

**INSTITUTIONAL POLICY IMPLEMENTATION AND
LECTURERS' READINESS TOWARDS ADOPTION OF
LEARNING MANAGEMENT SYSTEM IN SOUTH-WEST
UNIVERSITIES, NIGERIA**

BY

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CERTIFICATION

This is to certify that this project was carried out by JIMOH, Taibat Bolanle (03/25OE162) and has been read and approved as meeting part of the requirements for the award of the Degree of Doctor of Philosophy (Ph.D.) in the Department of Educational Management, Faculty of Education, University of Ilorin, Nigeria.

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DEDICATION

This research work is dedicated to my dear children for their outstanding and genuine love.

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ABSTRACT

Learning Management System (LMS), a component of Information and Communication Technology (ICT) has brought changes into most aspects of the education system. This has rendered the existing teaching principles and methods unsuitable for the achievement of the educational objectives. Therefore, there is need for new orientation in teaching and learning. This research was carried out to examine lecturers' readiness and institutional policy implementation towards adoption of LMS as part of their ICT utilization in universities in the South-west, Nigeria. The objectives of the study were to: (i) investigate the level of ICT policy implementation with respect to adoption of LMS; (ii) determine the adequacy of facilities provided for adoption of LMS in the institutions; (iii) examine lecturers' perceived self-efficacy in the use of LMS; (iv) examine the readiness of lecturers towards using LMS in the institutions; and (v) examine the influence of gender, age and ICT skill on lecturers' readiness to adopt LMS.

The study adopted a mixed method research design involving cross-sectional survey and in-depth interview. A multi-stage sampling technique was used to select 538 out of 6,252 lecturers and five ICT Directors from six universities for the study out of the 15 government-owned universities in the South-west, Nigeria. The research instruments used for the study were validated researcher-designed questionnaire and structured interview guide entitled "Institutional Policy Implementation and Lecturers' Readiness on LMS Adoption Questionnaire" (IPILRLMSAQ) and "Interview Questions on Institutional Policy Implementation and LMS Adoption" (IQIPIALMSA), respectively. The reliability coefficient of the IPILRLMSAQ was 0.8. Seven research questions were answered and six hypotheses were tested in the study. The data collected were analyzed using descriptive and inferential statistics at 0.5 level of significance.

The findings of the study were that:

- i. ICT policy implementation in institutions with regards to LMS adoption were at its infancy stage as a result of inconsistent framework, non-functional ICT policy, inadequate funding and lack of adequate training and retraining on LMS;
- ii. the ICT facilities provided were adequate with the least mean value of 3.81;
- iii. the lecturers indicated a moderate level of perceived self-efficacy with least mean value of 3.87;
- iv. lecturers' readiness towards using LMS in the universities is positive ($b = 0.539$, $p < 0.05$); and
- v. there was no significant difference in the lecturers' readiness to use LMS based on gender, age and ICT skills (male = 4.0261, female = 4.0278; young = 3.97; old = 4.02; skilled 3.96; unskilled 4.21 respectively).

The study concluded that implementation of institutional policy on ICT and lecturers' readiness could guarantee successful adoption of LMS in the Nigerian universities. The study recommended that there should be consistent framework, functional ICT policy implementation on LMS and adequate funding in Nigerian universities. Also, there should be

adequate training and retraining for lecturers on LMS to enhance their job performance in the universities.

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CHAPTER ONE

INTRODUCTION

Background to the Study

Virtually all sectors of human endeavour have witnessed operational changes as a result of the introduction of computers and its associated Information and Communication Technologies (ICTs). Educational institutions are not exceptions in this regard as the dictate by the emerging technology-driven society of the 21st century has no boundary. Hence, previous researches in the field of education have revealed that the required skills and knowledge in the 21st century cannot be delivered without the use of appropriate technologies (Alabi, 1999; Angaye, 2013; Farell, Yusuf, 2005; Ojo, 2014). Similarly, Fasasi (2011) revealed that there are inadequacies with regards to the provision of facilities and instructional materials in Nigerian tertiary institutions. Therefore, tertiary institutions are incapacitated to deliver the 21st century skills and knowledge.

Within Nigerian context, many researchers have proposed the integration of ICTs for academic and non-academic purposes in higher institutions of learning (Alabi, 1999; Falade, 2013; Ojo, 2014; Omirin, 2007). Integration of ICTs in higher institutions in Nigeria, and its promising tendency of delivering 21st century skills and knowledge have been equally revealed (Angaye, 2013).

However, there is quest for ubiquitous service delivery across all aspects of life with a mission of removing constraints imposed on access to technology related services based on time and locations (Angaye, 2013). Achieving this in educational sector has continued to pave way for emergence of electronic learning (eLearning) which affords the possibility of learning at anytime and from anywhere.

According to Angaye (2013), ICT is a transformation agent in education sector that can enhance information access for better relationships among lecturers in the sector. Therefore, institutions can enhance their competitiveness via information empowerment which promises to impart individuals and the society at large positively.

Also, ICT is a change agent which revolutionises all sectors of the society into the next century. The emerging globalization and advances in ICT necessitated the need to improve such technology so as to bring great opportunities for developing countries like Nigeria. Again, ICTs have the capability to improve, enhance and widening knowledge and skills required by the 21st century learners in relating school's experiences to work practices. Such capability could be harnessed to have economic viability for next generation workforce, and equally improve teaching and learning process (Daniels, 2002).

Historically, pedagogy in education reveals a strong connection between the mode of delivery and the current technology, as there is strong link between the mode of delivery and the learning outcome (Bell, 2013; Montanini, 2013). Therefore, the emerging technology must be integrated for educational institutions to become relevant and develop fully its educational potentials. Likewise, it becomes eminent on higher institutions of learning to operate in a rapidly changing and challenging technological environment so as to bring out the required educational innovations (Rosenberg, 2001; Yusuf, 2005; Ojo, 2014). This therefore, accounts for the changing nature in the demands for teaching principles and

methods from lecturers. Thus, the readiness of the lecturers vis-a-vis the change must be ascertained at all times for successful integration of the technology.

Since the introduction of eLearning, a great improvement in the use of eLearning applications to compliment face-to-face classroom teaching in Universities was witnessed by providing combination traditional teaching, eLearning, self and distant learning. Apart from the associated merits of eLearning, many higher institutions in Nigeria are yet to exploit eLearning to its full potential due to limited researches to give backgrounds on effective use of eLearning systems (Angaye, 2013). It is therefore important for any learning technologists to recognize the factors that influence the effectiveness of the hybrid learning techniques. Many researchers have worked on the factors that are of importance for evaluating the adoption of eLearning system and its effectiveness (Angaye, 2013; Mevarech & Light, 1992).

Also, given the wide acceptance of eLearning globally, there is need for effective management and planning of such an innovative learning platform (Angaye, 2013). It was equally revealed that old method of teaching and learning is not capable of delivering the required 21st century skills and knowledge (Angaye, 2013; Mevarech & Light, 1992).

Starting from 19th Century, education offered by higher education institutions of learning has witnessed paradigm shift with the introduction of eLearning. Subsequently, the adoption of eLearning technologies has impacted the planning, learning design, management and administration of the learning process and delivery of learning content to the students (Namahn, 2010), thereby promoting combined eLearning. Currently, the combined eLearning in higher institutions encompasses the use of a mix of improved course delivery strategies during face-to-face classroom teaching with live eLearning, self-paced eLearning facilitated by virtual learning environments (Sharpe et al. 2006). Such environments include learning management systems like Moodle, WebCT, and Blackboard as well as other Web 2.0 technologies which have become enablers for collaborative learning amongst students and

lecturers, online discussions and distance learning. Over 80% of higher institutions in the developed world are actively engaged in the use of eLearning systems for supporting their teaching and learning, with 97% of Universities reported to be using one or more forms of Virtual Learning Environments (Britain & Liber, 1999).

In the same vein, Universities in developing countries especially sub-Saharan Africa are progressively adopting these eLearning technologies for teaching, research and supporting students' learning so as to reap the same benefits with the developed countries. Nevertheless, education in sub-Saharan Africa are grappling with the continuing economic recession, high demand for higher education in emerging knowledge-driven economies as well as inadequacy of experienced and skilled teachers (UNESCO, 2006). Besides, there is need to improve on the quality of teachers in order to meet the high demand for education. Universities in sub-Saharan Africa are also still facing numerous challenges such as high volume of students, limited ICT infrastructure, high illiteracy levels, ineffective computer system maintenance and poor ICT support related to the implementation of eLearning (Ssekakubo et al., 2011; Andersson, 2008). Meanwhile, Abdulkareem and Fasasi (2012) equally corroborated the need for management of facilities in schools so as to increase the productivity of the lecturers.

Interestingly, Learning Management System (LMS) is central to the goal of any eLearning system (Hegazy & Radwan, 2010). With the revolutionary emergence of internet and web technologies, higher education institutions around the globe are increasingly exploring eLearning technologies to improve the value of education and to annihilate situational barriers. Learning Management System is one of the renowned eLearning technologies that have been widely used to cater for the ever-growing demand for flexible teaching and learning. LMS is said to be a teaching and learning model that accommodates virtual learning and electronic management of pedagogical processes using various communication technologies or eLearning technologies.

LMS is the tool (software) used to administer, track, report and document the delivery of eLearning courses. Primarily, the goal of LMS in institutions is to simplify the administration of learning programmes and support communications among lecturers. The process of eLearning viz-a-viz the central role of LMS is described in Figure 1.

As described in Figure 1, LMS serves as hub in any electronic learning environment with connection to a specific network for learning management purpose sitting on the global network with appropriate computing multimedia devices.

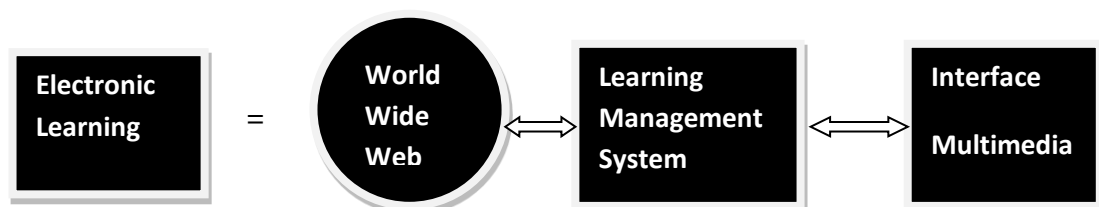


Figure 1: eLearning Process with LMS (Source: Alfadly, 2012)

In a bid to eradicate clogs from the developmental wheels of higher education system, higher education institutions in Nigeria are showing interest in adopting LMS. Adoption of LMS in higher institution is yet to record expected success (Ssekakubo et al., 2011; Unwin et al., 2010). Specifically, Nigerian universities are yet to significantly benefit from advantages of LMS due to certain hindering factors such as lack of technological infrastructures, negative perception of faculty members and uncooperative attitudes of decision makers (Yusuf, 2005; Agabi & Uche, 2006; Angaye, 2013). This makes readiness of stakeholder a serious factor with regards to the adoption of LMS.

LMS being a new innovation in education, is often confused with other ICT components like eLearning, digital learning, virtual learning and distance learning (Kritikou et al., 2008). In most cases, all of these educational ICT components represent modern advancements in education process, involving utilization of ICT tools and technologies

(Albirini, 2006). LMS is thus, an online system that allow users to share educative contents collaboratively (Lonn & Teasley, 2009).

Also, LMS is perceived as a software application that uses the internet as a medium to support education and learning process (Cavus & Momani, 2009). Particularly, LMS could be utilized by educational institutions as well as corporate organizations with a major focus on managing the education process rather than merely delivering course and training materials electronically. Similarly, it is synonymous to eLearning in terms of using the web inside classrooms to enhance the learning process (Rainer et al., 2007; Sridhar, 2005).

Indeed, LMS provide vital benefits to any educational institution. According to Mahdizadeh et al. (2008), LMS motivates students and teachers in the learning process by allowing active participations and interactions inside the digital classroom. This approach improves productivity in a cost-effective manner (Aczeletal., 2008; Naidu, 2006). In addition, LMS could accelerate the learning processes, and improve the effectiveness of communication among users (educators, staff, and students) (Cavus & Momani, 2009). .Also, the use of LMS in education aids the trainer and organization in reducing learning times and increase job retention (Hall, 1997). Naturally, LMS applications enable organizations to manage users, courses and instructors with testing capabilities and ability to generate reports, transcripts and notifications to students (Mahdizadeh et al., 2008). Furthermore, it could assist in effective management of learning process, which was identified as a critical success factor in educational institutions (Fasasi, 2011).

It is therefore of importance to evaluate the institutional policy and lecturers' readiness towards adoption of LMS in order to pave ways for its successful integration in Nigeria institutions. This study thereby focuses on institutional policy implementation and lecturers' readiness towards the adoption of LMS in Nigeria institutions.

Statement of the Problem

The dictate of the 21st century educational environment has made involvement of ICT inevitable (Daniels, 2002; Angaye, 2013). This paved ways for the emergence of eLearning to provide ubiquitous learning opportunities. Previous authors have revealed the necessity of migrating to the emerging trend in the university education (Daniels, 2002; Farell, 2007). All arguments in the literature are in favour of eLearning technology as a promising way of achieving the goal of 21st century education (Rosenber, 2001). However, for successful implementation of eLearning, there is need for a reliable Learning Management system (LMS) as revealed by previous researchers in this domain (Waston & Hardaker, 2005; Sadeh & Ellingsen, 2005). In addition, due to natural human resistance to change and innovations, previous authors have emphasized the need for ascertaining the readiness of stakeholders to adoption of LMS prior to its implementation for sustainability (Ozkan, Koseler & Baykal, 2009).

However, previous researchers considered the effect of using ICT on a number of educational issues (decision making, administrative effectiveness, learning effectiveness, etc.) within Nigeria sector in general such as Alabi (1999) where the research interest was to determine the effectiveness of ICT with emphasis on Management Information Systems (MIS) on University's decision making. In the same spirit, Ojo (2014) studied the relationships between ICT utilization, decision making process and administrative effectiveness in the Nigerian Polytechnics. Also, Falade (2013) investigated lecturers' perception of the integration of ICTs into distance learning in Nigeria. Certainly, all these studies among others were interested in ICTs as a whole without specific interest in the learning management tool. Having realized full integration and utilization of ICTs in Nigerian institutions, this research is interested in considering the factors that can assist in

successful integration of Learning Management System (LMS) with respect to lecturers and institutional policy implementation.

Globally, previous studies have considered adoption of LMS either from individualist perspective (lecturers) or structuralism perspective (policy) (Alfadly, 2012; Singh & Hardaker, 2013). Thus, there is need to take holistic perspective of LMS adoption base on lecturers' readiness and institutional policy in order to pave ways for its successful implementation in Nigerian universities given the fact that a number of studies in this domain have revealed the significance of ascertaining lecturers' readiness (Lee, 2006; Tseng, Lin & Chen, 2011). This further corroborates the significance of the variable lecturers' readiness in this study. This research is therefore interested in filling these gaps by examining the effect of institutional policies and lecturers' readiness on the adoption of LMS.

Purpose of the Study

The study is purposely designed to examine the adoption of LMS in selected universities in South-west Nigeria, based on lecturers' readiness and institutional policy implementation. Specifically, the study investigated adoption of LMS by assessing:

- i. Nigerian universities ICT policy implementation with respect to adoption of LMS;
- ii. adequacy of ICT facilities provided by the selected universities in preparation for adoption of LMS;
- iii. readiness of lecturers towards using LMS in selected universities;
- iv. lecturers' perceived self-efficacy in the use of LMS; and
- v. The effect of moderating variables like gender, age and ICT skill of lecturers' readiness to use LMS.

Research Questions

The following research questions were formulated and subsequently addressed in this study:

- i. Do ICT policy implementation of university education in Nigeria in favour of adoption of LMS?
- ii. Are the available ICT facilities in the universities adequate to support successful adoption of LMS?
- iii. Are the lecturers in Nigerian universities ready to use LMS?
- iv. What is lecturers' perceived self-efficacy on the use of LMS?

The main hypothesis of this study is stated as follows:

H₀: The adoption of LMS in selected universities is jointly determined by institutional policy implementation and lecturers' readiness.

The following are the operational hypotheses:

H₀₁: There is no significant relationship between institutional policy implementation on ICT and adoption of LMS in selected universities.

H₀₂: There is no significant relationship between lecturers' readiness and adoption of LMS in selected universities

H₀₃: There is no significant difference between male and female lecturers in their level of readiness to use LMS in selected universities

H₀₄: There is no significant difference between old and young lecturers in their level of readiness to use LMS in selected universities.

H₀₅: There is no significant difference between ICT skilled and unskilled lecturers in their level of readiness to use LMS in selected universities.

Scope of the Study

This study examined institutional policy implementation and lecturer's readiness toward the adoption of LMS in South-west universities in Nigeria. Thus, the study covered six universities out of 15 Federal and State Government owned universities in South-west Nigeria. This implies that, at least one university is selected in each state of the geopolitical zone.

The parameters used for measuring institutional policy implementation include organizational support, technical and training support, motivation, financial support, infrastructural support, legal backing, institutional autonomy and consistent framework. Likewise, lecturers' readiness was measured by perceived self efficacy, attitude towards LMS, experience, teaching style, personal innovativeness and communication skills. Also, adoption of LMS was measured by performance expectancy and behavioural goal to use LMS.

To this end, both institutional policy implementation and lecturers' readiness are the independent variables of the study, whereas LMS adoption serves as the dependent variable as described in Figures 1 and 2. Descriptive statistics, simple correlation, simple regression, Analysis of Variance and simple t-test were used for data analysis appropriately.

Significance of the Study

The findings of this study are of immense benefits as it would examine institutional policy implementation, lecturers' readiness and adoption of learning management system in universities in South-west, Nigeria. The findings of this study would help education policy makers particularly school administrators to understand the facilitating conditions and factors that influence and aid successful adoption of LMS in Nigerian universities.

Also, the findings reported in this study would benefit educational managers with regards to necessary ICT facilities to be provided for Nigerian universities to support successful integration of LMS. Again, findings of this study would give insight on the characteristics of lecturers based on their acceptance and actual use of the technology being a new domain. In addition, the findings would be useful in updating the National Policy on ICT for education so as to support appropriate institutional policy implementation plans for successful adoption of LMS. Lastly, the findings of this study would assist future researchers to bridge any noticed gap of the studied variables therein.

Operational Definition of Terms

The following terms are defined in the context this study:

Institutional Policy Implementation: This connotes a blue print policy document approved by an institution to assist in maintaining compliance with applicable policy, procedures and laws for the considerations of the use of LMS with respect to organizational support, financial support, technical and training support, motivation, infrastructural support, legal backing and consistent framework.

Lecturer's Readiness: This is a measure of readiness/willingness of lecturers in the selected universities to use LMS for educational.

Lecturers' Self-Efficacy: This is the conviction by prospective users of LMS that using the system will seamless with minimum or no supervision.

Learning Management System Adoption: This refers to the degree at which both institutions and lecturers believe in the integration and implementation of LMS. This is measured by behavioural intention to use LMS based on its performance expectancy.

Learning Management System: This is a technological innovation implemented by higher education institutions to support their teaching and learning tasks using variety of tools such as

discussion boards, collaborative platforms (for information sharing, assignment management, schedules, announcements), automated result grading and posting system, electronic examinations, and courseware.

Ubiquitous Learning: This is defined as the form of learning devoid of constraints either by geographical location or time i.e. learning anywhere anytime.

Electronic Learning: This is defined as the use of electronic media to carryout teaching and learning activities. The essence is to support ubiquitous learning opportunities.

South-west Nigeria: This means the six states where Federal and State Universities for this study are located. The states are Oyo, Ogun, Osun, Ondo, Lagos and Ekiti.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter examined relevant literatures on the main variables of the study which include institutional policy implementation, lecturers' readiness and adoption of LMS in South-west Nigeria universities. Subsequently, the chapter clearly explained major concepts of the study and also appraised the existing literatures related to the study. The review was carried out under the following headings:

- i. Theoretical Framework of the Study

- ii. Nigeria University System and Policies
- iii. Conceptualization of ICT in Education
- iv. Integrating ICT into Nigerian University Education
- v. Challenges of ICT Integration in Educational Environment
- vi. Ubiquitous Learning and its Needs in the 21st Century Learning Environment
- vii. Definitions of Ubiquitous Learning
- viii. Implication of Ubiquitous Learning in Education
- ix. Evolution of Electronic Learning
- x. Learning Management System (LMS) and eLearning Adoption
- xi. Institutional policy and Adoption of LMS
- xii. The Drivers of LMS Adoption
- xiii. Lecturers' Readiness and Adoption of LMS
- xiv. The Moderating Effect of Age, Gender and ICT Experience on the Adoption of LMS
- xv. Conceptual Framework of the Study
- xvi. Appraisal of Literature Reviewed

Theoretical Framework

Mayes (2004) models or learning theories designed for eLearning are composite in nature by combining a number of related ones. Hence, enhancements of these models have been proposed over the years as result of the innovative changes. Furthermore, it is worrisome that despite the exhibited innovativeness on the part of teachers and with regards

to ICT in education, these efforts have not yielded desired efficiencies (Mayes, 2004). The problem gets compounded by the evolving technologies, thereby leading to increase in application of Virtual Worlds as new educational environment (Mayes, 2004). Virtual worlds present the chance to the learners to be involved in activities that continuously quantify their performances and assess their apprehensions. It was revealed that long-life learning is based on experiences which is only achievable by acquiring new knowledge with continuous assessment (Dewey, 2008). It is however still desirable to factor in the traditional learning theories so as to protect the learning culture.

What constitutes the emerging 21st century educational environment such as openness, flexibility, learner centeredness are technological-driven in nature. This paves way for the ubiquitous learning opportunities without any constraints to geographical locations of the parties involved. The effect of new technologies and their application in education as shown in Figure 2.1, which makes virtual classrooms possible with internet (Keegan, 1995). As stated by Simonson (2000), distance education is a kind of educational environment where learners can access learning materials remotely with the use of technology.

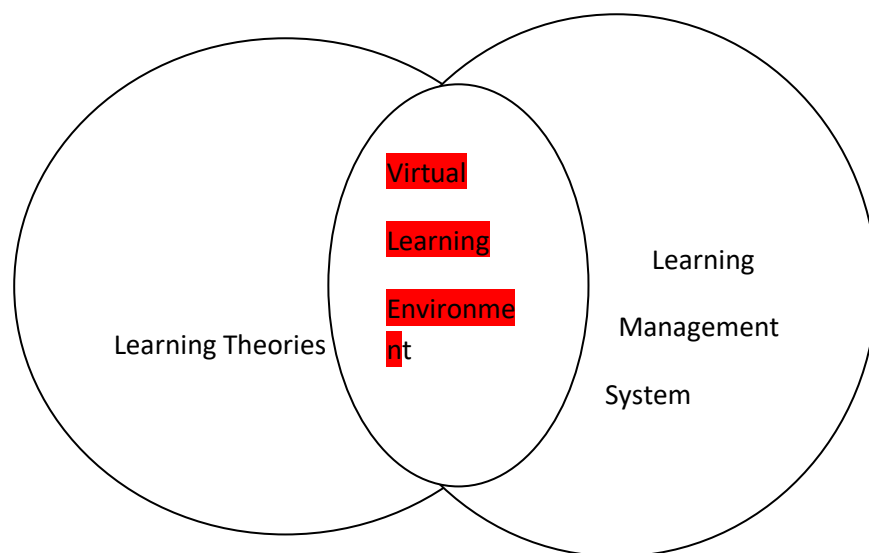


Figure 2.1: Relationships among Learning Theories (Keegan, 1995)

The changing nature of web-based LMS coupled with the dynamics of the field of learning technologies prompted the new perception of distance learning which resulted to eLearning. ELearning encompasses every method of distance learning that employs internet or digital resources. Thus, Clark and Mayer (2007) defined eLearning as an electronically supported and Internet mediated education that entails the following characteristics: the educational content is closely associated to the learning objective; employs educational methods to facilitate learning; makes use of words and images to deliver content; can be steered by the educator (synchronous eLearning) or planned for individual studying (asynchronous learning); and builds new knowledge and skills that are closely related to personal objectives.

The main encounter of eLearning is to allow course development according to human learning procedures. Also, it is broadly accepted that the effect of Information and Communication Technology on education is improved when it is properly integrated into educational practice (Schank & Cleary, 1995). Towards this objective, the focus should be on teaching and learning plan and not on content presentation. This advocates the reasons to explicitly define the learners' focus within the eLearning environment. Thus, it is necessary to examine the relevant learning theories that affects the design and development of learning environments, as well as the need to study their progression in order to comply with the modern-day needs of education.

The benefits derived from ICTs are empowering the traditional methods of course design, asking for partnership among students and necessitating their input in producing a deliverable towards course completion. On the other hand, traditional classroom based teaching methods conclude with a summary from the teacher disregarding the ICT potential that inspires students to express themselves through images, audio-visual and case studies that may carry a holistic answer to the questions posed in "class". Conversely, managing such innovative technologies to support effective learning becomes imperative.

Constructivism procedure suggests that knowledge is built upon past experiences and the mental constructions or principles that anybody applies in order to understand objects or facts (Piaget, 1972; Papert & Harel, 1991). Though, Vygotsky (1962) focused on the communicative and cultural methods of learning by trying a social-political approach. A progression of those two theories is social constructivism (Holmes & Gardner, 2006) that presents a third dimension in the collaboration between learner and its environment. This method is based on the other participants (learners and educators).

It should be mentioned that in our world of interrelated data, the nature of information that someone holds and the value of the knowledge that will be produced are significant. Moreover, an individual cannot be based only on its own experiences for knowledge acquisition. In the digital era, connectivism (Siemens, 2004a) fills the gap caused by technological development and the new learning environment. As such, knowledge is regarded as a network of nodes and connections regularly rearranged and reconnected to produce new knowledge. Regardless of the technological progress, the common objective of all learning theories is to describe the effort needed in order to acquire knowledge. For instance, cognitive, social-cultural and connectivism theories often focus on different aspects of learning. On the other hand, the theories paved way for the collaborative learning, i.e. ubiquitous learning through an evolutionary procedure (Konstantinidis et al., 2010). So, Collaborative Learning theory preceded computers and is based on a combination of Piaget and Vygotsky theories, comprising the relevant social and constructivist features (Dillenbourg et al., 1996; Scardamalia et al., 2006) in a form where two or more people learn or try to learn together.

Nigerian University System and Policies

The Nigeria university system runs on policies emanating from the agencies of the Federal government like The Nigerian University Commission (NUC) and the Joint

Admission and Matriculation Board (JAMB). These agencies are established to ensure universal access to university education in Nigeria, control the quality of product and process of university education in Nigeria, and finally to provide necessary checks and balances for the Nigerian universities in the way they carry out these responsibilities (JAMB, 2011; NUC, 2014).

Students' enrolments in Nigerian universities have grown over the years, which inform Nigerian universities to invent another weeding strategy in the candidate selection process conducted by the institution after the Unified Tertiary Matriculation Examination (UTME) (JAMB, 2014). Remarkably, the pressure has therefore largely increased the carrying capacity of the Nigerian universities as against the globally accepted standard (Moti, 2010, NUC, 2014). Thus, such unexpected increase in students' population called for a more robust teaching and learning approach to cater for the overstretching of the available facilities in Nigerian universities. This among others serves as a strong justification for the adoption of electronic learning in Nigerian university system.

According to Federal Ministry of Education (FME) (2009), grossly inadequate access, poor carrying capacity and inadequate facilities characterized Nigerian university system. This was revealed during the launching of its roadmap for the education sector. From all indications, the alarming increase in the rate of Nigerians aspiring for university education can be largely traced to the implementation of Millennium Development Goals (MDGs) set by Nigerian government to provide education for all citizens (Angaye, 2013). It is therefore necessary for government to provide ways to meet the educational needs of such teeming population. It was revealed that less than 20% of the applicants were offered admissions into their university of choice in the past few years (NUC, 2014). Hence, it is clear that ubiquitous teaching and learning approach capable of delivering learning without much consideration to the population of learners is desirable.

The earlier measure by the Nigerian university system as a response to the overcrowded campuses was the introduction of satellite/outreach campuses to take care of thousands of students which was later abused (disregard for standards, admitting unqualified candidates) and resulting to sanctions imposed on such practices by the NUC (NUC, 2014). Still, there is need for improving the quality of education in Nigerian university system. In recognition of this fact, the Federal Government of Nigeria (FGN) created more Federal Universities and this was done, also at the State Government levels to arrive at a total of 129 universities (40 federal, 39 state, 50 private and 1 National Open University) (NUC, 2014). Thirty six (36) out of the 129 universities fall into the domain of this study (South-West Nigeria). Only the Federal and State owned universities among the 36 will be considered in this study due to significance of institutional policy in this study.

Specifically, Nigerian universities are categorized based on the year of establishment which led into three categories the first, the second and the third generation universities.

Information and Communication Technology (ICT) in Education

The integrating ICT into education is quite inevitable with the dictate of the 21st century learning environment (Angaye, 2013). This is not restricted to teaching and learning alone but also the management of the educational process as revealed in the literature (Leidner & Jarvenpaa, 1995). Similarly, it was revealed that the use of ICT helps the learners in translating the acquired knowledge into skills capable of ensuring development at all levels (Leidner & Jarvenpaa, 1995). The increase in the demand for university education in Nigeria is another justification for keying in to ubiquitous teaching and learning. Such learning environment cannot be achieved without ICT. Therefore, ICT has become inevitable component in the 21st century classroom, where it becomes practically impossible for learning to take place without the use of one ICT tool or the other.

Integrating ICTs into Nigerian University Education

Generally, the provision of an appropriate framework for the full integration of ICT into the education system of any nation is the responsibility of the federal or central government as the case may be. For the proper integration of computer, and other ICT elements into the education system, there is the need for a comprehensive policy document to serve as a guide for lecturers in the education sector. The policy document is expected to give direction to the implementation of the policy in terms of the provision of the conceptual framework; the objectives, the strategy, the action plan and the evaluation of the successes of the integration. This among other factors motivates this study to investigate the appropriate institutional policy capable of granting successful integration and adoption of LMS in Nigerian universities.

In 2001, the Federal Government of Nigeria published the National Policy on Information Technology, and established the National Information Technology Development Agency (NITDA) to serve as the umpire in the implementation of the policy. However, this document failed to adequately address the issue of the integration of ICT into Nigerian Education system (Angaye, 2013). That is, the document presented the issue of ICT in education vaguely. While some sectoral aspect of our society like Governance, Health, Agriculture, Arts, Culture and Tourism etc., were given individual treatment, there was not such special treatment for education in the document. The document merely mentioned issues relating to education under the application for human resources development. One would have expected education to be treated distinctively like the other sectors therein, so that there are clear cut policy statements to guide lecturers. It is also worthy of mentioning that the document does not give any emphasis on the development of indigenous software that are in line with the educational needs of Nigerians, neither does it address issues of its incorporation into teacher training classroom instruction and evaluation. Therefore, educational policy towards successful implementation of LMS is considered an important variable in this study.

With the growth of ICT, everyone has the prospect to explore in a world that is full of information by using relevant ICT devices. The application of ICT is not only emphasized in cooperative business and the industrial sector, but it is also an essential part of education at different levels (Fabunmi, 2012). In both educational institutions and homes ICTs are widely seen as a tool for enhancing learning (Livingstone, 2012). According to reports on global ICT trends in the year 2012, 92% of the world's population now has a mobile phone (ITU, 2013) and 78% of the teenagers from age 12 to 17 own a cell phone and almost 50% of them indicate that their phone is a smartphone (Lenhart, 2013). Thus, ICTs have become an essential part of modern world. The school system globally has equally keyed in to the technological-driven era in a number of ways. The school, through teacher must make good use of technology so as to prepare students for the future. It is recognized that ICTs are transforming the teaching and learning process in universities. As a case in point, Museveni (2006) observed that ICT is no longer a matter of choice but rather it is a necessity in today's technology-driven world.

Many universities have seen the importance of ICTs in their teaching process as reported by UNDP (2001) that; across a range of educational applications, ICT is being harnessed to enhance the efficiency, accessibility and quality of the learning process's in developing countries. In addition, ICTs are indispensable tools in any educational system. They have the capacities of being used to meet the learning needs of individual students, promote equality of educational opportunities, offer high quality learning materials, increase self-efficacy and independence of learning among students, and improve teachers' professional development. Also, ICTs offer great potentials for transforming school administration (Kirschner & Selinger, 2003).

Nigeria University has made tremendous strides towards the integration of ICT into its functions and operations over the last few years. It was noted that equipment like desktop, laptops, stand-alone computers and projectors are used for teaching in some Nigeria

universities. A project by the Institute for Communication and Development (IICD) whose goal is to make the content available as printed pamphlets, via a website, on CD-ROMs, and through intranet web servers, is trying to integrate ICTs in teaching and learning process through two projects, the 'ICT-Based Educational Content' and 'ICT Basic Training' projects (Kaweesa, 2002).

It is a proven fact that ICT does improve the teaching and learning process Higgins (2004), however, there is always a problem when it comes to the acquisition of the necessary infrastructure from university management who are the financial controllers and decision makers of any university. It therefore implies that, the university management who are major lecturers when it comes to provisions of ICT infrastructure must be inclined to this course. For example, Emans (2002) noted that for many teachers and learning institutions, the use of computers for educational purposes might be a threatening step because there is often little expertise, and teachers and administration are reluctant to take the first step. Thus, the readiness of university lecturers as major lecturers needs to be ascertained for the successful integration and adoption of LMS.

Previous studies revealed that many governments are now facing challenges to change their higher education system to meet the demands of rapidly changing factors like social, economic and technological order in line with the national policy for educational development (Maier & Warren, 2000; Jaway, 2003). This is because the studies neglected the adoption strategy of the factors in most cases which makes the changes as a result of the new innovations to look almost impossible. In fact, Jaway (2003) observed that when developing nations are reaping the fruits of state of the art ICTs in their educational system, educational delivery in poorest countries of Africa in particular Ethiopia is solely based on student-teacher face-to-face contact. In Uganda, many sectors like in education are still heavily relying on traditional systems and severely lagging behind as far as new technologies are concerned (Kaweesa, 2002). The successful integration of any technology into the classroom

warrants careful planning and depends largely on how well policy makers understand and appreciate the dynamics of such integration (Dean, 2000).

The support given by administration is important for the improvement of ICTs in the teaching and learning process. As a case in point, Hawkins (2002) noted that teachers need support in good practice and leadership from administration to become more effective in their work. This justifies the inclusion of organizational/management support as one of the study variables. In a related study, Emans (2002) noted that a success factor for ICT in education is dependent on the availability of good equipment. More so, it is important that both pupils and teachers have regular access to up-to-date ICT equipment. Today, many schools have computer labs but with inadequate equipment, this challenge might necessitate the designing entire new school planning based on technological requirement (Jhurree, 2005; Becta, 2003; Waema, 2002). Many researchers noted that apart from financial resources to procure computers and software, and to set up to operate global ICTs standards, other challenges may come up.

Over the years, complexities of university governance as a result of different challenges constituted barriers to university managers in Africa in the aspect of introducing Hi-Tech ICTs for quality assurance (Steve, Diepreye, & Uduak, 2009). As revealed by Babalola (2007), a major reform and development in university education could be significant improvements in communication and ICTs improvements with its positive influence on teaching and research technologies. Also, a significant reform in tertiary recommended that, the use of electronic networking involving e-mail communication capacities for teaching, learning, research, educational management and performance evaluation (World Bank, 2002). Similarly, implementation of Management Information System (MIS) was suggested as the only way to guarantee effective educational management practices (record and data management), a position attested to by the Association of African

Universities believes that universities (Emetaron, 2001). This becomes inevitable due to the large volume of information required to be managed in the modern tertiary institutions.

Existing literature indicated that, use of ICTs in higher education processes (teaching, research and community services) is generally positive and promises to positively change the educational processes from the traditional teacher focused/moralistic approach to a more student centred/constructivist approach (Lopez, 2003; Kirschner & Woperies, 2003). As an example, Langlois (2001) revealed that ICTs in teaching is less expensive, enables lessons to be introduced speedily, provide consistent message, make learning ubiquitous, updating contents easily and quickly, increase learners' retention and management of large group of students. Furthermore, it is argued that ICTs increase the productivity of lecturers and secondary school teachers; help teachers to be more effective and productive; increase teachers' interest in teaching; assist teachers in reorganizing and restructuring their course(s); increase teachers' emphasis on individualized instruction; provide teachers with the opportunity to experiment with emerging technologies thus providing multi-media presence in the classroom; and also provide teachers with increased opportunities to collaborate and network with colleagues (Yusuf, 2007; Tella, 2007).

The use of instructional technology in the higher education teaching and learning processes is still in its initial stages in Nigeria, despite the fact that ICT instructional use is energetic to the progress and development of faculty and students alike. Higher education institutions, especially those in the Western part of the country, have adopted ICT as a means to impart upon students, the knowledge and skills demanded by 21st century educational advancement (UNESCO, 2002a). According to UNESCO (2002b), ICT now permeates the education environment and underpins the very success of 21st century education. Equally, ICT adds value to the processes of learning and to the organization and management of learning institutions. Obviously, technologies are a driving force behind much of the development and innovation in both developed and developing countries. As such, all

countries must seek to benefit from technological developments. To be able to do so, professionals (including faculty) have to be educated with sound ICT backgrounds, independent of specific computer platforms or software environments, to meet the required competencies of the ever-changing global environment.

Nevertheless, when ICT in education does not achieve expected goals or when it introduces complicated educational reforms, students and teachers can lose focus on the essentials and become distracted by the rapidly changing technologies themselves. This result is likely when students and teachers have not been able to acquire a full understanding of the technologies, the role ICT plays and where, how and what technology to use. When the meaning of ICT and its unlimited potential in the educational arena are understood, rapidly changing technologies are not seen as overwhelming, but as enablers of greater critical thinking and problem solving in education (Iloanusi & Osuagwu, 2009).

Progress has also been made in terms of improving ICT penetration in university education in Nigeria. According to survey conducted in 2009 to investigate the online presence of higher education institutions in Nigeria, 46 out of 70 institutions have online presence, whereas 24 were not present online. The University of Jos, for example, has an online library (eGranary) and select infrastructure on campus to support basic forms of ICT integration in education. Some of the other university websites have online learning portals with downloadable tutorials and provisions for online chatting; however, none support virtual classrooms, tele-conferencing and other synchronous forms of eLearning. Government departments, non-governmental organizations, financial institutions and individuals are all beginning to understand the need for these types of learning tools and have begun to fund ICT implementation in Nigerian educational institutions. Some of these organizations include the Nigerian Communications Commission (NCC) and Education Trust Funds (ETF) (Iloanusi & Osuagwu, 2009). Strategic plans and related projects that regularly revisit Nigerian ICT targets are ongoing.

The prospects for the use of ICT in teaching and learning in Nigerian higher education are positive, though there is much work left to be done. Aduwa-Ogiegbaen and Iyamu (2005) have observed that ICT enhances educational effectiveness in general and that the proficiency of faculty teaching in Nigerian institutions stands to be improved. Many higher education faculties, for instance, are already teaching large classes of students using ICT materials. Thus, with enhanced ICT capabilities it would be possible to use carefully prepared ICT programs to ensure that learners are more accurately and thoroughly instructed using effective instructional technology.

Importantly, ICTs are electronic technologies used for information storage and retrieval. So, development is partly determined by the ability to establish a synergistic interaction between technological innovation and human values. The rapid rate at which ICTs have evolved since the mid-20th century, the merging and extensiveness of ICTs, give them a strong role in development and globalization (Nwagwu, 2006). Certainly, ICTs have a significant impact on all areas of human activity (Brakel & Chisenga, 2003).

Education has been affected by information and communication technologies, which have certainly affected teaching, learning, and research (Yusuf, 2005). A great deal of research has shown the importance to the quality of education (Al-Ansari, 2006). Convincingly, ICTs have the ability to enhance, enrich, and deepen skills, to inspire and engage students, to help associate school experience to work practices, establish economic viability for tomorrow's workers, as well as promoting teaching and helping schools change (Davis & Tearle, 1999; Lemke & Coughlin, 1998).

In a rapidly fluctuating world, basic education is crucial for an individual be able to access and apply information. Such ability must include ICTs in the global village. The Economic Commission for Africa (ECA) has indicated that the ability to access and use information is no longer a luxury, but a necessity for development. Unfortunately, many

developing countries, especially in Africa, are still low in ICT application and use (Aduwa-Ogiegbean & Iyamu, 2005).

Integrating ICT to teaching and learning process is a global issue of 21st century. Precisely, the European eLearning Forum for Education (ELFE1) in their research drew a conclusion that ICT have made a difference in several ways in the schools including how the students are taught and how they learn. Most of these variations according to them can be defined in positive terms.

Challenges of ICT Integration into Teaching and Learning Environment

The process of integrating ICT into higher educational system is a complex one which may encounter some hindrances. These barriers make it difficult to records significant achievement of the said goals. The following are the challenge of integrating ICT into Nigeria Universities system (Becta, 2004; Daves, 2001; FRN, 2001; Idowu, Adagunodo & Popoola, 2003; Moursund & Bielefeld, 1999):

- A. Lack of technically experienced lecturers:** Most of the lecturers in Nigerian universities do not have competence in the use or integration of ICTs in their instruction (Idowu et al., 2003). Majority of lecturers who had taken tenured job were taught without ICTs and they have not developed competence in the use of ICTs, thus they cannot model good use of technology (Idowu et al., 2003). Even in the USA, faculty lecturers have been shown not to be better than their students in ICTs usage (Moursund& Bielefeld, 1999).
- B. Limited ICTs facilities:** Limited fund available to higher institutions have hindered the provision of needed facilities and infrastructure to promote ICTs usage. Most faculties in Nigeria Universities do not have dedicated laboratory for ICTs training (Angaye, 2013). Classrooms are equally not equipped for ICTs usage. Thus, teacher

trainers and trainee teachers do not have access to ICTs within their schools. The few available ones are used mostly for administrative purposes.

C. Inadequate course content for ICTs: The curriculum for teacher education is centralised based on NUC draft benchmark. The content and strategy are based on single course model. It is meant to teach trainee teacher about the computer, not teaching them how to learn or teach through the computer. While this is good for introductory stage its outcomes are very limited. They cannot furnish trainee teachers with the needed skills and knowledge to integrate ICTs in their instruction.

D. Lack of clear direction on teacher training on ICTs: The National Policy on Information Technology (NPIT) did not give clear directions for successful use of ICTs in schools (FRN, 2001). The policy only made superficial reference to education at the mission, goals, and strategy levels. There is no sectoral reference to education. Education is subsumed under human resource development. Since no clear information or reference is made to teacher development the document does not give focus to teacher education in the implementation of ICTs in Nigeria. There is need to explore the possibility of such established policy of the adoption and sustenance of LMS in the university sector.

E. Lack of leadership by professional organisation: In advanced countries, professional organisations like International Society for Technology in Education (ISTE), Association for the Advancement of computer in Education, Milken Exchange on Education Technology, play pivotal roles in promoting ICTs integration in schools, and also in setting standards for teacher training. However, professional organisations like Nigeria Computer Society (NCS), National Association for Educational Media and Technology (NAEMT), and so on, have not impacted on the use of ICTs in schools, the promotion of ICTs in teacher education, or in setting

academics or professional standards on ICTs. This lack of leadership creates vacuum which militates against quality ICTs component of teacher education in Nigeria

F. Problem of electricity: ICTs equipment is electrical equipment that requires electricity for operation. Most rural areas of Nigeria do not have electricity facility and in urban area electricity supply is epileptic, and this reduces the life span of hardware and also militates against effective usage. Even enthusiastic teacher educators and students who have access to computers may be debarred from using them as a result of power outage.

G. Lack of access to ICTs in trainee teachers' field experience: Practical teaching practice is an indispensable aspect of teacher education. During their field experience trainee teacher do not have access to technologically enriched classroom. Rather they are exposed to classroom where they use chalk board and talk. This does not give trainee teachers opportunity to explore the little knowledge, gained in the area of ICTs.

H. Lack of teacher confidence: Several researchers indicate that one barrier that prevents teachers from using ICT in their teaching is lack of confidence. Daves (2001) sees this as a contextual factor which can act as a barrier. According to Becta (2004), much of the researchers revealed that this is a major barrier to the uptake of ICT by teachers in the lecture room.

University Education in Nigeria and ICT Adoption

The history of University Education in modern Nigeria dates from 1948, when the University College of Ibadan was established, although, Yaba College of technology was already in existence having been established in 1947. For more than a decade, the college remained the only institution of University standing in Nigeria. Although the Eastern Nigeria Government had enacted a Law establishing the University of Nigeria Nsukka, in 1955, it was not until 1961, that the University came into existence. In that year also, a commission

was set up by the Federal Government to survey the needs of post-secondary and higher education in Nigeria for the next twenty years. One of the most lasting results of the commission is the establishment, between 1961 and 1962, three Universities in Nigeria. In that manner, universities sprung up to the much proliferated level it is now (NUC, 2014).

Basically, adoption of ICT in university education is evolving to teach current and emerging citizens valuable knowledge and skills around computing and communications devices, software that operates them, applications that run on them, and systems that are built with them. However, some of the merits of ICT adoption in education include the following (NUC, 2014):

Firstly, it supports digital literacy as everyone today requires a basic understanding of ICT and how to make productive use of it. The rate at which ICT has developed makes it mandatory in all fields, academic and professional, to be able to participate efficiently in modern technical society. The society at large now requires, technical people to deploy, manage and maintain ICT equipment, software and systems as technology improves.

Furthermore, it is obvious that ICT is quickly changing. It is used strategically in almost all businesses and industries, for example financial services industries rely on ICT to maintain customer records, trade, for financial reports, secure information amongst others. In manufacturing, specialized computer controlled systems and machines are used to produce and test products. Electric utilities use it to monitor and manage electricity distribution, customer billing and smart metering systems. Since graduates at the end of their programmes are supposed to pick up these various tasks, so adoption of ICT in university education in Nigeria cannot be overemphasized.

Finally, for research and development areas in schools and industries, the knowledge and expertise of ICT is used particularly in the management and dissemination of information. The awareness of ICT started gathering momentum in universities in Akwalbom and Cross River States in 2004 when University of Calabar entered into a partnership with

Socket Works to process students' records in the aspects of registration and school charges. Thereafter, other universities followed suit and since then, the evolution of ICT has grown in leaps and bounds. A good example is the giant stride recorded in University of Nigeria. The Vice-Chancellor, Professor Bartho Okolo, disclosed that the UNN i-transcript service was borne out of the on-going work on digitizing academic records in the institution at a press conference at Nsukka.

Ubiquitous Learning and Its Needs in the 21st Century Learning Environment

Ubiquitous computing can be considered as the new hype in the information and communication world. It is normally associated with a large number of small electronic devices (small computers) which have computation and communication capabilities such as smart mobile phones, contactless smart cards, handheld terminals, sensor network nodes, Radio Frequency Identification (RFIDs) etc. which are being used in our daily life (Sakamura&Koshizuka,2005).

These small computers are equipped with sensors and actuators, thus allowing them to interact with the living environment. In addition to that, the availability of communication functions enables data exchange between the environment and devices. In the advent of this new technology, learning styles has progressed from electronic-learning (e-learning) to mobile Learning (m-learning) and from mobile Learning to ubiquitous-learning (u-learning).

Ubiquitous learning, also known as u-learning is based on ubiquitous technology. The most significant role of ubiquitous computing technology in u-learning is to construct a ubiquitous learning environment, which enables ***anyone to learn at anyplace at anytime.*** Nonetheless, the definition and characteristic of u-learning is still unclear and being debated by the research community. Researchers have different views in defining and characterizing u-learning, thus, leads to misconception and misunderstanding of the original idea of u-learning.

Definitions of Ubiquitous Learning

Ubiquitous learning (u-learning) (learning anywhere anytime) evolves as a result of the invention of wireless telecommunications capabilities coupled with open networks which eventually increased the computational efficiency and throughput with the introduction of flexible software architectures (Lyytinen & Yoo, 2002). The emergence of ubiquitous learning affords the required flexibility in learning which makes learning possible without emphasis on geographical location and time. There are different perspectives with regards to definition of ubiquitous learning due to different learning environments (Hwang, 2008).

Ogata et al. (2004) defined u-learning by comparing the classification of learning environments. The researchers categorized both pervasive learning and mobile learning as ubiquitous learning. DeyCasey (2005) later supported this definition by conceptualizing u-learning as a composite of electronic and mobile learning. However, the term U-Learning Environment (ULE) applies in both definitions are quite confusing. The terms “u-learning” and “u-learning environment” hold different meaning.

According to Boyinbode and Akintola (2008), U-learning environment (ULE) can be defined as a pervasive learning environment. In addition, Jones et al. (2004) revealed that in ULE, learners are totally involved in the learning process. U-learning can be broadly defined as a kind of learning which is devoid of geographical location and time (anywhere anytime). By this definition, u-learning can be viewed as a technology-enabled learning environment where ICTs are used to access learning materials and contents via a computer network in any location at learner’s preferred time. Mobile learning on the other hand, defined as a kind of learning via wireless devices (Dochev & Hristov, 2006). Consequently, these definitions are almost the same. However, when learner’s mobility and location is of major concern, the definition is much related to mobile learning concept as learning goes on everywhere.

For proper and unambiguous conceptualization of ubiquitous learning, the definition has been expanded as ubiquitous-computing based learning (Yang et al., 2008). Hwang et al.

(2008) later argued that ubiquitous-computing based learning is a more appropriate for mobile learning. The term context-aware u-learning then served as a major means differentiating u-learning from m-learning.

U-learning can be defined as an emerging learning paradigm affording the learner the opportunity to learn about anything at anytime, anywhere via ubiquitous computing technology and infrastructure (Sakamura & Koshizuka, 2005; Boyinbode & Akintola, 2008).

The development of the ubiquitous learning (u-learning) is related to eLearning and m-learning. Dochev and Hristov (2006) revealed that the ubiquitous learning is tightly connected with the general eLearning progress. According to Yahya and Jaliland (2010), the advancement of computing and communication technologies have promoted the learning paradigms from conventional learning to electronic learning (eLearning), from electronic learning to mobile learning (m-learning) and now it is evolving to ubiquitous learning (u-learning).

Ubiquitous computing is adapted to learning environment to provide the lens of the learner and the learning environment where all students have unconstrained access to learning through electronic/mobile learning devices anytime, anywhere. Thus expanding learning boundaries beyond the four walls of lecture rooms. Therefore, adopting such innovative learning approach will require a new pedagogical framework for teaching and learning. The evolution of ubiquitous computing has been accelerated by the improvement of wireless technology and the flexibility of the technology (Yahya, Ahmad, Jalil& Mara, 2010). In general, a widely accepted definition of mobile learning is using mobile technologies to facilitate learning while a popular definition of ubiquitous learning is emphasizing on the learning context where learning can happen at anywhere and anytime with the ubiquitous tools (Hwang, Yang, Tsai & Yang, 2009). Therefore, the u-learning places less emphasis on mobility and contextual independence, but more emphasis on the contextualized and situated learning that mobile devices can provided (Pegrum, Oakley & Faulkner, 2013). Mobile

learning provided good support to micro-learning, a new and effective way of learning (Al-Fahad, 2009).

Application of ubiquitous technology in learning was first introduced about 60 years ago when classrooms were equipped with handheld response systems to allow discussions in large lecture rooms (Sharples & Roschelle, 2010). This evolving innovation paved way for the invention of mobile devices so as not to limit learning opportunities to the physical class rooms. Again, Sharples and Roschelle (2010) revealed that mobile learning deals with effectively harnessing personal and portable technologies for learning purposes. Recent research shows that technology should be used for learning with alignment of the educational vision, mission and curriculum (Moeller & Reitzes, 2011). Using technology for ubiquitous learning requires compliance to vision, leadership, and learning goals which connects the learners to the real world. Innovative changes to educational structure are required for migrating into the 21st century learning environment (Angaye, 2013). A number of recent instructional practices are yet to adopt the 21st century approach; teachers still teaching using the traditional teacher-cantered approach.

In addition, Lee, Lee and Kweon (2013) indicated that mobile devices can be used to deliver digital textbooks and other educational content to students anywhere and anytime, and thus they can effectively contribute to the early growth of ubiquitous learning in education. Devaney (2012) discovered that students used mobile technology in school for a variety of activities including creating presentations and media, play educational games, and conduct virtual experiments. These activities are more to self-directed and self-paced learning. In addition, according to Johnson et al. (2013), the workforce demand skills from graduates that are more often acquired from informal learning experiences than in the educational institutions. Thus, it can be observed that, ubiquitous learning has become inevitable in preparing skilful workforce for the future.

Ubiquitous learning is often simply defined as learning anywhere, anytime and is therefore closely associated with mobile technologies. The portability of computers and computing devices has bridged the traditional gaps between formal and informal learning.

Nicholas (2009) highlights six aspects of ubiquitous learning:

Spatial ubiquity - having constant access to the Internet (and conversely, others have constant access to you). The distinction of formal vs. informal learning is blurred - as people can access the Internet (and therefore the knowledge and connections implicit in the Internet) anytime, anywhere. This idea has implications for learning and memory - in the age of Google discovering important knowledge is becoming easier.

Mobile devices - From mobile phones to computers, learning is enabled by the mobility of computing devices. Heading toward a time when being constantly "connected" will be a way of life.

Interconnectedness - With web 2.0 technology, one can be constantly connected not only to information on the Internet, but to other people who have knowledge and skills required of one. This creates a web of knowledge that becomes a large part of how individuals learn - at all times. This concept is tied closely with the theory of connectivism (Siemens, 2005) which proposes that one's ability to find sources of knowledge are more important than current knowledge itself, and that maintaining connections is key to learning.

Practical ubiquity - There is a blurring of traditional lines in an either/or situation. Burbules (2009) notes that "work/play, learning/entertainment, accessing/creating information, public/private are distinctions that conceptually might never have been as clear-cut as our usage suggested them to be; but for a host of social and cultural reasons they are becoming increasingly untenable as sharp distinctions today." For learning, the implication is that there are new expectations of *how*, *when* and *why* learning takes place - the traditional, factory model is not relevant to the new model of learning. This change is not limited to technology.

A good example is the project-based learning which may or may not have a technology component.

Temporal ubiquity - Instead of one's schedule being created around the opportunities to learn, there is a shift and with mobile and ubiquitous computing, learning can be scheduled around one's habits and preferences. This also denotes a shift in perception of and interaction with time. Rather than "lifelong learning" being something that adults do after traditional school is over, lifelong learning is continual learning.

Globalized transnational networks - In the flattened world, there are continual flows of people, information and ideas across traditional physical and cultural barriers. We are in an age of fundamental interconnectedness.

Implications of ubiquitous learning in education

In society with mandatory free education, it is unlikely that the conventional classrooms and schools will cease to exist by the year 2025. However, the advent of mobile technologies and computing anywhere, anytime, the classrooms and schools will be considered the only or even the major source of learning and knowledge. Burbules (2009) imagines the school as the hub of the wheel, with spokes going out in all directions to learning opportunities and experiences not in the control or direction of the school or teacher at all. In such a system, the educator becomes important as the guide for learning, helping the students analyze and assess sources of information, make connections they might not think of, and mitigating factors that block access and connections for some students. It then becomes necessary to have an effective LMS so as to ascertain that the learning objectives are well achieved as in the traditional approaches.

Evolution of Electronic Learning

The origins of eLearning as currently practiced in higher education originate from the insightful work of Suppes (1964). It is important to note that there is no distinct evolutionary

point of which the eLearning originated from nor is there a particular agreed definition of eLearning. Since the 1960s, eLearning has advanced in different ways influencing the Business, Education, Training and Military sectors (Fletcher & Rockway, 1986). Electronic Learning means various things in different sectors. In the higher education sector, eLearning denotes the use of both application-based and online learning, but in Business, Military and Training sectors, it solely refers to a range of online practices (Campbell, 2004). Our target for this study is LMS adoption for eLearning in higher education.

In the 1960s, educational applications of computers in universities were few. It was understood that the unaffordable cost of technology would avert its ubiquitous uptake as an educational tool. Suppes (1964; 1966) claimed that: in the imminent time it would be conceivable for all students to have access to the service of a personal tutor in the same way the ancient royals were once served by individual tutors, but that this time the tutors would be in the form of electronic devices.

Suppes (1964; 1966) further established that the use of computers in teaching and learning is individualized tutoring and the dialogue that it supports. This was not an idle speculation, but was based on Bloom's (1984) research that validated that one-on-one tutoring improved student success by two standard deviations over group instruction. Suppes (1964; 1966) argued that individual tutorials were also an essential aspect of higher education and computers would embrace and spread this through the use of simulated learning environments. Suppes (1964; 1966; 1986) disclosed that teaching was restricted to structured fields and views of knowledge, with "drill and practice" approaches concerned with both producing better learning. Contemporary critiques of his approach often overlook the lack of viable alternative paradigms at that time. The researcher found that computer mediated instruction produced profound effects on learning, and identified changes in students' understandings ranging from simple to complex. While the use of computers was essentially

as a tool, it was foreseen the potential for wider applications of computers in education which led to the foundation ground work for computer assisted learning.

For illustration, Blitzer (1962) created PLATO, a timeshared computer system capable of addressing concerns about student literacy. According to Blitzer (1962), PLATO could be used to develop and deliver computer-based education, including literacy programs. It allowed educators and students to use high resolution graphics terminals and an educational programming language, TUTOR, to create and interact with educational courseware and to communicate with other users by means of electronic notes – the forerunner of today’s conferencing systems (Bitzer, Lichtenberger & Braunfeld, 1962).

Two decades before the World Wide Web came on the scene, the PLATO system pioneered online forums and message boards, email, chat rooms, instant messaging, remote screen sharing, and multiplayer games, leading to the emergence of what was perhaps the world’s first online community.

Comparing eLearning practice over time is problematic and fraught with a host of methodological concerns (Charp, 1997; Herrington, Reeves & Oliver, 2005; Mortera-Gutiérrez, 2006; Nicholson & McDougall, 2005; Pilla, Nakayama & Nicholson, 2006; Thomson, 2005). This is the reason for more adoption studies in the domain of eLearning usage due to differences in perceptions as a result of many societal factors.

eLearning adoption and integration has become a compulsory in most higher institutions of learning. Therefore, researchers and lecturers recognize the fact that approaching the field only through a technological perspective does not guarantee successful knowledge transfer. Thus, the analysis of pedagogical and learning principles under the prism of eLearning techniques appears to be inevitable. Therefore, educational policies of the context of usage constitute part of adoption factors.

Nowadays, most eLearning systems consist of several modules and functionality (e.g. content and participants’ management, operational environment, communication etc.).

Furthermore, they are loosely or not interconnected with no explicit educational objective overruling them. Moreover, within such a distant learning environment, the students should have full control of where, when and how the necessary knowledge can be obtained. An educational path that would be comprised of the content, the educators and the technological tools, should discourage lecturers from being distracted by numerous available choices that can be utilized. Also, a fundamental feature of such a system is to guide course development and direct relevant didactic plans implementation that have to be followed by the learners. The trade-off involved in user guidance is between posing burdens in navigation and aimless wandering within the cyberspace (Dietinger & Maurer, 1997).

The main objective of computer supported collaborative learning is to carry out communication among lecturers (scholars and teachers) and support social interaction (Dillenbourg & Traum, 1999). Collaborative procedures become feasible through collaborative learning networked environments that are designed for distributed and distance learning support (Anderson & Jackson, 2001). It was proved that collaborative learning can be empowered through the usage of 3D (3-dimentional) Virtual Worlds establishing a new eLearning tool (Shih & Yang, 2008; Konstantinidis et al., 2009, 2010).

Learning Management System (LMS) and eLearning Adoption

One of the major technological innovations to support eLearning platform is Learning Management Systems (LMS). Higher education institutes implement LMS to support their course curriculum with many types of tools; such as, discussion boards, forum, chat, online grade posting, online exam, file sharing, management of assignments, syllabi, schedules, announcements and course plans. Proper management of these tools is important for the success of courses; however, most of the time, management of such systems may be problematic and even may end with a failure (Legris et al., 2003). Successful implementation of this technology partly depends on factors related to attitudes and opinions of instructors,

students, information technologies and university management (Davis et al., 1989; Webster & Hackley, 1997; Selim, 2007). Although, these lecturers are primary considerations of LMS for successful implementation, instructors play a central role in the effectiveness and success of eLearning based courses (Webster & Hackley, 1997; Selim, 2007). Instructors' decision on using the system after trying is one of the success indicators of LMS implementation; therefore, determining the factors affecting users' intention to use LMS is one of the critical issues for researchers (Chiu et al., 2005). Instructors' attitudes towards a technology will affect learning outcomes (Webster & Hackley, 1997) and should be considered when technology-mediated distance learning systems are evaluated (Dillon & Gunawardena, 1995). Instructors are becoming increasingly critical determinant for implementation, management and continuous improvement of LMS. Therefore, the reasons effecting instructors' adoption towards the use of LMS must be revealed for the successful implementation of such systems in higher education.

Learning Management Systems (LMSs) which is frequently referred to as Digital Class Management systems or Virtual Learning Environments are software systems that appeared during the second half of 1990s and combine computer-based communication functionality, online support of educational content and tools that manage the educational procedure as an integrated web-based learning environment (Britain & Liber, 1999). LMSs are widely used for educational and training purposes not only because they are on the edge of technology but also, because they eliminate temporal and geographic restrictions from learning procedure; offer flexibility during the learning phase; allow for interaction between educators and students; provide reusable resources that are easily maintained; fulfil the relevant requirements and specifications for efficient, quick and educationally correct teaching.

Consequently, LMS should be used by educators and institutions in order to create and manage on-line courses; support collaboration among students; Provide motivation and

resources for creating team spirit; manage questions, quizzes and tests for assessment purposes; manage virtual classrooms where students are geographically distributed and communicate only through internet.

According to Ellis (2009), the main features of LMS include: Coordination and management of electronic classrooms; coordination and management of electronic courses – educational content and activities; personalization through individual profile support for each user; management of registered students; activities scheduling; communication between educators and students; user activities monitoring; and reporting functionality.

Early research has shown that teachers are unwilling to use computer-based teaching due the lack of teaching experience with ICT and the lack of technical support for teachers (Rosen & Weil, 1995). Likewise, teachers' perceptions and personal and psychological factors were also found to have a main influence on instructor' attitude to adopt the use of technology compared to traditional classes (Robertson et al., 1996). Shurville and Browne (2006) found that there are many drivers for educational institutions to adopt eLearning systems; facing global competition, personalizing learning, supporting lifelong and work-based learners, reducing costs and addressing environmental sustainability. Similarly, Ally (2004) concludes that methods and ways of teaching as well as student evaluations methods and testing are much more important than the use of ICT in education. In a related study, Russell (2001) as well as Kartha (2006) investigated the effectiveness of eLearning compared to traditional and found no statistical significant differences between the two approaches. Also, Zemsky (2007) found that users' acceptance of technology of distance learning was not the only influencer on the adoption of the eLearning system. Hence, the author concluded that users' attitude towards computer, prior ICT experience and state of technology readiness, had a significant effect on the adoption of eLearning system. Similar results were found in separate study conducted by Concannon et al (2005). Duke (2002) showed that educational

institutions were more resistant to change and hence resisting the adoption eLearning system compared to firms.

Webster and Hackley (1997) so also Dillon and Morris (1996) concluded that educators' attitudes towards a technology and their control over the technology had a significant effect on the learning outcomes. Singleton et al. (2004), pointed out that instructors preferred traditional classes rather than delivering content via the internet because they were more familiar with the traditional learning environment. A number of researchers also found that the perceived usefulness and the perceived ease of use of eLearning system had a significant effect on the behavioural intention to use that system (Ong& Lai, 2006; Tung & Chang, 2008). Pituch and Lee (2006) demonstrated that having a distance learning system within the educational institution setting would not automatically lead to its use. Porter and Donthu (2006) reported that people's experience, personality and cognitive factors lead to form a particular belief about their ability to perform a certain thing, and therefore, people would avoid learning something new because of the perceived difficulty and risk associated with performing that thing. Zhao & Frank (2003) found that the lack of access to internet from home was the main barrier to use technology in the teaching process. The authors also concluded that educators who had a positive perception toward the perceived value of using computers were more likely to embark the concept of distance learning. Becker (1999) found educators who had student-centred beliefs were more likely to use technology.

LMS have been proven to encourage a constructive approach to knowledge acquisition and support active learning. One of the keys to successful use of LMS is how the lecturers adopt and perceive this learning tool.

As a matter of fact, eLearning appeared at the end of the 20th century and has quickly become a new learning paradigm, having proved to be an effective educational technique (Alfadly, 2013; Boeker & Klar, 2006; Mijatovic, Cudanov, Jednak, &Kadijevich, 2012). It supports students' active involvement in the learning process and prepares the shift towards

student-centered education. Effective eLearning enhances collaboration and communication thus encouraging group activities and a constructive approach to knowledge acquisition (Lin & Hsieh, 2001). The growing use of online forms and systems of learning such as learning management systems (LMS) or Virtual Learning Environments (VLE) and their rapid spreading are an appropriate response of higher education systems to current processes of integrating and building a global information society. This study investigates the adoption, usage, and integration of an LMS at HSE by examining the perceptions of two stakeholder groups – students and teachers.

Teaching and learning through LMS seems to be initially intended for distant education which is reasonable because online studies are the only way to acquire knowledge if you are far away from the learning environment. However, their usage may be extended to support face-to-face and blended delivery. In situation where the number of contact hours is diminishing and there is a need to develop the learning skills of students the demand for using technology is increasing. It allows learners to perceive knowledge at their own pace, and for teachers, it can become a valuable tool to provide an individual approach and improve their existing teaching practices in general. Obviously, there are lot of learning patterns and every student has their own ways of perceiving knowledge that cannot be effectively catered for in the classroom settings (Graf, 2007), so technology should enhance learning, meet different interests, and result in successful learning outcomes. Thus, educational institutions are striving to provide faculty with LMS and encourage its effective use.

Institutional policy and Adoption of Learning Management System

According to Nigerian National Policy for Information Technology (IT) document, the vision statement was clearly stated as "To make Nigerian IT capable country in Africa and a key player in the Information Society by the year 2005, using IT as the engine for sustainable development and global competitiveness" (Federal Republic of Nigeria, 2001).

Also, in the mission statement of the same policy document, education is the first domain/area where IT is proposed to be used (Federal Republic of Nigeria, 2001). Thus, examining the policy implementation as adoption factor of any IT will be of immense benefit as Baro (2011) revealed that the policy document needs a review to meet the expected dynamism of the IT profession.

The new technological innovations have revolutionized the higher education system. With the emergence of LMSs in the last few years, it promised to have positive effects on university teaching and learning. LMS are enterprise-wide and internet-based systems, such as WebCT and Blackboard with quite a number of integrated pedagogical and course administration tools to facilitate ubiquitous learning opportunities. The systems are enabled with the required capacity to deliver virtual learning environments to students. Virtually all universities in the world are aspiring towards delivering ubiquitous learning opportunities.

Online LMS have the potential to affect the core business of teaching and learning in unanticipated ways. Despite this, research into the diffusion of LMS, in particular the educational management issues, is still in its infancy (Smitsen & Sims, 2002). In spite of widespread levels of adoption, attention has been most often focussed on their technical, financial and administrative aspects. In this study, therefore, it is desirable to capture the associated benefits of integration LMS into the core management of university educational system.

Universities in the developed nations witnessed significant level of adoption of LMS due to the innovative ways of running the institution coupled in infrastructural development (Smitsen & Sims, 2002). It was revealed through a survey of adoption trends that, sales of relevant ubiquitous learning infrastructure remained increasing despite the economic issue in Australian universities (Smitsen & Sims, 2002). In the same manner, it was reflected in the same study that such trends may reflect the developing global LMS is desirable.

Being relatively new technologies, there have been no large scale studies of the actual uses and educational management effects of LMS. In a recent study of online education Bell, Bush, Nicholson, O'Brien and Tran (2002) found widespread incorporation of online technologies into programmes at Australian universities. Although penetration is greatest in the areas of commerce, education and health, where there is often strong demand for mixed-mode or off-campus delivery, the study found that around 60% of Australian postgraduate subjects and around 25% of undergraduate subjects are using some form of online technology. Overall, it was found that around 54% of subjects contain an online component. The report concluded that 'even though the percentage of fully online courses and units is low, the percentage of web dependent units seems to be a clear statement that many institutions are using online technology to add value to teaching and learning (Bell et al. 2002).

The Drivers of LMS Adoption

Relevance of LMS in advancing university education can never be over emphasized. Though, it capital intensive with some level of complexities and risk involved, still the gains outweighs the pains (Daniel, 2003). Therefore, for achieving and sustaining educational competitive advantage, an enterprise-wide LMS is desirable. In an interconnected university system, components like administrative and technological issues, lecturers, and established institutional policies and procedures need to be considered.

Firstly, LMS suggest a means of increasing the efficiency of teaching. They offer institutions a means for delivering large-scale resource based learning programmes (Ryan, Scott, Freeman & Patel, 2000) which creates a soft-landing for aggressive increase in the demands for university education in Nigeria. They help to facilitate flexible course delivery, the identification and use of resources, communication and conferencing, activities and assessments, collaborative work, and student management and support (Ryan, Scott, Freeman

& Patel, 2000). More general claims are often made that LMS will bring new efficiencies to teaching. Despite the large upfront capital investments required, universities are attracted by opportunities to reduce course management overheads, reduce physical space demands, enhance knowledge management, unify fragmented information technology initiatives within institutions, expedite information access, set auditable standards for course design and delivery and improve quality assurance procedures (Bates, 1995; Brown, 2001; Dutton & Loader, 2002; Johnstone, 1995; Katz, 2003; King, 2001; McCann, Christmass, Nicholson & Stuparich 1998; Turoff, 1997; Dusen, 1997). It is also often argued that LMS will offer universities new economies of scale, although it is still too early to confirm such claims.

The yearnings for LMS are also associated with the promise of enriched student learning. These systems and online learning in general, are seen to reinforce and enhance a diverse suite of constructivist pedagogies (Gillani, 2000; Jonassen, 1995; Jonassen& Land, 2000; Relan&Gillani, 1996). Constructivist theorists contend, for instance, that online modes can enrich learning by allowing students to access a greater range of resources and materials. It is further argued that internet technologies can be used to make course contents more accessible to individual learners by allowing them to interact with diverse, dynamic, associative and ready-to-hand knowledge networks. LMS may also enrich learning by providing automated and adaptive formative assessment which can be individually initiated and administered.

Furthermore, universities are also driven by new student expectations. It is possible that student expectations for advanced technologies are increasing almost as quickly as the technologies are developing. Green and Gilbert (1995) revealed that growing numbers of college-bound students come to campus with computer skills and technology expectations. Frand (2000) further argued that contemporary students have an information-age mindset, and that these skills and expectations are tacit and profound. In the increasingly competitive higher education marketplace in which students are increasingly perceived as some type of

client (Gilbert, 2001), these expectations need to be matched or exceeded. It is increasingly expected that institutions embrace leading-edge technologies. Green and Gilbert (1995) revealed that the old competitive reference points describing information resources that used to distinguish between institutions – the numbers of science labs and library books – are being replaced by a new one: information resources and tools available to students. This brings us to the fourth point. Put simply, competitive pressure between institutions has been a driver behind the adoption of LMS, at least in Australia. Predictably, traditionally distance Learning orientated institutions have embraced new generation technologies and opportunities to reconfigure and expand their programmes (Garrison & Anderson, 2003). To this end, traditionally campus-based teaching institutions have also seen the adoption of new technologies as necessary for developing the campus environment. Regardless of the rooted traditional educational approaches in higher institutions, institutions have seen LMS as a means of leveraging the internet to offer some kind of competitive advantage. Universities are being forced to offer the best of both worlds, real and virtual. Nigerian universities cannot be isolated in this global thinking.

LMS are sometimes proposed as a means of responding to massive and increasing demands for greater access to higher education, though one may be doubtful of the extent to which this can be of serious influence at the institutional level. The development of virtual places for learning has been regularly heralded as a means of overcoming access limitations caused by the lack of physical infrastructure. Perhaps more significantly, however, LMS have also been identified as a means of qualitatively reforming higher education so that it can most effectively confront new types of demand. Analysts contend that without substantial change, traditionally structured universities will be unable to deal with a new era in which they no longer monopolise the provision and certification of tertiary education (Daniel, 1998; Dearing, 1997; Gilbert, 2001; Hanna, 1998; Johnstone, 1995; Moe, 2002). Contemporary learning technologies and LMS in particular, are placed at the heart of these calls for renewal.

Finally, LMS are part of an important culture shift taking place in teaching and learning in higher education. LMS offers universities a hitherto undreamt-of capacity to control and regulate teaching. From a managerial perspective, the disorder associated with academic independence and autonomy in the teaching and learning process can appear chaotic and anarchic. The management and leadership of academic communities require, correspondingly, a high tolerance of uncertainty, but such tolerance is in increasingly short supply in an era of attention to quality assurance and control. LMS may appear to offer a means of regulating and packaging pedagogical activities by offering templates that assure order and neatness, and facilitate the control of quality. The perceived order created in teaching and learning by LMS is, we suspect, one of the more persuasive reasons for their rapid uptake.

There is limited educational research into the factors responsible for the adoption and integration of LMS knowing well that eLearning cannot deliver without a reliable LMS. LMS is generally perceived as an electronic education manager. In efforts to identify salient topics for research, there has been an explosion of small-scale, localised and descriptive case studies looking at the effects of ICTs in education (Kezar, 2000; Merisotis & Phipps, 1999). Previous authors paid attention to specific educational technologies with particular attention to their usage in classes (Flowers, Pascarella & Pierson, 2000; Kuh & Hu, 2001; Kuh & Vesper, 2001). The primary factors of technological adoption were traced to innovation and economic situation. In this study, the researcher is interested in considering government educational policies and lecturers factors towards the adoption of LMS in Nigerian Universities.

Based on literature, LMS is perceived as such ICT-based educational component that supports educational activities in a more productive manner (Laurillard, 2002). It does this by providing communication-enabled features capable of delivering ubiquitous access to learning materials such as teleconferencing, interactive multimedia, personal bookmarking and

so on to support the discursive interactions considering individual students' learning pace (Britain & Liber, 1999; Laurillard, 2002).

Much of eLearning application success or failure can be attributed to how it is organized, managed, and adopted. Many researchers indicated a multidimensional character of the problem of learning management environments' perception, acceptance, and success. For instance, "critical success factors" (CSF) (Freund, 1988) have been grouped into several categories depending on the focus of the study: instructor, student, information technology, and university support (Selim, 2007); intellectual property, suitability of the course for an eLearning environment, building the eLearning course, eLearning course content, eLearning course maintenance, eLearning platform, and measuring the success of an eLearning course (Papp, 2000); student characteristics, student-student interaction, effective support, learning materials, learning environment, and information technology (Benigno & Trentin, 2000). In another conception, Volery and Lord (2000) identified three groups of CSFs: technology, instructor and students' previous use of technology. In analogous study, Soong, Chan, Chua and Loh (2001) names the following eLearning CSFs: human factors, technical competency of both instructor and student, eLearning mindset of both instructor and student, level of collaboration, and perceived information technology infrastructure. It is on this note the researchers captured issues related to educational environment with policies that guide the use of such technology in the universities while all other factors are lecturers-related.

Consequently, ubiquitous implementation of eLearning is limited by the absence of a holistic view of what should be done to make it effective and reduce resistance to change amongst lecturers (Blin&Monro, 2008; Keaster, 2005). Personal innovativeness and its antipode computer anxiety are therefore another challenge that may be critical for the success of LMS. Personal innovativeness in an information technology context is an individual's attitude reflecting a tendency to experiment with and to adopt new information technologies independently of the communicated experience of others (Al-Busaidi & Al-Shihi, 2012a).

This is often difficult for academics for various reasons: lack of experience, skills, and technological mindset (Watts, 2007).

Adopting this new approach to education would require another considerable investment – time. Although one of the main goals of ICT in education is to speed up the process, many scholars underline that continual management of the e-course makes instructors' work very time consuming (Abrahams, 2004; Gillard, Bailey & Nolan, 2008). Another important issue is the effectiveness of LMS which can be analyzed through several parameters includes the extent to which LMS is used by lecturers and their satisfaction (Naveh, Tubin & Pliskin, 2012).

According to recent research, the following factors influence student satisfaction with LMSs: course content (Selim, 2007), perceived usefulness (Sun, Tsai, Finger, Chen, & Yeh, 2008), perceived enjoyment, computer literacy (Liaw, Huang & Chen, 2008). On the other hand, instructors' satisfaction is impacted by technology experience and personal innovativeness (Al-Busaidi & Al-Shihi, 2012b).

It is necessary to consider that every study in the area of eLearning has a specific focus prioritizing such different issues as technical, social, psychological, and pedagogical. These factors influence perceptions, adoption, and success of LMS in every specific case. All these are captured in developing the research instrument. In this study, the following factors as the most important: administrative support, as the system is under implementation at the university and various organizational, structural, and infrastructural issues inevitably occur. However, the most influential factor appeared to be the human factor, namely perceptions and attitudes of two categories of lecturers: students and teachers. This is consistent with international studies in terms of identification of major areas of dissatisfaction and perceptions of quality online teaching and learning (Weaver, Spratt & Nair, 2008) and the importance of the role of teachers for the successful adoption of LMS (Steel, 2009).

Lecturers' Readiness and Adoption of LMS

Improvement on teaching and learning in traditional higher education courses can be supported by an introduction of LMS. The LMS provides facilities for design, development and sharing of learning materials, individual and group learning activities, evaluation and assessment of student work and management and administration of course work at classroom and organisational level (Istenic & Subic, 2006; Kravcik et al., 2004; Paulsen, 2003). The LMS with its orientation to student-centred teaching, which is not content-driven but activities-driven, supports the individualization of the study process i.e. student-centred teaching. The LMS can significantly impact the development of new organisation of higher university teaching and learning and blend traditional organisation with eLearning (Istenic& Subic, 2006). Individual student's progress can be tracked in the process of learning and adopt teaching and learning approaches to the individual learning style, prior knowledge and abilities.

The LMS supports various teaching and learning methods for individual, peer and group learning. Again, effectiveness, efficiency and quality of teaching and learning additionally foster communicational patterns with synchronous and asynchronous communication modes. The computer mediated communication (CMC) with its "integrative nature has led to a rather spectacular transformation: The CMC has been able to replace the traditional oral dimension of education without destroying what has until recently seemed to be an irreplaceable privilege of the classical face-to-face classroom situation" (Istenic, 2001).The LMS served as an integration tool in this process for planning, operationalization and monitoring of tasks. It served as a team office for students, where all theory, tasks, communication, reports and business information were located. Since all activities except for class lessons and for milestone deliveries were up to students, a lot of work and collaboration took place at home and in their free time. Group and reverse brainstorming, for example, were undertaken on LMS team forums, where all members of a team, located in different places (home, library, internet café etc) all over the country, had to attend at the same time.

Thompson and Strickland (2001) defined a stakeholder as the constituency of any organization. Following this definition, eLearning lecturers are those affected by it. Students, instructors, educational institutions, employers and others are considered to be some of the main lecturers of Learning Management System. Therefore, the acceptance and success of LMS in Nigeria depend on the degree to which the needs and concerns of its lecturers are met depending on cultural background (Wagner, 2008). Consequently, the potential developments that LMS can provide to the Nigerian higher education are affected directly by the perceptions and attitudes of its lecturers. Thus in order to adopt a new technology in Nigeria, lecturers cannot be ignored (Abd El Aziz, 2012), as they are the real persons in dealing with the system (Wagner, 2008). Although LMS seems to be an optimal solution that would solve some of the higher education problems in Nigeria, still it is not utilised according to its capacity (Afify, 2011; El Gamal, 2011; Hegazy & Radwan, 2010). Therefore, to make LMS more familiar, and to successfully adopt this technology in higher education, it is necessary to understand some of the LMS stakeholder group's perception, readiness and preferences in the Nigerian context.

A number of studies have investigated the perception of LMS and social awareness. Unfortunately, the studies have come to their conclusions based on sampling only students as the main LMS lecturers and end users (El-Zayat, 2007; Abdel-Wahab, 2008; Berteau, 2009; Hegazy & Radwan, 2010). According to Wagner (2008), students are not only the significant LMS lecturers such as instructors, employers and government representatives should be also taken into consideration in order to build a complete picture that represents the Nigerian context.

The Moderating Effect of Age and Gender on the Adoption of Learning Management System

Despite that prior researchers have empirically demonstrated the importance of several variables associated with the adoption of different technologies, especially, learning management systems, far little studies paid attention to the significance of the demographic characteristics of lecturers (Agarwal & Prasad, 1999; Sun & Zhang, 2006; Yi et al., 2006; Altawallbeh et al., 2015). Also, there are no much theoretical models explaining the role of demographic variables on the adoption of learning management systems (Branca, 2008; Gefen & Straub, 1997; Sun & Zhang, 2006; Venkatesh & Morris, 2000). In addition, Taylor and Todd (1995) argued that, prior researchers have adopted a stationary approach towards understanding the factors that explain lecturers' readiness, intention and willingness to adoption of learning management systems. Thus, researchers exert less interest on the apparent influence of demographic factors on the relationship between contextual factors of technology adoption and the actual adoption of learning and teaching related technologies (Altawallbeh et al., 2015). Consequently, this present study aims at examining the moderating role of demographic factors such as; age and gender on the relationship between the factors that affect the adoption of learning management systems among lecturers in Nigeria.

Few theorists have considered the role of age in the context of technology adoption (Venkatesh & Morris, 2000). For instance, Venkatesh et al. (2003) revealed that age is a significant moderating factor on the relationship between perceived usefulness, perceived ease of use, subjective norm and behaviour intention to use technology. Similarly, Altawallbeh et al., (2015) employed hierarchical regression analysis to analyse the data collected from 450 university students in Jordan and examine the moderating effect of age and gender on the factors that affect users' intention to adopt e-learning. The findings of the study statistically demonstrated that, age and gender are significant moderating role on the

relationship between different factors such as (attitude, subjective norms and perceived behavioural control) and intention to adopt e-learning technology.

In another study conducted on behavioural intention of educators in higher institutions in Kenya, Africa, Maina and Nzuki (2015) employed both self-administered questionnaire and face-to-face interview to survey 600 respondents involving educators, students and administrative staffs from three different universities in Kenya. The findings of Maina and Nzuki (2015) revealed that, age of users, gender and experience moderate the relationship between expected performance, enabling infrastructures, institutional policies, training support and leadership and ease of effort use and the adoption of learning management systems.

In addition, many technology acceptance-based studies have considered and reported the significance of age, gender and experience at different levels (Venkatesh et al., 2000; Morris & Venkatesh, 2000; Olatubosun & Olusoga, 2014; Venkatesh et al., 2012; Venkatesh & Zhang, 2010). The implication of these findings is that, people have different reactions and attitude towards the adoption of technology and these reactions are manifestation of their demographic features which include; their age, gender and their experience of technology usage (Venkatesh & Morris, 2000; Venkatesh et al., 2000). For instance, Keller et al., (2007) argued that, males have more favourable attitudes towards technologies than females. Females generally experience greater computer anxiety and negative perceptions than males. Meanwhile, the perception of both male and female might not be different towards the usage and adoption of technology (Leong & Saromines-Ganne, 2002).

Also, Venkatesh et al. (2003) indicated that age have a salient moderating effect on the relationship between performance expectancy and behavioral intention. Stressing that, younger people are more enthusiastic to use technology than old people. Similarly, Barnes, Hanson, McIntyre, Neiger, Thackeray and West (2011) examined the moderating effect of

experience on performance expectancy, effort expectancy and facilitating conditions on technology acceptance and found no significant moderating effect. However, Khechine et al. (2014), Tan (2013), Venkateshand Morris (2000) and Venkatesh et al. (2012) reported that, experience has a significant moderating effect on the adoption of technology. Therefore, this present study considers the moderating impact of gender, age and experience on the adoption of learning management systems.

Conceptual Framework for the Adoption of Learning Management System

Organization support

In general, eLearning is perceived as a priority for many public and private sectors, such that it enables training and development of employees in workplace without necessarily relocating people to training rooms. However in the education sector, the increase in the students demand for a more convenience and flexibility in learning programmes remains a main justification for eLearning.

Hence, Sehin (2007) noted that organizational support is a stringent factor in the successful implementation of any technological aided learning such as eLearning, LMS; in the same vein, a number of other researchers stated that the successful adoption of an innovation is majorly dependent upon its management ability to create an environment of trust, creativity and collaboration (Marshall, 2004; Surry et al, 2005; Benson &Palaskas, 2006). It was also suggested that a high responsibility is placed upon the management of organizations to foster an organizational culture and climate that is supportive, provide encouragement and motivate potential adopters of technology amongst others.

Also, there is the need for policy makers to plan, organize and manage their institutions in a cost-effective manner (Bates, 2000). This will enable institutions to be well informed and have a better plan for viability and sustainability when the issue of global competition arises. Hence, the importance of learning environment in the teaching and learning process cannot be over emphasized as adequate learning systems can be achieved

through adequate funding by the learning institutions. Additionally, the stringent need to evaluate the preparedness of learning organizations before embarking on technology mediated learning is of great importance as it is the responsibility of the organization to determine the focus, provide standards and promote good practices that would eventually provide policy-makers with the vital information about the worth and value of LMS projects at various stages of planning, design and implementation.

Hence, organizational support in this context refer to the extent to which universities support learning institution in making resources available in support of an advanced technology adoption. (Cabintone, Griffitb&Yalcinkaya, 2006). The authors are of the opinion that government plays a vital role in setting goals and polices that could either facilitate promote or hinder the adoption of new technologies. The various enabling supports for the success of any technologies in any educational organization as described by Patrizio et al., (2004) are as follow:

- A. **Technical Support and Training:** This plays three significant roles in supporting adoption of LMS the roles can be listed as (i) Assisting with design and planning by giving technical assessments in the form of proof of concept (POC) and pilot tests of new technologies (ii) Assisting in the request for information (RFI) and request for price (RFP) processes and (iii) It is responsible for creating and maintaining the technical library and technical knowledge base for any organizations.

Technical support takes actions as a relationship with dealers on technical issues and there is the need for training and support system which maintains the currency of personnel skills that is set in keeping with LMS adoption. IT assistance such as help desks, suitably qualified IT staff within the organizations are all necessary human resources used for a successful organizational ICT readiness. Hence, the need to train and retrain personnel's on how to take advantage of ICT as an updated teaching method is crucial, as it becomes unreasonable to expect teachers to change their

existing approaches without sufficient and appropriate training on how to integrate new technologies into their teaching programmes.

However, it is generally accepted that LMS competencies requires a longer course by the personnel's involved about the technical use of the virtual learning environment (Awouters, 2009). This explains the need for teachers to be trained on the usage of ICT for personal and classroom purposes.

- B. **Motivation:** The integration of IT into educational management is not trivial by any means and it is not just a matter of providing computer access and training to faculty and students. Precisely, effective use and integration of computers into classrooms requires a departure from traditional interaction modes; which can be only be achieved through adequate motivation of lecturers by the educational institutions.

Lecturers' Readiness

Thompson and Strickland (2001) defined a stakeholder as the constituency of any organization. Following this definition, LMS lecturers are those affected by it. So, students, instructors, educational institutions, employers and others are considered to be some of the main stakeholders of eLearning. Therefore, the acceptance and success of eLearning in Nigeria depend on the degree to which the needs and concerns of its stakeholders especially lecturers are met depending on cultural background (Wagner, 2008). Consequently, the potential developments that e-learning can provide to the Nigeria Institutions are affected directly by the adoption and attitudes of its lecturers. Thus, in order to adopt a new technology in Nigeria institutions, lecturers cannot be ignored (Abd El Aziz, 2012); as they are the real persons in dealing with the system (Wagner, 2008).

The Students' Factors

Students' attitudes towards eLearning are directly connected to several factors. Some of these factors include technical abilities, students' efficacy, attitude towards LMS,

willingness to use LMS and ICT skills. Other important factors when considering the students adoption to LMS are age, gender, technology acceptance and individual learning styles.

A number of studies showed that students are willing to use eLearning and admit its benefits (Vrana, et al., 2006; Tasir et al., 2011; Tagoe, 2012). Self-paced and multimedia instructions are examples of the driving forces that could encourage students (Liaw et al., 2007). These, driving forces may not be welcomed in all cultures and especially in established environment. Adoption towards eLearning is affected by the flexibility of technology in knowledge management, time management and widening access to information. Tagoe (2012) discovered that although most students have admitted that eLearning will enhance teaching and learning, yet their fears concerning access to computers, inadequate bandwidth and lack of IT skills resulted in decreasing adoption rates. Similarly, Varna (2006) added that although students totally affirmed that, the introduction of ICT enhances education and could add to the development of more efficient educational processes. Though, it seems that they are not ready to accept it. More information should be provided to learners officially in order to modify their perception. Information on the provision of quality assurance in design, ensuring the timely development and delivery of quality course materials and student support services must be adopted and announced in order to increase student's adoption and raise perception levels (Ojo, 2006).

It is critically important for educational institutions to be fully aware of student's needs and fears related to their learning environment in order to achieve high academic achievement (Tasir et al., 2011). Providing sufficient training in all areas related to eLearning, availability of adequate and suitable technology infrastructure, supporting teamwork technologically and subjectively, as well as highlighting the role, responsibility and workload of e-instructors must be announced to learners to make sure that motivation remains high throughout the learning period (González, 2011). However, this study focuses on Lecturers as stakeholder.

The Instructors Factors

The preparedness of the academic staff to reform and deliver LMS is also a substantial point that can reveal their adoption towards LMS. Their readiness in taking part in eLearning transfer may affect adoption rates. Previous researches revealed that the lack of technical support, adequate equipment, and the increased amounts of preparation time required were the most commonly found barriers towards adoption of LMS from the perception of educators (Mishra, 2007). Although the same reasons are still valid, recent studies have added to them. Self-reliance to use eLearning in terms of getting the training needed is one of the main factors desired for e-course delivery, which should be taken into consideration before implementation of LMS (Agboola, 2006). Similarly, (Scott 2004) discovered that academics were reluctant in delivering eLearning courses. They were concerned about teaching a lower standard course content by not delivering the same curriculum as traditional face-to-face teaching.

On the contrary, Liaw et al. (2007) stated clearly that instructors have highly positive perceptions towards using eLearning. Their behavioural intention to use eLearning is influenced by perceived usefulness and self-efficacy. Educators felt that eLearning was a tool that matched their teaching and learning needs in terms of flexibility, interactivity and accessibility despite a significant level of lack of competence in the technology (Handal et al., 2011). As a result, offering incentives and rewards besides the announcement of clear strategic plans and visions to academic staff involved in eLearning could act as significant drivers to encourage staff members to be involved in delivering eLearning programmes (Newton, 2003). The assessment of educators in using contemporary technologies to prepare e-content for their courses is also significant (Krishnakumar, 2011).

Since the institutional policy in Nigeria suffered in using ICT in our schools and lack resources, it could be expected that even if educators identify the benefits of developing online tracks, limitations of financial, software, hardware and technological resources are not available so also are the resources needed for training before implementing online tracks

might be considered as a main obstacle. Institutions in Nigeria may be forced to develop suitable plans and strategies in order to encourage the design and delivery of LMS to academics. These strategies should take into consideration all trainings needed in order to facilitate the ease of use, design and delivery of eLearning platforms and hence encourage eLearning spread and adoption. Figure 2.2 depicts the conceptual framework for the study while Figure 2.3 gives the research model for the study.

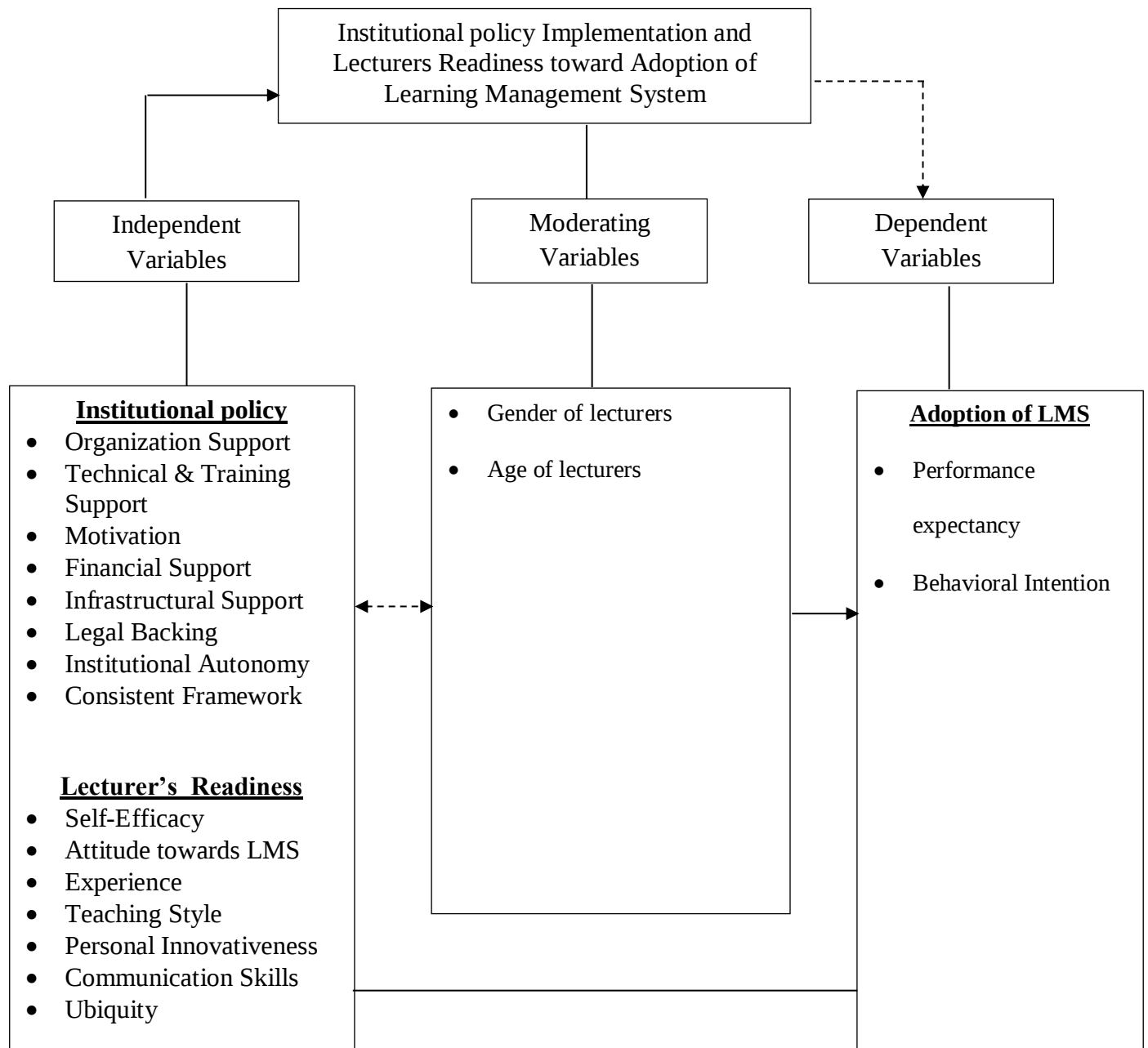


Figure 2.2: Conceptual Framework

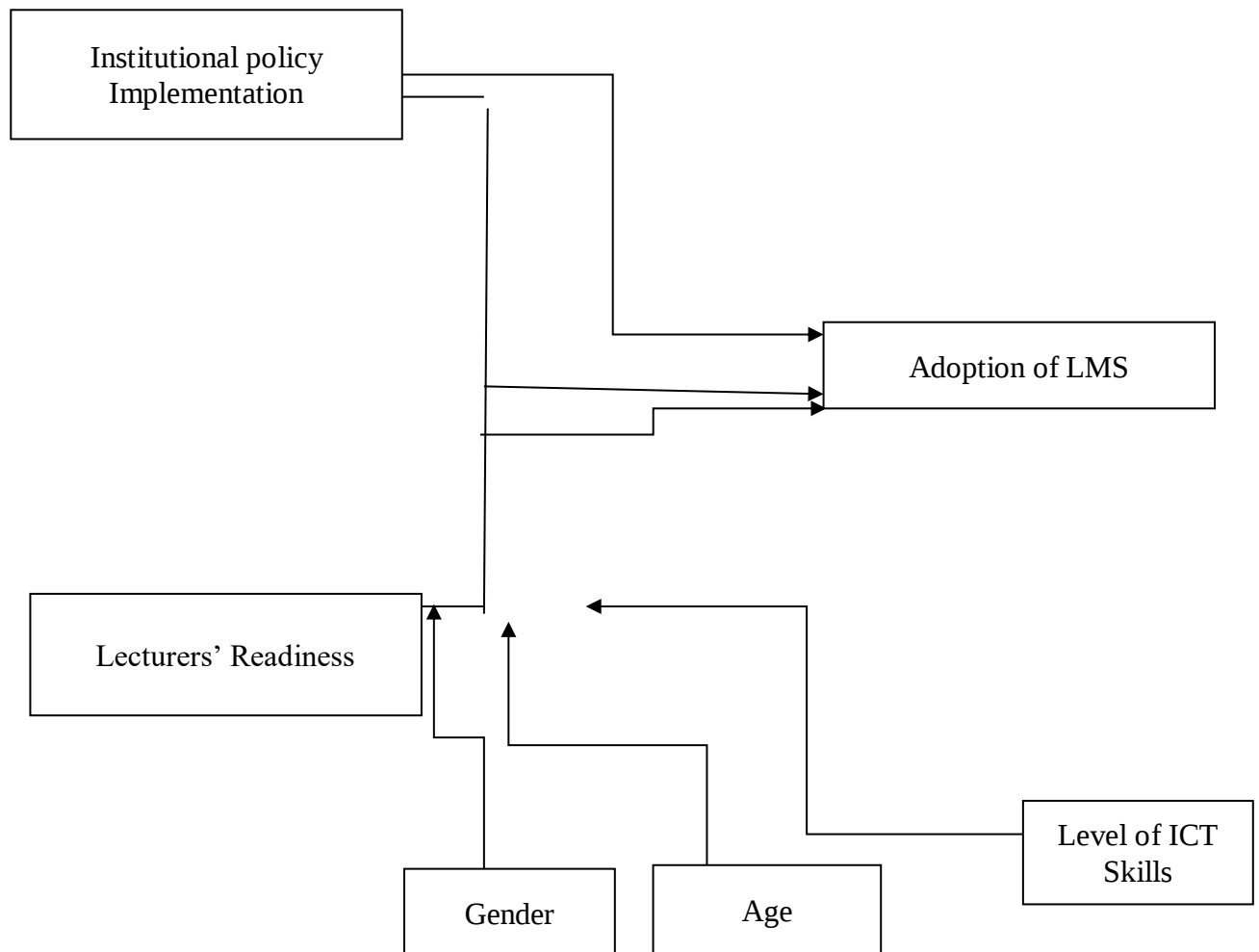


Figure 2.3: Research Model

The Unified Theory of Acceptance and Use of Technology (UTAUT) and Usage of LMS

The propositions in this study solely rely on the Unified Theory of Acceptance and Use of Technology (UTAUT) as propounded by Venkatesh et al., (2003). The UTAUT Model is a technology acceptance model which was developed by Venkatesh et al. (2003). The theory opined the determinants of behavioural intention and the actual usage of a technology. The UTAUT model has been one of the renowned theories for understanding

users' acceptance and usage of various types of technologies including LMS for teaching and learning (Venkatesh & Zhang, 2010).

The UTAUT model asserts that, certain factors are responsible for the adoption of technology as listed in the model. The role of gender which has a strong and permanent basic psychology (Venkatesh et al., 2003), age, experience and the voluntary use are claimed to decrease the effect of the four main constructs towards BI. This model has been developed through the study and integration of eight other developed research models which have been used such as The Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), Model Combining the Technology Acceptance Model and Theory of Planned Behavior (C-TAM-TPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT).

Furthermore, the research conducted by Pardamean and Susanto (2012) and which was titled "Assessing User Acceptance toward Blog Technology Using the UTAUT Model revealed that, the e-learning media interactive function is able to attract students' interest and attention. They have agreed that e-learning media is also suitable for collaboration and shared knowledge. This explains that social factors and environment or Social Influence (SI) is a strong booster for students to use blogs in their e-commerce learning and teaching. In the research conducted by Wong et al. (2013), they found that teachers get involved in the 'Smart Board' technology when they see the value and benefits. This shows that the policy makers and curriculum designers have to spell out the advantages of using the technology and organize training sessions on how to use it effectively.

Consequently, this study employs the UTAUT model to explain the relationship between policy implementation, lecturers' readiness and the adoption of LMS for learning and teaching. Also this study considers the UTAUT model to ascertain the moderating role of

age, gender and ICT skills on the level of lecturers' readiness to adopt LMS for learning and teaching. Figure 2.4 describes a typical UTAUT model.

Self-efficacy can be defined as belief of individual in his or her ability to exhibit behaviour capable of achieving specific performance. (Bandura, 1977). Self-efficacy inhibits assurance in the individual's ability to have control over his/her own motivation, behaviour, and social environment (Bandura, 1977) The author equally defined self-efficacy as people's cognitive self-evaluations that can influence all types of human experience, including the goals for which people strive, the amount of energy used toward goal achievement, and likelihood of achieving particular levels of behavioural performance.

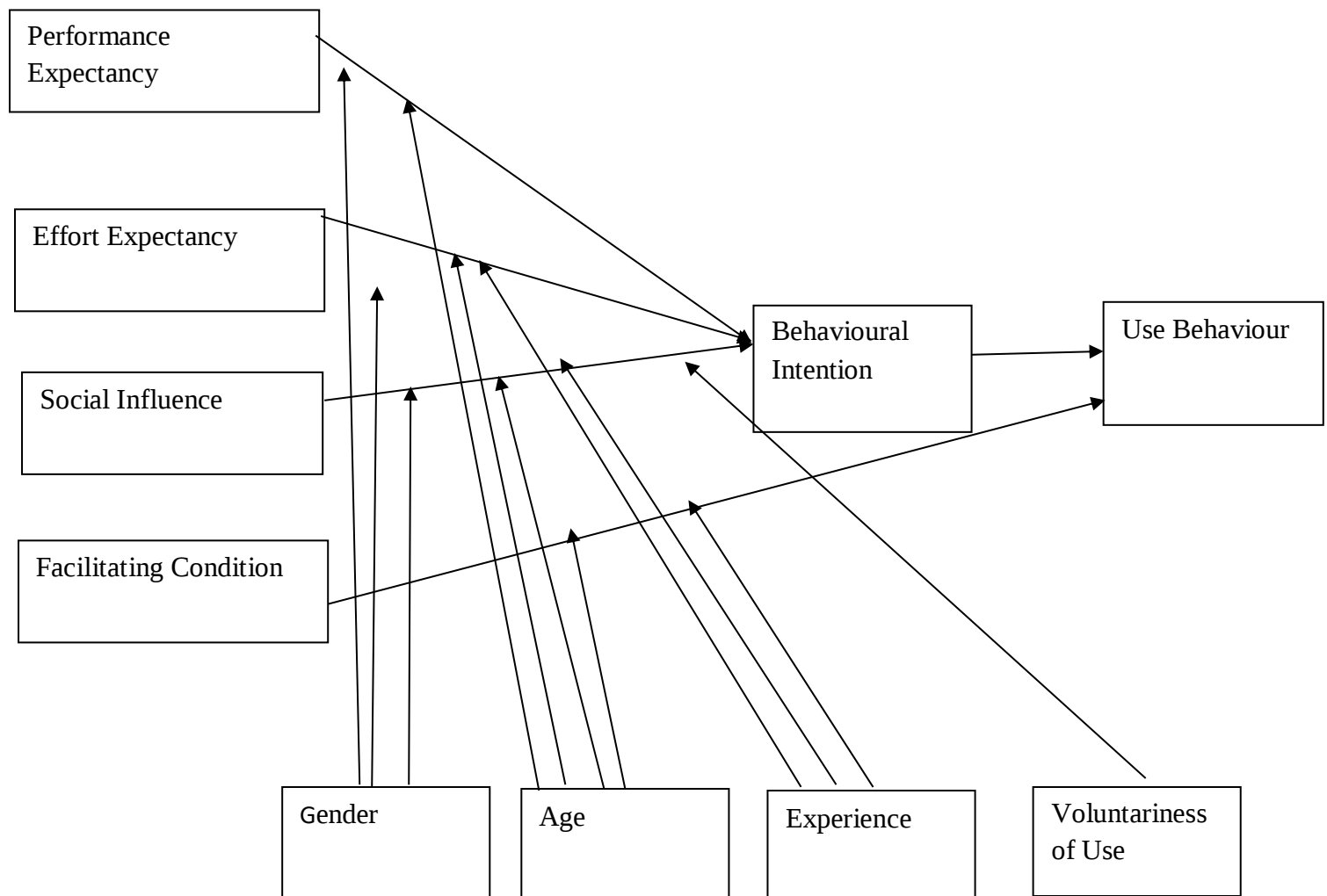


Figure 2.4: Unified Theory of Acceptance and Use of Technology (UTAUT) (Source Venkatesh et al., 2003)

Appraisal of Literature Reviewed

Series of literature revealed similar findings for similar studies; however, most of them differ considerably from this particular study. For instance, Alabi (1999) looked at the effectiveness of ICT with emphasis on Management Information System (MIS) on University's decision making, however, the study excluded institutional policy implementation and did not consider Learning Management System (LMS), Ojo (2014) studied the relationships between ICT utilization, decision making process and administrative effectiveness in the Nigerian Polytechnics whereas, the study did not consider policy implementation aspect, Falade (2013), investigated Lecturers' perceived ICT integration into distance learning in Nigeria, however, the study did not specify any particular learning management tool. Kamla and Hafedh (2010) focused on instructors' acceptance of learning management systems: a theoretical framework, however, excluded institutional policy implementation on adoption of learning management system. Abrahams (2004) examined technology adoption in higher education: a framework for identifying and prioritising issues and barriers to adoption, however, the study left the aspect of lecturers' readiness and policy implementation towards adoption of LMS, Agboola (2006) assessed the awareness and perceptions of academic staff in using e-learning tools for instructional delivery in a post- secondary institution but failed to consider institutional policy implementation and LMS as an enabler for successful e-learning, Al-Fahad (2009) examined students' attitudes and perceptions towards the effectiveness of mobile learning in King Saud University, Saudi Arabia, Fabunmi (2012) also examined undergraduates' perception of the effectiveness of ICT use in improving teaching and learning in Ekiti State University, however, differences existed between Al-Fahad and Fabunmis' studies as they both concentrated on students' perception and the effectiveness of

the use of ICT while the current study incorporated lecturers' readiness towards adoption of LMS as an ICT tool was carried out in South-west universities in Nigeria.

From the series of literature reviewed, it is evinced that teaching and learning approach has made the use of technology inevitable and has paved ways for the emergence of various learning opportunities in institutions of learning, however, looking at the previous studies altogether, there is need to focus on institutional policy implementation, and examine the relationship among institutional policy implementation, lecturers' readiness and adoption of learning management system which is the main focus of this study. Again, majority of the previous studies focused on integration of ICT, adoption of ICT, and utilization of ICT while a limited number considered the adoption of learning management system which is an element of information and communication technology (ICT).

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter discusses the methodological approach adopted in this research including the research design, population of the study, the sample size and sampling technique, unit of analysis and instrument. Also, the measurements of the variables in this research are presented in this chapter. Likewise, the method to check reliability and instrument validation are presented in this chapter. Lastly, the chapter presents the method of data collection and analysis.

Research Design

In this study, cross-sectional survey research method was employed to collect data using a self-administered questionnaire and structured interview questions. This study adopts mixed research approach to examine the predictive tendencies of institutional policy implementations, lecturers' readiness and the role of moderating variables of (Gender and Age of lecturers) on the adoption of LMS among Nigerian universities. In addition, because the target population of the study is individual lecturer and ICT Directors who are regarded as lecturers and policy implementers in the adoption of LMS for teaching, learning and instructing students in the selected Nigerian universities, the unit of analysis in this study is considered individual.

Population, Sample and Sampling Techniques

The target population for this study constitute the 6,252 lecturers and six ICT Directors in the government owned universities in the six states of South-west Nigeria, to reflect a good representation of the six states of the geo-political zone and also to capture all generations based on year of establishment. The selected universities were named universities

A to F. In specifics, the target population of this research are the total number of lecturers from each of the universities located in the six South-western states of Nigeria. According to the data obtained from the registry of selected universities, Table 3.1 shows the total number of lecturers in the six selected universities of South-west of Nigeria.

Table 3.1

Selected Universities for the Study

S/N	Selected Universities	Ownership	Year established	Population
1	A	Federal	1962	1,123
2	B	Federal	1981	2,000
3	C	Federal	1982	529
4	D	State	1990	1,100
5	E	State	1988	1,250
6	F	State	2006	250
Total Population				6,252

Sample Size

Sample size is defined as the exact number of respondents drawn from the target population of a research context (Ranjit, 2012). As discussed above, it is clear that the target population of this study is the total number of lecturers in the six sampled government-owned universities in the South-West of Nigeria. Krejcie and Morgan's (1970) sample size determination criteria was used to determine the representative sample size for this study because it takes into consideration, the confidence level and precision, in the of minimizing sampling error. Based on Krejcie and Morgan's (1970), 384 sample size is appropriate for this study. Furthermore, to increase response rate, the sample size was increased by 40% (Salkind, 2010). The summation of 40% (154) to 384 makes the total of 538. Therefore, the

sampling size of 538 was surveyed for this study. For the qualitative part of the study, five in-depth interviews were conducted with ICT Unit Directors from five different sampled universities in South-west Nigeria. In line with the common qualitative research principles, the absolute number of informants is subject to saturation. Saturation is attained when further interviews do not reveal any new information. However, Creswell (2007) suggested that a minimum number of three respondents is required in a qualitative study. Hence, the researcher observed that the responses of the informants had reached saturation after the fifth interview. As such, in consonance with previous qualitative studies, a total number of five respondents are sufficient for this kind of research (Holliman & Rowley 2014).

Sampling Technique

The stratified proportional and purposive random sampling techniques were employed in this study for selecting the sample size as determined above (Ranjit, 2012). The universities were stratified based on federal and state institutions, while the purposive sampling technique was employed to select four federal and two state universities in the South-west of Nigeria based on their location and ownership, this implies that six out of 15 government owned universities in South-west Nigeria were sampled for this study. Proportional sampling technique was used to select 538 respondents out of the 6,252 target population which signifies 8.7% of the population, apparently, this allows the researcher to determine the number of adequate respondents from each of the sampled universities. Five ICT directors were randomly selected across the selected universities in South-west Nigeria for the qualitative aspect of the study. Table 3.2 presents the number of samples that were selected from each university across the six South-west states based on the random sampling technique.

Table 3.2

List of Samples Selected Across Universities

S/N	List of Universities	Required Number of Samples
1	A	121
2	B	112
3	C	98
4	D	87
5	E	82
6	F	38
Total		538

Instrumentation

In this study, questionnaire tagged 'Institutional Policy Implementation and Lecturers' Readiness on LMS Adoption Questionnaires' (IPILRLMSAQ) were administered to the teaching staff of the selected universities and interview guides tagged 'Interview Questions on Institutional Policy Implementation and Learning Management System (LMS) Adoption (IQIPIALMSA)' was also used to elicit information from the sampled respondents. The questionnaire consists of six sections. Section one consists of questions about the respondents' background information. Section two consists of items that measure ICT facilities. The third part is made up of items used in measuring lecturers' perceived self-efficacy, Section four consists of items that measure Institutional Policy Implementation, Section five consists of items that measure lecturers' Readiness, and section six comprises items on LMS Adoption. The entire items adapted in the questionnaires for the measurement of the variables understudied in this research were answered using a five-point scale (see Appendix I). The use of a five-point scale format is considered the most appropriate because it has been found to enhance the reliability of measures and reduce social desirability bias that could lead to contamination of the substantive results (Hair et al., 2014).

The instrument was subjected to both content and construct validation. The content validation was performed by the supervisor and three additional experts from Educational Management Department and Educational Technology Departments, University of Ilorin who were Senior Lecturers and above. Cronbach's alpha was used to test the construct validity using a pilot study.

For the qualitative aspect, the questions of the interviews explored informants' opinion and experiences about the existence and implication of ICT policy to adoption of LMS in South-west Universities, Nigeria. As such the informants were shown a brief definition of LMS to ensure that, the informants understand the operationalization of LMS in this study. Furthermore, the interview guide entails 10 different questions (see Appendix II) to explore the availability of ICT policy, technical support, training and other support provided by the university to enhance adoption of LMS among south-west universities in Nigeria. However, additional questions were promptly inserted during the interview, based on the responses of the interviewees. Hence, the interviewer did not limit the briefing to the questions that were listed in the interview guide. Instead, the interviewer probed deeply to gather all the thoughts and opinions of the informants with regards to the subject matter (Bryman & Bell, 2011). Before conducting the main interviews, two pilot interviews were conducted. The pilot interviews allowed the researcher to pre-test the interview guide among researcher-colleagues to establish content validity (Saunders et al. 2009). The pilot interview allowed the researcher to fine-tune and refine interview guide. They also helped to determine the appropriate time for conducting the main interviews. Subsequently, the interview with the briefest duration lasted for about 15 minutes while the longest lasted for about 23 minutes.

Procedure for Data Collection

As part of the data collection procedure, the researcher applied for authorization and permission to collect data from the officials of the targeted universities prior to the time of data collection. Collection of data was carried out through a process of responses to paper and

pen survey questionnaires. A maximum of 30 minutes was devoted to respond to the questionnaire. The researcher and/or assistants were responsible for the distribution and collection of research instrument. The assistant researcher was properly briefed and trained to enable him/her acquire a desired professional ethics for a smooth data collection exercise.

As part of the procedure for gathering qualitative data, a consent form was filled by the interviewee before the commencement of the interviews, the interviewees were shown the interview guide and were informed of the purpose of the interview. The informants were given sufficient time to prepare their responses. As part of the procedures of ethical issues, the researcher attached a covering letter to the structured interview questions before the conduct of the interview, also the researcher ensured the confidentiality and privacy of the selected universities as well as the respondents for the sake of trust and integrity.

Method of Data Analysis

The quantitative data was coded and analysed using Statistical Package for Social Sciences (SPSS). Various descriptive methods were used for preliminary analysis and demographic analysis. Correlation and Linear Regression analysis were used to show the relationships and the degrees of such relationships for the adoption factors involved in the study. Independent Sample T-test was used to examine the moderating effects of the moderating variables involved in the study.

The qualitative data was analysed using thematic analysis of the interview transcripts. The thematic analysis allows the researcher to identify relevant themes and perspectives (Creswell, 2007). Additionally, the important factors discussed by the informants were used to group and categorize using the deductive content analysis and the sorting and coding of themes.

Hypothesized model

Based on the formulated hypotheses in the study, Figure 3.1 depicts the hypothesized model for the study.

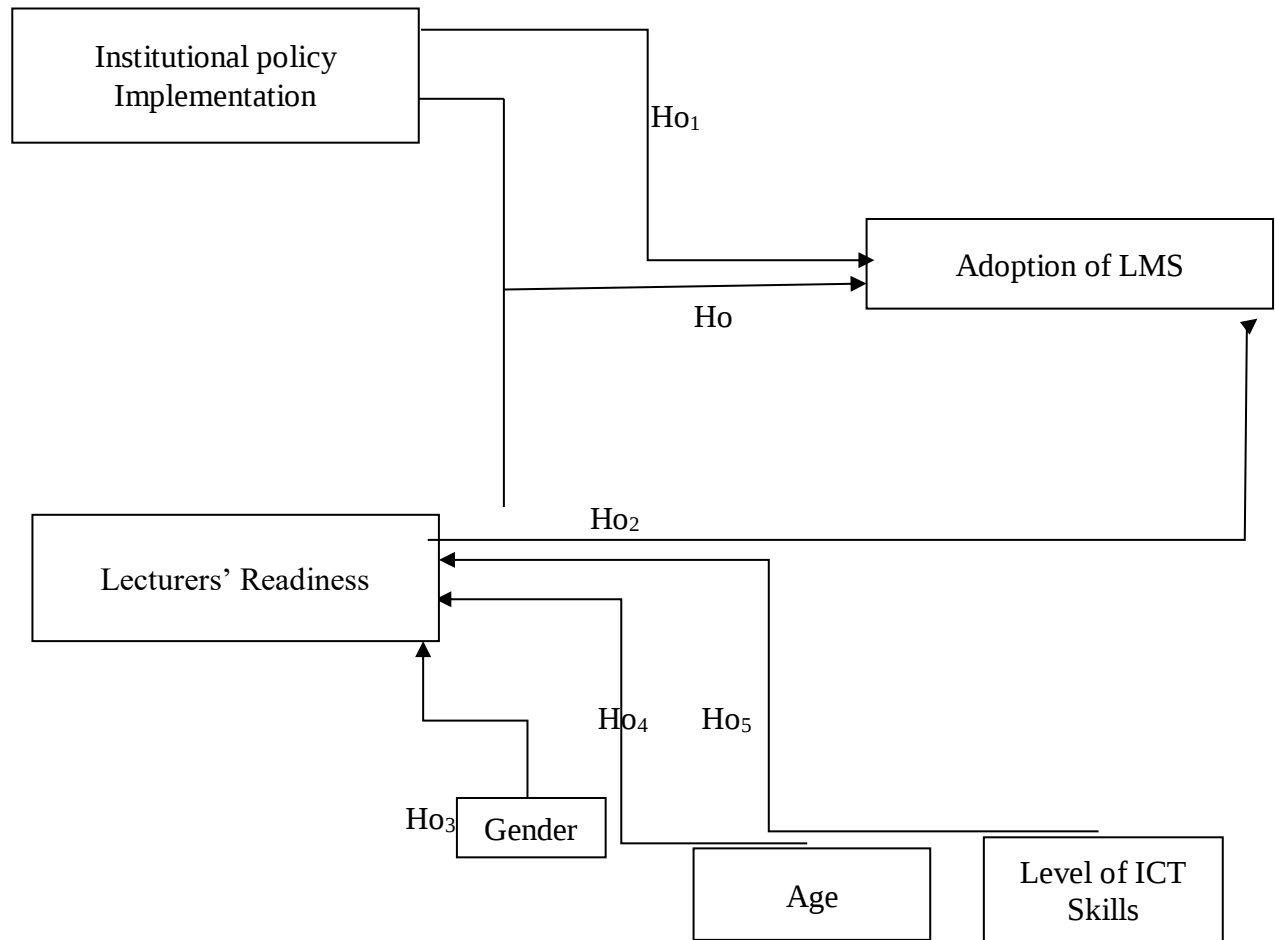


Figure 3.1: Hypothesized Model for Adoption of Learning Management System.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

This chapter presents the data collected for the research as well as the analysis of the data so as to provide pertinent answers to the research questions stated for the study.

This section contains analysed results of data obtained from the self-administered questionnaire to determine the role of institutional policy implementation and lecturers' readiness towards the adoption of learning management systems among government-owned universities in the South-west of Nigeria. The analysis was carried out using SPSS version 22.0 for windows. The statistical package was used for data cleaning, tests of normality, multicollinearity, descriptive analysis of respondents' profile, reliability test, regression, correlation and independent sample t-test. The analysis presented in this chapter is divided into three phases. The first phase and second phase revolves around cleaning the data and the descriptive statistics. This is followed by inferential analysis which was used to answer the research questions and test the formulated hypotheses.

Response Rate

Based on the sampling technique employed in this study, 538 questionnaires were distributed among lecturers of six selected universities across the six states of the South-west region in Nigeria. The questionnaires were hand delivered to the respondents in their offices, teaching theaters and in conferences. Meanwhile, out of the 538 questionnaires distributed, 489 (90.8%) respondents filled and returned the questionnaires. Hence, 49 (9.1%) questionnaires were not returned. In addition, out of the 489 returned questionnaires, 39 respondents were excluded from this because of outliers' issues. Finally, the analysis of this study is based on 450 respondents which left the study with 83.6% response rate.

Profile of Respondents

This section presents the profile of the respondents consisting of their age, gender, level of education, computer literacy, familiarity with LMS, types of LMS, purpose of using LMS and the hindrances for LMS adoption. The detailed analyses of the respondents' profiles are presented in subsection below.

Age of the Respondents

As shown in Table 5 and Figure 6, almost half of the respondents 224 (49.8%) are within the age bracket of 20-39 years. The next age group 40-49 years has 151 (33.6%) respondents. Whereas, the last age group comprising of the oldest respondents has least number of count of 12 (2.7%).

Table 5

Distribution of Respondents by Age

Age	Frequency	Percent
20 – 39	224	49.8
40 – 49	151	33.6
50 – 59	63	14.0
60 and Above	12	2.7
Total	450	100.0

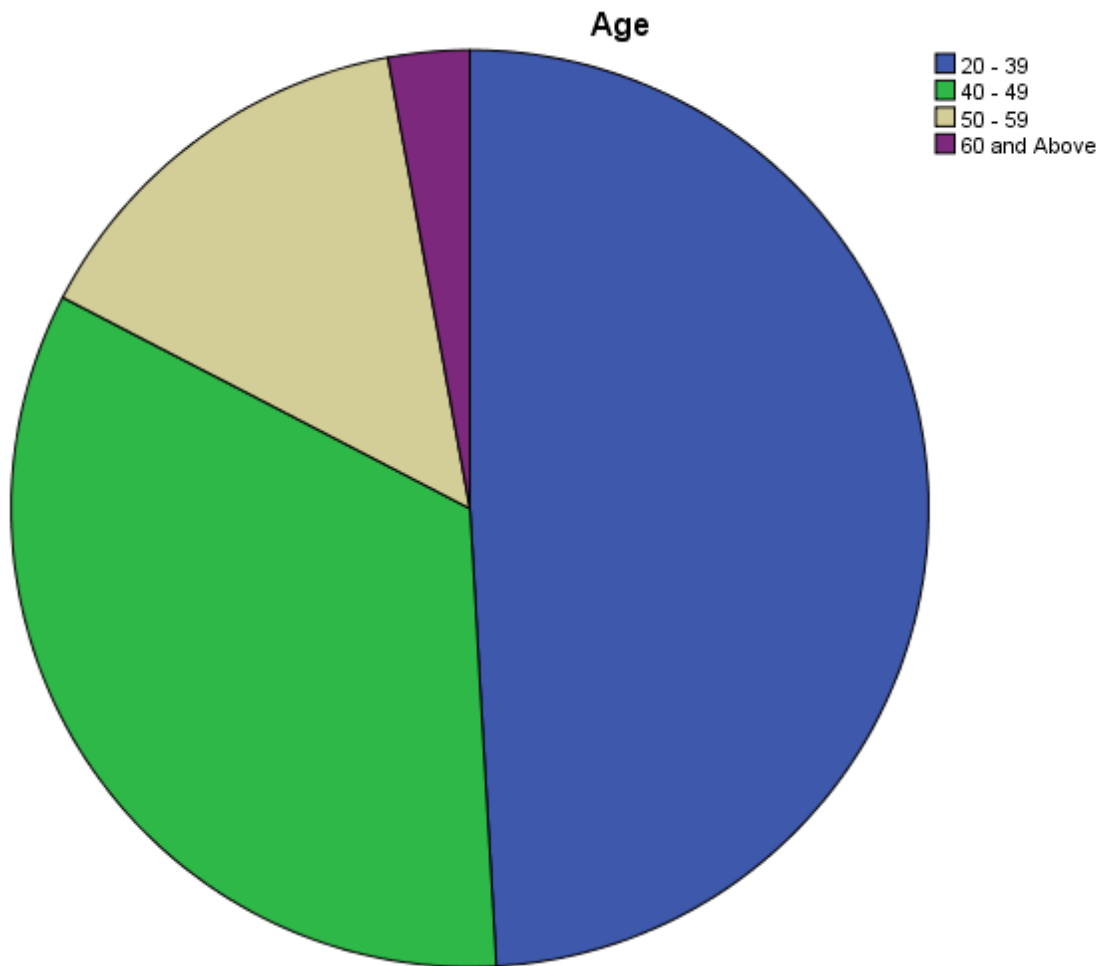


Figure 6: Respondents' Distribution by Age

Gender of the Respondents

Table 6 and Figure 7 revealed that there are female respondents 252 (56%), whereas the male counterparts accounted for 198 (44%) of overall respondents.

Table 6

Distribution of Respondents by Gender

Gender	Frequency	Percent
Male	198	44.0
Female	252	56.0
Total	450	100.0

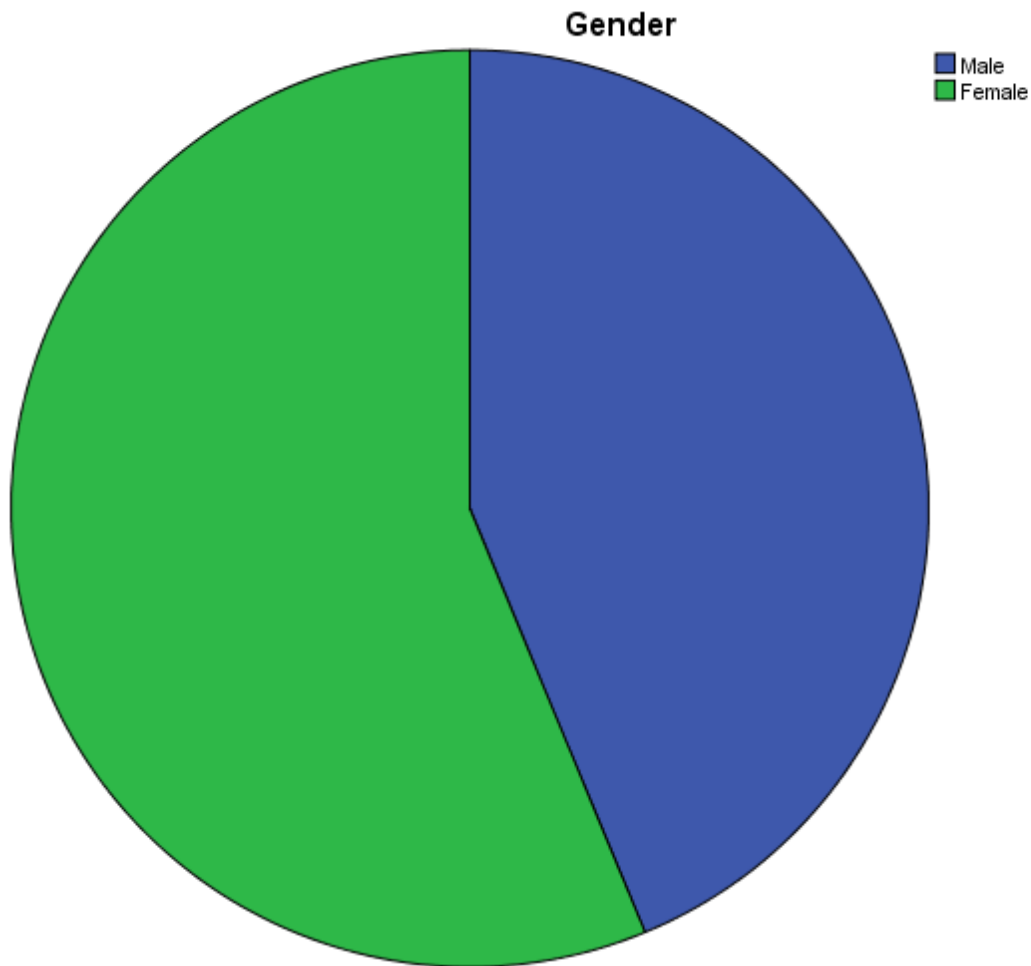


Figure 7: Respondents' Distribution by Gender

Highest Level of Education of the Respondents

As shown in Table 7 and Figure 8, all the respondents are almost divided into two distinct groups in terms of higher education. Clearly, the respondents with Master's Degree are more than half, 275 (61.1%) of the entire sampled population. Whereas, the respondents with Doctor of Philosophy (PhD) accounts for 161 (35.8%).

Table 8: Distribution of Respondents by Highest Level of Education

Highest Level of Education	Frequency	Percent (%)
----------------------------	-----------	-------------

Bachelor's Degree	12	2.7
Post Graduate Diploma	2	.4
Master's Degree	275	61.1
PhD	161	35.8
Total	450	100.0

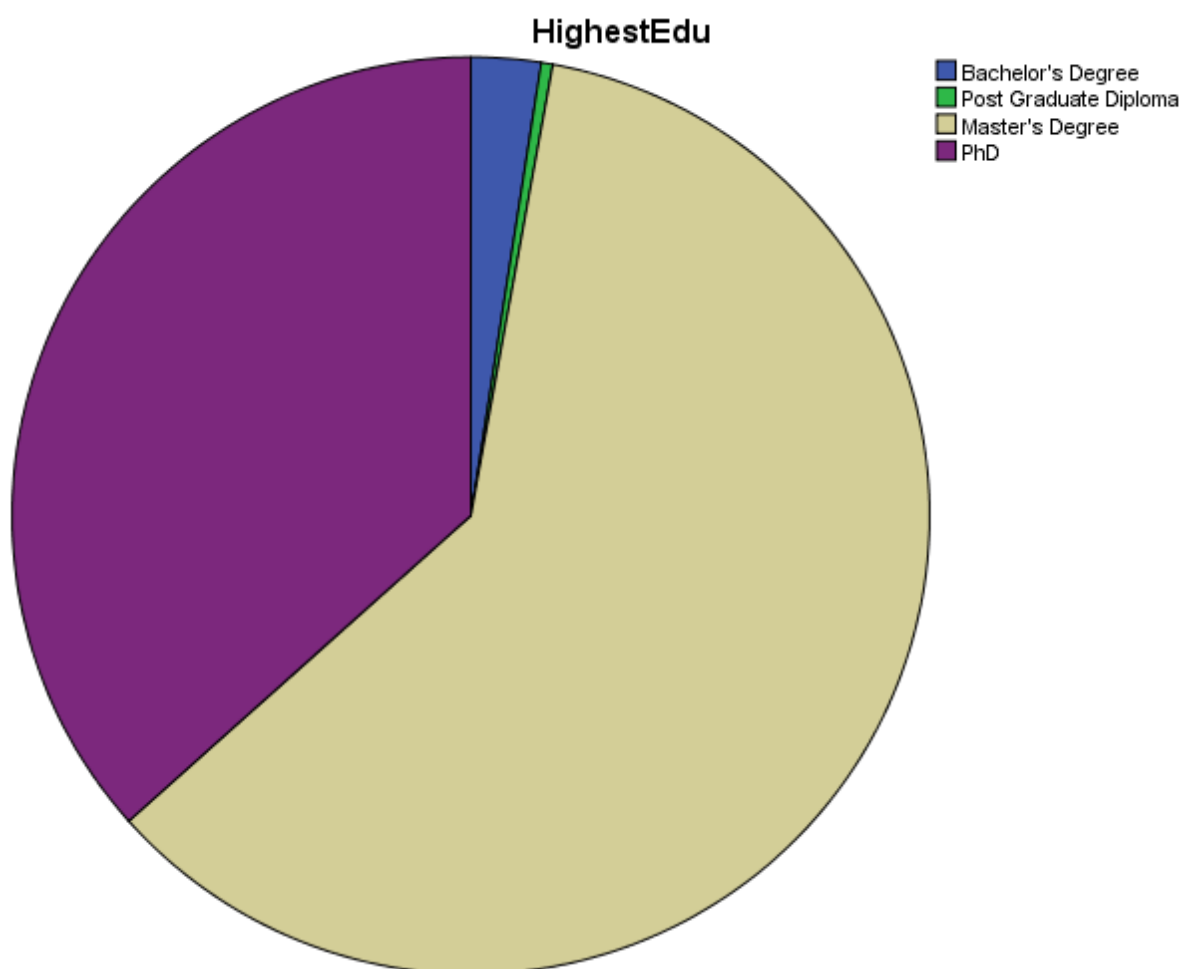


Figure 8: Respondents' Distribution by Level of Education

Computer Literacy of the Respondents

Table 8 and Figure 9 showed that 432 (96%) of the respondents are computer literate. However, only 18 (4%) of the respondents are found to be computer illiterates.

Table 8: Distribution of Respondents by Computer Literacy

	Frequency	Percent (%)
Yes	432	96.0
No	18	4.0
Total	450	100.0

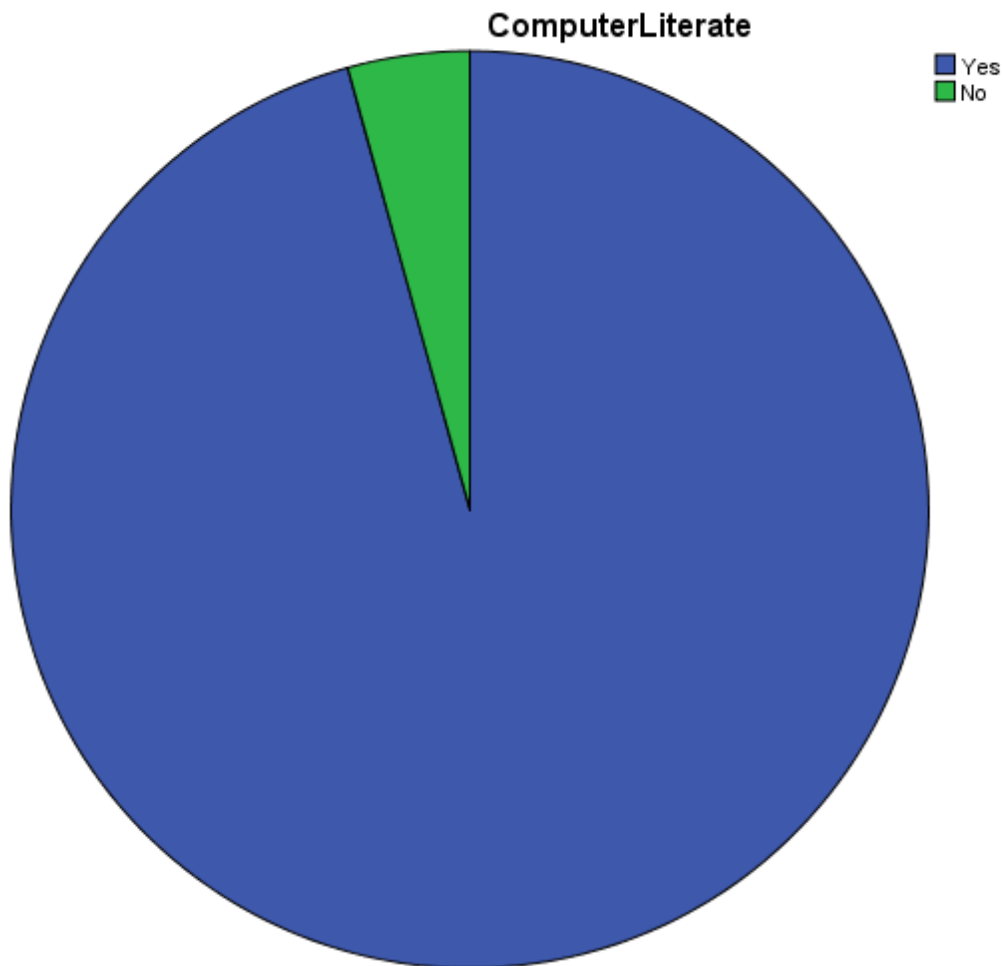


Figure 9: Respondents' Distribution by Level of Computer Literacy

Respondents' Familiarity with Learning Management System

As shown in Table 9 and Figure 10, a total of 334 (75.2%) of the respondents are already familiar with LMS. On the other hand, 10 (2.3%) of the respondents had never heard of LMS. However, 31 (7%) had exceptional familiarization with LMS.

Table 9: Respondents' Level of Familiarity

Level of Familiarity	Frequency	Percent (%)	Valid Percent
Never heard of it	10	2.2	2.3
Not very familiar	30	6.7	6.8
Somewhat familiar	39	8.7	8.8
Very familiar	334	74.2	75.2
Exceptionally familiar	31	6.9	7.0
Total	444	98.7	100.0

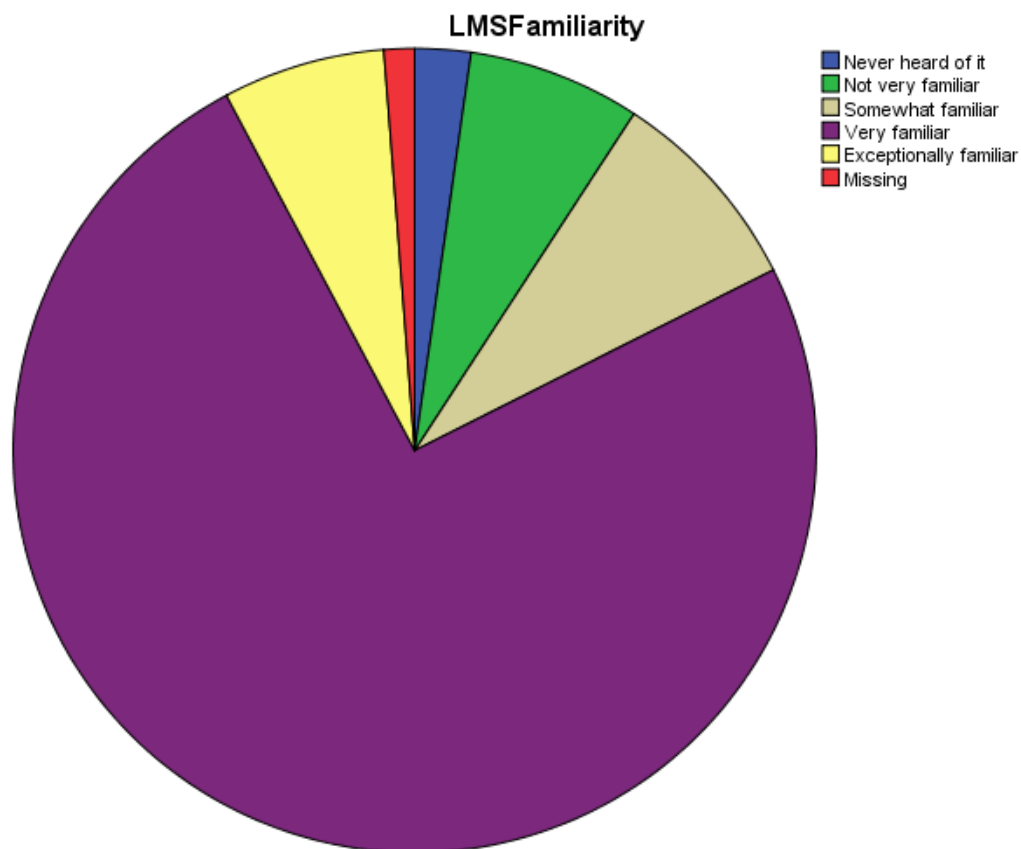
**Figure 10: Respondents' Distribution based on Familiarity with LMS****Types of Learning and Management Systems Used by Respondents**

Table 10 revealed that LMS owned by Yahoo 310 (68.9%) and Google 345 (76.7%) are the most used system by respondents. Also, some respondents are familiar with other

LMS like Moodle 47 (10.4%), ATutor 45 (10%) and OLAT 74 (16.4%) than others available LMSs.

Table 10: Respondents' Level of Familiarity

	Frequency	Percent (%)
Familiar with Yahoo group	310	68.9
Familiar with Google	345	76.7
Familiar with Moodle	47	10.4
Familiar with ATutor	45	10.0
Familiar with Eliademy	14	3.1
Familiar with Forma LMS	14	3.1
Familiar with Dokeos	13	2.9
Familiar with ILIAS	19	4.2
Familiar with Opigno	5	1.1
Familiar with OLAT	74	16.4

Respondents' Purpose of Learning Management System Usage

As shown in Table 11, the respondents used LMS almost equally for academic purposes. Though, 149 (33.1%) respondents used LMS for learning which is slightly higher than teaching and research having 133 (29.6%) respondents and 134 (29.8%) respondents respectively.

Table 11: Respondents' Purpose Using LMS

Purposes	Frequency	Percent
Research	134	29.8
Teaching	133	29.6
Learning	149	33.1
Personal	130	28.9
Work-Related	77	17.1

Respondents' Hindrances to Learning Management System Usage

Table 12 showed that 196 (43.6%) respondents identified lack of institutional support and 188 (41.8%) respondents reasoned insufficient internet access as hindrance to their usage of LMS. On the contrary, 58 (12.9%) respondents mentioned inadequate ICT as their hindrance to LMS utilization.

Table 12: Respondents' Hindrance to LMS Usage

Hindrances	Frequency	Percent
Lack Personal Interest	71	15.8
Lack ICT Knowledge	58	12.9
Lack Internet Access	188	41.8
Lack Institutional Support	196	43.6
Lack of ICT Infrastructure	133	29.6

Data screening

Before proceeding with the main analysis of this study, certain of data screening approaches such as: detection and treatment of missing values, identification of outliers, Test for assumptions of normality, multicollinearity and reliability analysis were ensured. These sets of analyses were conducted to screen the data before conducting inferential analysis. The following sections present the results of the data screening analysis.

Detection and treatment of missing data

Missing data refers to information not available for a respondent but available to others in the study. This can occur if the respondent fails to complete one or more sections in

a survey, from data/code entry error (Baxter & Babbie, 2004). This can impede generalization of findings and possibly lead to erroneous results. In checking for the missing data, each of the variables was inspected for scores that were out of range or empty cells via frequency tables in SPSS. The inspection revealed that, there are 5 missing cases randomly spread across the items of different variables. In specifics, IPI7, ICTF7, LR4, LR8 and LR11 all have 1 missing cases each. These six (6) cases were corrected with mean substitution as one of the most acceptable techniques of generating replacement values for missing data (Hair et al., 2010).

Detection and Treatment of Outliers

Detecting outliers involves the observations of values that are distinctly different from majority of the responses in the data set. Byrne (2010) describes outliers as the observations which are numerically distant to the rest of the data set. As observed by Hair et al. (2010), outliers could be beneficial or problematic, depending on their status in a particular data. They explain that an outlier is beneficial when it helps to fish out characteristics of the population that might have gone unnoticed in the normal course of analysis while a problematic outlier gives false impression about population ‘and can seriously distort statistical tests. Given the gravity of the impact of outliers in hindering the reality of statistical findings, Hair et al., (2010) recommend that detection and treatment of outliers be effected at various levels. Detection of outliers at the univariate level was conducted by inspection of box plots using the exploratory descriptive method in SPSS while Mahalanobis distance was calculated to detect the outliers at the multivariate level (Pallant, 2003).

An inspection of the box plot for each of the variables revealed 39 outliers (Pallant, 2003). Although Hair et al. (2010) cautions on the deletion of outliers ‘unless demonstrable proof indicates that they are truly aberrant and not representative of any observations in the population’, this study is confident that the deletion of few cases from a sample size of 489

will not hamper the findings in this study. Consequently, 39 cases were excluded from the data set. Therefore, henceforth, the sample size for this study is based 450.

At the multivariate level, the Mahalanobis distance of data from its predetermined threshold; $p = 0.001$ (Tabachnick & Fidell, 2007) was calculated. This involved the reading of the critical value of the data based on the number of independent variables (Pallant, 2003) from the chi-square table. With 27 degree of freedom (number of items in the questionnaire) critical value in this study, $\chi^2 (27, 0.05) = 53.38$. Next, the Mahalanobis distance was calculated through linear regression in SPSS version 22.0. The entry of the Mahalanobis check creates a new data title; 'Mah_1' at the end of the data file. No case presented Mah_1 greater than 53.38 and therefore this shows that, the data is free from outliers.

Normality Tests

Measures were taken to ascertain the normal distribution of data in this study as a prerequisite for multivariate analysis. Failure to do this can lead to misleading relationship between the variables under study and jeopardise the significance of the research findings. One of the measures of testing the normality of the data was an assessment of its distribution through skewness and kurtosis (Hair et al., 2010). Various values have been ascribed to acceptable skewness and kurtosis by scholars. While Kline (2005) approves of ± 3 value for skewness, and ± 8 for kurtosis, Tabanichnick and Fidell (2007) say both should not be greater than ± 3 . Although a perfect skew assumes the value of zero, this is 'rather an uncommon occurrence in the social sciences' (Pallant, 2003:53). All the variables in this study present acceptable values of skewness and kurtosis within the set criterion by the two cited scholars. Table 13 and Figure 10 revealed the normal distribution of all measured variables in this study with skewness and kurtosis not greater than ± 2 the table further indicates that all the variables were positively skewed.

Table 13: Values of Skewness and Kurtosis of Measured Variables

Variables	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Institutional Policy	-.990	.115	1.288	.230
Implementation				
Lecturers' Readiness	-.086	.115	1.405	.230
Adoption of LMS	-.155	.115	1.042	.230

N = 450

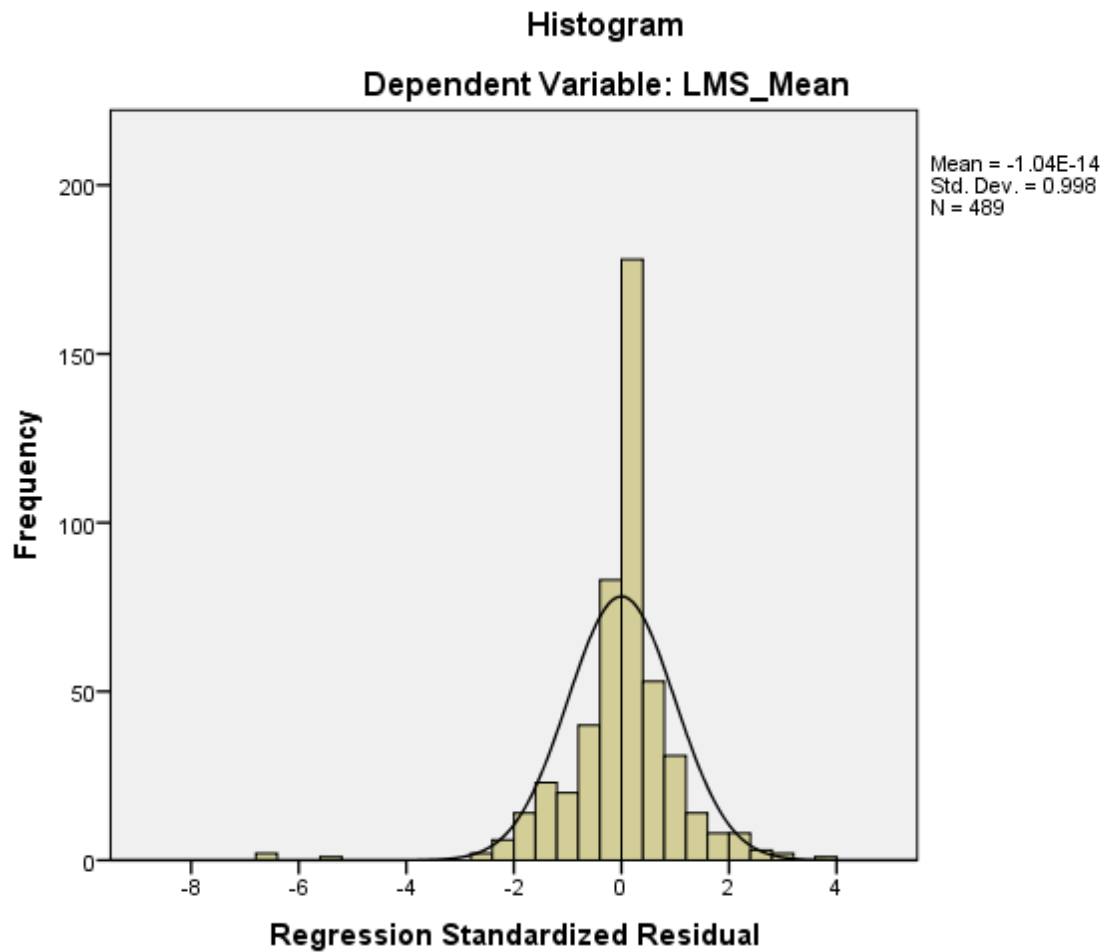


Figure 11: Skewness Graph

Multicollinearity

The focus of inspection in multicollinearity is observing the degree of relationship that exists between the independent variables and the dependent variable. Multicollinearity occurs when the correlation between the independent and the dependent variables on one hand, and the intercorrelation between the independent variables on the other hand is 0.7 and above (Pallant, 2003; Hair, Black, Babin, & Anderson, 2010). Hair et al., (2010) further explain that the existence of multicollinearity between variables hampers the predictive power of the independent variables on the dependent, just as it makes determination of the unique roles of the independent variables difficult. Table 14 reveals the absence of multicollinearity between the independent variables, as well as between the independent and the dependent variable.

Table 14: Test for multicollinearity

		Institutional Policy Implementation	Lecturers' Readiness	Adoption of LMS
Institutional	Pearson Correlation	1	.405**	.259**
Policy	Sig. (2-tailed)		.000	.000
Implementation	N	450	450	450
Lecturers'	Pearson Correlation	.405**	1	.412**
Readiness	Sig. (2-tailed)	.000		.000
	N	450	450	450
Adoption of	Pearson Correlation	.259**	.412**	1

LMS	Sig. (2-tailed)	.000	.000	
	N	450	450	450

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

Reliability Analysis

Reliability is the test of accuracy or the internal consistency of a measurement scale (Dunn et al., 1994). Reliability is often examined with the help of Cronbach's Coefficient Alpha. The unanimous rule of thumb established by most experts is that an acceptable Cronbach's Alpha value must be higher than 0.600. Following this rule of thumb, Table 15 shows that the Cronbach's alpha values of the items of the measured variables in this study are considered acceptable. The results presented in Table 15 depict acceptable values for the variables understudied in this research signaling a comfortable reliability of the instrument used in this study.

Table 15: Summary of Reliability Analysis of Measured Variables

Variables	Number of Items	Cronbach's Alpha
Institutional Policy Implementation	10	0.778
Lecturers' Readiness	11	0.771
Adoption of LMS	6	0.639

Answering Research Question 1: Is ICT policy implementation of university education in Nigeria in favour of implementation of LMS?

Based on the findings of the qualitative study as reported in Table 16, institutional policy implementation on ICT with regards to LMS adoption were at its infancy as a result of inconsistent framework, lack of policy implementation and inadequate funding, lack of institutional support, inadequate IT infrastructure and inadequate capacity building in the area of ICT

Table 16: Thematic Analysis of Qualitative Data

Availability of institutional policy for ICT to enable LMS adoption	The institutional policies on ICT in the universities exist at the formation stage. In other words, <i>the policies on ICT are yet to be implemented and remain non-functional</i> as reported by respondents 2, 3, and 5. They all ascertained that <i>lack of functionality of ICT policies is associated to the lack of financial resources used to purchase facilities such as modern computer gadgets.</i>
Institutional supports for successful implementation of LMS	Respondents 3 and 5 agreed that they have <i>various categories of institutional supports towards the implementation of LMS</i> . Support services includes IT infrastructures (such as computers and projectors), training motivation (Financial and material), ICT framework which aids and guide the security and copyrights of intellectual properties.
IT Infrastructures	Respondent 1, reported that <i>the provision of IT infrastructures is in a snail movement which implies that it remains unimpressively slow.</i> While respondents 4 and 5 lamented <i>that cases where laboratory were provided, it was ill and poorly equipped.</i> The poorly equipped IT facilities are as a result of financial constraint.

Solutions to IT Challenges	Respondents 1, 2, 3, 4 and 5 agreed that <i>University management at various levels and through various steps remains supportive in tackling the challenges which are IT related in most of the institutions.</i> Respondent 2 specifically stated that the <i>provision of portal for students and staffs registration and documentation was a welcomed idea which has helped in solving managerial problems.</i>
Technical Training and Re-training	Respondent 2 and 5 revealed that <i>university management are reluctant in providing training and retraining opportunities for staffs of the university and the IT unit of the institutions.</i>
Framework for Sustaining ICT Implementation	Respondents 2 and 3 agreed that <i>their universities do not have a consistent framework for sustaining ICT implementation;</i> however, majority of the respondents such as respondents 1, 4 and 5 <i>yearn for the necessity and need to make ICT framework more workable and practicable.</i>

Answering Research Question 2: Are the available ICT facilities in the universities adequate to support successful implementation of LMS?

Adequacy of ICT Facilities

Table 17 presented below shows the level of adequacy for ICT facilities provided for teaching, learning and researching in the opinion of the respondents in this study. Overall, the result shows that, the respondents in this study agree that the ICT facilities provided in their universities are adequate. Specifically, the result shows that ICT facilities are most adequate for research collaboration having the highest mean value of 4.08. This is followed by “effective multimedia teaching support” with the mean value of 4.02. Notably, an adequate

ICT facility for educational materials has the least mean value with 3.81. In summary, this study demonstrates that, respondents are somewhat satisfied with the level of ICT facilities provided in their universities. The least mean value of 3.18 recorded for ICT facilities for educational materials showed that additional facilities need to be provided to cater for educational resources like LMS.

Table 17: Respondents'

ICT facilities provided are adequate for ...	N	Mean	Std. Deviation
accessing educational materials	489	3.81	1.083
downloading electronic resources	489	3.86	1.000
uploading electronic resources	489	3.89	.929
achieving effective teaching collaboration	489	3.96	.844
achieving effective research collaboration	489	4.08	.819
achieving effective multimedia teaching support	489	4.02	.867
achieving effective relationship with professional colleagues	489	3.91	.904
achieving effective information exchange between lecturers and students	489	3.93	.905
achieving effective usage of electronic manuscripts	489	3.92	.846
achieving effective platform for managing learning process	489	3.97	.864

Answering Research Question 3: Are Lecturers ready to use LMS in selected universities in Nigeria?

From the findings of the study, the descriptive mean (3.88) revealed that the respondents intend to use LMS for managing learning activities. Their intention to use LMS for communication and assessment purposes is also positive ($m = 3.82$, $m = 3.96$) as depicted in Table 18. In summary, lecturers are ready and willing to use LMS.

Table 18: Lecturers' Readiness to use LMS

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
BI1: I intend to use LMS for managing teaching activities	450	1	5	3.88	.790
BI2: I intend to use LMS to communicate with my students	450	1	5	3.82	.831
BI3: I intend to use LMS for assessment management	450	1	5	3.96	.757
BI4: I intend to use LMS with facilitating conditions	450	1	5	4.02	.675
BI5: I intend to use LMS to teach if it is easy to use	450	1	5	4.07	.680
BI6: I intend to use LMS to teach if it will satisfy job needs	450	1	6	4.11	.663
Valid N (listwise)	450				

Answering Research Question 4: What is Lecturers' perceived self-efficacy to use LMS?

Lecturers' Perceived Self-Efficacy

Given the results in Table 19, the Lecturers' perceived self-efficacy is positive with the highest mean of 4.1 (achieving teaching goal with LMS, cognitive ability, exposing professional hidden talents and possibilities of getting out of difficulties), 4.0 (easy of learning how to use LMS), 3.9 (teaching enhancement and ability). These are all on positive sides indicating that Lecturers perceived that they possess the required self-efficacy to use LMS.

Table 19: Lecturers' Perceived Self-Efficacy

Descriptive Statistics

	N	Mean	Std. Deviation
SE1: I can learn how to use LMS easily	485	4.0021	.76736
SE2: I can figure out anything tough about using LMS if I try hard	485	4.0619	.69256
SE3: I can achieve my teaching goals with LMS	485	4.1072	.69595
SE4: LMS will enhance my teaching efforts	485	3.8742	.79944
SE5: My ability will increase by using LMS	485	3.9629	.76781
SE6: Using LMS will develop my cognition	485	4.0784	.69387
SE7: Using LMS will enhance my teaching talent	485	4.0887	.66368
Valid N (listwise)	485		

Testing Research Hypotheses (H₀, H₀₁, H₀₂)

This section presents the analysis of testing the hypotheses formulated in this study. This is very important because the above analyses are the preceding analysis to ensure the

hypotheses in this study were tested correctly. In the present study, a standard multiple regression is employed to test for the acceptance or rejection of the formulated hypotheses (H_0 , H_{01} and H_{02}). The results of the multiple regressions are discussed in relation to the first, second and third research objectives of the study. As such, Hair et al. (2010) established three steps for interpreting the results of multiple regressions. The first of the steps is checking F value to determine the statistical significance of the model. The second step is checking for R^2 value. Finally, the last step for interpreting the result of multiple regression is to examine the regression coefficients and their Beta coefficient (b) to determine the role of independent variables that have statistically significant coefficients. Following sections present the findings of multiple regressions under each objectives of this present study.

The result presented in Tables 20a, 20b and 20c reveals the result of multiple regression which can be represented by ($F= 98.148$, $P < 0.05$). This indicates that, the model is statistically significant. Furthermore, the R^2 value ($R^2 = .288$) also indicates that, the model is fit and acceptable with regards to the argument proffered by Hair et al. (2010). Subsequently, the following sections present the interpretation of the regression analysis with respect to the formulated analysis.

H₀: The adoption of LMS in selected universities is jointly determined by institutional policy implementation and lecturers' readiness.

Table 20a: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.536 ^a	.288	.285	.45271	.288	98.148	2	486	.000

a. Predictors: (Constant), LR_Mean, IPI_Mean

Table 20b: ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	40.231	2	20.115	98.148	.000 ^b
	Residual	99.605	486	.205		
	Total	139.836	488			

a. Dependent Variable: LMS_Mean

b. Predictors: (Constant), LR_Mean, IPI_Mean

The results of the analysis of variance (ANOVA) shown in Figure 20b, $F(df\ 2, 486) = 98.148$, $p < 0.000$, indicated a statistically significant relationship (stronger than 0.05) in the independent variables (institution policy implementation and lecturers' readiness) and dependent variable (LMS adoption). With this significant relationship, the coefficient for the Beta standard deviation of (0.054 at > 0.05 alpha value for institution policy implementation and 0.513 at less than 0.05 alpha level for lecturers' readiness) in Table 20c shows higher relationship for lecturers' readiness compared to institutional policy implementation.

Table 20c: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.333	.199		6.686	.000
	IPI_Mean	.054	.042	.054	1.292	.009
	LR_Mean	.609	.050	.513	12.279	.000

a. Dependent Variable: LMS_Mean

H0₁: There is no significant relationship between institutional policy implementation on ICT and adoption of LMS in selected universities.

The result presented in Table 21 revealed the relationship between Institutional Policy Implementation and Adoption of LMS ($b = 0.258$, $P < 0.05$). The result indicates that, there is significant relationship between Institutional Policy Implementation and Adoption of LMS. As such, this hypothesis is rejected thus alternative hypothesis that "there is no significant relationship between Institutional Policy Implementation and Adoption of LMS in selected universities" is accepted.

Table 21: Testing Hypothesis H0₁

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.998	.167		17.931	.000
IPI_Mean	.259	.044	.258	5.901	.000

a. Dependent Variable: LMS_Mean

H0₂: There is no significant relationship between Lecturers' Readiness and Adoption of LMS in selected universities

The result presented in Table 22 revealed the relationship between lecturer's readiness and adoption of LMS ($b = 0.534$, $p < 0.05$). The result indicates that, there is a significant relationship between Lecturers' Readiness and Adoption of LMS. Therefore, this hypothesis is rejected thus alternative hypothesis that "there is no significant relationship between Lecturers' Readiness and Adoption of LMS in selected universities" is accepted.

Table 22: Testing Hypothesis H0₂

Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	1.435	.183		7.827	.000
	LR_Mean	.635	.046	.534	13.941	.000

a. Dependent Variable: LMS_Mean

Testing Hypothesis (H0₃): The Moderating Effect of Gender

The findings presented in this section is to test the H0₃ which in other words is to identify the significant difference between male and female lecturers' level of readiness to use LMS in selected universities. For this purpose, Independent Sample T-Test and Levene Test were conducted to compare between means of both female and male respondents. Hence, to examine the significant difference between male and female. Table 23 shows that there was no significant difference in the mean of male (4.0261) and female (4.0278) scores. Furthermore, the Levene test revealed that, there is no significant difference between male and female lecturers' readiness to adopt LMS. Therefore, this hypothesis is accepted.

Table 23: Independent Sample T Test on the Differences between Genders

	Gender	N	Mean	Std. Deviation	Std. Error Mean	Levene's Test for Equality of Variances	
Adoption of LMS	Male	198	4.0261	.35705	.02537	F	Sig.
	Female	252	4.0278	.41243	.02598	1.880	.171

Testing Hypotheses (H0₄): The Moderating Effect of Age Group

This hypothesis is formulated to examine the differences between the age groups of the respondents namely; youths and adults. This is in the aim of determining the moderating role of age on the level of lecturers' readiness to adopt LMS. For this purpose, the respondents in this study were divided into two groups of youths and adults. The youth group consists of respondents between the ages of 20 and 39, while, the adult group entails the respondents with the ages between 40 and 60. The results presented in Table 24 shows that, there is a slim difference between the mean scores of youths (3.97) and adult (4.02) group. The result of the Levene's Test shows that, there is no significant difference between youth and adult lecturers ($p < 0.751$). On this basis, this hypothesis is accepted. This result implied that, there age does not moderate the relationship between the readiness of lecturers and their adoption of LMS.

Table 24: Independent Sample T Test on the Differences between age groups

	Age Groups	N	Mean	Std. Deviation	Std. Error Mean	Levene's Test for Equality of Variances	
						F	Sig.
Readiness	Youth	240	3.9795	.45298	.02924	.101	.751
	Adult	249	4.0208	.44767	.02837		

Testing Hypotheses (H0₅): The Moderating Effect of ICT Skill

The fifth hypothesis suggests that, there is no significant difference between ICT skilled and unskilled lecturers on their level of readiness to adopt LMS. To test this hypothesis, Independent Sample T-Test was conducted using Levene's test to determine the equality of variances between two groups of ICT skilled and unskilled lecturers. For the purpose of grouping the lecturers, the researcher recomputed and grouped the respondents based on their level of familiarity. Both the "Not very familiar" and "Somewhat familiar" were considered as unskilled group. As shown in Table 25, this grouping amounts to 85 unskilled respondents. Furthermore, both the "Very familiar" and "Exceptionally familiar" were grouped as skilled. This group amounts to 397 respondents. The result presented in Table 25 revealed a significant difference between the mean scores of the ICT skilled (3.96) and Unskilled (4.21) groups. Furthermore, the result of the Levene's test evinced that, there is a significant difference between the ICT skilled and unskilled lecturers ($p < 0.05$). On this basis, the H0₅ is rejected. This result implied that, there is a significant difference between the ICT skilled and unskilled group suggesting that, ICT skill moderates the level of LMS readiness among lecturers. This suggestion is clearly demonstrated in the differences in the mean scores between the groups. The mean score of skilled respondents is greater in comparison with the mean of unskilled respondent. With this result, the respondents demonstrate that, the higher the ICT skill of lecturers the higher their readiness to adopt LMS for teaching and learning.

Table 25: Independent Sample T Test on the Differences between ICT Skilled and Unskilled

	Not very familiar and	N	Mean	Std.	Std. Error	Levene's	
	Somewhat			Deviation	Mean	Test for	
						Equality of	
						Variances	
						F	Sig.
Readiness	Unskilled	85	3.9615	.50817	.05512	4.139	.042
	Skilled	397	4.2094	.43996	.02208		

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This Chapter presents the summary of the results, conclusion and recommendations based on the findings of the study.

Summary

The study was designed to determine the level of adoption of LMS in South-west Universities in Nigeria based on Institutional Policy Implementation and Lecturers' Readiness. The independent variables are Institutional Policy Implementation and Lecturers' Readiness while Adoption of LMS is the dependent variable. It was a mixed research design which involves both quantitative and qualitative data. A review of literature was used for the process of identifying and constructing the instrument which was employed for the study. So also, a conceptual framework in line with the reviewed related literature was developed. Seven research questions and six hypotheses were formulated for the study.

The study was conducted in six selected government owned universities within South-west geo-political zone of Nigeria. Stratified, proportional and random sampling technique was used to select 538 respondents among the target population of 6,252 lecturers and five ICT directors in the six selected universities and finally 450 responses were found useful after data filtering. A set of questionnaire instrument titled IPILRLMSAQ and structured interview questions titled IQIPIALMSA. The seven research questions were analysed using descriptive statistics, regression, t-test and thematic analysis for the qualitative aspect. The main hypothesis was tested using multiple regression analysis while the five operational hypothesis were tested using regression and t-test respectively at 0.05 level of significance.

The findings revealed the following:

(i) Institutional Policy on ICT was found to still be at its infancy in majority of the selected universities in South-west Nigeria. Some universities have the ICT policy as a draft while

others are yet to institutionalise any. This implies a low level of adoption of LMS in the universities.

(ii) The Federal universities who were found to be equipped moderately with ICT infrastructures to support LMS implementation do not effectively utilize them for educational purposes while the counterpart state universities face the problem of lack of adequate ICT infrastructures.

(iii) It was evinced that the university Management do not always provide training and retraining on general ICT usage and applications unlike other sectors who are given the required technical supports.

(iv) Inadequate funding of LMS projects by the institution has greatly affected its successful implementation.

(v) There is no specific framework to drive the adoption and integration of LMS in Nigerian universities which has greatly hindered its adoption.

(vi) The evaluation of the LMS adoption model showed ($F = 98.148$, $P < 0.05$). This indicates that, the model is statistically significant. Furthermore, the R^2 value ($R^2 = .288$) also indicates that, the model is fit and acceptable. Also the values ($b = 0.254$ and 0.513 respectively at $P < 0.05$) indicate that Institutional Policy Implementation and Lecturer's readiness are jointly related to the Adoption of LMS.

(vii) The estimated value of ($b = 0.258$, $P < 0.05$) indicates that, there is significant relationship between Institutional Policy Implementation and Adoption of LMS.

(viii) The estimated value of ($b = 0.534$, $p < 0.05$) indicates that, there is a significant relationship between Lecturers' Readiness and Adoption of LMS.

(ix) The result of t-test showed that there was no significant difference in the mean of male (4.0261) and female (4.0278) scores. Therefore, there is no significant difference between male and female lecturers' readiness to adopt LMS.

(x) Given the result of the Levene's Test, there is a slim difference between the mean scores of youths (3.97) and adult (4.02) group. It means that there is no significant difference between youth and adult lecturers ($p < 0.751$). This result implied that, age does not influence the effect of lecturers' readiness on the adoption of LMS.

(xi) It was revealed that there exist a significant difference between the mean scores of the ICT skilled (3.96) and Unskilled (4.21) groups. This implies a significant difference between the ICT skilled and unskilled lecturers ($p < 0.05$). Thus, ICT skill moderates the level of LMS readiness among lecturers.

Conclusion

Based on the findings from the data collected and analyzed, the following conclusions were drawn:

(i) Institutional policy implementation and Lecturers' readiness jointly determines the adoption of LMS, which means that with the implementation of institutional policy on ICT catering for organizational support, technical and training support, motivation, financial support, infrastructural support, and consistent framework coupled with lecturers' readiness can guarantee successful integration and adoption of LMS in Nigerian Universities.

(ii) Institutional policy implementation had a positive significant with adoption of LMS. This means that appropriate implementation of ICT policy by the institutions will aid the adoption of LMS.

(iii) Lecturers' readiness had a positive significant with adoption of LMS. Thus, there is need for lecturers' willingness and preparedness to use LMS so as to ensure its adoption success.

(iv) Lecturer's readiness and self-efficacy has not been complemented by institutional policy implementation which implies that adoption of LMS in Nigerian universities cannot be successful policy been put in place.

(v) Unlike in the previous studies, gender and age of Lecturers do not influence their readiness to use LMS. Thus, they exhibit no moderating effect in this domain.

(vi) ICT perceived self-efficacy positively influenced the readiness of lecturers to use LMS. Therefore, emphasis should be placed on ICT self-efficacy to pave way for successful adoption of LMS.

Recommendations

Based on the findings and conclusions in this study, the following recommendations are made:

(i) There should be a functional policy document and blue prints to give directions, objectives, action plans and necessary evaluation of LMS adoption in Nigerian universities.

(ii) Institutions in Nigeria should be mandated to put in place appropriate framework and strategies in so as to encourage the design and delivery of LMS to lecturers.

(iii) The institutional ICT policy with regards to using LMS should give priority trainings and retraining in facilitating ease of use of LMS platforms.

(iv) Nigerian higher education policy makers and curriculum designers should spell out the advantages of using technology and also organize training sessions on how to use them effectively.

(v) National Information Technology Development Agency (NITDA) should establish a benchmark with regards to minimum ICT requirements in the Nigerian universities capable of achieving successful adoption and implementation of LMS.

(vi) Adequate financial budget should be made for the provision of required ICT infrastructures in Nigerian universities.

Suggestions for further study

Based on the scope and limitations of this study, further researches are encouraged as follows:

- (i) Other educational stakeholders in the Nigerian universities such as students and non-teaching staff can be explored in future researches.
- (ii) For the possibility of generalizing the findings across all types of university, private universities can be included in the future.
- (iii) Future study can also expand the scope by sampling all universities in the six geo-political zones of the country.

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