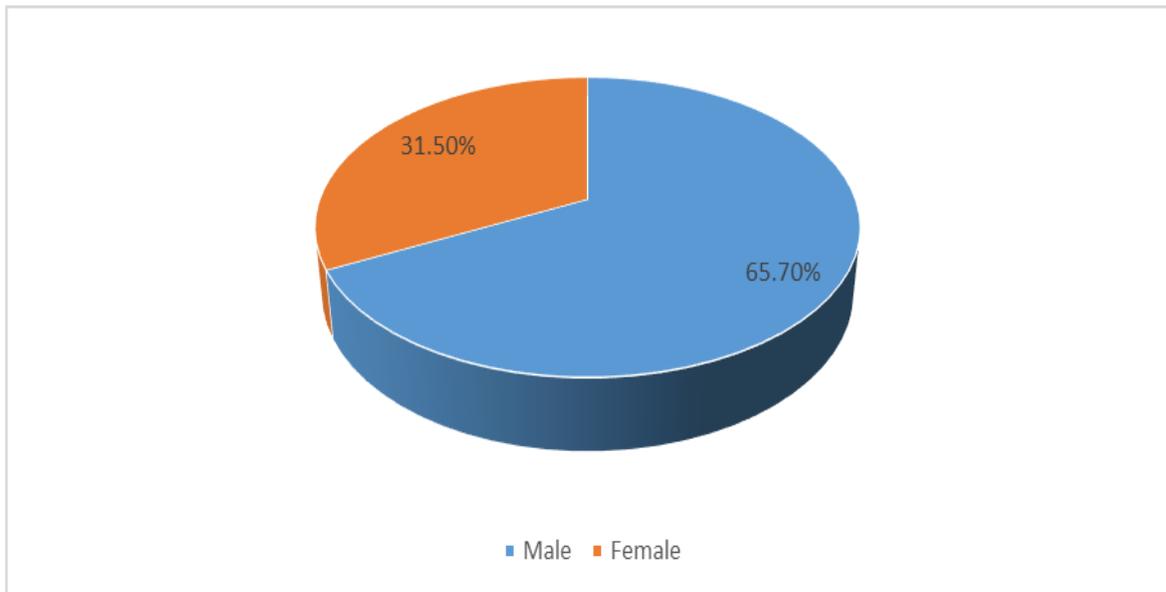


Figure 4.4 Gender

4.2.5 Availability of an E-Learning Program

Figure 4.5 shows that 69.7% of the respondents stated yes, 18% were not sure, 9.6% stated none, 2.8% stated that the e-learning program had been implemented, but was still at the testing stage, and none indicated that it was a future plan. This indicates that USIU-A had an e-learning program in place.

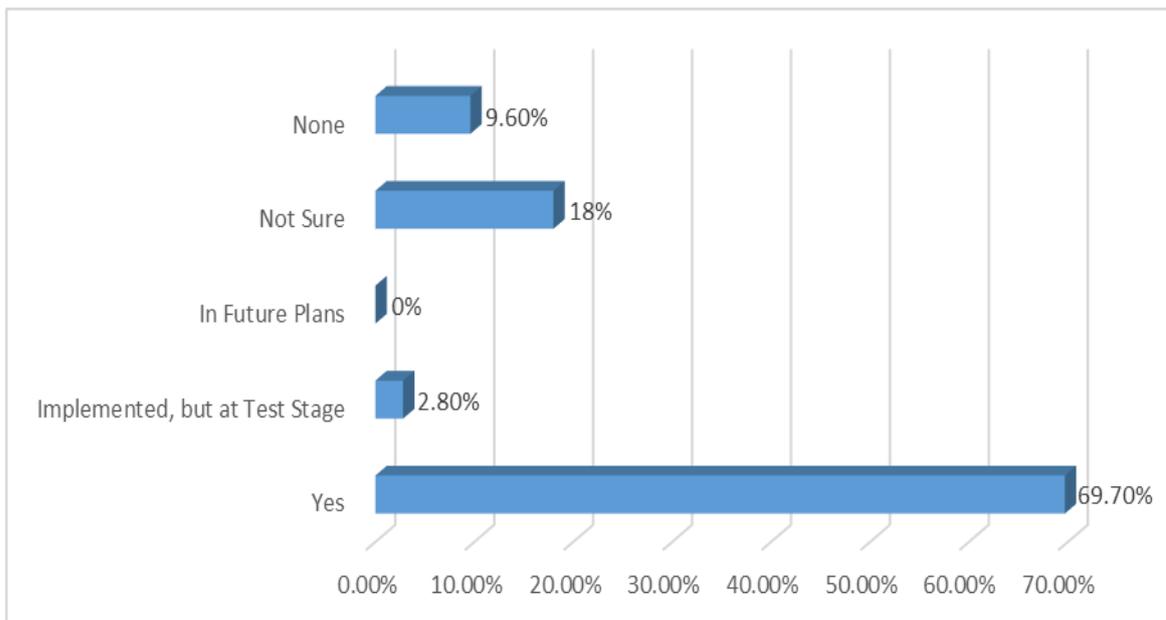


Figure 4.5 Availability of an E-Learning Program

4.2.6 Use of E-Learning Program

Figure 4.6 shows that 39.9% of the respondents used the e-learning program, 37.6% sometimes used the e-learning program, 9.6% were not sure about using the e-learning program, 7.9% planned to use the e-learning program, and 5.1% would not use the e-learning program at all. This shows that majority of the students made use of the e-learning program.

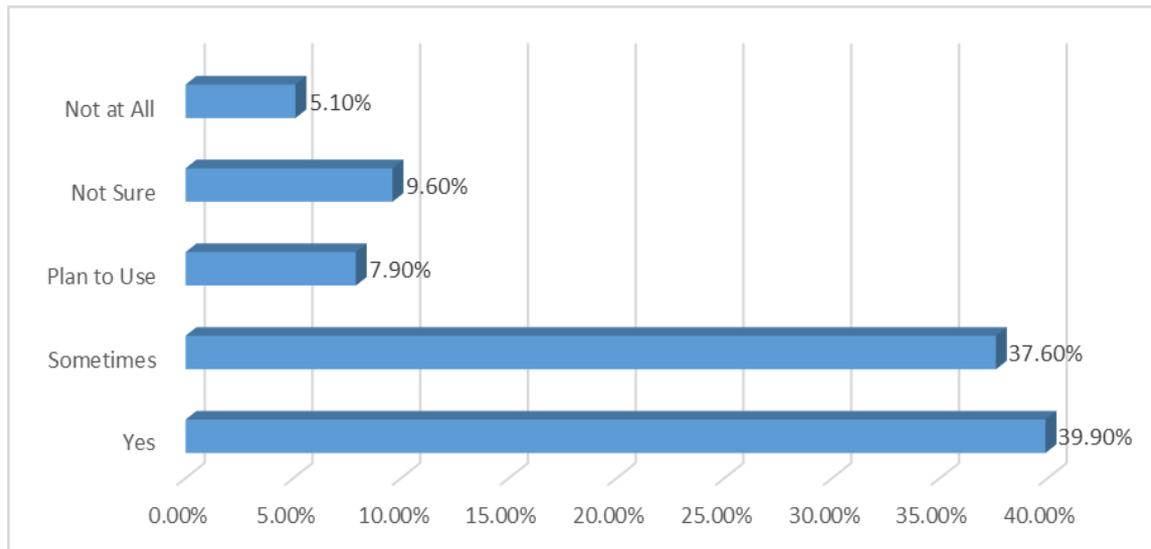


Figure 4.6 Use of E-Learning Program

4.2.7 Factors Influencing the E-Learning Program

Table 4.1 indicates the factors influencing e-learning program. The table shows that perceived usefulness of e-learning was important as shown by 32.6% that indicated most important, 23.6% stated important, 28.7% were neutral, 12.4% stated least important, and 2.8% stated less important with a mean of 3.61 and a standard deviation of 1.302. Perceived attitude towards e-learning was important since 42.7% stated important, 26.4% were neutral, 18% stated most important, 7.3% stated less important, and 5.6% stated least important with a mean of 3.60 and a standard deviation of 1.043. Perceived ease of use of e-learning was important since 39.3% stated important, 32.6% stated most important, 13.5% were neutral, and 14.6% stated less important, with a mean of 3.90 and a standard deviation of 1.020.

Table 4.1 Factors Influencing E-Learning Program

Influencing Factors	Least Important - Most Important					Mean	Std Dev
	%	%	%	%	%		
Perceived usefulness of e-learning	12.4	2.8	28.7	23.6	32.6	3.61	1.302
Perceived attitude towards e-learning	5.6	7.3	26.4	42.7	18	3.60	1.043
Perceived ease of use of e-learning	0	14.6	13.5	39.3	32.6	3.90	1.020

4.3 Effect of Perceived Usefulness and E-Learning Intention

4.3.1 Perceived Usefulness of E-Learning on Task Accomplishment

Table 4.2 shows that students find e-learning useful in timely completion of assignments and research papers as agreed to by 49.4%, 23.6% were neutral, 13.5% considerably agreed, 9% disagreed, and 4.5% strongly disagreed with a mean of 3.58 and a standard deviation of 0.984. Students can read more concerning my courses through e-learning since 43.8% were neutral, 43.3% agreed, 10.7% considerably agreed, and 2.2% disagreed with a mean of 3.62 and a standard deviation of 0.704. Students can view course material more frequently as agreed to by 60.1%, 24.7% considerably agreed, 7.9% were neutral, and 7.3% disagreed with a mean of 4.02 and a standard deviation of 0.788.

Table 4.2 Perceived Usefulness of E-Learning on Task Accomplishment

	SD	D	N	A	CA	Mean	Std Dev
	%	%	%	%	%		
I find e-learning useful in timely completion of assignments and research papers	4.5	9.0	23.6	49.4	13.5	3.58	.984
I can read more concerning my courses through e-learning	0	2.2	43.8	43.3	10.7	3.62	.704
I can view course material more frequently	0	7.3	7.9	60.1	24.7	4.02	.788

4.3.2 Usefulness on E-Learning on Learning Outcome

Table 4.3 shows that students' Grade Point Average (GPA) had improved since they started using e-learning since 43.8% were neutral, 25.3% agreed, 14% strongly disagreed, 8.4% considerably agreed, and another 8.4% disagreed with a mean of 3.06 and a standard deviation of 1.113. Students have learnt a lot since they started using e-learning systems since 47.8% were neutral, 46.1% agreed, and 6.2% considerably agreed with a mean of 3.58 and a standard deviation of 0.607. Students can say that e-learning assists them to achieve predetermined learning objectives since 45.5% were neutral, 34.3% agreed, 17.4% considerably agreed, and 2.8% disagreed with a mean of 3.66 and a standard deviation of 0.795.

Table 4.3 Usefulness on E-Learning on Learning Outcome

	SD	D	N	A	CA	Mean	Std Dev
	%	%	%	%	%		
My GPA (Grade Point Average) has improved since I started using e-learning	14	8.4	43.8	25.3	8.4	3.06	1.113
I have learnt a lot since I started using e-learning systems	0	0	47.8	46.1	6.2	3.58	.607
I can say that e-learning assists me to achieve predetermined learning objectives	0	2.8	45.5	34.3	17.4	3.66	.795

4.3.3 Usefulness on E-Learning on Workload Reduction

Table 4.4 shows that due to e-learning, students did not spend little study hours per week since 36% were neutral, 18% strongly disagreed, 15.7% agreed, and 15.2% equally considerably agreed, and disagreed with a mean of 2.95 and a standard deviation of 1.281. Students spend little effort researching for term papers and assignments since 31.5% were equally neutral and agreed, 22.5% considerably agreed, and 14.6% strongly disagreed with a mean of 3.47 and a standard deviation of 1.259. Students have witnessed a reduction on the proportion of time spend on academic subjects since 43.3% were neutral, 23.6% agreed, 12.4% disagreed, 10.7% strongly disagreed, and 10.1% considerably agreed with a mean of 3.10 and a standard deviation of 1.090.

Table 4.4 Usefulness on E-Learning on Workload Reduction

	SD	D	N	A	CA	Mean	Std
	%	%	%	%	%		Dev
Due to e-learning I now spend little study hours per week	18	15.2	36	15.7	15.2	2.95	1.281
I spend little effort researching for term papers and assignments	14.6	0	31.5	31.5	22.5	3.47	1.259
I have witnessed a reduction on the proportion of time I spend on academic subjects	10.7	12.4	43.3	23.6	10.1	3.10	1.090

4.3.4 Correlations for Perceived Usefulness Factors and E-Learning Intention

Table 4.5 presents the Pearson correlation test between perceived usefulness of e-learning factors and the independent variables: task accomplishment, learning outcome, and workload reduction. The table indicates that task accomplishment was significant to perceived usefulness e-learning program ($r=0.719$, $p<0.01$). Learning outcome was insignificant to perceived usefulness of e-learning program ($r=0.111$, $p>0.05$). Workload reduction was significant to perceived usefulness of e-learning program ($r=0.319$, $p<0.01$).

Table 4.5 Correlations for Perceived Usefulness Factors and E-Learning Intention

	Perceived Usefulness	Task Accomplishment	Learning Outcome	Workload Reduction
Perceived Usefulness	1			
Task Accomplishment	.719** .000	1		
Learning Outcome	.111 .140	.432** .000	1	
Workload Reduction	.319** .000	.528** .000	.439** .000	1

** Correlation is significant at the 0.01 level (2-tailed)

4.3.5 Regressions for Perceived Usefulness Factors and E-Learning Intention

Table 4.6 shows the model summary of the regression analysis for perceived usefulness of e-learning factors and the independent variables: task accomplishment, and workload reduction. The value of the adjusted R square of 0.517 denotes that 51.7% of the variance in perceived usefulness of e-learning intention would be explained by task accomplishment, and workload reduction.

Table 4.6 Model of Perceived Usefulness Factors and E-Learning Intention

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.723	.522	.517	.62846

a. Predictors: (Constant), Task Accomplishment, and Workload Reduction

Table 4.7 presents the ANOVA results of the regression analysis for perceived usefulness of e-learning factors and the independent variables: task accomplishment, and workload reduction. It indicates that the independent variables had the ability to significantly predict the dependent variable since the df (2, 175) was equal to 0.000 which was <0.05 indicating that the regression model's best-fit model was good for the description of the data.

Table 4.7 ANOVA for Perceived Usefulness Factors and E-Learning Intention

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	75.520	2	37.760	95.603	.000
Residual	69.119	175	.395		
Total	114.639	177			

a. Predictors: (Constant), Task Accomplishment, and Workload Reduction

b. Dependent Variable: Perceived Usefulness

Table 4.8 indicates the regression coefficients for perceived usefulness of e-learning factors and the independent variables: task accomplishment, and workload reduction. It provides the study with the linear equation that predicts the influence of perceived usefulness on e-learning intention as:

$$Y = 0.187 + 1.078 \text{ Task Accomplishment} - 0.108 \text{ Workload Reduction}$$

From the equation presented, the coefficient for task accomplishment is 1.078, thus the results show that if all factors are held constant, then one should expect an increase of 1.078 in perceived usefulness with every increase of task accomplishment. The equation also indicates that one should expect a decrease of 0.108 in perceived usefulness with every increase in workload reduction due to the inverse relationship between the two variables.

Table 4.8 Coefficients for Perceived Usefulness Factors and E-Learning Intention

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
1 (Constant)	.187	.291		.642	.522
Task Accomplishment	1.078	.087	.763	12.407	.000
Workload Reduction	-.108	.080	-.084	-1.360	.176

a. Dependent Variable: Perceived Usefulness

4.4 Effect of Perceived Attitude on E -Learning Intention

4.4.1 Social Influence and Attitude towards E-Learning Use

Table 4.9 shows that students did not use e-learning purely because it was a university/class requirement since 35.4% were neutral, 32% disagreed, 27.5% agreed, and 5.1% considerably agreed with a mean of 3.06 and a standard deviation of 0.894. Students did not use e-learning because fellow students in the university/classmates used it since 52.8% disagreed, 15.7% agreed, 14.6% were neutral, 11.8% considerably agreed, and 5.1% strongly disagreed with a mean of 2.76 and a standard deviation of 1.145. Students did not use e-learning because their friends and classmates had convinced/compelled them to use it since 36.5% disagreed, 23% were neutral, 15.2% agreed, 14% considerably agreed, and 11.2% strongly disagreed with a mean of 2.84 and a standard deviation of 1.230.

Table 4.9 Social Influence on Attitude towards E-Learning Use

	SD	D	N	A	CA	Mean	Std Dev
	%	%	%	%	%		
I use e-learning purely because it is a university/class requirement that I do so.	0	32	35.4	27.5	5.1	3.06	.894
I use e-learning because fellow students in the university/my classmates use it.	5.1	52.8	14.6	15.7	11.8	2.76	1.145
I use e-learning because my friends and classmates have convinced/compelled me to use it.	11.2	36.5	23	15.2	14	2.84	1.230

4.4.2 Perceived Enjoyment and Attitude towards E-Learning Use

Table 4.10 shows that students do enjoy using e-learning in their course since 43.8% agreed, 24.7% considerably agreed, 21.9% were neutral, 5.1% disagreed, and 4.5% strongly disagreed with a mean of 3.79 and a standard deviation of 1.018. Students did not find the actual use of e-learning quite unpleasant since 40.4% disagreed, 29.2% were neutral, 14.6% agreed, 11.2% strongly disagreed, and 4.5% considerably agreed with a mean of 2.61 and a standard deviation of 1.015. Students would perhaps find e-learning quite fun if certain attributes were improved since 36% considerably agreed, 25.8% were neutral, 24.7% agreed, and 13.5% disagreed with a mean of 3.83 and a standard deviation of 1.065.

Table 4.10 Perceived Enjoyment and Attitude towards E-Learning Use

	SD	D	N	A	CA	Mean	Std Dev
	%	%	%	%	%		
I do enjoy using e-learning in my course	4.5	5.1	21.9	43.8	24.7	3.79	1.018
I find the actual use of e-learning quite unpleasant	11.2	40.4	29.2	14.6	4.5	2.61	1.015
I would perhaps find e-learning quite fun if certain attributes were improved	0	13.5	25.8	24.7	36	3.83	1.065

4.4.3 Behavioral Intention and Attitude towards E-Learning Use

Table 4.11 shows that students did not dislike of the idea of using e-learning since 47.8% disagreed, 25.3% were neutral, 22.5% strongly disagreed, and 4.5% agreed with a mean of 2.12 and a standard deviation of 0.804. Students would use e-learning if it was not a requirement or directed to do so by their lecturer since 42.7% disagreed, 39.3% were neutral, 14% considerably agreed, 2.2% strongly disagreed, and 1.7% agreed with a mean of 2.83 and a standard deviation of 1.035. Students would recommend e-learning to others students since 42.1% agreed, 25.3% considerably agreed, another 25.3% were neutral, and 7.3% disagreed with a mean of 3.85 and a standard deviation of 0.884.

Table 4.11 Behavioral Intention and Attitude towards E-Learning Use

	SD	D	N	A	CA	Mean	Std Dev
	%	%	%	%	%		
I dislike of the idea of using e-learning	22.5	47.8	25.3	4.5	0	2.12	.804
I would not use e-learning if it was not a requirement/directed to do so by my lecturer	2.2	42.7	39.3	1.7	14	2.83	1.035
I would recommend e-learning for others students	0	7.3	25.3	42.1	25.3	3.85	.884

4.4.4 Correlations for Perceived Attitude on E -Learning Intention

Table 4.12 presents the Pearson correlation test between perceived attitude of e-learning factors and the independent variables: social influence, perceived enjoyment, and behavioral intention. The table indicates that social influence was significant to perceived attitude e-learning program ($r=0.229$, $p<0.01$). Perceived enjoyment was insignificant to perceived attitude of e-learning program ($r=0.146$, $p>0.05$). Behavioral intention was significant to perceived attitude of e-learning program ($r=0.182$, $p<0.05$).

Table 4.12 Correlations for Perceived Attitude Factors and E-Learning Intention

	Perceived Attitude	Social Influence	Perceived Enjoyment	Behavioral Intention
Perceived Attitude	1			
Social Influence	.229** .002	1		
Perceived Enjoyment	.146 .052	.269** .000	1	
Behavioral Intention	.182* .015	.273** .000	.076 .312	1

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

4.4.5 Regressions for Perceived Attitude Factors and E-Learning Intention

Table 4.13 shows the model summary of the regression analysis for perceived attitude of e-learning factors and the independent variables: social influence, and behavioral intention. The value of the adjusted R square of 0.057 denotes that 5.7% of the variance in perceived attitude of e-learning intention would be explained by social influence, and behavioral intention.

Table 4.13 Model of Perceived Attitude Factors and E-Learning Intention

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.260	.068	.057	.87780

a. Predictors: (Constant), Social Influence, and Behavioral Intention

Table 4.14 presents the ANOVA results of the regression analysis for perceived attitude of e-learning factors and the independent variables: social influence, and behavioral intention. It indicates that the independent variables had the ability to significantly predict the dependent variable since the df (2, 175) was equal to 0.002 which was <0.05 indicating that the regression model's best-fit model was good for the description of the data.

Table 4.14 ANOVA for Perceived Attitude Factors and E-Learning Intention

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	9.795	2	4.898	6.356	.002
Residual	134.844	175	.771		
Total	144.639	177			

a. Predictors: (Constant), Social Influence, and Behavioral Intention

b. Dependent Variable: Perceived Attitude

Table 4.15 indicates the regression coefficients for perceived attitude of e-learning factors and the independent variables: social influence, and behavioral intention. It provides the study with the linear equation that predicts the influence of perceived attitude on e-learning intention as:

$$Y = 1.722 + 0.363 \text{ Social Influence} + 0.219 \text{ Behavioral Intention}$$

From the equation presented, the coefficient for social influence is 0.363, thus the results show that if all factors are held constant, then one should expect an increase of 0.363 in perceived attitude with every increase of social influence. The equation also indicates that one should expect an increase of 0.219 in perceived attitude with every increase in behavioral intention.

Table 4.15 Coefficients for Perceived Attitude Factors and E-Learning Intention

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
1 (Constant)	1.722	.561		3.068	.002
Social Influence	.363	.143	.193	2.548	.012
Behavioral Intention	.219	.128	.129	1.703	.090

a. Dependent Variable: Perceived Attitude

4.5 Effect of Perceived Ease of Use on E-Learning Intention

4.5.1 'No Extra Effort' and Perceived Ease of Use of E-Learning Use

Table 4.16 indicates that students find e-learning easy to use and understand since 42.7% agreed, 37.1% were neutral, 7.9% considerably agreed, 7.3% strongly agreed, and 5.1% disagreed with a mean of 3.39 and a standard deviation of 0.969. Students find e-learning to be user-friendly since 57.3% agreed, 23% were neutral, 12.4% disagreed, and 7.3% considerably agreed with a mean of 3.60 and a standard deviation of 0.799. Students feel that they do not spend extra effort using e-learning since 34.3% were neutral, 29.2% equally agreed and considerably agreed, and 7.3% agreed with a mean of 3.80 and a standard deviation of 0.945.

Table 4.16 'No Extra Effort' and Perceived Ease of Use of E-Learning Use

	SD	D	N	A	CA	Mean	Std Dev
	%	%	%	%	%		
I find e-learning easy to use and understand	7.3	5.1	37.1	42.7	7.9	3.39	.969
I find e-learning to be user-friendly	0	12.4	23	57.3	7.3	3.60	.799
I feel that I do not spend extra effort using e-learning	0	7.3	34.3	29.2	29.2	3.80	.945

4.5.2 Perceived Competence and Perceived Ease of Use of E-Learning Use

Table 4.17 indicates that students are quite capable of using e-learning without a challenge since 34.3% were neutral, 30.3% agreed, 17.4% disagreed, 13.5% considerably agreed, and 4.5% strongly agreed with a mean of 3.31 and a standard deviation of 1.052. Students are comfortable using e-learning since 70.8% agreed, 14.6% were neutral, 9.6% considerably agreed, and 5.1% disagreed with a mean of 2.91 and a standard deviation of 0.934. Students are not stressed sometimes using e-learning since 36.5% disagreed, 34.3% were neutral, 21.9% agreed, 5.1% considerably agreed, and 2.2% strongly disagreed with a mean of 2.91 and a standard deviation of 0.934.

Table 4.17 Perceived Competence and Perceived Ease of Use of E-Learning Use

	SD	D	N	A	CA	Mean	Std
	%	%	%	%	%		Dev
I am quite capable of using e-learning without a challenge	4.5	17.4	34.3	30.3	13.5	3.31	1.052
I am comfortable using e-learning	0	5.1	14.6	70.8	9.6	3.85	.651
I am sometimes stressed using e-learning	2.2	36.5	34.3	21.9	5.1	2.91	.934

4.5.3 Perceived Relatedness and Perceived Ease of Use of E-Learning Use

Table 4.18 shows that students find e-learning material quite relevant for my course since 44.4% agreed, 24.2% considerably agreed, 21.9% were neutral, 5.1% disagreed, and 4.5% strongly disagreed with a mean of 3.79 and a standard deviation of 1.014. Students prefer e-learning because it permits them to coordinate group work assignments and tasks since 57.9% agreed, 21.9% considerably agreed, 10.7% were neutral, and 9.6% disagreed with a mean of 3.92 and a standard deviation of 0.840. Students feel that e-learning system complements their study or academic engagements at an individual level since 41.6% agreed, 31.5% considerably agreed, 21.9% were neutral, and 5.1% disagreed with a mean of 3.99 and a standard deviation of 0.860.

Table 4.18 Perceived Relatedness and Perceived Ease of Use of E-Learning Use

	SD	D	N	A	CA	Mean	Std
	%	%	%	%	%		Dev
I find e-learning material quite relevant for my course	4.5	5.1	21.9	44.4	24.2	3.79	1.014
I prefer e-learning because it permits me to coordinate group work assignments and tasks	0	9.6	10.7	57.9	21.9	3.92	.840
I feel that e-learning system complements my study or academic engagements at an individual level	0	5.1	21.9	41.6	31.5	3.99	.860

4.5.4 Correlations for Perceived Ease of Use Factors and E-Learning Intention

Table 4.19 presents the Pearson correlation test between perceived ease of use factors and the independent variables: no extra effort, perceived competence, and perceived relatedness. The table indicates that no extra effort was significant to perceived ease of use of e-learning program ($r=0.392$, $p<0.01$). Perceived competence was significant to perceived ease of use of e-learning program ($r=0.380$, $p<0.05$). Perceived relatedness was significant to perceived ease of use of e-learning program ($r=0.323$, $p<0.01$).

Table 4.19 Correlations for Perceived Ease of Use Factors and E-Learning Intention

	Perceived Ease of Use	No Extra Effort	Perceived Competence	Perceived Relatedness
Perceived Ease of Use	1			
No Extra Effort	.392** .000	1		
Perceived Competence	.380** .000	.518** .000	1	
Perceived Relatedness	.323** .000	.600** .000	.778** .000	1

** Correlation is significant at the 0.01 level (2-tailed)

4.5.5 Regressions for Perceived Ease of Use Factors and E-Learning Intention

Table 4.20 shows the model summary of the regression analysis for perceived ease of use of e-learning factors and the independent variables: no extra effort, perceived competence, and perceived relatedness. The value of the adjusted R square of 0.184 denotes that 18.4% of the variance in perceived ease of use of e-learning intention would be explained by no extra effort, perceived competence, and perceived relatedness.

Table 4.20 Model of Perceived Ease of Use Factors and E-Learning Intention

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.445	.198	.184	.81638

- a. Predictors: (Constant), No Extra Effort, Perceived Competence, and Perceived Relatedness

Table 4.21 presents the ANOVA results of the regression analysis for perceived ease of use of e-learning factors and the independent variables: no extra effort, perceived competence, and perceived relatedness. It indicates that the independent variables had the ability to significantly predict the dependent variable since the df (3, 174) was equal to 0.000 which was <0.05 indicating that the regression model's best-fit model was good for the description of the data.

Table 4.21 ANOVA for Perceived Ease of Use Factors and E-Learning Intention

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	28.673	3	9.558	14.341	.000
Residual	115.966	174	.666		
Total	144.639	177			

a. Predictors: (Constant), No Extra Effort, Perceived Competence, and Perceived Relatedness

b. Dependent Variable: Perceived Ease of Use

Table 4.22 indicates the regression coefficients for perceived ease of use of e-learning factors and the independent variables: no extra effort, perceived competence, and perceived relatedness. It provides the study with the linear equation that predicts the influence of perceived ease of use on e-learning intention as:

$$Y = 1.282 + 0.387 \text{ No Extra Effort} + 0.402 \text{ Perceived Competence} - 0.082 \text{ Perceived Relatedness}$$

From the equation presented, the coefficient for no extra effort is 0.387, thus the results show that if all factors are held constant, then one should expect an increase of 0.387 in perceived ease of use with every increase in no extra effort. The equation also indicates that one should expect an increase of 0.402 in perceived ease of use with every increase in perceived competence. The equation also indicates that one should expect a decrease of 0.082 in perceived ease of use with every increase in perceived relatedness due to the inverse relationship between the study variables.

Table 4.22 Coefficients for Perceived Ease of Use Factors and E-Learning Intention

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
1 (Constant)	1.282	.376		3.409	.001
No Extra Effort	.387	.115	.287	3.360	.001
Perceived Competence	.402	.151	.289	2.665	.008
Perceived Relatedness	-.082	.127	-.075	-.642	.522

a. Dependent Variable: Perceived Ease of Use

4.6 Chapter Summary

This chapter has provided the results and findings of the study using a variety of statistical methods principally the inferential and descriptive methods. The chapter was organized based on the flow of the questionnaire. Results have been presented in the form of tables and figures. Chapter 5 provides the summary of the study, together with the major results and findings of the study.

CHAPTER FIVE

5.0 DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter provides the summary of the study, together with the major results and findings of the study. The chapter is organized as follows: section 5.2 summary of findings, section 5.3 discussions, section 5.4 conclusions, and section 5.5 recommendations.

5.2 Summary of the Study

Significant number of Universities in Kenya are using e-learning management system as a platform to provide students with online learning. E-learning has continuously played a vital contribution to the progress of academic staff and students, and the improvement in the quality of teaching method and learning management system which have resulted in increased popularity of education in different educational institutions and organizations. Nonetheless, very few studies have applied the TAM to conceptualize and explicate the acceptance and implementation of e-learning in institutions of higher learning. The general objective of the study was to analyze the applicability of the Technology Acceptance Model (TAM) in understanding the behavioral intention to use e-learning among university students. The specific objectives of the study were to; examine the effect of perceived usefulness and e-learning intention; investigate the effect of perceived attitude on e-learning intention; and determine the effect of perceived ease of use on e-learning intention.

The research methodology, which was adopted, was as follows. The study used an exploratory research design to explore or find out ‘how’ digital marketing has affected consumer privacy. The target population for the study comprised of United States International University – Africa (USIU-A) students of which 233 were sampled for the study. The study used simple random sampling technique to ensure that students at every level education are given an equal chance of participation in the study. A structured questionnaire was used to collect the relevant information from the students. This study used the quantitative method of data analysis, as such both descriptive and inferential

statistics were used. Microsoft Excel and Statistical Package for Social Sciences (SPSS) program version 21 were used to present and analyze the collected data.

The study showed that students find e-learning useful in timely completion of assignments and research papers and that e-learning has ensured that students can read more concerning their courses through e-learning. The study revealed that students have the ability to view course materials more frequently and this has improved their GPA. Students have learnt a lot when they use e-learning systems, and e-learning assists them to achieve predetermined learning objectives. Due to e-learning, it can be observed that students spend little study hours per week, and also spend little effort researching for term papers and assignments.

The study indicated that students did not use e-learning purely because it was a university/class requirement or because fellow students in the university/classmates used it, nor because their friends and classmates had convinced/compelled them to use it. They chose to use the e-learning platform because it facilitated their ability to study faster and organize their studies comprehensively. The study revealed that students do enjoy using e-learning in their courses, and they did not find the actual use of e-learning quite unpleasant. However, students would find e-learning quite fun if certain attributes are improved.

The study revealed that students find e-learning easy to use and understand, as well as they find it being user-friendly. From the study it was noted that, students felt that they did not spend extra effort using e-learning because most of them are quite capable of using it without a challenge. This means that students are comfortable using e-learning and are not stressed sometimes while using e-learning. The study showed that students find e-learning material quite relevant for their course, and they prefer e-learning because it permits them to coordinate group work assignments and tasks.

5.3 Discussions

5.3.1 Effect of Perceived Usefulness and E-Learning Intention

The study showed that students find e-learning useful in timely completion of assignments and research papers. These results are in agreement with Aristovnik, Kerzic, Tomazevic and Umek (2016) who found that, one of the reasons why students accepted e-

learning was because they perceived it as important in assisting the accomplishment their course assignments on time.

The study revealed that students can read more concerning my courses through e-learning. These results are in agreement with Selamat and Selladurai (2015) who state that, goal obsession implies the extent to which e-learning assists the learners to achieve their predetermined learning objectives. They further state that, it can be argued that teachers and students' decision to accept and use e-learning is contingent in their perception as to whether e-learning facilitates their quest to learning or teaching tasks.

The study indicates that students can view course material more frequently. These results are in agreement with Aristovnik, Kerzic, Tomazevic and Umek (2016) who found that students favored e-learning because it permitted them to view course materials frequently. Davis (1993) has a strong use-performance relationship. This is further implying that the increased use of the technology has a direct positive impact on task performance for the user of the technology.

The study indicates that students' Grade Point Average (GPA) had improved since they started using e-learning. These results are similar to those of Kulik, (2003) who studied the impact of e-learning on students and found that students who utilized computer tutorials recorded higher scores in such subjects as the natural sciences, mathematics and social sciences than those who did not.

The study showed that students have learnt a lot since they started using e-learning systems. These results are in tandem with Olojo, *et al.*, (2012) who found that e-learners demonstrate increased knowledge retention rates and better use of acquired knowledge as compared to conventional instructor-led techniques. Harandi (2015) finds that due to the perceived potential benefits of e-learning both students and universities are accepting e-learning as an engagement with potential positive results for the learning process.

The study revealed that students can say that e-learning assists them to achieve predetermined learning objectives.

The study showed that due to e-learning, students did not spend little study hours per week. This is in tandem with Hwa, *et al.* (2015) who states that in education, the

application of e-learning facilitates the attainment of educational goals by both the student and the teacher. Dohan and Tan (2013) state that, in e-learning both teachers and students are able to interact with each other through the use of information technology (IT) and the associated applications.

The study indicated that students spend little effort researching for term papers and assignments. This is in agreement with Usta (2011) who explains that web-based learning is also referred to as network-based or internet-based learning, and that it is a system which permits students to access course materials whenever they have access to the internet, the internet of senkron communication tools in academic environments or education settings.

The study showed that students have witnessed a reduction on the proportion of time spend on academic subjects. These results concur with to Elkaseh, *et al.* (2015a) who states that, perceived usefulness is denoted by user's sentiments regarding the ability of e-learning to aid the accomplishment of tasks, result in expected learning outcome, and reduce the workload associated with nonuse.

5.3.2 Effect of Perceived Attitude on E -Learning Intention

The study indicates that students did not use e-learning purely because it was a university/class requirement. This is in agreement with Elkaseh, *et al.*, (2015a) who contends that studies have revealed that the several factors including satisfaction and attitudes that users have with and towards e-learning respectively, affect the success level of e-learning. Edmunds, *et al.* (2012) notes that, several factors including student's perception about how useful e-learning is, how easy it is to use, who else is using it and why they are using it work to shape students attitude towards the acceptances of e-learning.

The study showed that students did not use e-learning because fellow students in the university/classmates used it. This results differ with Sponselee, *et al*, (2008) who perceives social influence as a critical issue that encourage or discourage users to adopt or accepts a technology or a technological application. It also differs with Bagozzi (2007) who states that, the information, opinions, perceptions and even behaviors of the those

that form part of a user or potential users of a technology about a technology play a crucial role in their acceptance or reject of a technology.

The study noted that students did not use e-learning because their friends and classmates had convinced/compelled them to use it. This differs with Arthur, *et al.* (2006) who states that, the social influence is indeed a fundamental determinant in shaping people's attitudes towards the use as people are often apprehensive of how their peers perceive they're not using or using these devices. For students using e-learning is a show of the extent to which one is exposed and in tandem with the technological revolution of the modern world.

The study showed that students do enjoy using e-learning in their course. This is in agreement with Khalid (2014) who explains that relation to e-learning, perceived enjoyment is the extent to which services or activities offered by LMS is considered enjoyable in their own right apart from the resultant performance consequences. In other words, PE is the inherent motivation element for the use of a given information systems (IS).

The study indicates that students did not find the actual use of e-learning quite unpleasant. These results are in agreement with Maina and Nzuki (2015) who states that individuals participate or engage in activities in which they derive pleasure and enjoyment - that is the level of perceived enjoyment from participation in the activity. Elkaseh, *et al.* (2015a) notes that, e-learning is an activity aided by computers, PE is therefore a principal variable affecting acceptance and use of e-learning among students and teachers.

The study showed that students would perhaps find e-learning quite fun if certain attributes were improved. This is in agreement with Saadé, Tan and Nebebe (2008) who posit that intrinsic motivators representing a student's subjective feelings of joy, that play a critical role in explaining user acceptance and usage behavior of e-learning. Van der Heijden (2004) proposed that intrinsic motivator such as perceive enjoyment can influence user to use information system such as E-learning because the result show that perceive enjoyment has significant impact on student intention to use E-learning.

The study indicated that students did not dislike of the idea of using e-learning. These results concur with Park (2009); Tsai, Tung, & Laffey (2013) who state that, adoption or use of technology is interconnected to a positive attitude toward the system and the behavioral intention to use the system, and that behavioral intention the primary purpose of this research is to understand the factor that drives the behavioral intention of students to use E-learning.

The study revealed that students would use e-learning if it was not a requirement or directed to do so by their lecturer. This is in agreement with Khalid (2014) who explains that relation to e-learning, perceived enjoyment is the extent to which services or activities offered by LMS is considered enjoyable in their own right apart from the resultant performance consequences. In other words, PE is the inherent motivation element for the use of a given information systems (IS).

The study showed that students would recommend e-learning to others. This results are in agreement with Arthur, *et al*, (2006) who states that social influence is indeed a fundamental determinant in shaping people's attitudes towards the use as people are often apprehensive of how their peers perceive they're not using or using these devices, and for students using e-learning is a show of the extent to which one is exposed and in tandem with the technological revolution of the modern world.

5.3.3 Effect of Perceived Ease of Use on E-Learning Intention

The study indicates that students find e-learning easy to use and understand. This is in agreement with Yiong, Sam and Wah (2008) who have argued that when the effort of using a technology outweighs its ability to perform a task, the user may find it worthwhile not using the technology. People would not see the point in using a technological application that takes more of their energy than they would otherwise expend not using the technology.

The study showed that students find e-learning to be user-friendly. This is in tandem with Vidanagama (2016) who states that a user-friendly system is important specially to assist students who have problems in using some of the e-learning tools. Moreover, students thought that the infrastructure of the technology and e-learning system should be upgraded.

The study denotes that students feel that they do not spend extra effort using e-learning. This is in agreement with Park (2009) who states that, the degree to which the user of a technology believes that the use of such a given technology will be free from extra effort if any at all is referred to as the “perceived ease of use”. Yiong, Sam and Wah (2008) also note that, people would not see the point in using a technological application that takes more of their energy than they would otherwise expend not using the technology.

The study revealed that students are quite capable of using e-learning without a challenge. This concurs with Ting, *et al.* (2011) who state that, in such cases, people will tend to use technology because they perceive it as benefiting them or capable of being used advantageously. Bandura (1986) conceptualized self-efficacy as individual's perceptions of their competences to shape and perform courses of functions necessary to achieve designated kinds of performances.

The study showed that students are comfortable using e-learning. This is in agreement with Clark & Mayer (2011) who state that, computer self-efficacy was found to influence perceived usefulness in previous studies. Since internet self-efficacy and computer self-efficacy are self-efficacy judgments, and previously computer self-efficacy and perceived ease of use have been found connected, they argue that it is reasonable to predict a relationship between internet self-efficacy and perceived ease of use.

The study indicates that students are not stressed sometimes using e-learning. This concurs with Roca and Gagne (2007) who showed that only when people felt both competence and autonomous, successful performance improved intrinsic motivation. Clark and Mayer (2011) opine that, the IS literature, computer self-efficacy refers to self-assessment of individual ability to apply computer skills to complete the specified tasks.

The study revealed that students find e-learning material quite relevant for their course. This concurs with Elkaseh, *et al.*, (2015a) who have found that acceptance of e-learning is sometimes based on the perception that e-learning provides greater efficiency as compared to classroom tutorials as students are able to acquire new skills, gain new knowledge and develop positive attitudes towards the course and the course material.

The study indicates that students prefer e-learning because it permits them to coordinate group work assignments and tasks. This is in agreement to Garrison (2011) who states that although autonomy and competence have a strong influence on motivation, people are likely to endorse their group's goals more when they feel connected to group members. Thus, when individuals are in an autonomy-supportive context and they have a sense of relatedness their motivation is enhanced.

The study showed that students feel that e-learning system complements their study or academic engagements at an individual level. This is in agreement with Hallinger and Lu (2013) who notes that faith is the amount of confidence or trust that someone has in something as such having faith in the potential benefits of e-learning allows individuals to accept and use e-learning in the academic engagements. Harandi (2015) finds that due to the perceived potential benefits of e-learning both students and universities are accepting e-learning as an engagement with potential positive results for the learning process.

5.4 Conclusions

5.4.1 Effect of Perceived Usefulness and E-Learning Intention

The study concludes that students find e-learning useful in timely completion of assignments and research papers and that e-learning has ensured that students can read more concerning their courses through e-learning. The study concludes that students have the ability to view course materials more frequently and this has improved their GPA. Students have learnt a lot when they use e-learning systems, and e-learning assists them to achieve predetermined learning objectives. Due to e-learning, it can be concluded that students spend little study hours per week, and also spend little effort researching for term papers and assignments. It can be concluded that students witness a reduction on the proportion of time they spend on academic subjects through e-learning platforms.

5.4.2 Effect of Perceived Attitude on E -Learning Intention

The study concludes that students did not use e-learning purely because it was a university/class requirement or because fellow students in the university/classmates used it, nor because their friends and classmates had convinced/compelled them to use it. They chose to use the e-learning platform because it facilitated their ability to study faster and organize their studies comprehensively. The study concludes that students do enjoy using e-learning in their courses, and they did not find the actual use of e-learning quite

unpleasant. However, students would find e-learning quite fun if certain attributes are improved. The study concludes that students did not dislike of the idea of using e-learning and they were willing to use e-learning if it was not a requirement or directed to do so by their lecturers. It was noted that most students were willing to recommend e-learning to their fellow students.

5.4.3 Effect of Perceived Ease of Use on E-Learning Intention

The study concludes that students find e-learning easy to use and understand, as well as they find it being user-friendly. From the study it can be noted that, students feel that they do not spend extra effort using e-learning because most of them are quite capable of using it without a challenge. This means that students are comfortable using e-learning and are not stressed sometimes while using e-learning. The study concludes that students find e-learning material quite relevant for their course, and they prefer e-learning because it permits them to coordinate group work assignments and tasks. It can be concluded that students feel that e-learning system complements their study or academic engagements, thus improving their studying behavior.

5.5 Recommendations

5.5.1 Recommendations for Improvement

5.5.1.1 Effect of Perceived Usefulness and E-Learning Intention

The study recommends USIU-A to ensure that its learning process directly affects the quality of e-learning of its students at their e-learning platform. The study recommends the institution to ensure that the sequence of learning activities and resources have a defined structure that is adopted for all learning objects.

5.5.1.2 Effect of Perceived Attitude on E -Learning Intention

The study recommends USIU-A to produce an e-learning resource that will contain a peer production that entails and includes the digital content created, edited, enriched and validated by students, and teachers who are of the same peer, in other words by people on the “same hierarchical level ”. This will empower a wide variety of professionals to the learning content production.

5.5.1.3 Effect of Perceived Ease of Use on E-Learning Intention

The study recommends USIU-A to adopt an interface that will define the ergonomics and psychological aspect of presentation of e-learning objectives in the learning process. USIU-A should include visual and designs to add value in their e-learning platform for its students. The platform's administrator and publisher teachers of learning process should improve the visual design of learning content and compare it with the visual and design of contents of other e-learning platforms.

5.5.2 Recommendations for Further Studies

The current study has focused on the Technology Acceptance Model (TAM) developed by Fred D. Davis to conceptualize university students' behavioral intention to use e-learning. The study examined the effect of perceived usefulness and e-learning intention, the effect of perceived attitude on e-learning intention, and the effect of perceived ease of use on e-learning intention at USIU-A. The study recommends similar studies to be conducted on other institutions of higher learning to provide a broader understanding of the application of TAM.

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APPENDICES

APPENDIX 1: LETTER OF INTRODUCTION

Bernard Mbira

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3rd August, 2017.

Professor Wamabala

Head of Research USIU

Dear Sir,

RE: LETTER OF INTRODUCTION

I am master's students currently pursuing a Masters of Business Administration (MBA) at USIU. I am in the process of doing my thesis in partial fulfilment of the degree program. As such, am conducting a study on, "**Technology Acceptance Model in Understanding University Students' Behavioral Intention to Use e-Learning**". I have selected USIU as the university in which I intend to conduct the study.

Am writing in request for permission to conduct the study among USIU students. Should I be granted the opportunity, I will observe utmost professionalism as directed by USIU guidelines in the research, I will keep the respondents anonymous and use the data for the intended purpose alone.

Yours Sincerely,

Bernard Mbira.

APPENDIX 2: RESEARCH QUESTIONNAIRE

Kindly read each question and respond to it the best of your ability and where necessary mark with a tick [√] in the boxes provided.

There are no accurate or inaccurate responses; your answers are crucial to the study. All replies to this survey are completely confidential. All identifying information if any will be removed during the data entry and analysis; however, you are requested to respond anonymously. The questionnaire will take an average of 15 minutes to fill. *Thank you for participating in this study.*

PART 1: BIOGRAPHICAL INFORMATION

1. For each of the questions, please select one answer.

1. Please indicate your year of study:					
Freshman		Sophomore		Junior	
				Senior	Other, specify
2. Please indicate your age category					
18 - 23		24-29		30-35	
				36 - 41	Over 41
3. Indicate your gender					
Male			Female		
4. Does your University have e-learning program					
Yes		Implemented but at test stages		In future plans	
				Not Sure	None
5. If yes, do you use e-learning					
Yes		Sometimes		Plan to use it in the future	
				Not Sure	Not at all

2. In the table are some of the factors that influence the acceptance and adoption of e-learning by students. Please rank in order of importance (with 1 being least important and 5 being most important)

factors that influence the acceptance and adoption of e-learning	Least Important Most Important				
	1	2	3	4	5
i. Perceived usefulness of E-learning					
ii. Perceived attitude towards e-learning					
ii. Perceived ease of use of e-learning					

PART II: PERCEIVED USEFULNESS AND E-LEARNING

3. Kindly indicate your perception of task accomplishment, learning outcome and workload reduction on the perceived usefulness of e-learning.

1. Indicate your perception of perceived usefulness of e-learning on Task Accomplishment.	Slightly disagree	Disagree	Neutral	Agree	Considerably agree
	1	2	3	4	5
i. I find e-learning useful in timely completion of assignments and research papers.					
ii. I can read more concerning my courses through e-learning					
iii. I can view course material more frequently.					
2. Indicate your perception of effect of usefulness on e-learning on Learning Outcome					
i. My GPA (Grade Point Average) has improved since I started using e-learning					
ii. I have learnt a lot since I started using e-learning systems.					
iii. I can say that e-learning assists me to achieve predetermined learning objectives.					
3. Indicate your perception of effect of usefulness on e-learning on Workload Reduction					
i. Due to e-learning I now spend little study hours per week					
ii. I spend little effort researching for term papers and assignments.					
iii. I have witnessed a reduction on the proportion of time I spend on academic subjects.					

PART III: PERCEIVED ATTITUDE AND E-LEARNING

4. Kindly indicate your opinion of effect social influence, perceived enjoyment and behavioral intention on your perceived attitude of e-learning on.

1. Indicate your perception of effect of social influence on your attitude towards e-learning use.	Slightly disagree	Disagree	Neutral	Agree	Considerably agree
	1	2	3	4	5
i. I use e-learning purely because it is a university/class requirement that I do so.					
ii. I use e-learning because fellow students in the university/my classmates use it.					
iii. I use e-learning because my friends and classmates have convinced/compelled me to use it.					
2. Indicate your perception of effect of perceived enjoyment on your attitude towards e-learning.					
i. I do enjoy using e-learning in my course					
ii. I find the actual use of e-learning quite unpleasant					
iii. I would perhaps find e-learning quite fun if certain attributes were improved.					
3. Indicate your perception of effect behavioral intention on your attitude towards e-learning					
i. I dislike of the idea of using e-learning					
ii. I would not use e-learning if it was not a requirement/directed to do so by my lecturer					
iii. I would recommend e-learning for others students					

PART IV: PERCEIVED EASE OF USE AND E-LEARNING

5. Kindly indicate your opinion on the effect of 'no extra effort', perceived competence and perceived relatedness on your perception of perceived ease of use of e-learning.

1. Indicate your perception of effect of 'no extra effort' on your perceived ease of use of e-learning use.	Slightly disagree	Disagree	Neutral	Agree	Considerably agree
	1	2	3	4	5
i. I find e-learning easy to use and understand					
ii. I find e-learning to be user-friendly					
iii. I feel that I do not spend extra effort using e-learning					
2. Indicate your perception of effect of perceived competence on your perceived ease of use of e-learning use.					
i. I am quite capable of using e-learning with a challenge					
ii. I am comfortable using e-learning					
iii. I am sometimes stressed using e-learning					
3. Indicate your perception of effect of perceived relatedness on your perceived ease of use of e-learning use.					
i. I find e-learning material quite relevant for my course					
ii. I prefer e-learning because it permits me to coordinate group work assignments and tasks					
iii. I feel that e-learning system complements my study or academic engagements at an individual level.					

THE END

Thanks for Your Participation in the Study