FACTORS INFLUENCING UNIVERSITY MANAGERS' PARTICIPATION IN DISTANCE EDUCATION: A CASE OF PUBLIC UNIVERSITIES IN KENYA

BY

NAOMI WAIRIMU M. GIKONYO

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DECLARATION

This thesis is my original work and has not been presented for a degree or any other award in any other university.

Signed..... Date...10th August 2012

Naomi Wairimu M. Gikonyo

L80/80144/2010

This thesis has been presented with our approval as the University Supervisors.

Signed..... Date .....10.08.2012.....

Dr. Christopher M. Gakuu

Senior Lecturer

Department of Extra-Mural Studies

University of Nairobi

Signed.....Date.....10.08.2012.....

Dr. Guantai J. Mboroki

Senior Lecturer

Department of Educational Studies

University of Nairobi

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DISCLAIMER

The views and ideas expressed in this thesis are the Author's – Naomi Wairimu M. Gikonyo – and do not reflect the official position of the University of Nairobi, institutions or individuals who provided support during this study.

This is my original work and I remain responsible for any errors, omissions or claim that may arise from this work.

Naomi Wairimu M. Gikonyo. ..... Date 10/08/2012

DEDICATION

To my Husband and Children; and Mum and Dad, David, Wanjiru and Gathoni; and Gathoni and Mwangi. Your prayers, support and encouragement were a true inspiration to accomplish this task. Thank you, God bless you.

ABSTRACT

The world today continues to move into the development of various non-traditional methods of reaching the growing numbers of people who cannot, or who will not attend conventional institutions, but who choose to learn away from their teachers. This has created the need for universities to direct resources and efforts to the macro-factors that would increase university managers' participation in distance education and also increase the rate of adoption of distance education in the universities. This study was concerned with the analysis of factors influencing university managers' participation in distance education in public universities in Kenya. A lot of resources have been committed to the development and integration of e-content at the public universities in Kenya; but there has not been much implementation of this content and participation in distance education. It has been established that both lecturers and students' attitude towards technology-based learning is favourable but the participation of managers and the factors that influence this participation have not been established. The study was guided by the following objectives: to establish the extent to which managers' level of knowledge in distance education influences their participation in distance education activities; to establish the extent to which availability of distance education support facilities influences managers' participation in distance education activities; to establish the extent to which university managers' attitude towards distance education, influences their participation in distance education activities; to identify any significant difference between the factors that influence managers participation in distance education activities at different levels. The research employed cross-sectional descriptive survey design; and multi-stage stratified sampling design to ensure fair representation of all the public universities in Kenya. The findings indicated that the managers' level of knowledge significantly influences their participation in distance education activities. It was also established that university managers' attitude towards distance education is not supportive; and that there is no significant difference in factors that influence university managers' participation in distance education at the different levels of management. It is recommended that: Managers be trained in distance education to enable them embrace and participate in distance education activities; managers' attitude change from non-supportive to supportive attitude, through persuasive communication; availing necessary support facilities; and formulation of policy framework to guide participation in distance education. This research is not exhaustive and further research is recommended on: A comparative study in factors that influence managers' participation in distance education in public and private universities; and a replica research in factors that influence university managers' participation in distance education in public universities, after a number years.

LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA: Analysis of Variance

DE: Distance Education

DL: Distance Learning

DT: Distance Teaching

e-Learning: Electronic Learning

ICT: Information Communication Technology

KU: Kenyatta University

ODL: Open and Distance Learning

OLE: Online Education

OLI: Online Instruction

UoN: University of Nairobi

US: United States

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Education is one of the main indispensable pillars of development and its accessibility is critical in a country's development agenda. It is an element for socio-economic, political and technological development the world over; and higher education in particular is a crucial instrument for sustained wealth creation (Psacharopoulos, 1985; Denison, 1962; RoK, 1965). Education plays a major role in development of any country's economy and helps in alleviating poverty, (Gakuu, 2006). Since education is a means of empowering an individual to effectively and efficiently perform in a society and participate in raising their living standards.

The traditional face-to-face education is increasingly becoming inadequate to cater for higher educational needs (Vision 2030). This calls for more innovative ways of educating those who demand higher education. Distance education caters for demand of higher education by those who may not fit in the traditional classrooms due to various reasons such as family and work commitment.

Globalization and the convergence of technologies into what is now commonly called Information Communication Technology (ICT) has made the role of distance education in educational institutions to take on new and radical dimensions; and as Bill Gates puts it, 'we are living in a truly fascinating time of change and promise'. Unfortunately, change is normally resisted; and as there was resistance and hostility among politicians and skepticism in educational circles when the first cohort of distance learners joined

Open University in United Kingdom in 1970, (Keegan, 1996), so this might be the case today in Kenya, over thirty years later.

The definition of distance education has been refined and redefined over the years. This is seen in the evolution of Moore's distance education definitions. In 1990, Moore described distance education as all arrangements for providing instruction through print or electronic communications media to persons engaged in planned learning in a place or time different from that of the instructor or instructors. Later, Moore and Kearsley (1997) refined the definition to specify that the learning is planned and includes organizational and administrative arrangements. Most definitions specify that distance education is teaching and learning that occurs asynchronously. This is where the learner(s) and instructor are separated by time and space and use a variety of technical media to support the teaching and learning (Keegan, 1996; Eastmond, 1998; Locatis & Weisburg, 1997).

Higher education, through distance education, has expanded significantly all over the world and according to UNESCO (1998), the global enrolment for higher education increased from 420 million to 1105 million in 1995. This rapid growth in demand is attributed to social status attached to university degree and shortage of employment opportunities with low level qualifications, (Rambo, 2008). UNESCO further attributes the high demand for higher education to failure of mainstream education systems to cater for the increasing popular demand for higher education. In Kenya, for instance, over 97,000 learners qualified for higher education in the year 2010; but the facilities available in the seven public universities to cater for regular or traditional classes can only accommodate about 24,000 (Daily Nation 1st March 2011). This is less than 25% of the

total qualified students. This situation places new emphasis on alternative methods of instruction to avoid wastage.

Distance education offers new possibilities for universities to provide equal learning opportunities for their students. Many universities have not embraced distance education in general for fear that it would undermine the traditional educational system, limit student interaction with peers and teachers and eradicate the platforms where deliberate academic discourse takes place, (Mathews, 1999). Access to educational opportunities for all is a major challenge facing most developing countries. Distance education broadens access to education, (Gakuu, 2006); and the adoption of distance education in the institutions of higher learning will provide alternative methods of ensuring that the social demand for higher education is met.

In view of the importance placed on the role of education to a country's development, the government of Kenya has over the time put enormous efforts towards education of its citizens since independence. This is exemplified by the continued huge budgetary allocations to the education sector, which currently stands at 40% (National Budget 2008/9). Kenya is a signatory to various education-inclined international protocols for example, Jomtien Declaration 1990 which emphasizes on education for all, and Dakar Declaration of 1966 which encourages adult education and life-long learning, among others as the policy commitments and legislations on education. The Kenya Education Commission of 1964, for instance, endorsed free primary education as a valid objective of educational policy. Its implementation has continuously posed a problem. This is being overcome by provision of part-time classes and correspondence courses supported by radio broadcasts as spelt out in the Sessional Paper Number 10 of 1965 and the 1966

National Conference on Education and Rural Development, the Board of Adult Education Act (1966 revised in 1967), the 1976 National Development Committee on Education Objectives and Policies, 1978 Presidential Directive on fight against illiteracy, Master Plan of Education and Training (MPET), 1999 Total Quality Education and Training (TIQET) as well as the Free Primary Education (FPE) launched in 2002 and the Free Secondary Education in that was proposed in the year 2008 among others are good indicators of such commitment. Despite such enormous commitment in terms of policies and resources, a remarkable number of Kenyans do not have access to education especially post-primary education, (Board of Adult Education, 2000).

Strategic plans of the public universities have been drawn and policies formulated that supports the development of distance education. For instance, the University of Nairobi 2005-2010 strategic plan clearly indicates that there is need to expand the use of computers and Internet in learning. The VLIR-UoN Project, one of the University of Nairobi's project's objectives, seeks to ensure that the University's programmes are gradually converted and availed on-line to more learners (OPLN Newsletter, 2003).

The role of university management in the adoption and implementation of distance education cannot be underestimated. University managers formulate policies, ratify programmes, finance the programmes, prepare budgets for each academic year and also administer scholarships. Their participation and willingness to participate in distance education would determine its success; and as Dillon and Walsh, (1992) put it, the acceptance of distance education heavily depends on the perspectives of the university management, who form part of the faculty as well.

Generally, there has been slow move towards participation in distance education at the Kenyan public universities. Distance education was established in the country in the late 1960's; and only a few academic programmes are offered by the print media and minimal number available on-line, over forty years later. Distance education is certainly an arena for change in higher and adult education; and the slow adoption of innovation in instructional technology, often drags this vital change even as the recent technological and competitive pressures to innovate through distance and adult education, are changing the markets for producers and consumers, (Edtech, 2000).

Looking closely at policy documents and strategic plans of the public universities in Kenya, it is evident that there is an aspect of use of ICT in teaching, but there seems to be limited participation in distance education by university management to enforce and implement the change from the traditional delivery modes. For instance, the University of Nairobi's Strategic Plan (2008-2013), has its third objective as 'to actively promote diversified modes of delivery' which is to be realized through the use of strategies such as: encouraging use of technology in teaching, and promoting and popularizing open and distance education in all programmes. Contrary to this commitment, part of the management disagrees that all courses can be taught through the traditional face-to-face mode and also in distance learning mode, irrespective of the innovations.

This has denied access of education to people who would otherwise access it through distance education. Syagga Report, 2001, notes that learning and teaching practices in the University of Nairobi have a strong and enduring tradition whose approaches are largely influenced by the campus-based systems. The report further notes that the changing learning environment and new trends remain an alien entity far removed from education

systems and methods that continue to apply traditional teacher-centered approaches and methods.

The alien trends of distance education have been resisted and their acceptance really will greatly be influenced by the university management participation in distance education. The problem is aggravated by some universities that have a dual mode of instructional delivery, the face to face or the so called the regular mode and the distance mode, and preference is given to regular mode over distance mode. According to Gakuu (2006), there has been a very low rate of adopting distance education and the use of ICT based instructional delivery modes in the University of Nairobi. This situation has hampered the expansion of distance education to all disciplines in the university. The situation is not different in other public universities in Kenya as Gakuu observed, factors that influence participation in distance education in other institutions in the world are basically the same. He cited lack of extrinsic rewards and support as a major factor that hinders adoption of ICT in delivering instruction in distance education which can only be availed by the university management.

Kenya's Ministry of Education in its pursuit of quality education, recognizes that ICT is not only an important tool for education but also a crucial medium for curriculum delivery (Minister's speech, August 2006). For this reason, the ministry aspires to provide ICT access to all learners.

Despite these efforts and commitment of the ministry to encourage content delivery through ICT, the public universities in the country lag behind in embracing this alternate method of curriculum delivery which is as good, in all aspects, as the traditional face-to-

face method, (Schulman & Sims, 1999); (Thirunarayanan & Perez-Prado, 2002). National policies have been formulated in support of ICT in education evident through various projects for instance, Pan-African Research Agenda on Pedagogical Integration of ICT in teaching and learning. Computer for Schools, (CFS), a computer project, is supplying computers to schools. Two hundred schools were selected to pilot the use of computers in the teaching and learning process in schools in Kenya through CFS.

The situation is different in the public universities. Teachers are trained and content developed, but use of technology in teaching remains minimal. One may argue that the resources are not enough but even where resources and facilities are adequate, distance education is not embraced as a priority mode of curriculum delivery. Looking at the situation in Kenya today, public universities are struggling with curriculum delivery through distance mode. There has been sprouting of open and distance learning centres which at times appear to be decentralization of the traditional teaching (face-to-face) at the mother institutions to community levels. Internet connectivity may have been a hindrance but not anymore, especially with the wireless connection. However, even for adult learners who may have internet connectivity at their offices and houses, universities have not fully developed courses that they can pursue at the comfort of their homes and offices. This is a major drawback in the development of distance education which students would readily embrace, since their attitudes towards distance education and online courses is favourable due to their ability to log on any time, day or night from practically anywhere, as observed by Murray (2001).

The University of Nairobi, the largest and the oldest public university in the country, has been training the lecturers on the writing of units and modules in e-format so that they

can be available on-line and off-line through CD-Roms, but only a small fraction of these courses has been rolled out for use by the learners through the university's e-learning platform. This shows that the management is either not convinced that these materials are as good as face-to-face learning, or they are not ready to participate in distance education, at least, for the time being.

A study by Wilson (2001) on higher education faculty members from Kentucky State, reveals that faculty ranked on-line instruction as the effective mode of all modes available. One of the challenges universities face is to increase access to university education. The government has also made a priority that all public universities must find ways of increasing enrolment to qualified students. This has made Maseno University to come up with a policy to consider the use of ICT and related emergent technologies to pilot this expansion through open distance and electronic learning programmes. The intention is to ensure the enrolment increases. www.maseno.ac.ke. This is yet to be implemented fully.

Vision 2030, in its social strategy of investing in the people of Kenya lays emphasis on education and training, gender, equity and poverty eradication. It proposes intensified application of science, technology and innovation (STI) to raise productivity and efficiency levels across the three pillars (economic, social and political pillars). It recognizes the critical role played by research and development (R&D) in accelerating economic development in newly industrializing countries in the world. It aims at reducing illiteracy by increasing access to education, improving transition rates to technical institutions and universities and raising quality and relevance of education, (Vision 2030). This may be achieved by providing incentives for efficient use of existing

knowledge through technology and increasing access through distance education. This may take long to be realized in most universities that have ICT matters being addressed at a departmental level, apart from the University of Nairobi which has a school (School of Informatics and Computer Studies) that deals with ICT issues at the university.

Maseno University has had its ICT Department hidden under the School of Pure and Applied Sciences; and it views its primary role as offering common course on introduction to computer applications to students from the Schools of Education, Business, Health Sciences, Humanities, and Environmental Studies, (www.maseno.ac.ke 2010). In its latest innovations, it has established an e-campus that proposes to offer programmes through e-learning starting August 2012, (www.maseno.ac.ke 2012). From its strategic plan, Maseno University's greatest challenge is to increase access to university education. The university aims at overcoming the challenge through e-learning and this requires support of the entire management.

The challenge of increasing access to quality university education has made the University of Nairobi to consider use of ICT and related emergent technologies in its provision of education. This will offer access to university education to students who qualify but are not admitted to public universities through Joint Admissions Board (JAB). This has brought increased enrolment into programmes available through distance mode for instance, in 2008 there were about 600 students graduated with a bachelor of education, face-to-face programme and over 1400 graduated from the same programme, distance mode.

Moi University's Department of Information Technology mission is to conceive and design courses that enhance and support effective organisational information management. The department considers effective management of information assets and resources as critical to successful organisational performance, innovativeness and competitive edge, (www.mu.ac.ke 2009). It does not seem to be concerned with content delivery through alternative means. The university has recently established an institute for open and distance learning which aims at increasing access to university education.

The Vice-Chancellor of Kenyatta University in her welcome speech to persons who will visit the university's web site asserts that the university is making a conscious effort to internationalize Kenyatta University in terms of curricula, teaching and research. Academic links have and are continuing to be established between Kenyatta University and universities in all the continents of the world in order to make Kenyatta University develop world-class standards (www.ku.ac.ke): The University offers courses such as computer science at various levels, software engineering and information technology, and there is need for concerted effort to develop distance education materials in pave way for programmes to be offered through distance mode. In a bid to internationalize the university and the curricula, the management needs some change in its organizational structure and culture to keep pace with the current change in education arena.

Egerton University has only a Department of information technology, which offers few basic information technology courses at certificate and diploma levels and one degree course. The university has been restructured and established a college for open and

distance learning that aims at increasing access to programmes offered at the university (www.egerton.ac.ke 2010). If the university management could embrace distance education, they could capture more qualified students to access higher education to counter the rising demand as well as raise more revenue for the university.

From the aforementioned discussion, the status of distance education in various public universities in Kenya is highlighted. The University of Nairobi has a college that handles distance education alongside regular education courses. Kenyatta University has an institute for open, distance and e-learning. Moi University has a center of open and distance learning and Egerton University has a college for open and distance learning. However, many programmes are yet to be offered through distance mode in the public universities. Open and distance learning focuses on expanding access, quality and equity to education to enhance responding to the demands on education as emphasized in Constitution of Kenya 2010 and Vision 2030, (Ministry of Education, Feb. 2012).

1.2 Statement of the Problem

University education has been in the country for over fifty years now and the country cannot boast of even a single open university. There is a plan for an open university, but this has not been realized yet. Most universities in the country offer a wide range of programmes but only less than 10% of these programmes are available through distance mode. However, e-learning content has been developed and many lecturers have been trained in distance and e-learning content development, yet programmes available through distance mode and online remains minimal. This has denied many people access to university education. Open and distance learning in education is merely mentioned in

Sessional Paper No. 1 of 2005 and lacks policy framework for implementation, (Ministry of Education, Feb 20102).

The government policies are supportive of technology-based distance education methods of instruction through the support of ICT in curriculum delivery and policy formulation; the lecturers' and the learners' attitude towards the adoption of ICT in teaching and learning are also not negative, and the factors influencing lecturers adoption of distance education has been established, (ICT policy, 2005, Gakuu, 2006 and Omwenga, 2003). There is need to establish the factors that influence managers' participation in distance education. If ICT access is improving, then why are the universities in Kenya not encouraging technology-based instruction? This study therefore sought to analyse the factors that influence the university managers' participation in distance education in public universities in Kenya.

1.3 The Purpose of the Study

The intent of this study was to investigate the factors that influence university managers' participation in distance education in public universities in Kenya.

1.4 Research Objectives

The study was guided by the following research objectives:

i. To establish the extent to which university managers' level of knowledge in distance education influences their participation in distance educational activities.

ii. To establish the extent to which availability of distance education support facilities influence managers' participation in distance educational activities.

iii. To establish the extent to which university managers' attitude towards distance education influences their participation in distance educational activities.

iv. To identify any significant difference between the factors that influence managers' participation in distance educational activities at different levels of management.

1.5 Research Questions

i. To what extent does the managers' level of knowledge in distance education influence their participation in distance educational activities?

ii. To what extent does the availability of distance education support facilities influence managers' participation in distance educational activities?

iii. To what extent does the attitude of university managers towards distance education influence their participation in distance educational activities?

iv. Is there any significant difference between the factors that influence different levels of managers' participation in distance educational activities?

1.6 Research Hypotheses

The study was guided by the following six hypotheses:

1. H_o: University managers' level of knowledge in distance education has no significant correlation with their participation in distance education activities.

   H_a: University managers' level of knowledge in distance education has significant correlation with their participation in distance education activities.

2. H_o: University managers' attitude towards distance education has no significant correlation with their participation in distance education activities.

   H_a: University managers' attitude towards distance education has significant correlation with their participation in distance education activities.

3. H_o: There is no significant difference in the factors that influence different levels of university managers' participation in distance education activities.

   H_a: There is significant difference in the factors that influence different levels of university managers' participation in distance education activities.

1.7 Delimitations of the Study

This study was restricted to the factors that influence university managers' participation in distance education in Kenyan public universities. The factors that were analysed were: University managers' level of knowledge in distance education; university managers'

attitude towards distance education; and availability of support facilities. The university managers considered here were the chairmen of teaching departments, deans of faculties and schools, directors of institutes, principals of colleges and campuses and the deputy vice-chancellors of the various public universities in Kenya.

This research study was concerned with university managers' participation in distance education at the Kenyan public universities. The samples were drawn from the current seven public universities and the conclusions were not extended beyond this population sample. The sampling was done such that it represented the population; concepts and terms were clarified to the respondents. Questionnaires were administered to the universities and their constituent colleges all over the country.

1.8 Significance of the study

Out of this study, it is hoped that universities managers will be aware of their level of participation in distance education. Further, the factors influencing their participation in distance education will be elicited. The university management will be in a position to develop a strategy of dealing with the factors (level of knowledge in distance education, attitude towards distance education and availability of support facilities) thus accelerating the rate of adopting distance education and the related technology- based teaching methods. It will also enable the university to understand the relationship between university management attitude towards distance education and their participation in distance education as the universities embark on open and distance learning, and more of adult education. The study findings can be used by other local and regional universities

that are embarking on distance education in their institutions, because they share relatively the same educational environment. Without the understanding of the factors influencing university managers' participation and adoption of distance education, the implementation of distance education would be difficult because university management is among the major stakeholders in distance education and their role is critical to its successful implementation. This research suggested areas for further research that will form the foundation of other future research studies on participation and adoption of distance education and related issues in adult and distance education. This research has analyzed the factors that influence the university managers' participation in distance education and has developed an intervention strategy that will improve the distance education in public universities.

1.9 Assumptions of the Study

This study was based on the following assumptions:

(i) The sample drawn is representative of the target population.

(ii) The study population is normally distributed.

(iii) The results can be generalized to the entire population.

1.10 Limitations of the Study

In conducting the study, the researcher encountered limitations of financial constraints that made it difficult for the researcher to gather information from a larger sample. There was limitation of time since the study was to be carried out within the set duration of time for a Ph.D study. The outcomes of this study are therefore as per the time of study and are bound to change with time. The respondents were not readily available to respond to the

instruments since they are busy persons at the universities. This required the researcher to do a lot of follow-up to ensure an acceptable return rate of the questionnaires. This study was confined within the public universities in Kenya and therefore, the findings can only be generalized to cover other universities in the country.

1.11 Organization of the Study

This study is organized in five chapters. Chapter one presents the introduction; chapter two explores the related literature; chapter three explains the methodology used; chapter four shows how the data were analysed and interpreted and lastly, chapter five presents the summary, discussion, conclusion of the findings and the recommendations.

1.12 Definitions of Significant Terms

Many variables in social science research like attitude are conceptualized and defined in dictionary terms, but cannot be observed directly. Such terms need to be defined as they are used in the study. This stipulates the way the terms can be observed and measured, Best (1993).

Adopt - To take up something such as plan, idea or practice and follow it, in this case, distance education. In this study, it means the uptake and use of distance education by public universities.

Adoption - University's management acceptance or rejection of distance education.

Attitude – A learned tendency to respond to people, concepts and events in an evaluative way. Attitudes are composed of beliefs, feelings and action tendencies.

Distance education - All arrangements for providing planned teaching and learning that occurs asynchronously using a variety of technical media to support the teaching and learning.

Participation - To take part in one aspect or the other in DE.

Perception - The process by which we organize, integrate and recognise patterns of stimuli.

Online instruction - Use of computer networks, such as internet, to deliver or manage learning resources an experiences. Instructors and students may be located in different places at different times. Interactions take place over the network.

Readiness - University management's state of mental readiness, or having been made ready or prepared for use or action, to participate in on-line instruction.

University management – Academic members of staff who serve at the top level management and who are involved in most decision-making process. These include the vice-chancellors, deputy vice-chancellors, college principals, deans of

faculties and schools; and chairmen of academic departments.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature review presented here is collected from both primary and secondary sources. It is organized in thematic areas as derived from the research topic. First, overview of distance education is presented. This is followed by the themes: participation in distance education, attitude towards distance education, distance education support facilities and the knowledge on distance education. These are the factors that influence participation in distance education of university managers that are examined in this study. The theoretical and conceptual framework is also presented and finally, a chapter summary.

2.2 Distance Education

Distance education as a discipline has its own meaning, characteristics, history, philosophy, models, and theories. In this section, each one of these aspects of distance education is discussed to offer an overview of distance education.

2.2.1 The meaning of distance education

Distance education has many definitions. These definitions capture issues on educational access, information technology and communication infrastructure. In this study, distance education is seen as planned learning that normally occurs in a different place from where teaching is taking place, and as a result requires special techniques of course design,

special instructional techniques, and special methods of communication by electronic and other technology, as well as special organizational and administrative arrangements, (Moore 1998). Distance education has challenges such as quality of instruction, hidden costs, misuse of technology, and the attitudes of instructors, students, and administrators. These challenges, as observed by Moore (1998), are inter-related and hence affect the expansion of distance education.

2.2.2 History of Distance Education

Distance education dates back to early 17th century in the form of correspondence education, but technology-based distance education can be linked to the introduction of audiovisual devices into the schools in the early 19th century in United States and Europe. The first catalogue of instruction films appeared in 1910 (Reiser, 1987) and in 1913, Thomas Edison proclaimed that, due to the invention of film, the school system was to change completely in the next ten years" (Saettler, 1968).

The pioneers of distance education used the best technology of their day, the postal system, to open educational opportunities to people who wanted to learn but were not able to attend conventional schools. People who benefitted mostly from such correspondence education included those with physical disabilities, women who were not allowed to enrol in educational institutions open only to men, people who were working during normal school hours, and those who lived in remote regions where schools did not exist (Saettler, 1968). An Englishman, Isaac Pitman, is credited as an early pioneer. He began teaching shorthand by correspondence in Bath, England in 1840. Students were

instructed to copy short passages of the Bible and return them for grading via the new penny post-system.

Introduction of television as an instructional medium appears as an important entry point for theorists and practitioners outside the correspondence education tradition, and marks parallel paths for correspondence study and instructional media. Although instructional radio failed in the 1930s, instructional television was viewed with new hope. In 1932, seven years before television was introduced at the New York World's Fair, the State University of Iowa began experimenting with transmitting instructional courses. World War II slowed the introduction of television, but military training efforts had demonstrated the potential of using audio-visual media in teaching (Wright, 1991).

American university level distance education began in 1874 at Illinois Wesleyan University where bachelor and graduate degrees could be obtained in absentia. The Chautauqua movement, which started in about 1882, gave the popular push to correspondence education, (Wright, 1991).

The teaching of academic and vocational courses by correspondence became quite popular by 1900 and problems of quality and ethical practice came with the popularity. The National Home Study Council (NHSC) was formed in 1926, partly to address these issues. Accreditation of college and university distance programmes fell to the National University Extension Association in 1915, (Wright, 1991).

The invention of educational radio in the 1920s and the advent of television in the 1940s created important new forms of communication for use in distance education. Educators

used these new technologies to broadcast educational programmes to millions of learners. thus extending learning opportunities beyond the walls of conventional teaching institutions.

The development of reliable long-distance telephone systems in the early 1900s also increased the capacity of distance educators to reach new student populations. But telephone systems never played a prominent role in education until the introduction of new teleconferencing technologies in the 1980s and 1990s.

Teleconferencing systems made it possible for teachers to talk with, hear, and see their students in real time - that is, with no delays in the transmissions - even if they were located across the country or around the world.

In the early 1960s, the innovative Midwest Program on Airborne Television Instruction (MPATI) launched its "flying classroom" from an airfield near Purdue University in Lafayette, Indiana, to broadcast instructional programs to school systems and the general public in Indiana and five surrounding states (Smith, 1961). At its peak, MPATI would transmit educational television programs to nearly 2,000 public schools and universities reaching almost 400,000 students in 6500 classrooms in Indiana and five surrounding states (Gordon, 1965).

Distance education, increasingly uses combinations of different communication technologies to enhance the abilities of teachers and students to communicate with each other. With the spread of computer-network communications in the 1980s and 1990s, large numbers of people gained access to computers linked to telephone lines, allowing

teachers and students to communicate in conferences via computers. Distance education also makes use of computer conferencing on the World Wide Web, where teachers and students present text, pictures, audio, and video. File sharing and communications tools like email, chats and audio and video conferencing, are integral to the Internet model.

2.2.3 Characteristics of Distance Education

Distance education has unique characteristics that differentiate it from the conventional system of education. Keegan (1996) analyzed distance education and came up with the following characteristics: There is separation of teacher and learner during the learning process; the influence of an educational organization both in the planning and preparation of learning materials and in the provision of student support services; the use of technical media – print, audio, video, or computer – to bridge the separating gap between teacher and the learner and carry the content of the course; the provision of two-way communication so that the student may benefit from or even initiate dialogue; and the absence of the interaction among the learners during the learning process so that people are usually taught as individuals rather than in groups, with the possibility of occasional meetings, either face-to-face or by electronic means, for both didactic and socialization purposes. For distance education to be effective, these characteristics should be considered.

2.2.4 Theories of Distance Education

Distance education is founded on various theories that explain its existence. Distance learning applications should begin with a clear understanding of the learners, their educational needs and its foundation. Different theories explain distance education in different ways. Keegan (1986) proposes an initial classification for some of the distance education theories as shown in Table 2.1.

Keegan identified elements of separation of learner and teacher geographically, input of educational organization in planning and development of learning materials and student support infrastructure, technical media that joins teacher and content, two-way communication that enables dialogue between teacher and learners and individual learning.

Table 2.1: Theories of Distance Education

Classes of Theories	Main Theme	Key Words
Theories of independence and autonomy	DE is the independence of students	Learners' autonomy Distance between teacher and learner
Theories of industrialization of teaching	DE is the industrialized form of teaching and learning	Mechanization, assembly line, mass production and students
Theories of interaction and communication	Distance teaching supports students motivation, promote learning pleasure, creates feeling of rapport between learner and DE institution	Motivation, learning pleasure, rapport between learners and distance institutions

Source: Keegan 1986.

Theories of independence and autonomy place the learner in the middle of the educational process (Keegan, 1996; Saba, 2003). According to Saba (2003), the centrality of the learner is one of the distinguishing features of distance education, and understanding this fact is essential in discerning why it is essentially different from other forms of education.

Theory of industrialization is another theory in distance education. Peters, Keegan, Garrison, and Anderson advocate for this theory and are mainly interested in how the field functions and how it is organized. Structural concerns and issues are the main foci of this group of theories, along with how those issues influence the teaching and learning process (Keegan, 1996; Saba, 2003).

Theories of interaction and communication by contemporary ideas and views of Holmberg, Baath, Smith and Stewart highlight the constructs of interaction and communication as important factors in distance education (Keegan, 1996). These theories' main theme is distance teaching that supports students, motivation and promotion of learning pleasure, creating feeling of rapport between the learner and distance education institution.

Theories of distance education, guide on the provision of distance education as the distance education provider should aim at increasing student autonomy, interaction and communication between the teacher and the learners and proper planning of distance education.

2.2.5 Philosophy of Distance Education

One of the fundamental beliefs (philosophy) in distance education is that the instructional leader requires a unique bundle of competencies. He needs to know how to make best use of the technologies available in order to personalize instruction and actively involve students in the learning experience (Dooley, 2005). The philosophy of constructivism also applies in distance education, where a learner acquires the information or solves problems based on existing learning infrastructure.

Distance education is an innovation and designing interactive components for instruction and feedback affects the philosophy of distance education. Rogers (2003) defines an innovation as an idea, practice or object that is perceived as new by an individual or other unit for adoption.

2.2.6 Models of Distance Education Institutions

Distance education may be organized using different models: Linear planning model; creative collaboration model; participation/ partnership model; and orchestrated congruence model. There are three main models of distance education institutions. Single mode distance education institutions; Dual mode distance education institutions; and consortium model of distance education. The single mode reflects autonomous distance education institutions like the Open University or the open school. Such institutions focus on organisation or distance teaching activities for distant learners only. These institutions do not have on-campus regular students, Keegan, 1996).

The dual mode distance education institutions are institutions that organise both face-to-race regular programmes as well as distance education programmes. Unlike single mode open universities, distance education programmes of traditional universities, remain under the control of face-to-face system in matters of curriculum development and examination, the consortium model is an emerging concept. It aims at optimum level of sharing of resources of different kinds of institutions, organising distance education programmes under one consortium, (Moore 1995).

2.2.7 Policy Framework and Practice in Distance Education

Distance education requires policy framework at the national and institutional levels for it to function properly and receive the attention it requires. There are seven policy areas that are fundamental to development and management of distance education. The seven areas are: academic, governance/administration/fiscal, faculty, legal, student support services, technical and cultural, (Berge, 1998). Table 2.2 presents policy analysis framework for distance education.

Table 2.2: Policy Analysis Framework for Distance Education

Policy Area	Key Issues
Academic	Calendar, Course integrity, Transferability, Transcripts, Student/Course evaluation, Admission standards, Curriculum/Course approval, Accreditation, Class cancellations, Course/Program/Degree availability, Recruiting/Marketing
Governance/ Administration/ Fiscal	Tuition rate, Technology fee, FTE's, Administration cost, State fiscal regulations, Tuition disbursement, Space, Single versus multiple board oversight, Staffing
Faculty	Compensation and workload, Development incentives, Faculty training, Congruence with existing union contracts, Class monitoring, Faculty support, Faculty evaluation compensation and workload, Development incentives, Faculty training, Congruence with existing union contracts, Class monitoring, Faculty support, Faculty evaluation
Legal	Intellectual property, Faculty, Student and Institutional liability
Student Support Services	Advisement, Counseling, Library access, Materials delivery, Student training, Test proctoring, Videotaping, Computer accounts, Registration, Financial aid, Labs
Technical	Systems reliability, Connectivity/access, Hardware/software, Setup concerns, Infrastructure, Technical support (staffing), Scheduling, Costs
Cultural	Adoption of innovations, Acceptance of on-line/distance teaching, Understanding of distance education (what works at a distance), Organizational values

Adapted from Gellman-Danley and Fetzner, 1998; Berge, 1998

This framework has evolved into a three-tier policy analysis framework tool that addresses three major issues in distance education, that is, the student support, the faculty and management of the distance educational process. This is presented in Table 2.3.

Table 2.3: Three Tiered Policy Analysis Framework for Distance Education

Policy Area	Description
Faculty	Rewards (e.g., stipends, promotion, etc.); Support (e.g., student help, technical assistance, training, etc.); Opportunities to learn about technology and new applications (e.g., release time, training, etc.); Intellectual property (e.g. ownership of materials, copyright, etc.)
Students/Participants	Support (e.g., access to technology, library resources, registration, advising, financial aid, etc.); Requirements and records (e.g., residency requirements, acceptance of courses from other places, transfer of credit, continuing education, etc.)
Management Organization	Tuition and fee structure; Funding formula; Collaboration (e.g., with other departments, units, institutions, consortia, intra-and inter-institutional, service areas, etc.); Resources (e.g., financial resources to support distance education, equipment, new technologies, etc.); Curricula/individual courses (e.g., delivery modes, course/programme selection, plans to develop, individual sequences, course development, entire programme delivery, interactivity requirements, test requirements, contact hour definitions, etc.)

Adapted from Gellman-Danley and Fetzner, 1998; Berge, 1998

The field of distance education is rapidly changing with the growth of technology particularly in the use of Internet and World Wide Web (the Web or WWW). Distance education provides opportunities to learn anywhere and anytime. Distance education that utilizes synchronous and asynchronous tools, has become an alternative to the traditional classroom environment because these tools offer the promise of flexibility and individualization and can reach several kinds of learners. For example, it will be able to

reach commuter students, full-time working students, students having families, students with disabilities, and those who change residences. Therefore, many institutions of higher education are increasing the courses or degree programmes that are offered entirely through distance (Hanna, 1998; Hara & Kling, 1999; Heeter, 1999; Khan, 1997; National Center for Education Statistics, 1998, 1999; Office of Higher Education, 2001).

As public universities in Kenya struggle to increase access to education, distance education provides a window of opportunity. Distance education is seen in three historical themes which describe its position in the provision of education-democratization, liberal education and educational quality, (Jorge, 2006). As interests and confusion regarding distance education increase in regard to methodologies and media, benefits of distance education outweigh the barriers to adopting distance education, (Loegering, 2000).

This distance education mode of instruction will inevitably be part of instruction in the learning institutions, especially the universities, in the near future. But before this is realized, it is critical that all stakeholders be fully supportive and in favour of the process. There has been educational crisis which is intensifying today and has yielded several educational challenges among them, the changed learning needs where more people want to learn different things; problems of financing, where reduced funding demands more effective use of resources; increased concern about democratization and fairness, which calls for elimination of socio-economic, gender and geographical inequities; a perceived need for closer ties to day-to-day life, where there is need for harmonizing education and culture, relating education to work, linking education to peace and survival; call for

changed teaching and learning strategies, where flexible and democratic educational planning, provision of learning networks and finally more self-direction in learning.

Unfortunately, many change initiatives are launched without such consideration which results in their failure because they lack the blessings and support of most stakeholders, (Gakuu, 2006). According to Omwenga (2004), adoption of ICT depends on the learners' attitudes; and according to his study, the learners' attitude is not negative. Gakuu (2007) observed that adoption of ICT and on-line teaching is affected by the attitude of the tutors. He observed that the attitude of lecturers towards distance education, their readiness to adopt e-learning and their attitudes towards technology-based learning are not negative. Therefore, a close look at the participation of the university management in distance education and the factors that influence such participation would suffice to fill a gaping gap.

2.2.8 On-line Instruction in Distance Education

On-line instruction is one way that distance educators can use to bridge the gap between the learners and the teacher through the use of World Wide Web (www). It is particularly useful where internet connection is readily available. It faces a challenge of evaluation, hence, even where internet connection is not a challenge; learners still take their examinations on-campus.

Kahn (1997) defines online instruction/Web-based instruction (WBI) as a hypermedia-based instructional programme which utilizes the attributes and resources of the World Wide Web to create meaningful learning environment, where learning is fostered and

supported. It is one way of instruction in distance education. WBI is a new tool to support instruction and learning which uses the Web as a medium to carry instruction to the distant learners. The Web not only carries the media, but it also creates global village, which allows people around the world to exchange information communication (Crossman, 1997).

On-line instruction is a system of instruction involving teaching and learning with the World Wide Web (www) as the principal means of content delivery and lecturer-student interaction. On-line instruction is an integral part of distance learning, especially in the lecturer-student interaction. On-line learning is a recent phenomenon. It is a learning that requires the use of the network environment. In this kind of environment, students are not learning in a place as is the case in the traditional face-to-face learning, but they learn in a shared space called the cyberspace. The learning network (classroom) is anywhere the student has a personal computer, a modem and a telephone line, satellite dish or a radio link. When students dial into the network, they turn their computer screen into a window on the world of learning, (Harasim, et al., 1997).

There are two forms of instruction, the traditional face-to-face teaching based on interpersonal communication and industrialized teaching, which is objective based, rationalized, technology based interaction under which on-line instruction falls. On-line learning comes in three different forms, the adjunct mode, mixed mode and totally on-line mode, (Abraham 2002).

On-line learning is a new phenomenon in the public universities in Kenya. However, many universities elsewhere in the world have capitalized on the advancement of ICT to

enhance their students learning through on-line. As a result, there has been the use of one of the three modes of on-line learning in the universities, whereas in the Kenyan scenario, there has been no on-line learning, apart from a bit of adjunct mode. On-line learning provides forms of interactions through email, computer conferencing, on-line tutorials and forums. Interactions are done both asynchronously and synchronously. Course materials are provided on-line. Registration is done online and information passed online as well. At times, limited face to face sessions are necessary to support online instruction, (Ibrahim 2002).

Where the delivery of on-line instructional courses in higher education institutions is flourishing, it is the university management who plays the key role in its successful implementation. Rockwell et al., (1999) see faculty administrator as the key player but for the universities in Kenya, the university management at departmental, faculty and higher levels have a more important role to play. The Senate, Deans' Committee, College Principals, College Academic Boards, Faculty Boards and Departmental Boards have to support ideas that are of academic importance for them to be implemented. They are the key decision-makers, they control finances at the university, and hence their participation in distance education and on-line instruction would determine whether it would be implemented or not. With the coming of the World Wide Web and other technologies, the concepts of distance learning and adult learning is gaining more attention in post-secondary educational institutions from teaching to learning and from teacher to student, Owsten, (1997). These benefits in the developing countries would see the access extended to marginalized groups, disadvantaged population and women. In spite of these opportunities, many colleges and universities in Kenya have not embraced it. There is

therefore, the need to assess the factors that influence their participation in distance education. This would keep public universities at pace with the other universities in the world in moving towards learner-centred methods of teaching and to conform to the ideals of instructional strategy that is abreast with technology.

Distance education has several advantages and there are many reasons why a prospective student would choose to take distance education (Murray, 2001). However, it can be argued that the number one reason is flexibility. The ability to log on anytime, day or night from practically anywhere is attractive. Students will work through some of the negative aspects just to maintain that flexibility. Therefore, at the end-of-course surveys, the satisfaction may be higher than deserved. Distance education instructors enjoy flexible working conditions since classes can be taught from any place and at any time, Berge (1998).

Distance education provides the instructors with the opportunity to instruct and reach new audiences and student population of diverse ability, Barron and Lyskawa, 1998. According to Mius (1999), distance education is enjoyable and provides the opportunity to enhance their technology skills while planning and delivering on-line courses (Clary 1999, Merron 1999). It increases job satisfaction, (Belts 1998) and provides ease in updating and revising previously administered on-line courses, (Berge 1998). It calls for continuous review of course content and thus ensuring that there is relevance of course topics (Mius, 1999).

Hardin (1998) observes that in many cases, distance education increases interaction because most students, including those who do not participate freely in class, are comfortable asking questions and making comments, through e-mail. He further observes that distance education is less intimidating to the students who are normally withdrawn in a traditional classroom. Lombardi (1994) asserts that university education requires little technical sophistication to deliver. He makes a case for universities to use information technology to deal with some problems faced by traditional education such as lack of classroom space or equipment, the increasing cost of tuition, lack of parking space among others. Distance education also has its own obstacles. Omwenga (2005) observed that investment in ICT infrastructure coupled with high cost of connectivity, and bandwidth, are two major problems that hinder effective use of resources available in the Internet.

Distance education decreases live, face-to-face interaction with students, Kirby (1999), Stockeband and Althoft, (1997). This may affect the feedback process. The instructors may lack time to plan and deliver on-line courses, Berge (1998) and even if they do, they may do so under coercion. It lacks support and assistance in planning and delivering on-line courses, Betts (1998). This could be from the institutional and university management, as this research attempts to establish. There is inadequate compensation and incentives for delivery of an on-line class, (Rockwell et al., 1997). There is also slow computer access especially in areas where connectivity is still a problem, (Pan 1998).

2.3 Distance Education in Kenya

Distance education in Kenya started with correspondence course unit that was offered jointly by the University of Nairobi and Kenya Institute of Education. The Radio Correspondence Course Unit concentrated on upgrading courses for unqualified teachers. Distance education has been developing and with the introduction of external degree programme of the University of Nairobi, it was possible to produce graduates who studied through distance.

It is unfortunate that for a long time, there has not been a section of the Ministry of Education responsible for distance education. It is only recently that the responsibility was to given Kenya Institute of Education. Although the Kenya government is committed to distance education like any other government in Africa, there is minimal policy framework to oversee implementation of distance education in the universities. However, there are acts of parliament and policy documents which recommend among other things, the setting up of institutions to implement distance education.

The first Government policy to address distance higher education was the Act of Parliament of 1966 which established the Board of Adult Education. The Kamunge Report of 1988 expressed satisfaction that the External Degree Programme offered by the University of Nairobi was an example of a successful Alternative and Continuing Education Programme that could be nationally accessed by eligible learners throughout the country. It also recommended that facilities for printing and recording of educational materials at the College of Adult and Distance Education be updated and expanded to

cope with the growing demand for adult education through distance teaching (Republic of Kenya, 1988).

The idea of starting an open university in Kenya has been recommended by different commissions and reports. Mungai Report of 1995 recommended the establishment of an open university similar to the ones operating in Britain, Hong Kong and Tanzania, be considered as a way of extending university education to as many Kenyans as possible. The report, however, cautions against basing the Open University on the current restrictive system practised in the public universities. It is of the view that it should be based on innovative strategies aimed at meeting the needs of as many Kenyans as possible that desire university education. The public universities are asked to establish short courses for purposes of skills improvement and a source of generating income (Republic of Kenya, 1995).

Similar recommendations were also made by Koech Report (1999). The report hailed the external degree programme of the University of Nairobi as being particularly beneficial to serving teachers and other Kenyans in employment that would otherwise not have been able to enrol for university education on a full-time basis. It recommended that the programmes be expanded in order to reach many deserving and qualified Kenyans. It also hailed parallel degree programmes that had helped individuals who had otherwise been barred from public university admission (Republic of Kenya, 1999). Despite these recommendations by the important policy documents, distance education programmes remain tiny components of higher education and government involvement in distance education is quite minimal.

2.4 Participation in Distance Education

Social, economic, demographic, and technological changes are challenging higher education administrators to re-examine the way education is delivered (Daniel, 1997; Gilbert, 1996; Willis, 1993). A research carried out at George Washington University (Spring, 1998) to identify factors that influence deans of schools and faculty members to participate in distance education established that intrinsic factors, intellectual challenge, personal motivation to use technology, ability to reach new audiences that cannot attend classes on campuses and opportunities to develop new ideas positively, influenced the participation in distance education. Factors that negatively influenced the participation, were lack of release time for faculty, workload and lack of technical support. Deans, who had experiences in distance education, had higher participation of their faculty than those who did not have experiences in distance education. Factors that influence both deans and faculty participation in distance education, include technical support, intellectual challenge and incentives.

This study explicitly asserts that most of the factors that influence faculty participation in distance education also influence the participation of the management (deans). This is as a result of the managers being predominantly teachers of faculty with special responsibility of heading the academic division they are appointed to head.

In Malaysia, open and distance education is seen as a powerful vehicle to deliver education opportunity to adults of all walks of life. Again, in Malaysia, distance education is seen as learning where the learners take responsibility of their own learning (Lawton & Barnes, 1998). However, distance education in Malaysia remained

marginalized until the managers embraced its importance and welcomed the idea of Open University of Malaysia in 1999, which was charged with the responsibility of co-ordinating distance learning programmes in the eleven local public universities in the country (Raghan & Kumar, 2008). This may be the same idea that requires to be nurtured in Kenya today if distance education is to receive the attention it deserves for it to fulfill its importance of increasing access of education to more Kenyans, who are not able to access education through the traditional face-to-face mode.

The educational changes will force universities in Kenya to change accordingly by use of technology to enrich delivery in distance education mode, the faculty and university administrators are not sure whether there is any policy in the country on open learning and distance education, or policy on ICT that would enhance access to education as observed by Agalo (2006).

2.5 Factors Influencing University Managers' Participation in Distance Education

Factors that influence managers' participation in distance education at the public universities include, the managers' attitude towards distance education, managers' level of knowledge in distance education, and availability of the support facilities at the universities. An analysis of the factors underlying participation in technology-based teaching and learning indicate that the characteristics for both innovation and managers, greatly influence the adoption of innovation. Furthermore, the innovation cost and sophistication do not impede the adoption of innovation, Damanpour, Fariborz and Schneider, (2009).

Readiness for change begin with an individual perception of benefits of change, Prochaska (1994); the risks of failing to change, Armenakis (1993) or the benefits of externally imposed changes, Pettigrew (1987). Al-Senaidi, Lin and Pairot (2009) identified some of the barriers to adopting technology as: lack of equipment; lack of institutional support; disbelief of technology benefits; lack of confidence; and lack of time. The top management is a major hindrance to the implementation of new initiatives in the university and unless they change, open and distance learning will remain but a big dream, Gakuu (2006). He further asserts that the university administrators at all levels are the chief-change agents in the university.

2.5.1 Level of Knowledge in Distance Education

Knowledge is defined as the condition of knowing something with familiarity gained through experience or association. It is an acquaintance with or understanding of a science, an art or a technique (Davenport, 1998). It is the understanding people develop as they react to and use information either individually or as an organisation (Archterbergh, 2002). There are two types of knowledge, tacit and explicit knowledge. Tacit knowledge is personal knowledge embedded in individual experience and involves intangible factors, such as personal beliefs, perspective, and the value system. Tacit knowledge is hard to articulate with formal language. Before tacit knowledge can be communicated, it must be converted into words, models, or numbers that can be understood. There are two dimensions to tacit knowledge: technical and cognitive dimensions. Technical dimension consists of informal skills acquired, for instance,

craftsmen. The cognitive dimension consists of beliefs, perceptions, ideals, values, emotions and mental models so ingrained in a person that they are many times taken for granted. Some knowledge may be acquired through training (Sanchez, 2000).

Training is aimed at delivering some expected benefits in an organization. But the question that an organization struggles with is whether a given training programme has yielded what it was supposed to bring to the organization. Measuring the effectiveness of training programs consumes time and resources but it is worth it. Kirkpatrick (1959) developed a model for measuring the effectiveness of training programmes. This is the most widely used and popular model for the evaluation of training programmes. It is called "The Four Levels of Learning Evaluation." The model was defined in 1959. Kirkpatrick redefined the evaluation model with his 1998 work entitled "Evaluating Training Programs: The Four Levels."

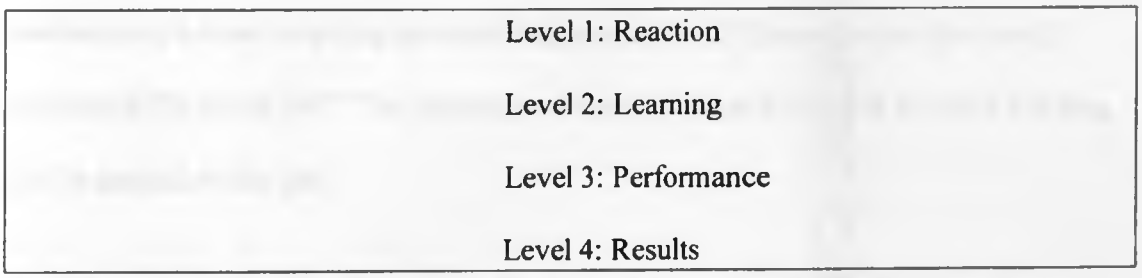


Fig 1: Kirkpatrick Training Evaluation Model

The idea behind the model is for an organization to have meaningful evaluation of learning in the organization. Level 1 consists of reaction. Evaluation at this level measures how the learners react to the training or knowledge gained. Learners are often keenly aware of what they need to know to accomplish a task. This level is not indicative of the trainee's performance potential as it does not measure what new skills the learners

have acquired or what they have learned that will transfer back to the working environment. Reaction informs how relevant the training is to the work the learners perform.

Level 2 consists of learning. This is the extent to which participants change attitudes, improve knowledge, and increase skill as a result of participating in the learning process. It addresses the question: Did the participants learn anything? Measuring the learning that takes place in a training programme is important in order to validate the learning objectives. Evaluating the learning that has taken place typically focuses on such questions as: What knowledge was acquired? What skills were developed or enhanced? What attitudes were changed? Learning informs the degree of relevance of that training.

Level 3 consists of performance. This level of evaluation involves testing the students capabilities to perform the learned skills while on the job. It determines if the correct performance is now occurring by answering the question, "Do people use their newly acquired skills on the job?" The performance level indicates the degree to which learning can be applied on the job.

Level 4 consists of results. It measures the training programme's effectiveness, that is, "What impact has the training achieved?" Impact indicates the returns the organization receives from the training. Further development to Kirkpatrick's model has been carried out by Clark (2008), who advocates for backward planning using Kirkpatrick's model. Thus, planning and analysis need to work backward by identifying: the desired impact (outcome or result) that will improve the performance of the business: this should be followed by the level of performance the learners must be able to do to create the impact:

the knowledge and skills they need to learn in order to perform: What they need to perceive in order to learn (the need to learn). Planning it backwards will help to ensure there is a circular causality:

Fig. 2: Clark's Improved Model of Kirkpatrick's model of evaluating training programmes

The learners' perception of the need to learn should motivate them to learn, which in turn causes the desired performance that drives the impact desired by our customer or client. Clark asserts that, this causality should continue in a circular fashion so that the results achieved should now drive the performers' perceptions of the need to learn more and perform better in order to achieve even better results.

Philips (2005) improved on Kirkpatrick's and Clark's Model to include a fifth level called return on investment (ROI). This is the ultimate level of evaluation. It compares the monetary benefits from the program with program costs. He notes that evaluation may serve a number of key quality control functions such as improving the quality of learning programs; determining if a training programme meets its objectives; identifying potential strengths and weaknesses in the learning programmes; determining a training

programme's appropriateness for the target audience; and assist in decision making about a training programme investment and establish funding priorities. Philip's modification of Kirkpatrick's model is important in determining the returns on investment of any training. However, distance education in Kenya where the universities are still struggling with the first three levels of reaction, learning and performance, Kirkpatrick's model is more applicable since it focuses on results. In this study, the focus is on increased adoption of distance education in the public universities.

Training in distance education and training in computer application skills is a major factor in determining how well a manager participates in distance education activities. This is because distance education makes use of technology to bridge the gap between the teacher and the learner. Therefore, in the current time and age, one cannot talk of knowledge in distance education without computer training. The challenge is how well the trainings are understood and more importantly, how they are put into use when participating in distance education activities. This issue was addressed by UNESCO (2005) in a report that asserted that computer training of at least thirty hours is enough to enable a teacher to integrate ICT in teaching in secondary schools, and this can further be translated to distance education mode of teaching which depends alot on computer and other communication information technology, to bridge the gap between the learner and the teacher.

2.5.2 Attitude of University Managers Towards Distance Education

Attitude can be defined as a mental state of readiness, organized through experiences, exerting an influence upon an individual's response to an object and the situation with which it is related, (Hogg and Vaughan 1995). It can also be defined as a person's favourable or unfavourable evaluation, feelings and tendencies towards an object or an idea. Attitude is composed of cognitive, affective and behavioural components, (Kotler, 2001). An attitude is the result of the evaluative beliefs that the person has about the attitude object, (Meyer, 1979). According to Rosenberg (1958), attitudes have influences on how people behave and it determines their behaviour towards any stimuli. Attitudes are likes and dislikes or affinities for and aversions to objects, persons, groups, situations, or any other identifiable aspects of the environment, including abstract ideas and social policies, (Atkinson 1987). Attitudes are expressed as opinion statements but they express feelings. Social psychologists have studied attitudes as one component of a three-part system. First, there are the beliefs which constitute the cognitive component; second, the attitude which constitutes the affective component and third, the actions constituting the behavioural component.

According to Wilson, et al., (1989), there is a difference between cognition-based and affect-based attitudes. Affect-based attitudes are associated with a strong affective reaction to the object and are easily accessible and automatically activated through mere exposure to the attitude object or its name. Edwards (1995) argues that affect-based can hardly change because they are not based on cognitive reasons. In contrast, cognitive-

based attitudes are as a result controlled cognitive processes rather than automatic processes. They consist of a set of evaluative beliefs concerning an attitude object rather than an affection reaction.

Consistency between our beliefs and our attitudes is a common occurrence in life. If for instance, the university management believes that distance education and on-line teaching is highly reliable in as far as it imparts knowledge and passes on skills just as good as face-to-face method of teaching, then they are likely to have a favourable attitude towards it, as a result of the supporting beliefs.

A major reason why the study of attitudes would be important in this research is the fact that it will enable to predict behaviour. This is because a person's behaviour is largely determined by his or her attitude, (Atiknson, 1987). According to Atkinson, in general, attitudes tend to predict behaviour best when they are one, strong and consistent, two, based upon a person's direct experience, and three, specifically related to the behaviour being predicted. Several theories have been put forward expressing the attitudes-behaviour consistency.

The cognitive dissonance theory coined by Leon Festinger assumes that there is a drive towards a cognitive consistency. When two cognitions are inconsistent with one another, they produce discomforts that motivate the person to remove the inconsistency and bring the cognitions in harmony.

Attitudinal issues such as how people perceive and react to distance education technologies are far more important than structural and technical obstacles in influencing the use of distance education, McNeil (1990). In this study, if the university management feels that distance education is bound to bring dissonance, they would work towards avoiding it to retain the cognitions harmony in the system.

The second theory that explains behaviour is the self-perception theory. Perception is the process by which we organize, integrate and recognise patterns of stimuli, (Atkinson, 1987). Howard Bartley (1976) defines perception as the immediate discriminatory response of the organism to energy-activating sense organs. Based on perception certain behaviour occurs. Hersley and Lugo define perception as the process of gathering information by means of the senses and interpreting it on the basis of prior experiences. The theory sums up that dissonance-causing behaviour will lead to attitude change when the behaviour can be induced with minimum amount of pressure whether in the form of reward or punishment. In contrast to cognitive dissonance theory, self-perception theory implies that the person's initial attitude is irrelevant and there is no discomfort produced by the behaviour. Probably in this study, whatever may seem to be attitude-related bottlenecks for distance education implementation may be dealt with to support increased participation in distance education activities.

Third theory is the impression management theory. The theory states that subjects are motivated to make a good impression on the experimenter. The attitudes change then, is not seen as a result of internal cognitive dynamics but of a motivated attempt to avoid looking bad in a situation contrived by the experimenter, (Tedeschi & Rosenfeld, 1981).

The university management may be talking of supporting on-line instruction in distance education but would just be because of the global move that seems to advocate it. In reality, things may be different when their beliefs are not supportive of distance education.

Edooley (2000) carried out a research on how perceptions of university management, particularly the faculty and their impact on the rate of adoption of distance education. He reveals that three major areas required consideration if distance education is to be enhanced. These are: the administrative support, training of members on instructional design and incentives to staff. University management provides infrastructure and virtual presence of learners. They also provide finances and make policies. They play a crucial role in the adoption of distance education technologies. Training of members on instructional design is vital too. This requires the faculty members to be trained on instruction methods for distance learners which is definitely different from the face-to-face traditional teaching mode. Incentives to staff, for instance in continuing education, stipends and recognition in promotion and tenure process is also an important area of consideration.

The university management is very important if any change is to be implemented since they are the change agents. For any change to take place, the change agents and the change implementers must be in agreement. Gakuu (2006) established that the teachers, who are the change implementers, are positive about the technology change in teaching methods. They may not however, be able to achieve much if the management lacks the

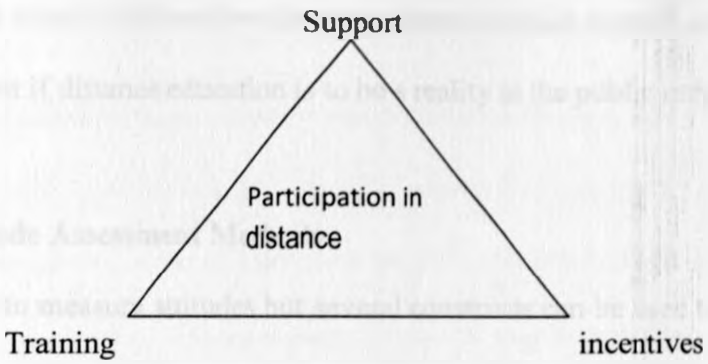
positive attitude to support the move. In considering the attitude of the university managers, one may consider constructs such as: their attitudes toward older adults. Are these attitudes associated with administrators' ages, their highest earned degrees, and amounts of their time spent with non-family older adults? A study conducted by Nidiffer and Moore (1998) found that administrators' attitudes toward older adults were generally not favourable. Distance education needs to be planned for in the universities alongside the regular education. A study by Wolcott (1997) based on interviews with faculty members, programme administrators and the chief academic officers at four US research universities, concludes that: Distance education occupies a marginal status; distance teaching is neither highly valued nor well- rewarded as a scholarly activity; distance teaching is not highly related to promotion and tenure decisions; rewards for distance teaching are dependent on the academic unit's commitment to distance education. Wolcott (1997) concludes that participation in distance education could be enhanced further by working on support, incentives and training, as illustrated in figure 3.

Carter (1996) remarks that universities must have in place a policy statement before starting a distance education outfit which details how the programmes are to be run and sustained. Gakuu (2006) observes that university management needs to change their views toward distance education. He cites Dillon and Walsh (1992) commenting that the view of distance education as innovation provides an important means for understanding the phenomena of distance education, particularly from the perspectives of those upon whom its acceptance depends. According to Edooley (2000), how people perceive and react to the technologies is far more important than the technical obstacles influencing its

implementation and use. This is further articulated by Moore (1994) as cited by Keast (1997) that the major obstacles associated with the acceptance or participation in distance education activities are: organizational change, change in faculty roles and change in administrative structures. It is important to determine the perceptions, concerns, and interests regarding distance education technologies. According to Edooley, this understanding can facilitate the diffusion and adoption of distance education technologies to enhance student learning while maintaining employees- management, administrators, faculty and support staff-engagement and satisfaction. While technological advancements are an important part of distance learning environment, basic changes in teaching methods, technique and motivation are needed to make distance education more effective (Purdy &Wright,1992).

Lack of participation in distance education is evident where there is no conversion of materials to distance education formats. This stems from lack of perceived institutional support like faculty rewards, incentives, training, etc. Quinn and Corry (2002); Perreault et al., (2002). As distance education continues to proliferate globally, universities must commit to address the needs of faculty (McKenzie, Mims, Bennett & Waugh, 2000). There is need to support, train and prepare the faculty to train at a distance. Dooley and Murphy (2000) found that faculty members lacked experience in teaching learners. The manager should provide training opportunities for increased participation. They should also provide support and motivation required for increased participation in distance education activities in the universities.

Figure 3: Enhancement to increase participation in distance education



Source: Dooley and Murphy (2000)

In the integration of incentives, training and support promote participation in distance education activities by university managers and faculty at large. In support, there is need to provide professional support; in training, there is need for technology exposure, instructional design, pedagogy/andragogy; and incentives. There is need for release time, mini-grants, continuing education, stipends, recognition in promotions, (Dooley & Murphy, 2000).

A study by Nazer (2000) to investigate the attitudes of school teachers and directors (management) towards the worth and value of distance education in Lebanon, revealed a difference in the attitude of the two groups. School directors were negative about the possibility of distance education meeting the training needs of school teachers and that training needs and purchase of required technologies would be prohibitive. A research study by Akihito and Beverly (2000) found that faculties would be willing to offer distance courses and recommend them to the colleges if there were incentives like provision of computers and other related facilities. This can only be possible if the

management finds it worth to have computer used in distance learning. This then indicates that a study of the university management attitude towards distance education is very important if distance education is to be a reality in the public universities.

2.5.3 Attitude Assessment Methods

It is not easy to measure attitudes but several constructs can be used to represent attitude. Thus, the first thing that one needs to understand is how attitudes can be represented. Fazio (1989) developed the evaluative nodes in semantic memory model whose core assumption is that nodes represent attitude. Objects in a semantic memory model are connected to a node representing an evaluation of good versus bad, and this association is termed attitude. Aiken (1996, 1997 & 1998) gives three methods of attitude assessment: questionnaires and inventories; rating scales and checklists; and tests and examinations. This study will combine the questionnaires, rating scales and checklists.

2.5.4 Availability of Adequate Distance Education Support Facilities

Providing support services and facilities to the distance learners is an important part of creating the feeling of belonging for students who do not have access to traditional clues (Martin, Moskal, & Morse, 1997). Garrison and Baynton (1987) define learner support as the resources that learners can access in order to carry out the learning processes. Garrison (1989) observes that in distance education, support is concerned with a range of human and non-human resources to guide and facilitate educational transaction. Some of the support services that should be considered include access to library materials and

facilities, delivery of course materials, traditional mail services, counselling, mentoring, job placement, and peer interaction (Boettcher & Cartwright, 1997; Kovel, 1997).

A World Bank report (Daniel, 2001) states that four challenges faced in distance education include: gaining recognition of the economic importance of universities; overcoming the low political and financial support; recognition of the baseline needs of staffing and equipment; and the globalisation effects on students and student movement. These four challenges converge into one issue: support facilities. This is because, if there is to be recognition of economic importance of distance education, support in terms of resources is required. To overcome low political and financial support, there is need for lobbying at political arenas and budgetary allocation meetings. This in turn means there will be more facilities availed by increased funding. Recognition of baseline needs of equipment is the starting point of provision of adequate facilities that are required in provision of quality distance education.

Mayadas (1998) defines quality through five pillars for effective asynchronous distance learning including: Student satisfaction; access to desired courses and accompanying support; learning effectiveness; faculty (staff) satisfaction; and cost effectiveness. McDougall, Young and Apan (2001) defines quality as the standard of infrastructure provided to the student. Therefore, quality encompasses issues such as development of course materials, staff, delivery systems and support mechanisms. Distance education depends a lot on the support facilities and infrastructure. These include the computers, and internet connectivity. Phipps and Wellman, (2001) say the great challenge in the provision of support facilities in higher learning is how to finance and establish policies on how financing of infrastructural support should be provided. He recommends that

ways should be established on how to acquire resources, and policies be established on how to distribute the finances to ensure adequate availability of support facilities.

2.6 Factors That Hinder Participation in Distance Education

Participation in distance education requires competence in use of technology, an attitude that distance education is important and valuable, and access of quality infrastructure (Hawkes & Coldeway, 2002). University managers need to recognize that distance education requires different competencies hence need for support and training (Dooley & Lindner, 2004). In his study of how the perceptions of administrators (managers), faculty and support units impact the rate of adoption of distance education, Edooley (2000), concludes that three groups indicated a general consensus on factors that either motivate or inhibit the groups from adopting distance education. The results showed that one of the areas that required consideration was administrative support which should include providing a seamless infrastructure and virtual presence of distance learners (technical and student support). Edooley recommends that universities revise their policies primarily focussed on research and establish the institutional capacity to support the development of distance education courses if the universities are to utilize ICT technologies effectively.

In a study that examined support systems in a state-wide instructional television programme, Dillon, Gunawardena, and Parker (1992) noted that students listed the following factors as hindering their performance in the interactive television courses: Instructor's negative attitude towards off-campus students; lack of instructor contact outside class; lack of feedback from instructor; unavailability of library resources; technical problems related to audio; lack of training in the use of media for both

instructors and students; poor courier service, (distribution of course materials to sites); and unruly behaviour of students at remote sites.

Concerns of faculty regarding participation in teaching courses through distance modes include lack of time, lack of institutional support, lack of scholarly respect in the areas of promotion and tenure, and a lack of training are obstacles in participating in distance education (Baldwin, 1998; Bonk, 2001; Lee, 2001; Northrup, 1997; O'Quinn & Corry, 2002; Parisot, 1997). The factors were grouped into categories which included personal, external, technical, pedagogical, and institutional. Upon further reflection, the technical and pedagogical categories seemed to fit best within the institutional category. Thus, the final categories were intrinsic or personal, extrinsic, and institutional. Within the institutional category, the following two sub-categories were recognized: technology and teaching; and technical and administrative support.

Factors that are extrinsic have been categorized as institutional motivators as the institutions or the administration are perceived to have the ability or power to alter distance education policies or procedures to meet the needs of the faculty. These needs are addressed within the following list of institutional motivators. When faculties outline administrative and technical support issues that would motivate them to teach on-line, support issue most noted is that of administrative recognition and encouragement for on-line efforts. Lee (2001) indicates that when faculty members feel institutional support, their levels of motivation and dedication are increased. This then reveals that managers' participation in distance education promotes participation by other members of the faculty.

Faculty indicates that this support can be demonstrated with credit towards tenure and promotion (Betts, 1998; Bonk, 2001; Rockwell, et al., 1999; Schifter, 2000). Jones and Moller (2002) also agree with this type of incentive but caution that those determining tenure and promotion may never have taught distance education courses, and therefore are ill-equipped to properly assign merit and worth to efforts of a faculty member who may have redesigned a course to be delivered via the Internet. Another type of administrative support is monetary incentives. In Schifter's (2002) study, a faculty that is sixty years old and above show more concern over monetary factors than does faculty of any other age category. Faculty, both current participants and non-participants, and administrators indicate that monetary support, either in the form of stipends, continuing education or overload pay, or increased salaries would motivate faculty to teach on-line (Betts, 1998; Jones & Moller, 2002; Rockwell, et al., 1999; Schifter, 2000; Schifter, 2002).

Technological support is also a major motivator for faculty interested in teaching on-line. Faculty notes the importance of the institution in providing training on how to effectively teach online (Bonk, 2001) and to respect the decisions of faculty in deciding what are the most appropriate subjects or courses to teach via the medium. In addition, instructional design and development support is essential for the faculty that does not have the time to develop and maintain online courses (Bonk, 2001; Dooley & Murphrey, 2000).

The intrinsic factors that do deter participation in distance education include resistance to change (Berge, 1998; Parisot, 1997) and intimidation of technology (Parisot, 1997). Since distance education is a new paradigm, many faculties are unprepared for the fundamental

differences in the roles required for teaching online. A higher level of involvement by administrators and managers' support is needed to ensure success. Seven issues exist related to faculty that administrators must address: faculty buy-in, policies that address faculty concerns, selection of faculty, faculty compensation, an understanding of faculty workloads, faculty support, and faculty satisfaction.

Furthermore, some faculties believe that distance education is inappropriate for traditional-aged students (O'Quinn & Corry, 2002) and support the need for face-to-face, on-campus classroom experiences. They believe that distance education will foster a decrease in student interaction (Dooley & Murphrey, 2000; Jones & Moller, 2002). Finally, faculty is unclear about the policies surrounding copyright issues and are concerned about the absence of intellectual property rights (Berge, 1998; Dooley & Murphrey, 2000; O'Quinn & Corry, 2002).

The majority of factors that are barriers to teaching online are found in the areas of administrative and technical support. One deterrent noted repeatedly was the issue of faculty workload (Berge, 1998; Betts, 1998; Schifter, 2000; O'Quinn & Corry, 2002). According to Bonk (2001), 62% of faculty respondents indicated that "the main obstacle to using the web in teaching was the preparation time required". Time is considered to be an administrative issue because of the institution's ability to offer release time for development and maintenance of online courses. In Betts' (1998) study, the deans that were surveyed also indicated that the lack of release time would be an inhibitor for faculty participation in distance education. Faculty feels that time spent on course

development alone takes away time that could be devoted to research (Rockwell, et al., 1999).

A second administrative deterrent is the lack of recognition for teaching via distance education. Time devoted to teaching or developing online courses is not as highly regarded as is time spent on research or even on time spent teaching "traditional" face-to-face courses. Thus, the lack of recognition from the administration and peers in the form of credit towards tenure and promotion is another large barrier to on-line faculty participation (Betts, 1998; Lee, 2001; Rockwell, et al., 1999; Wilson, 1998). Faculty also sees the lack of grants for materials, software expenses, design and development of courses as another barrier (Betts, 1998; Bonk, 2001; Chizmar & Williams, 2001; Dooley & Murphrey, 2000; Schifter, 2000).

Another barrier that is monetarily related is the lack of merit pay or financial stipends for faculty which develops or teaches online courses (Berge, 1998; Dooley & Murphrey, 2000; Schifter, 2000; O'Quinn & Corry, 2002). Of all of the barriers cited by the faculty and administrators, the one mentioned most frequently is the lack of technical support (Berge, 1998; Betts, 1998; Bonk, 2001; Chizmar & Williams, 2001; Jones & Moller, 2002; Lee, 2001; Rockwell, et al., 1999; Schifter, 2000; Wilson, 1998). This includes concerns about the lack of systems reliability and access to the on-line courseware as well as inadequate infrastructure, hardware, and software.

Faculty is concerned about developing effective technology skills and mentions lack of training as another deterrent to teaching online. In addition, there is a lack of knowledge regarding where to go for technical support while teaching in an online environment.

Faculty worries about depending on developers and programmers and is also concerned about security issues. If these barriers are to be dealt with effectively, the university must provide the necessary support to enable more participation and adoption of distance education in the universities. Referring to the reason for non-involvement in technology-based delivery of distance learning, Sho sees organizational culture as the main barrier. Thus for any form of instruction to be practical, organizational frame, administration, planning and work processes must support it, (Holmberg, 1977).

2.7 Theoretical Framework

The theoretical framework of the participation and adoption of any innovation can be outlined from the findings of Rogers (1995). According to Rogers' innovation diffusion model, for any change to occur, a critical mass of individuals must adopt and implement a given innovation. Critical mass occurs when enough individuals have adopted the innovation so that the rate of adoption becomes self- sustaining (Green & Gilbert, 1995). Rogers identifies five categories of adopters of any innovation: innovators, early adopters, early majority, late majority and laggards.

Peters (1983) analysed distance education as industrialised form of teaching. In his view, distance education represents the industrialised form of teaching, with the following aspects, typical for an industrial process: Rationalisation, division of labour, mechanisation, assembly line, mass production, planning and preparation and standardisation. All these aspects are interdependent in an industry if a finished product is to be received. This applies to distance education where the management, teacher, the

learner, administration, material and infrastructure among others should work together for learning to take place.

The study also used Moore's theory structure for distance education, the theory of independent study, (Moore 1977). He analyses distance education on two dimensions, distance and student autonomy. This study seeks to expand on the need for adoption of distance education and its related technology to take care of the distance and increase student autonomy.

This research is also based on O'Malley and McCraw (1999) work which adapts Rogers 1995 diffusion model. This model suggests that for any change in the form of innovation and decision-making process, five stages should be taken into consideration. Since technology has not found its way in most of the learning institutions in Kenya, the change is still at the stages of knowledge and persuasion. In this study, the university management is believed to be knowledgeable hence needs to persuade them to participate in distance education and change attitude so that they can support distance education in teaching and learning processes.

This research study was also based on systems theories, which consists of various components called subsystems, which must function together for a system to work. The system input sets the goal which is the desired effect. There is the assessment of the performance, which is dominated by the effectiveness of the feedback path. By applying negative feedback in different ways, it is possible to remove discrepancies and so achieve the goal with greater accuracy. If a sub-system fails, then the whole system is put into

jeopardy. If public universities management attitudes are not supportive of distance education, the realization of distance education courses may never be despite the fact that other sub-systems may be supportive.

According to Covington and Petherbridge (2004) framework, there are three major factors that are likely to influence transition to distance education. These are: Administrative support, peer support and professional development. Management is all about administrative support. It is influenced by the following factors: Perceived advantages of the distance education; financial budget constraints; attitude towards technology; individual innovativeness; prevailing practices; perceived needs; and prior knowledge.

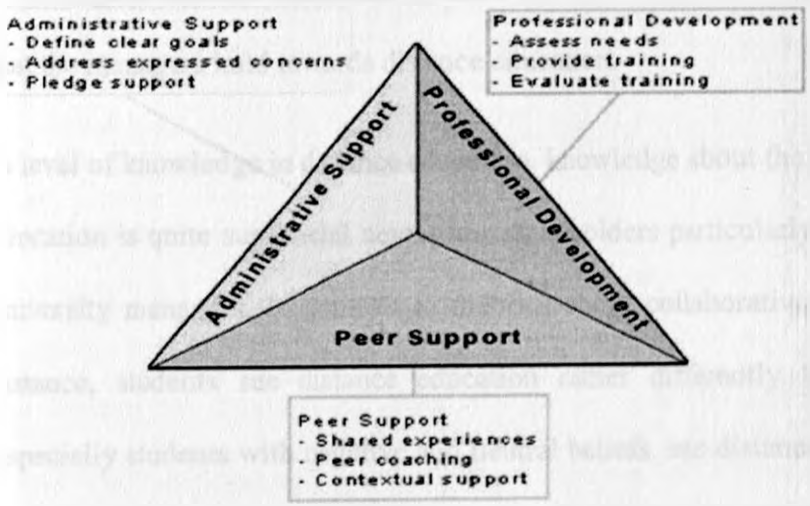


Fig. 4: Covington and Petherbridge (2004) conceptual framework

2.8 Conceptual Framework

This study is based on a conceptual framework guided by five variables, independent variable, dependent variables, moderating variable, intervening variables and extraneous variables.

2.8.1 Independent variables

Independent variable refers to the variable that the researcher manipulates in order to determine its influence on another variable. In this study, the independent variables were: Factors influencing university managers' participation in distance education. These are the predictor or the manipulated variables. Various factors have been found to either motivate or inhibit the participation in distance education. Among them are: Level of knowledge in distance education; distance education support facilities available; attitude that the managers hold towards distance education.

In level of knowledge in distance education, knowledge about the possibilities of distance education is quite superficial among the stakeholders particularly the administrators and university managers. In contrast to theories about collaborative learning practices, for instance, students see distance education rather differently from the management. Especially students with negative and neutral beliefs, see distance education merely as a static warehouse of materials and study-alone learning tasks instead of one that does offer possibilities for collaborative knowledge building. On the other hand, the management sees distance education as a financial burden that requires initial high investment and which may not match the traditional way of instruction, (Christie & Jurado, 2009). This leads to the hypothesis that, the level of knowledge in distance education that the

university managers have significantly influences their participation in distance education activities. The indicators of this independent variable are: Training in distance education of the university managers; training in computer application skills; number of hours of training; purpose for personal computer; purpose of email address; participation in distance education.

In distance education support facilities available, learners embarking on distance education programme are faced with many constraints such as financial constraints, constraints of time, distance, physical disabilities, and family commitments (Kinnaman, 1995; Willis, 2006). Since distance learners are varied according to their socio-economic backgrounds, adequate provision should be made by institutions in providing administrative and organizational support. (Idrus & Lateh, 2000). The faculty requires professional and technical support to be able to offer courses through distance. If the managers do not provide support to the faculty and the students, then, it is evident that they are not supporting distance education activities. The indicators for this variable were: Internet availability; connectivity; availability of computers; availability of opportunities for training; availability of ICT help desk.

The attitude the management holds towards distance education, will greatly influence their behaviour in supporting or not supporting distance education. In understanding and measuring attitudes, one has to understand how attitudes can be represented. Several models have been proposed. Fazio (1986 & 1987) developed the evaluative nodes in semantic memory model whose core assumption is that nodes representing attitude objects in a semantic memory are connected to a node representing an evaluation and this association is termed 'attitude'. Measuring attitudes against their relationship to

behaviour is complex, (Glick & Fiske, 1996). The basic assumption of attitude measurements, according to Hogg and Vaughan (1995), is that a person's attitude can be measured by asking questions about thoughts, feelings, and likely actions towards the attitude object. Second, attitude can be measured by quantitative techniques, that is, each person's opinion can be represented by a numerical score.

Third, a particular test item or other behaviour indicating an attitude has the same meaning for all respondents so that a given response is scored identically for everyone making it. Fourth, in a typical questionnaire, respondents are asked to indicate whether they agree or disagree with each of a series of belief statements about an attitude object. Fifth, those attitudes are arranged along an evaluative continuum ranging from favourable to unfavourable. This led to the formulation of the second alternate hypothesis that, the attitude university managers hold towards distance education has significant influence on their participation in distance education activities. The indicators for this variable were: Disciplines deemed to be appropriate for distance learning mode; perceived usefulness of distance education; factors deemed to be influencing distance education; participation in distance education.

2.8.2 Dependent Variable

Dependent variable refers to the variable that varies as a result of influence from the effects of another variable (independent variable). It is a function of the independent variable. This study was guided by one dependent variable, participation in distance education. Participation in distance education is influenced by the prior knowledge of distance education. Prior knowledge or level of familiarity in adult and distance education and online instruction may enhance its adoption, (O'Malley, 1999). University management may lack some vital knowledge

of distance education; and in the process of acquiring knowledge may encounter some unpleasant experiences which may influence their participation in distance education. The indicators of the dependent variable were: distance education workshops and seminars attended; distance materials prepared; use of computers for teaching purposes; use of email for teaching purposes; courses offered through distance; distance education workshops and seminars organized.

2.8.3 Moderating Variable

Moderating variable refers to the variables that have influence on the relationship between the independent and dependent variables. In this study, the moderating variable was, 'the type of institution'. There are three main types of institution in relation to distance education: First, single mode institutions in which distance education is the sole mission to which teachers and administrative staff are exclusively dedicated. Course development, instruction, evaluation and other educational processes are tailored to the distance learner. Second, there is the dual mode institution in which teaching is principally on campus but offering some programmes at a distance. Third, distance learning consortia which consist of two or more distance learning institutions that share either in the design or delivery of programmes, or both.

The public universities in Kenya are dual mode institutions. The universities management are experienced in traditional face-to-face instruction as opposed to distance education, hence more attention is given to face-to-face programmes while the distance courses are not given much attention.

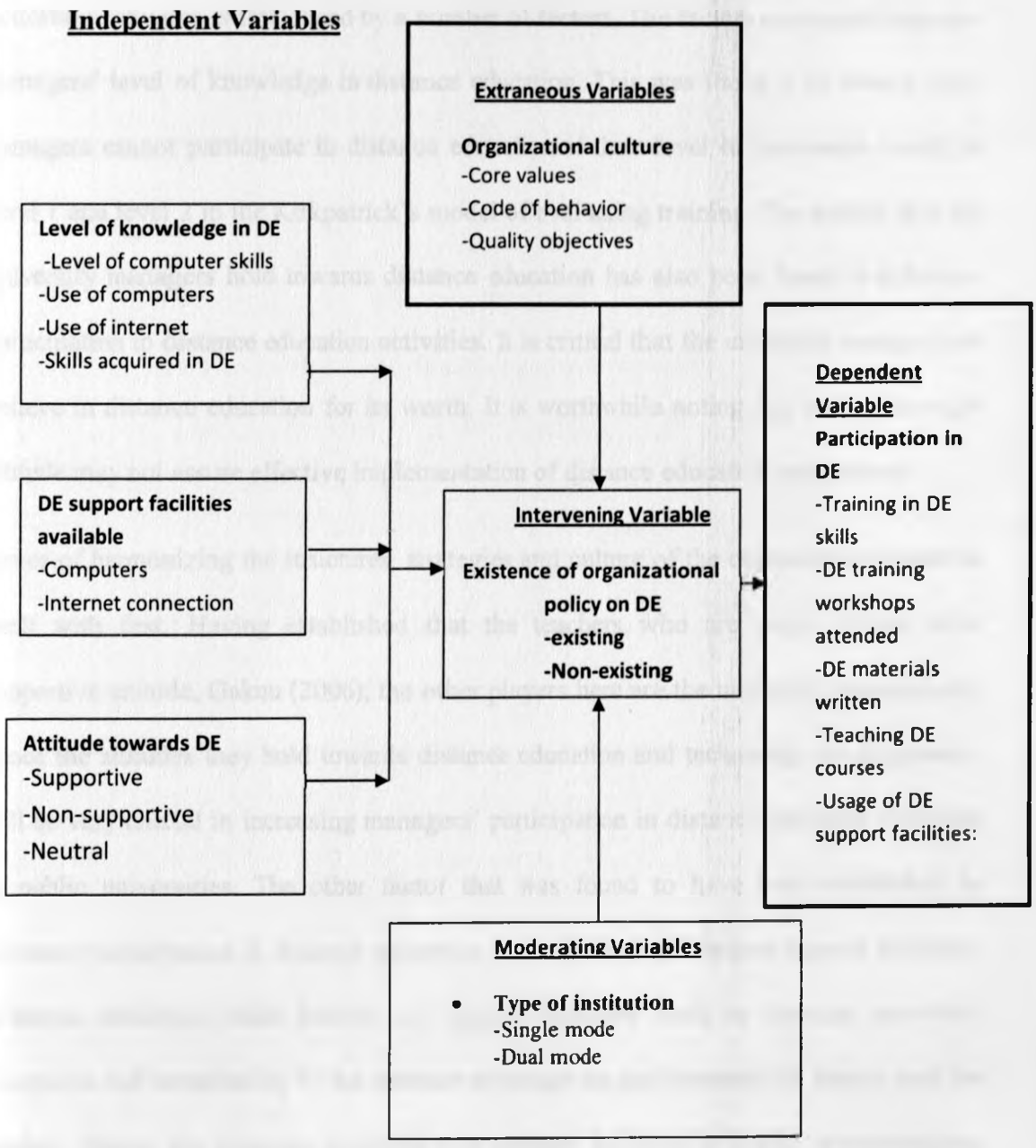
2.8.4 Intervening Variables

Existence of Distance Education policy was considered as an intervening variable. Distance education requires policy framework to offer guidance and address issues of academic, fiscal, geographic, governance, labour management, legal, student support services, Gellman-Danley and Fetzner (1998); plus technical and cultural, Berge (1998). The existence or non-existence of policy framework determines the level of participation in distance education activities.

2.8.5 Extraneous Variables

Organizational culture is considered as an extraneous variable. Organizational culture includes core values, code of behaviour and quality objectives. The culture that the universities have embraced influences their participation in distance education activities.

Fig 5: Conceptual Framework: Factors Influencing University Managers' Participation in Distance Education



2.9 Summary of the Reviewed Literature

This section on literature review has examined literature relevant to the area of study, factors influencing university managers' participation in distance education. From the literature reviewed, it is clear that participation of university managers in distance education activities is influenced by a number of factors. The factors considered here are: managers' level of knowledge in distance education. This was found to be crucial since managers cannot participate in distance education if their level of knowledge is still at level 1 and level 2 in the Kirkpatrick's model of evaluating training. The attitude that the university managers hold towards distance education has also been found to influence participation in distance education activities. It is critical that the university management believe in distance education for its worth. It is worthwhile noting that having the right attitude may not assure effective implementation of distance education programmes.

Issues of harmonizing the structures, strategies and culture of the organization should be dealt with first. Having established that the teachers who are major players have supportive attitude, Gakuu (2006); the other players here are the university management, hence the attitudes they hold towards distance education and technology use in general, will be very crucial in increasing managers' participation in distance education activities in public universities. The other factor that was found to have been established to influence participation in distance education is availability of adequate support facilities. Distance education relies heavily on support facilities such as learning materials, computers and connectivity to the internet to bridge the gap between the learner and the teacher. Hence, the adequate availability of support facilities is crucial in encouraging participation in distance education activities.

This is a major gap established in the literature reviewed. The public universities seem not to have done enough in the promotion of distance education in terms of training in distance education and provision of adequate facilities that would encourage more participation in distance education. There is need for management of change and structural change in the universities so that resources could be committed to enhance more participation in distance education. This will be possible only if the university management attitude towards online instruction and distance education will be supportive.

A second gap identified in the reviewed literature is lack of knowledge in distance education. In embracing change, the major issue to contend with is whether everybody involved understands really what it is that should change and how it can best be accomplished, (Fullan, 2001). The third gap identified is lack of participation in distance education by the managers; hence they have no reference point when it comes to discussions on distance education. Issues to do with budgetary allocation, human resource and time allocation requires that one understands to some extent what distance education entails. The theoretical and conceptual framework that guided this study has also been presented in this section.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section of the study presents the methods that were employed in collecting data, analysing them, interpreting them and providing inferences and conclusions. It gives an in-depth description of how research questions identified in chapter one were answered. The section describes the research methodology that includes the research design, target population, sample and sampling procedure, research instruments, reliability, validity, data collection procedure and data analysis procedures.

3.2 Research Design

This research used mixed mode approach, that is, both quantitative and qualitative approach. A combination of quantitative and qualitative techniques are said to supplement each other in that qualitative technique provides the in-depth explanations while quantitative technique provides the hard data needed to meet the requirements of objectives and to test hypotheses (Emory, 1985). A combination of qualitative and quantitative techniques was deemed appropriate for this study since the researcher had several objectives, some of which were better assessed using qualitative while others were better assessed using quantitative techniques. The study is quantitative in nature in that it sought to find out factors that influence university managers' participation in distance education; and it is qualitative in that it obtained a holistic picture of what goes on in public universities in Kenya in relation to managers' participation in distance education and more innovative forms of teaching.

The research design that was employed in this study was cross-sectional descriptive survey design. A cross-sectional survey collects information from a sample that has been drawn from a pre-determined population. The information is collected at just one point in time, although the time it takes to collect all the data may take a number of weeks or more (Fraenkel & Wallen 2006). This cross-sectional survey gave the state of affairs in public universities. The researcher looked at real experiences at the public universities in relation to the participation in distance education. The sampling technique was crucial since it had strong influence over the validity of the independent variable, (Black, 1999). The sample was drawn from the pre-determined population and the information was collected at one point in time although the time to be taken in collecting the data was about five months. This study was carried out on a sample drawn from the public universities and at the end of the study, a description of the public university management in Kenya was inferred from what was found from the sample.

3.3 Philosophical Foundation of the Study

This study is based on philosophical foundation of positivism. Positivism emerged in the nineteenth century and Auguste Comte (1798-1857) was the person most responsible for the development and spread of this philosophy. He notes "I believe that I shall succeed in having it recognized...that there are laws as well-defined for development of the human species as for the fall of stone". He argues that the stage of human knowledge is reached when people begin to rely on empirical data, reason, and the development of scientific laws to explain phenomena. Positivism holds that there exists a reality 'out there', independent of us, waiting to be discovered, that is driven by stable natural laws

(Fraenkel & Wallen 2006). The task of scientific researcher is to discover the nature of this reality and how it works.

This study looks at the university managers' participation in DE. It pre-supposes that there are factors that are influencing managers' participation in DE and these factors need to be elicited and addressed to increase participation and adoption of DE in the universities. The study is also based further on philosophical foundation of postmodernism. Postmodernism holds that all knowledge and truth are products of history, power and social interests, and hence cannot be discovered. There is no universal truth. This study looks at the university managers' participation in distance education activities, and this participation is deemed to have emanated from the truth managers hold from history, power and social interests as it relates to conventional education versus distance education. There is no universal truth in what some of the manges may be holding but with the changing of times and technology, they will find that distance education is as applicable as the conventional education.

3.4 Study Location

The location of this study was the public universities as distributed in the Republic of Kenya. The study location was chosen based on various factors. One, the researcher is interested in studying distance education practices in Kenya which is also the researcher's home country. Second, the researcher has worked in one of the public universities in the country, therefore, understands the state of affairs in the universities. Third, the researcher has worked in the distance education unit in the university and hence has prior

knowledge of participation and adoption rates of distance education in the university and this will be extended to other universities in this study. The Republic of Kenya is approximately 582,644 square Kilometres. Kenya lies between Somalia to the East, Ethiopia to the North, and Sudan to the northwest, Uganda to the West and Tanzania to the South. The country is cut across by the Great Rift Valley which runs from North to South and whose depth is between 610 and 914 metres below the rest of the landscape.

Kenya's coastline on the Indian Ocean stretches from the Somalia border in the North, to Tanzania in the South, a distance of 620 kilometres. Kenya lies astride the equator on the Eastern seaboard of Africa. There are seven public universities in Kenya, namely; the University of Nairobi: This is a body corporate established by an Act of Parliament Cap 210 of the Laws of Kenya. It is the pioneer institution of university education in Kenya. The University is situated in Nairobi, a fast growing city with a population of over 3.5 million. The city centre has an area of over 700 square kilometres and stands at an altitude of 1,675 meters above sea level. It is 140 kilometres south of the equator and some 480 kilometres west of the Indian Ocean. It has a student population of approximately forty thousand, drawn from all over the country and beyond. The major core function of the university of Nairobi is teaching and learning: The University offers innovative , relevant and market-driven academic programmes , both at undergraduate and postgraduate levels, hence participation in distance education is crucial if the university is to keep abreast with the new innovations in education as the country struggles with the issue of equity and access in education.

Kenyatta University: Kenyatta University is situated about 23 kilometres from the city of Nairobi on the Nairobi-Thika dual carriageway on 1,100 acres of land; Moi University: Moi University is located in Eldoret, 310 kilometres northwest of Nairobi. It was established as the second university in Kenya by an Act of Parliament, the Moi University Act of 1984. The total student enrolment now stands at 22,364 out of whom 19,429 are undergraduates. One of the university's core values is continual improvement of services in order to remain competitive and relevant. This will only be realised if participation in DE and its adoption is embraced to keep pace with the new technology.

Egerton University: Egerton University is the premier Agricultural public University in Kenya; Jomo Kenyatta University of Agriculture and Technology: Jomo Kenyatta University of Agriculture and Technology is situated in Juja, 36 kilometres North East of Nairobi, along Nairobi-Thika Highway. Maseno University: Maseno University continues to grow as an academic hub of choice to numerous prospective students. With its vision being a Centre of Excellence in Teaching, Research and Development, Maseno University has successfully integrated Information Technology (IT) into its academic programmes; and Masinde Muliro University of Science and Technology: The University was founded through Harambee spirit in 1972, as Western College of Arts and Applied Sciences (WECO). In 2002, WECO became WUCST (Western University College of Science and Technology) after being elevated to a Constituent College of Moi University. Early 2007, President Kibaki elevated WUCST to a full university by assenting to a Bill which also changed the name to Masinde Muliro University of Science and Technology (MMUST). This research was based on the seven universities and each one of them was represented.

3.5 Study Population

The study population comprised of the top university management in the seven public universities in Kenya, namely; University of Nairobi, Kenyatta University, Egerton University, Moi University, Jomo Kenyatta University of Agriculture and Technology, Maseno University and Masinde Muliro University.

3.6 Target population

This sice-chancellors, college principals, deans of faculties and schools, and heads of academic departments in the public universities in Kenya. At the time of study, there were 121 managers at the university of Nairobi- 4 deputy vice-chancellors, 6 principals, 29 deans/directors and 83 heads of academic units (chairmen). Kenyatta University had a total of 54 managers comprising 3 deputy vice-chancellors, 3 principals, seven deans/directors and 41 heads of academic units (chairmen). Moi university had 68 managers comprising 2 deputy vice-chancellors, 3 principals, 13 deans/directors and 50 heads of academic units (chairmen). Jomo Kenyatta University of Agriculture and Technology had 51 managers comprising deputy vice-chancellors, 3 principals, 11 deans/directors and 34 heads of academic units (chairmen). Egerton university had 37 managers comprising 3 deputy vice-chancellors, 3 principals, 8 deans/directors and 23 heads of academic units (chairmen). Masinde Muliro University of Science and Technology had 26 managers comprising 3 deputy vice-chancellors, 6 deans/directors and 17 heads of academic units (chairmen).The target population was 399 managers and this is summarized in Table 3.1.

Table 3.1: Target population

University	Academic division	Total number
University of Nairobi	• Main division headed by DVCs	4
	• Colleges/campus	6
	• Faculties/Schools/Institutes	29
	• Departments	83
Kenyatta University	• Main division headed by DVCs	3
	• Colleges/campus	3
	• Faculties/Schools/Institutes	7
	• Departments	41
Moi University	• Main division headed by DVCs	2
	• Colleges/campus	3
	• Faculties/Schools/Institutes	13
	• Departments	50
Jomo Kenyatta University of Agriculture and Technology	• Main division headed by DVCs	3
	• Colleges/campus	3
	• Faculties/Schools/Institutes	11
	• Departments	34
Maseno University	• Main division headed by DVCs	3
	• Colleges/campus	3
	• Faculties/Schools/Institutes	6
	• Departments	29
Masinde Muliro University	• Main division headed by DVCs	3
	• Colleges/campus	
	• Faculties/Schools/Institutes	6
	• Departments	17
Egerton University	• Main division headed by DVCs	3
	• Colleges/campus	3
	• Faculties/Schools/Institutes	8
	• Departments	23
Total		**396**

3.7 Sampling Design

This section of the study describes the sampling design that was used in the study. The study used multi-stage stratified sampling method to select a sample from the university management in the seven public universities. This was to ensure reliability of the results. This also ensured that university management chosen for the study, were representative of the seven public universities. The method further ensured that all university colleges, faculties and academic divisions studied in each university had equal opportunity of being selected for the study. Hence, the sample was representative. Finally, the individual subjects were selected using the simple random sampling procedure.

3.8 Sample Size

The sample indicates the total number of respondents selected from the target population. Samples should be as large as a researcher can obtain with reasonable expenditure of time and energy, (Fraenkel & Wallen 2001). According to Best (1993), there is no fixed number of percentage of subjects that determines the size of an adequate sample. It may depend upon the nature of the population of interest or the data to be gathered and analyzed.

To determine the sample size, the following formula may be used:

$$n = \frac{z^2 pq}{d^2}$$

Where,

n = desired sample size (if the target population is greater than 10,000)

z = standard normal deviation at the required confidence level of 95%

p = proportion in the target population estimated to have characteristics being measured

q = 1- p

d = the level of statistical significance set

$nf = \frac{n}{1+\frac{n}{N}}$ where,

nf = the desired sample size (population is less than 10,000)

n = desired sample size (population is greater than 10,000)

N = estimate of the population size

Morgan and Krejcie Table for sample size determination was used. This is a statistical table for determining sample sizes for different population sizes, produced by Krejcie and Morgan (1970). The Statistical Table indicates that the smaller the population, the larger the percentage taken for the sample and vice versa (See appendix vi). As indicated in the statistical table, at least 50% of the total number in every category of the administrative managers at the public universities, thus for the departments, faculties/ schools/institutes and colleges applied the formula,

$n = 1/2N$

Whereas, for the deputy vice-chancellors, two of them from each university were considered. This implied that all the seven universities, their colleges and campuses were represented in the study. The total sample size agreed with the Krejcie's Table. A population of 396 corresponds to a sample size of 196. Therefore, a total of 196 university managers were selected from the seven universities as summarized in Table 3.2 and Table 3.3.

Table 3.2: Sample Size

University	Academic division	Total number	Sample size
University of Nairobi	• Main division headed by DVCs	2	2
	• Colleges/campus	6	3
	• Faculties/Schools/Institutes	29	14
	• Departments	83	41
Kenyatta University	• Main division headed by DVCs	3	2
	• Colleges/campus	3	1
	• Faculties/Schools/Institutes	7	3
	• Departments	41	20
Moi University	• Main division headed by DVCs	2	2
	• Colleges/campus	3	1
	• Faculties/Schools/Institutes	13	6
	• Departments	50	25
Jomo Kenyatta University of Agriculture and Technology	• Main division headed by DVCs	3	2
	• Colleges/campus	3	1
	• Faculties/Schools/Institutes	11	5
	• Departments	34	17
Maseno University	• Main division headed by DVCs	3	2
	• Colleges/campus	3	1
	• Faculties/Schools/Institutes	6	3
	• Departments	29	14
Masinde Muliro University	• Main division headed by DVCs	3	2
	• Colleges/campus		
	• Faculties/Schools/Institutes	6	3
	• Departments	17	8
Egerton University	• Main division headed by DVCs	3	2
	• Colleges/campus	3	1
	• Faculties/Schools/Institutes	8	4
	• Departments	23	11

Table 3.3: Sample Size Summary

Heads of academic departments	**277**	**136**
Deans/Directors of faculties/schools/institutes	80	38
Principals of colleges/campuses	21	08
Deputy Vice-chancellors of the universities	18	14
Total	**396**	**196**

3.9 Data Collection Instruments

The research instruments used to collect data in this study were structured questionnaires. The questionnaires contained both open and closed-ended questions as well as a section for giving one's opinion that was to be analysed qualitatively. The closed-form questions called for short, check-mark responses, whereas the open-form or unrestricted questions called for free responses in respondents own words. When using the closed form questions, provision was made for unanticipated response by including 'others' category among the responses. There were four different questionnaires that were used to collect data in this study.

3.9.1 Questionnaire for the Chairmen

This questionnaire was used to collect data from chairmen. It consisted of two main sections. The first section sought to gather general information about the chairmen. This included demographic information like their gender, age bracket and information about their management position in the university. The second section sought to find out factors that influenced the particular chairman's participation in distance education. This addressed the objectives and research questions as presented in the chapter.

3.9.2 Questionnaire for the Deans/Directors

This questionnaire was used to collect data from deans/directors. It consisted of two main sections. The first section sought to gather general information about the dean/director. This included demographic information like their gender, age bracket and information about their management position in the university. The second section sought to find out factors that influenced the particular dean/director's participation in distance education. This addressed the objectives and research questions as presented in the chapter.

3.9.3 Questionnaire for the Principals

This questionnaire was used to collect data from principals of colleges and campuses. It consisted of two main sections. The first section sought to gather general information about the respondents. This included demographic information like their gender, age bracket and information about their management position in the university. The second section sought to find out factors that influenced the principal's participation in distance education. This addressed the objectives and research questions which are presented in the chapter.

3.9.4 Questionnaire for the Deputy Vice – Chancellors

This questionnaire was used to collect data from deputy vice-chancellors. It consisted of two main sections. The first section sought to gather general information about the respondents. This included demographic information like their gender, age bracket and information about their management position in the university. The second section sought to find out factors that influenced the vice-chancellor's participation in distance education. This addressed the objectives and research questions as presented in chapter one.

3.10 Instrument Validity and Reliability

Validity of an instrument in research refers to the extent to which the instrument measures what it is supposed to measure. Reliability is concerned with the consistency of research findings. If a research finding can be repeated and similar results found, it is reliable.

3.10.1 Instruments Validity

To ensure the validity of the instruments, the questionnaires were pre-tested. They were administered to a few members of the university management in a pilot study. The purpose of this was to detect any problems that could have been remedied before the actual study was carried out, (Fraenkel & Wallen, 2000). Construct validity is the approximation that operationalization accurately reflects the construct. This was ensured by defining the constructs adequately and checking operationalization against it. Face validity, was ensured by looking at the operationalization and see whether "on its face", it seemed like a good translation of the constructs. Content validity, was ensured by checking the operationalization against the relevant content domain for the construct. For

criteria-related validity, performance of the operationalization was checked against set criterion. Predictive validity ensured that operationalization was able to predict what the researcher wanted it to predict. Validity of the instruments was attained with the guidance of the supervisors.

3.10.2 Instruments Reliability

Reliability means "repeatability" or "consistency". A measure is considered reliable if it would give the same results over and over again (Trochim, 2006). To ensure reliability of the questionnaires, spilt-half method was used. Split-half procedure involves scoring two halves of a test separately for each person and then calculating a correlation coefficient for the two sets of scores. In this study, the procedure involved putting the questionnaires from the respondents into two piles (even and odd numbers). Then the correlation coefficient for the two piles was calculated. The coefficient indicates the degree to which the two halves of the test provide the same results and hence describes the internal consistency of the test. For reliable questionnaires, the two findings should not be significantly different.

The study employed Kuder-Richardson Approach formula KR21 to test internal consistency of the instruments. The formula required the number of items on the test, the mean and the standard deviation of the items.

The formula used was:

KR21 Reliability Coefficient = K/K-1[1- M(K-M)/K(SD2)]

Where K is the number of items

M is the mean score of the test scores

And SD is the standard deviation of test scores.

In the study, applying the formula, the reliability was found to be 0.869 which is good. Fraenkel and Wallen (2006) recommend that for research purposes, reliability be 0.70 or higher. Hence the instruments were accepted as being reliable. The results of the reliability test showed a scale coefficient which ranged from 0.568 to 0.874. This indicates that the instrument had the required reliability.

3.11 Statistical Instruments

The statistical instrument selected and used in this research was one that gave consistent results, that is, it had validity. It was also easy to use.

The Likert Scale was used to rate the degree of attitude of university management towards DE. This is a five-point scale that ranges from 'strongly disagree' to strongly agree' (Gall and Borg 1996). This ascertained the attitudes by declarative statements and asking them to rate them in terms of agreement or disagreement. The total score was quantified as the indicator of the attitude in order to achieve maximum reliability and validity, (Black 1999).

Five-point rating scale was also used in a set of questions which required similar responses whereas questions that needed more explicit response were put under different rating scale for each. This rating scale ranged from three point to seven point scale. Free response questions helped in confirming the issues raised were actually important.

Checklists were also used. The checklist consisted of activities or set of events considered collectively to be the operational definition of the attitude.

The instruments were piloted to ensure that the items presented on the instruments were appropriate indicators of constructs. Piloting ensured that different responses have similar interpretation of the questions presented.

3.12 Data Collection Procedure

The researcher applied for a research permit from the Ministry of Higher Education, Science and Technology. After it was granted, the researcher wrote letters to the university administration asking for permission to collect data from the various managers as it was outlined in research permit from the Ministry of Higher Education, Science and Technology. The research assistants were then trained on the process of data collection and what was expected. There was an introduction letter to the respondents that assured them of confidentiality and a justification of the study. The process took a total of five months because the university managers who were the unit of analysis in this study, have busy schedules and to get acceptable number of respondents took time.

On data management, once the questionnaires were received from the field, there was signing of the questionnaires. This was to ensure the sample size based questions and their respective quotas on the sampling frame. There was also coding frame development for all the questionnaires received for easier analysis. There were statistical checks to ensure that correct and accurate data capturing into its respective or designated design format as per the sample. The data was then exported to SPSS (18.0). Imaging was done as a validation that all handwritten characters had been properly captured.

3.13 Data Analysis

Both descriptive and inferential statistics in analyzing data were used. This spelt out what was found from the data and how it was related to the population under study. Inferential statistics helped in using the sample findings to generalize to the population.

Once the raw data was collected, it was cleaned. This involved editing, coding and tabulation. The responses were then coded by assigning number values for further analysis (Marshall & Rossman 1989). Data was then translated into derived data which was more useful in interpretation. Four types of measurement scales were used, namely; the ordinal scale, the nominal scale, the interval scale and the ratio scale. The data gathered was then analyzed using the Statistical Package for Social Scientists (SPSS, 18.0).

Data on nominal scale was used in determining the gender of the respondents and determining which public university they belong to. These were analysed using measures of central tendency, the mean and the mode. The ordinal data was used in the determination of the position of the respondents in the administration hierarchy in the public universities.

Data on interval scale was used for the responses received on rating scales, checklist and likert scale. For qualitative data, the analysis involved analyzing and synthesizing the information the researcher had obtained from the open items of the questionnaires. This involved a description of what the researcher obtained from the respondents. The researcher did content analysis to interpret data presented from the open-ended questionnaire items. While for quantitative data, the analysis was done using measures of

central tendency to calculate median and mode. Correlation was used to verify the relationship among variables by calculating correlation coefficient. Spearman correlation coefficient and Kendall tau b were used for ordinal and nominal data. Spearman correlation coefficient and Kendall tau b also showed direction and magnitude of the relationship between the variables, for example, universities management attitudes and participation in distance education and university managers' level of knowledge in distance education and participation in distance education activities. Mann-Whitney U Test was used to analyse ranked data and establishing whether there existed difference in means of various groups. These measures were appropriate for this study because the data presented was mainly non-parametric.

3.14 Ethical Considerations

Ethical considerations made in this study were based on the basic aspects that Oliver (2008) identified as being an important component of social considerations in social sciences research. These ethical considerations consisted of identification of the researcher to the respondents. This was done by writing an introductory letter to the respondents that identified the researcher to the respondents. Reasons behind the carrying out of the study were given in the same letter of introduction and consequences of respondents' participation in the study. The letter also assured the respondents of the confidentiality of the information gathered. Research permit was obtained from the Ministry of Higher Education, Science and Technology before embarking on data collection phase of the study.

Table 3.4: Operational Definition of Variables

Objective	Independent variable	Indicator	Measurement	Measuring Scale	Data collection method	Type of Analysis	Tools of Analysis
-To establish the extent to which managers' level of knowledge in distance education influences their participation in distance education activities.	-managers' level of knowledge in distance education	-DE training -Computer training -use of computers -possession of email address -use of email address	-Number of trainings in DE -Number of hours of computer training -purpose of computer -purpose of email address	-ordinal -ordinal -nominal -nominal	Survey Survey Survey Survey	-descriptive -descriptive -inferential -inferential	Measures of central tendency Spearman correlation coefficient
-To establish the extent to which availability of distance education support facilities influences managers' participation in distance education activities.	-Availability of distance education support facilities	-Internet Connectivity; -computers -training opportunities -ICT help desk.	-availability of Internet -Availability of Connectivity - Availability of computers - availability of training opportunities -availability of ICT help desk -number of internet connection points, computers, training opportunities -level of ICT unit	-nominal -nominal -nominal -nominal -nominal -Ordinal -Ordinal	Survey	-non parametric -non parametric -non parametric -non parametric	Measures of central tendency Spearman correlation coefficient
-To establish the extent to which university managers' attitude towards distance education, influences their participation in distance education activities.	-University managers' attitude towards distance education	-Disciplines deemed to be appropriate for distance learning mode; -Perceived usefulness of distance education; -Factors deemed to be	-courses that can be offered through distance mode -usefulness of distance education to managers -factors that managers term to influencing	-Interval	Survey	Likert scale	Kendall tau b correlation coefficient

		influencing participation in distance education	their participation in distance education				
Dependent Variable	University Managers' Participation in Distance Education	-Distance education workshops and seminars; -distance materials; -computers for teaching purposes; -email for teaching purposes; -Distance education Courses	-Number of distance education workshops and seminars attended; -Number of distance education workshops and seminars organized for staff -distance materials prepared; -Use of computers for teaching purposes -Use of email for teaching purposes; -Courses offered through distance mode	Ordinal	Survey	Non-parametric	Mann whitney u

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter provides a summary of the survey data collected from the university managers of the public universities in Kenya. The chapter is organized in sub-sections; first the instruments return rate is determined. This is followed by an analysis of demographic characteristics of the respondents. This is followed by the analysis of the findings based on the objectives of the study. The first objective sought to establish the extent to which managers' level of knowledge in distance education influences their participation in distance education activities. Under this objective, the following indicators were analysed: Training in distance education of the university managers had gone through; training in computer application skills; number of hours of training; purpose for personal computer; purpose of email address; participation in distance education.

The second objective sought to analyse the extent to which availability of distance education support facilities influences managers' participation in distance education activities. Under this objective, the following indicators were considered and analysed: Internet availability; connectivity; availability of computers; availability of opportunities for training; availability of ICT help desk.

The third objective sought to establish the extent to which university managers' attitude towards distance education, influences their participation in distance education activities. The following specific indicators were addressed in this objective: Disciplines deemed to

be appropriate for distance learning mode; perceived usefulness of distance education; factors deemed to be influencing distance education; participation in distance education.

The study also sought to establish the level of participation of university managers in distance education activities at the public universities in Kenya. To establish this, the following specific issues were addressed: distance education workshops and seminars attended; distance materials prepared; use of computers for teaching purposes; use of email for teaching purposes; courses offered through distance; distance education workshops and seminars organized.

4.2 Data Analysis

Data collected was analysed using descriptive and inferential statistics. Survey data concerning university managers' participation in distance education and factors that influence their participation, using self-administered questionnaires was collected. The data gathered was then analyzed using the Statistical Package for Social Scientists (SPSS) version 18 was used, (Kirkpatrick & Feeney, 2011). For qualitative data, content analysis was used to analyse questionnaire items that were qualitative in nature. This involved the analysis, description and synthesis of information obtained from the open-ended items of the questionnaires. Quantitative data was anlysed using measures of central tendency to calculate the mean and the mode. Measures of spread were used to calculate the standard deviation. Correlation was used to verify the relationship among variables by calculating the correlation coefficient. Spearman rank order correlation coefficient and Kendall's tau coefficient were used for non-parametric data. For parametric data, factor analysis was used. This was important so as to establish the extent of the influence exerted on the dependent variable by the independent variable. Spearman rank order correlation

coefficient was used to find out the extent to which factors influenced participation in distance education activities in the universities. The findings are presented in this chapter according to the formulated objectives, research questions and hypotheses of the study.

4.3 Questionnaire Return Rate

All public universities in Kenya participated in the research. These are the University of Nairobi, Kenyatta University, Moi University, Egerton University, Maseno University, Jomo Kenyatta University of Agriculture and Technology and Masinde Muliro University. A total of one hundred and ninety six (196) questionnaires were distributed to university managers, and one hundred and forty three (143) questionnaires were duly filled and returned. This translates to seventy three per cent (73%) return rate.

Table 4.1: Questionnaire Return Rate

University	**Number of University Managers participating**		
	Expected	Actual	% Return Rate
University of Nairobi	60	45	75
Kenyatta University	26	21	81
Moi University	34	25	73
Egerton University	18	14	73
Masinde Muliro University	13	11	84
Maseno University	20	08	40
Jomo Kenyatta University of Agriculture and Technology	25	19	76
Total	**196**	**143**	**73**

Table 4.1 showed that all the seven universities had responded very well, (Monkey, 2000), to the questionnaires distributed and the representation was proportionate to the number of staff involved in the study.

4.4 Demographic Characteristics of the Respondents

The survey respondents portrayed the following demographic characteristics:

4.4.1 Respondents' Gender Distribution

The respondents represented both genders as shown in Table 4.2.

Table 4.2: The Percentage Gender Based Distribution of University Managers

University Manager	Male (N)	%	Female (N)	%
Chairmen	75	76	24	24
Deans/Directors	8	29	0	0
Principals	5	62.5	3	37.5
DVCs	7	70	3	30

The data indicated that majority of the university managers sampled are males. This is represented by 76% for chairmen; 29% for directors and deans; and 62.5% for principals. This shows that university management positions are held by more men than women.

4.4.2 Age of the Respondents

The respondents' age distribution is shown in Table 4.3. Most of the managers are middle aged.

Table 4.3 Age of the respondents

University Manager	Below 25	N	25-35	N	36-45	N	Above 55	N	46-55
Chairmen	0	0	0	42	42.9	5	4.8	52	52.4
Deans/directors	0	0	0	9	33.3	0	0	19	66.7
Principals	0	1	16.7	1	16.7	1	16.7	3	50
DVCs	0	0	0	0	0	7	67.3	3	32.7

From Table 4.3, majority of the chairmen were in the age bracket 45-55 years. This group comprises 52.4% while 42.9% belongs to age bracket 36-45 years. None of the sampled chairmen fell in the bracket 25-35 years, while only 4.8% were in the bracket of above 55 years.

Majority (66.7%) of the deans/directors belonged to 46-55 age bracket while 33.3% of the sample belonged to 36-45 age bracket. This may have indicated that participation in distance education activities was less among the managers who happened to be also in age bracket 46-55 years. This could be explained by technophobia among the managers and since distance education relies a lot on technology to bridge the gap between the teacher and the learner, then there was low participation in distance education activities.

4.4.3 Number of teaching years at the university

Table 4.4 presents the number of years the university managers have taught in the university.

Table 4.4: Number of Teaching Years at the University

University Manager	Below 5	N	5-10	N	11-15	N	Over 15
Chairmen	0	19	19.2	19	19.2	57	57.1
Deans/Directors	0	0	0	9	33.3	19	66.7
Principals	16.7	2	33.3	1	16.7	2	33.3
DVCs	0	0	0	0	0	7	70

Table 4.4 indicated that majority of the sampled managers had taught at the university for more than ten years, 57.1% of the sampled chairmen had taught for more than fifteen years; while 38% had taught for 5-15 years as shown in the table. However, 4.9% did not indicate the length of time they have taught in the university. Deans/directors indicated that 33.3% had taught for 11-15 years, while 66.7% had taught for more than fifteen years. The university college and campus principals indicated that 16.7% had taught for less than five years, and also for 11-15 years. This may be explained by the fact that some principals heading new campuses could have been new and had not taught at the university level. However, 33.3% of the sampled university college and campus principals had taught for 5-10 years and over 15 years.

4.4.4 Years of experience in the current position

The sampled managers indicated that they had held their current positions for a number of years as indicated in Table 4.5.

Table 4.5: Number of Years in the Current Position

University Manager	Less than 5	5-10	Over 10
Chairmen	61.9	23.8	14.3
Deans/directors	83.3	16.7	0
Principals	88	12	0
DVCs	62.7	37.3	0

Table 4.5 showed that 61.9% of the chairmen used in this study, had held their positions for less than five years, 23.8% of them had held their position for 5-10 years, whereas 14.3% of the chairmen had held their positions for over ten years. Majority (83.3%) of the deans/directors had held their positions for less than five years, 16.7% of the deans/directors had held their respective positions for 5-10 years; whereas none of the deans/ directors sampled in this study had served for more than ten years. Similarly, 88% of the university college and campus principals sampled in this study had served in their positions for less than five years, 12% of the principals sampled in the study had held the position for 5-10 years, whereas none of the principals sampled had served for more than ten years. This is because chairmen are appointed; deans are elected for a maximum of two terms of four years each, while the university college and campus principals serve for a maximum of two terms of five years each. This is according to the laid down policy documented in the university calendars.

4.5 Factors Influencing University Managers' Participation in Distance Education

The factors that influenced university managers' participation in distance education considered and studied in this research are: First factor was 'university managers' level of

knowledge in distance education'. The indicators of this variable studied are: training in distance education; training in computer application skills; duration of training; teaching of courses through distance mode; and writing of distance education materials. The second factor was 'availability of adequate distance education support facilities'. The indicators of this variable are: computer availability to the manager and the staff; access to personal computer; internet availability; number of internet connection points; and availability of ICT help desk. The third factor was 'university managers' attitude towards distance education'. The indicators of this variable are: academic disciplines that are believed can be offered through distance mode; perceived usefulness of distance education; and factors deemed to influence participation in distance education. To examine the cited factors influencing university managers' participation in distance education in the public universities in Kenya, it was important to establish the level of university managers' participation in distance education. Data analysis for each of these factors is presented in sections 4.6, 4.7 and 4.8 respectively.

4.6 University Managers' Level of Knowledge in Distance Education

The variable "level of knowledge in distance education' (an independent variable in this study) was measured by five key factors which were analysed using factor analysis from a list of eighteen factors which were used to analyse both the dependent and independent variables. The five indicators used to analyse this independent variable (university managers' level of knowledge in distance education) were: training in distance education; training in computer application skills; duration of training; courses taught through distance mode; and writing of distance education modules. The analysis, presentation and interpretation of each of the five factors are discussed in this section.

4.6.1 Training in Distance Education and Computer Application Skills

Training in distance education and computer application skills for university managers was studied through the assessment of the managers' responses on whether they had been trained in distance education and computer application skills on the questionnaire items. The findings of the training in distance education and computer application skills are summarized in Table 4.6.

Table 4.6:Training in Distance Education Instruction Methods

Manager's Response	Frequency (n)	Percentage
No	78	54.5
Yes	62	43.4
N/A	3	2.1

The information in Table 4.6 indicated that 54.5% of the university managers admitted that they had not participated in distance education training; .43.4% revealed that they had been trained in distance education. The rest of the university managers, 2.1% of the university managers, did not respond. This information revealed that as much as university managers are required to embrace distance education, 54.5% or more of the managers had not been trained in distance education. This made it difficult for them to participate in distance education activities in the university. The sampled managers (100%) had been trained in computer application skills.

4.6.2 Duration of Training in Computer Application Skills

All the university managers sampled in the study indicated that they had been trained in computer application skills. What differed is the duration of training. Table 4.7 summarized the findings on the duration of training in computer application skills, measured in number of hours.

Table 4.7: Duration of Training in Computer Application Skills

Duration of Training in Hours	Frequency (n)	Percentage
Below 20	7	4.8
21-30	47	33.0
31-40	14	9.8
Above 40	75	52.4

The findings indicated that all the managers had been trained in computer application skills. Based on Kirkpatrick's model of evaluating training, it is apparent that the managers had achieved during the first two levels of the model, Level 1 and Level 2, where there is reaction to the training in Level 1, and learning to improve knowledge and skills, in level 2; but what was not evident was behavior change in terms of increased participation in distance education, (level 3) and results showing benefits that the universities had acquired as a result of training, that is level 4.

The number of hours spent in the training in computer application skills was considered. This determined the amount of time a manager had interacted with the available content and this may have indicated how the knowledge acquired may be applied in practical work of teaching in distance education. UNESCO (2005) recommended that a training of

30 hours or more is adequate as an indicator of ICT application in secondary schools. In this study, 52.4% of the university managers had been trained in computer application skills for more than 40 hours. This is more than the recommended 30 hours (UNESCO, 2005) said to be adequate for ICT application in teaching. Over 60% of the university managers sampled in this study had been trained for more than 30 hours, and over 90% of the managers had been trained for more than 20 hours. This indicated that majority of the university managers were trained in computer application skills. However, about half, 50%, of the university managers sampled for the study had not been trained in distance education. This indicated low level of knowledge in distance education and consequently, this could have explained their seemingly low participation in distance education.

4.6.3 Teaching of courses through distance mode

In reference to teaching of courses through distance mode, university managers were required to respond to questionnaire items that required them to indicate whether they have taught courses through distance mode. The findings of the university managers' teaching of courses through distance mode are summarized in Table 4.8.

Table 4.8: Teaching Course(s) Through Distance Mode

Response	Frequency (n)	Percentage
No	102	71.3
Yes	41	28.7
Total	**143**	**100.0**

Table 4.8 indicated that 71.3% of the university managers had not participated in teaching of courses through distance mode. Only 28.7% of the university managers indicated that they had participated in the teaching of courses through distance mode.

What emerges from these findings is that the university managers' level of knowledge and consequently their participation in distance education activities was low.

4.6.4 Writing of distance learning materials

University managers' level of knowledge was further assessed by finding out whether they had written distance learning materials. The findings on university managers level of knowledge as shown by participation in the writing of distance education materials resulted in the summary presented in Table 4.9.

Table 4.9: Participation in DE Material Development Workshops/Seminars

Response	Frequency	Percent
Yes	61	42.6
No	82	57.4
Total	**143**	**100.0**

The findings summarized in Table 4.9 indicated that 57.4% of university managers had not participated in distance education material development workshops and seminars; while 42.6% of the university managers had participated in distance education material development workshops and seminars. This implied that over 57% of the university managers had not written or participated in distance education material writing workshops and seminars. This was considered to be an indicator of low level of knowledge in distance education activities.

Based on the percentage respondents who either responded with a 'no' or a 'yes' to the questionnaire items that were indicators of the managers' level of knowledge, the responses were categorized as: below 25% respondents represented very low level of knowledge in distance education, in as far as that indicator is concerned; 26% to 45%

respondents represented low level of knowledge in distance education; 46% to 65% respondents represented moderate level of knowledge in distance education; 66% to 85% respondents represented high level of knowledge in distance education; and 86% and above represented very high level of knowledge in distance education.

In terms of scores, 25% and below respondents scored 1; 26% to 45% scored 2; 46% to 65% scored 3; 66% to 85% scored 4; and 86% and above scored 5. Any score below 3 was considered low and any score above 3 was considered high, while a score of 3 represented an overall moderate level of knowledge in distance education.

From the findings presented, the university managers' level of knowledge is summarized in Table 4.10.

Table 4.10: University Managers' Level of Knowledge in Distance Education

Factor of Analysis	**Response**				**Percentage**	**Score**	**Remarks on participation level**
	Frequency	**Yes**	**frequency**	**No**			
Training in DE	62	43.6	81	54.9		2	Low
Training in computer application skills	143	100.0	0	0.0		5	Very high
Teaching courses through DE mode	41	28.6	102	71.4		2	Low
Writing of DE learning materials	61	42.9	82	57.1		2	Low
Mean Score						**2.75**	**Low**

From the study findings, it was established that the indicators used for this variable as a determinant of the level of participation in distance education activities namely: Training in distance education that the university managers had gone through; Training in computer application skills; duration of training; use of personal computer and e-mail for teaching purposes, indicate that there is low level of knowledge in distance education among the managers at the public universities. Summary of findings presented in Table 4.10 indicated that all the managers had undergone some computer training. However, training in distance education had only been attended by 43.6% of the respondents; 28.6% of the respondents had taught courses through distance mode; and further 42.9% of the respondents had participated in the writing of distance education materials.

In summary, knowledge in distance education plays a major role in determining how well one participates in distance education activities. From the findings, it is evident that the university managers' level of knowledge in distance education had a score of 2.75. This is less than 3. Therefore, the level of knowledge in distance education that the university managers possessed was low.

4.6.5 Level of Knowledge in DE among Managers of Public Universities in Kenya

The level of knowledge in distance education among managers of different public universities in Kenya was analyzed. Table 4.11 presents the findings. The findings are based participation in production of distance education materials. This is because, preparation of distance education materials is a key indicator of participation in distance education and level of knowledge in distance education.

Table 4.11: Level of knowledge in distance among managers of public universities in Kenya

Name of the University	Level of Knowledge in Distance Education-Production of Distance Education Materials		
	Yes (%)	No (%)	Total (%)
Egerton University	52.6	47.4	100
Jomo Kenyatta University of Agriculture and Technology	35.1	64.9	100
Kenyatta University	52.6	47.4	100
Maseno University	17.5	82.5	100
Masinde Muliro University of Science and Technology	17.5	82.5	100
Moi University	52.6	47.4	100
University Of Nairobi	70.2	29.8	100

This analysis considered the variable participation in distance material production. From the results, University of Nairobi has had more of its managers (70.2%) participating in the development of distance materials, while Maseno University and Masinde Muliro University of Science and Technology has less managers (17.5%) who indicated that they participated in development of distance materials. Kenyatta University, Moi University and Egerton University had each an average number (52.6%) of its managers

participating in development of distance materials. This implies that there is significant difference between levels of knowledge in distance education as elicited by the indicator participation in development of distance materials.

4.7 Availability of Distance Education Support Facilities

The variable 'availability of adequate distance education support facilities' was considered as an important determinant of university managers' participation in distance education activities. This variable was examined using the following five indicators: access to personal computer; internet availability; internet connection points; computers available for teaching; and availability of ICT help desk. This section presents the analysis and interpretation of each of these indicators.

4.7.1 Access to Personal Computer (PC) in the Office

Access to a personal computer was considered key in encouraging participation in distance education activities. This is because in the current age, most of distance education activities rely on technology. The findings on this indicator are summarized in Table 4.12

Table 4.12: Access to Personal Computer in the office

Access to PC in office	Frequency	Percentage
Yes	123	86.0
No	20	14.0

The data collected indicated that most university managers (86.0%) had personal computers; and only 14.0% had no access to personal computers. This could have been as

a result of the administrative tasks that the university managers are expected to perform in their respective positions. Besides the administrative duties that university managers used their personal computers to perform, they used the computers for various purposes as indicated in Table 4.13.

Table 4.13: Purpose of the Personal Computer in the Office

Managers' Response	Frequency	Percent	Score	Remarks on level of participation
Administration	56	39.1	1	Low
Personal Use	26	18.2	1	Low
Teaching	33	23.1	1	Very low
Other uses	28	19.6	1	Very low
Mean Score			**1**	**Very low**

The data collected indicated that 39.1% of the university managers used computers for administrative purposes; 18.2% of the respondents used their personal computers in the offices for personal purposes; and 23.1% admitted that they used their personal computers in office for teaching purposes. This indicated that there was low use of computers for teaching purposes. This was an indicator of low participation in distance education whose core functions are performed either administratively through support services available or through teaching.

4.7.2 Availability of Computers

The indicator 'availability of computers' was considered important in that with the technology taking the centre stage in the provision of distance education, any university unit (department, school, faculty. institute College or campus) without computers may not be in a position to participate in distance education activities as may be necessary. The findings on this indicator are summarized in Table 4.14.

Table 4.14: Number of Computers Available in the Department

No. of computers	Frequency	Percentage
1-5	50	50.5
6-10	33	33.3
11-15	10	10.1
16-20	5	5.1
Over 20	1	1.0

From the data presented in Table 4.14, it is evident that over 50.5% of the departments have 1-5 computers, while 1.0% have over 20 computers. It is clear that much investment has not been put in purchase of computers in the teaching departments in the public universities. Though the ratio of computer to staff is a better indicator of availability of computers in the department, 1-5 computers may not be sufficient for a department to use for both teaching and administrative purposes in the department.

The number of computers that the university managers sampled in this study availed to lecturers for teaching purposes was found to be distributed as summarized in Table 4.15.

Table 4.15: Number of computers available to Lecturers in the Departments

No. of computers	Frequency	Percentage
None	48	48.5
1-5	42	42.4
6-10	9	9.1
11-15	0	0
16-20	0	0
Over 20	0	0

The data showed that most university managers sampled in this study had not allocated any of their available computers to the lecturers for teaching. 48.5% of the sampled departments had not allocated any computer to their lecturers for teaching, while the rest, 42.4% have 1-5 computers allocated to the lecturers for teaching. On average 1.905 computers were availed to the lecturers for teaching purposes. This translates to approximately 2 computers per department being availed to the lecturers for teaching purposes.

4.7.3 Internet Availability and Internet Connection Points

Internet availability and the number of connection points available was considered to be important in determining the level of participation in distance education activities. This is because with internet, online learning and use of materials available via web is possible. In addition, interaction with students via e-mail, chats and other threads is possible. The findings on the results of this factor are summarized in Table 4.16.

Table 4.16: Number of Internet Connection Points in the Departments

No. of Internet connection Points	Frequency	Percentage
None	19	19.2
1-5	76	76.8
6-10	4	4.0
Over 10 points	0	0

The data collected revealed that the departments sampled had few Internet connection points. Table 4.16 indicated that majority of the departments had less than five points of Internet connections; and none had more than ten points of Internet connections. 19.2% of the university managers sampled in this study indicated that their units had no Internet connection points. 76.8% had 1-5 points of internet connections; and 4.0% had between 6 and 10 internet connection points. This was an indicator that Internet and Web-based distance education activities had not been emphasized in the departments and the teaching units in the public universities in Kenya.

Closely related to the factor on internet availability and connection points is the Internet speed. On examining this factor, the findings summarized in Table 4.17 presents the results.

Table 4.17: Internet Speed

Internet Speed	Frequency	Percentage
Slow	36	36.4
Satisfactory	56	56.6
Fast	4	4.0
Extremely fast	3	3.0

The data showed that 36.4% of the sampled departments had slow internet speed. This is a speed of 50 mbps. 56.6% of the sampled departments have a satisfactory internet speed of 80 mbps; 4.0% of the sampled departments had fast internet speed of 100 mbps, and only 3.0% of the sampled departments had extremely fast internet speed of over 150 mbps. In essence, this implied that 63.6% of the department had satisfactory internet speed and this should not be a hindrance on participation distance education activities.

4.7.4 Availability of an ICT Technical Unit/Help Desk

Distance education being a relatively new phenomenon in the public universities in Kenya, majority of the players do not possess all the skills required to participate in distance education. It is therefore important to have a technical unit or help desk to offer the assistance required to participate more in distance education. The results on the findings are summarized in Table 4.18.

Table 4.18: Availability of an ICT Technical Unit/Help Desk

Response	Frequency	Percentage
No	27	18.9
Yes	116	81.1
Total	**143**	**100.0**

The findings presented in Table 4.18 indicated that 81.1% of the university managers sampled in this study admitted that there was ICT technical unit or help desk in their respective units; and 18.9% indicated that there was no ICT technical unit available. This implied that more than 80% university managers agreed that they can access help when need arises, and therefore this may not be a hindrance to their participation in distance education activities.

4.7.5 Availability of Selected Distance Education Support Facilities

The third research question was to establish the influence of available support facilities on participation of university managers in distance education activities. Availability of support facilities was considered an important factor that was likely to influence participation in distance education activities. The managers were required to indicate (on a likert scale) the level to which they agreed that the selected distance education support facilities were available.

In summary, the indicator 'availability of selected distance education support facilities and services' showed that the support facilities were available. Considering the response 'strongly disagree to be equivalent to score 1; 'disagree' to be equivalent to 2; 'uncertain' to be equivalent to 3; 'agree' to be equivalent to 4; and 'strongly agree' to be equivalent to 5, the results are as summarized in Table 2.19.

Table 4.19: Availability of Selected Distance Education Support Facilities

Available Support	Mean Score	Level of Availability
An ICT technical unit/help desk	3.2	High
Materials made available via web	2.8	Low
Short courses or workshops	3.4	High
Special projects to stimulate use of technology	2.6	Low
Guidance and counseling unit for DE	2.8	Low
Clear admission procedure	3.8	High
Proper records keeping for DE students	3.6	High
Clear examination and certification procedure	3.9	High
Computer for teaching purposes	1.9	Low
Internet connection points	3.5	High
Mean	**3.5**	**High**

Table 4.19 showed the extent to which university managers agree that distance education support facilities and services are available to instructors. From the calculated means of 3.5, it was evident that managers disagreed, were uncertain or just agreed to a small extent that the DE support was available. The means ranged between 1.9 and 3.9. For analysis and interpretation, the Likert scores of 1, 2, 3, 4, and 5 were used, where

strongly disagree corresponded to 1; disagree to 2; uncertain or neutral to 3; agree to 4; and strongly agree to 5. Any score on the availability of support facility and services below 3.5 was low, and a score on the availability of support facility and services of more than 3.5 was considered to be high. The lowest score was 1.9 and the highest score was 3.9. This gave an overall median of 2.4. This indicated that the support facilities are available but at low level. This was further elaborated by the question on what other issues the managers would have liked to raise about participation in distance education activities. There was a call for more infrastructure and support facilities to be availed through budgetary allocation to cater for the needs in distance education. There was also the issue of support services especially guidance and counseling, special projects to stimulate distance education and availability of materials via web, that were raised in the qualitative and that required to be addressed.

4.8 University Managers' Attitude Towards Distance Education

This section presents the findings on the attitude of university managers towards distance education. Attitude is a predisposition to act. It is the tendency to respond to an object, a person, a situation or an idea positively or negatively (Baker, 1991). University managers' attitude towards distance education is crucial and requires to be investigated if distance education is to be embraced in the universities. Since they are the leaders in the universities, the university managers' attitude towards distance education greatly affect the behavior of other members of the university. The managers were required to respond to attitude items on the questionnaires to indicate if they had supportive or no-supportive attitude towards distance education.

The attitude was measured using the five point Likert's scale format. The responses comprised of strongly agree with a score of 5; agree with a score of 4; uncertain with a score of 3; disagree with a score of 2; and strongly disagree with a score 1. For analysis and interpretation, strongly agree, indicated a strong supportive attitude; agree showed a moderately supportive attitude; undecided, presented an undefined attitude; disagree, indicated a moderately non-supportive attitude; and strongly disagree, indicated a strong non-supportive attitude. Further analysis summarized the scores into two categories: any score below 2.9 was considered to be unsupportive attitude towards distance education; while any score above 3.1 was considered to be supportive attitude towards distance education. Data collected in this survey shows a total of twenty eight items that determined university managers' attitude towards distance education. The indicators that were showing the disposition of university managers in participating in distance education included: Disciplines deemed to be appropriate for distance learning mode; Perceived usefulness of distance education; Participation in distance education; and Factors deemed to be influencing participation in distance education activities. The results for each indicator are presented separately.

4.8.1 Disciplines deemed to be appropriate for distance learning mode

University managers were asked to identify courses that they agreed could be offered through the distance mode and the findings are summarized in Table 4.20.

Table 4.20: Academic Disciplines that can offer DE Programmes

Academic Discipline	frequency	percentage	Mean	Remarks
Humanities and social sciences	129	90.2	4.1	Supportive
Education	129	90.2	4.5	Supportive
Health Sciences	14	9.8	2.8	Non-supportive
Architectural and engineering	20	14.0	2.8	Non-supportive
Agriculture and veterinary sciences	41	28.7	2.9	Non-supportive
Biological and physical sciences	56	39.2	3.2	Supportive
Mean Score			**3.38**	**Supportive**

From Table 4.20 it is clear that university managers still have not agreed that all courses offered in the university can be offered through distance mode. Most of them (90.2%) agreed that both educational courses and humanities and social sciences courses can be offered through distance mode. 9.8% of the managers agreed that health sciences can be taught through distance and 14% agreed that architectural and engineering courses can be offered through distance mode. The general trend is that courses in humanities and education had positive attitude since managers agreed to a great extent that the courses can be offered through distance. Other courses that are under health sciences, engineering and architecture, and agriculture and veterinary sciences had negative attitude. Managers felt that these courses could not be offered through distance.

The decision was based on the 5- point Likert scale where strongly disagree was assigned 1, while strongly agree was assigned 5. Any score below 3 was considered to be non-

supportive, while any score above 3 was considered to be supportive. The overall average of 3.38 was obtained, implying that managers attitude is supportive (though to a small extent as deduced from the score of 3.38) of university managers' attitude towards in distance education activities.

4.8.2 Perceived Usefulness of Distance Education

In reference to this indicator, the university managers were to indicate the extent to which they agreed that distance education was useful in different areas. The study findings are summarized in Table 4.21.

Table 4.21: Importance of Distance Instruction in Teaching and Learning

Areas of Learning and Teaching	Mean	Remarks
Desire to get students more involved with technology like online learning, computers.	3.2	Supportive
Opportunity to use technology more innovatively to enhance course quality	2.8	Non-supportive
Opportunity to meet and interact with students at a distance	3.5	Non-supportive
Increased flexibility in working hours and location	3.8	Supportive
Response to students asking for distance educational programs	4.1	Supportive
Provide more and varied training sessions to teachers	2.8	Non-supportive
Continue to provide technology support as needed by instructor and student	2.6	Non-supportive
Provide more detailed understandable instructional materials that can be used in DE	3.1	Supportive
Mean Score	**3.24**	**Supportive**

From Table 4.21, it is evident that managers agree that distance instruction is important in responding to demand for distance education by learners. This has a mean of 4.1.

Distance instruction is also seen to be important in interacting with distance education students, and increasing flexibility in working hours and location. An average of 3.24 was obtained in predicting the usefulness of distance education. This implies that university managers sampled in this study have supportive (though low, and tending to non-supportive attitude) attitude towards distance education.

4.8.3 Participation in distance education

In this section, managers were required to indicate the extent to which they agreed that the identified factors influenced their participation in distance education activities. A total of twelve factors were presented to the managers.

4.8.3.1 Uncertainty of Intellectual Property Rights

Uncertainty of intellectual property rights was considered an important factor in this study. Table 4.22 presents a summary of the findings on this factor.

Table 4.22: Uncertainty of Intellectual Property Rights

Managers' response	Frequency	Percentage
Strongly Agree	49	34.3
Agree	41	28.7
Uncertain	17	11.9
Disagree	20	14.0
Strongly Disagree	4	2.8
No response	12	8.4
Total	143	100.0

Table 4.22 indicated that 49% of the managers that were sampled in this study strongly agreed that uncertainty of intellectual property rights influences their participation in

distance education activities. 41% of the managers agreed that uncertainty of intellectual property rights influenced their participation in distance education activities.

4.8.3.2 Lack of Knowledge of Technology Application

Lack of knowledge of technology application was presented as an important factor that may influence managers' participation in distance education. The findings on the responses the managers gave are summarized in Table 4.23.

Table 4.23 Lack of Knowledge of Technology Application

Managers' response	Frequency	Percentage
Disagree	23	16.1
Uncertain	18	12.6
Agree	42	29.4
Strongly Agree	38	26.6
No response	22	15.4
Total	**143**	**100.0**

From Table 4.23, it is clear that 70% of the managers admitted that lack of knowledge in technology application influenced their participation in distance education activities.

4.8.3.3 Personal Motivation to Use Technology

Personal motivation on use of technology was also presented in this study as an important factor that influenced participation in distance education activities. The results are summarized in Table 4.24.

Table 4.24: Personal Motivation to use Technology

Managers' Response	Frequency	Percentage
Disagree	13	9.1
Uncertain	21	14.7
Agree	41	28.7
Strongly Agree	30	20.9
Non-Response	38	26.6
Total	**143**	**100.0**

The results in Table 4.24 indicate that 71% of the managers sampled in this study agreed that personal motivation to use technology influenced their participation in distance education activities.

4.8.3.4: Ability to Reach the Otherwise Unreachable Audiences

University managers were asked to indicate whether the ability to reach the unreached audiences in education could influence their participation in distance education activities. The results are summarized in Table 4.25.

Table 4.25: Ability to Reach the Otherwise Unreachable Audiences

Managers' Response	Frequency	Percentage
Disagree	7	4.9
Uncertain	20	14.0
Agree	95	66.4
Strongly Agree	14	9.8
Non-response	7	4.9
Total	143	100.0

From Table 4.25, the findings indicate that over 90% of the managers could be influenced to participate in distance education activities to reach out to the audiences that may not be reached through the conventional mode of education.

4.8.3.5 Resistance to Changing Traditional Teaching Practices

University managers indicated that resistance to changing traditional teaching practices may have influenced their participation in distance education activities. The results are summarized in Table 4.26.

Table 4.26: Resistance to Changing Traditional Teaching Practices

Managers' response	Frequency	Percentage
Disagree	29	20.3
Uncertain	23	16.1
Agree	48	33.6
Strongly Agree	22	15.4
Non-response	21	14.6
Total	143	100.0

Table 4.26 indicated that over 60% per cent of the managers sampled in this study could have failed to participate in distance education activities due to resistance to change from traditional teaching practices, that is, face to face mode of teaching.

4.8.3.6 Dismissive attitude towards distance education due to early experiences

University managers regarded attitude towards distance education as an important factor that influenced their participation in distance education activities. The results are summarized in Table 4.27.

Table 4.27: Dismissive Attitude towards Distance Education

Managers' response	Frequency	Percentage
Disagree	42	29.4
Uncertain	21	14.7
Agree	48	33.6
Strongly Agree	21	14.7
Non-response	11	7.6
Total	**143**	**100.0**

From the results presented in Table 4.27 it is clear that 48.3% of the university managers agreed that they hold dismissive attitude towards distance education and this could be hindering their participation in distance education activities.

4.8.3.7 Lack of Release Time

Lack of release was presented in this study as a factor that could influence managers' participation in distance education activities. The results are summarized in Table 4.28.

Table 4.28: The Lack of Release Time

Managers' Response	Frequency	Percentage
Disagree	21	14.7
Uncertain	35	24.5
Agree	54	37.8
Strongly Agree	7	4.8
Non-response	26	18.2
Total	**143**	**100.0**

The results in Table 4.28 indicate that 42.6% of the managers admitted that lack of release time influenced their participation in distance education activities.

4.8.3.8 Lack of Technical Support

University managers indicated that lack of technical support could have influenced their participation in distance education activities. The results are summarized in Table 4.29

Table 4.29: Lack of Technical Support

Managers' Response	Frequency	Percentage
Strongly Disagree	14	9.8
Disagree	28	19.6
Uncertain	14	9.8
Agree	56	39.2
Strongly Agree	21	14.7
Non-response	10	6.9
Total	**143**	**100.0**

The findings in Table 4.29 indicate that university managers' participation in distance education could be influenced by lack of technical support. This supported by 53.9% of the managers who agreed that their participation in distance education activities was influenced by lack of technical support.

4.8.3.9 Lack of Incentives

University managers identified lack of incentives as a factor that could influence their participation in distance education activities. The results are summarized in Table 4.30.

Table 4.30: The Lack of Incentives

Managers' response	Frequency	Percentage
Disagree	14	9.8
Uncertain	7	4.9
Agree	68	47.5
Strongly Agree	35	24.5
Non response	19	13.3
Total	**143**	**100.0**

The results in Table 4.30 indicate that 72% of the university managers sampled in this study agreed that lack of incentives influenced their participation in distance education activities.

The factors that the managers identified to have possible influence in their participation in distance education activities are summarized in Table 4.31.

Table 4.31: Factors that Influence Participation in Distance Education Activities

Factors that seem to influence participation in distance education activities	Mean	Remarks on attitude
Uncertainty of intellectual property rights	4.9	Supportive
Technology is not a financial priority within the university	2.9	Non-supportive
Inadequate knowledge of technology application	3.1	Supportive
Personal motivation to use technology	2.8	Non-supportive
Ability to reach new audiences that cannot attend classes on campus	4.2	Supportive
Resistance to changing traditional teaching practices	3.8	Supportive
Dismissive attitude because of early experiences (real or perceived)	3.9	Supportive
Lack of release time	4.1	Supportive
Lack of technical support	4.2	Supportive
Lack of materials	4.5	Supportive
Workload	3.7	Supportive
Lack of incentives	4.7	Supportive
Generational divide between older and younger staff in use of technology	3.6	Supportive
Mean Score	**3.88**	**Supportive**

From Table 4.31, the data presented indicate that the major factors that influence participation in distance education activities include uncertainty of intellectual property rights, lack of incentives, inadequate knowledge of technology application and dismissive attitude towards distance education because of early experiences either real or perceived. Further findings from qualitative responses indicated that lack of policy framework to guide the distance education is a major factor that influences participation in distance education activities.

4.8.4 University Managers' Attitude towards DE in Public Universities in Kenya

The university managers' attitude towards DE in different universities was analyzed and results are presented in Table 4.32

Table 4.32: University Managers' Attitude towards DE in Different Universities

Factor	Universities						
	Egerton	JKUAT	KU	Maseno	Masinde	Moi	UoN
Uncertainty of intellectual property rights	4.8	4.8	5.0	4.7	4.8	4.9	5.3
Technology is not a financial priority	2.8	3.3	2.9	3.0	2.8	2.8	2.7
Inadequate knowledge of technology application	3.1	3.0	3.1	2.9	3.0	3.2	3.4
Personal motivation to use technology	2.8	2.7	2.6	2.7	2.7	2.9	3.2
Ability to reach new audiences that cannot attend classes on campus	4.1	4.0	4.2	3.6	3.9	4.1	4.4
Resistance to changing traditional teaching practices	3.7	3.7	3.9	3.7	3.7	3.8	4.2
Dismissive attitude because of early experiences (real or perceived)	3.8	3.8	3.9	3.7	3.8	4.0	4.3
Lack of release time	4.1	3.9	4.4	4.0	4.0	4.2	4.1

Lack of technical support	4.0	3.6	4.2	4.1	3.9	4.4	4.1
Lack of materials	4.0	4.1	4.2	3.9	3.6	4.4	4.1
Workload	3.8	4.1	3.7	3.5	3.6	3.6	3.6
Lack of incentives	4.6	4.6	4.6	4.1	4.5	4.8	4.8
Generational divide between older and younger staff in use of technology	4.0	3.5	3.7	3.6	3.5	3.5	3.4

The findings indicated that University of Nairobi had a more supportive attitude towards distance education with a scale of 5.3. This was followed by Moi University and Kenyatta University respectively. This explained the observed higher participation in distance education at the University of Nairobi.

4.9 University Managers' Participation in Distance Education

The variable of 'university managers' participation in distance education (the dependent variable in this study) was measured by five key factors which were identified and analysed from a list of eighteen factors which were used to analyse both the dependent and independent variables. The five factors used to analyse the dependent variable (university managers' participation in distance education) are: distance education workshops and seminars attended; distance education workshops and seminars organized for staff; use of computer for teaching; use of email address for teaching purpose; and courses offered through distance mode. Each of these factors is analysed and the results of the analysis is presented in this section.

4.9.1 Distance Education Workshops and Seminars Attended

The factor 'Distance education workshops and seminars attended by university managers' was regarded as an indicator of level of university managers' participation in distance education. It was studied through the questionnaire item that required the managers to state whether they had attended distance education workshops and seminars. The results of this examination yielded the results presented in Table 4.33.

Table 4.33: Participation in Distance Education Development Workshop and Seminars

Managers' responses	Frequency	Percentage
No	85	59.4
Yes	58	40.6
Total	**143**	**100.0**

The results summarized in Table 4.33 indicated that 59.7% of the managers sampled in this study had not attended distance education workshops and seminars. 40.3% of the sampled managers in this study had attended distance education workshops and seminars. This indicates low participation since distance education is a new phenomenon in Kenyan universities and as such, much of the information is passed on during these workshops and seminars to enable the managers participate more in distance education activities.

4.9.2 Use of Computers for Teaching Purposes

The factor 'use of computers for teaching purposes was also considered an important indicator on how a manager participates in distance education activities. The findings on this factor are summarized in Table 4.34.

Table 4.34: Use of Computers for Teaching Purposes

Managers' Response	Frequency	Percentage
No	53	37.1
Yes	63	44.1
Non-response	27	18.8

The results presented in Table 4.34 indicate that 44.1% of the sampled university managers use their computers for teaching purposes. Thirty seven point one per cent (37.1%) of the managers do not use the computers for teaching purposes, and 18.8% of the managers did not respond to the question on whether they use the computer for teaching purposes. Considering 0-25% category to indicate very low participation with a score of 1; 26%-50% category to be low participation with a score of 2; 51%-75% category to be high participation with a score of 3 ; and 76% and above to be very high participation with a score of 4. This shows low use of computers for teaching purposes.

4.9.3 Use of e-mail Communication for Teaching Purposes

The factor 'use of e-mail communication for teaching purposes' was considered important in establishing participation in distance education. The results are presented in Table 4.35.

Table 4.35: Use of e-mail Communication for Teaching Purposes

Managers' Response	Frequency	Percent
No	70	48.9
Yes	40	28.0
Non-response	33	23.1
Total	**143**	**100.0**

The results on the factor 'use of e-mail communication for teaching purposes' indicate that 48.9% of the university managers sampled did not use e-mail communication for teaching purposes; 28.0% of the managers admitted that they used e-mail communication for teaching purposes. However 23.1% of the managers did not respond to the questionnaire item on whether they used their email addresses for teaching purposes or not. This indicates that there has not been much use of e-mail communication for teaching purposes among the university managers. 0-25% response was considered to be very low participation; 26%-50% category to be low participation; 51%-75% category to be high participation; and 76% and above to be very high participation. Therefore the use of e-mail for teaching purposes has been low. This may translate to low participation of university managers in distance education activities.

4.9.4 Courses Offered Through Distance Education Mode

The factor 'courses offered through distance education mode' was considered as an important determinant of participation in distance education activities. The results of the findings are summarized in Table 4.36.

Table 4.36: Department Offering Courses through Distance Education Mode

Managers' Response	Frequency	Percent
No	75	75.8
Yes	24	24.2
Total	99	100.0

The results indicate that 24.2% of the university managers sampled in this study offer courses through distance mode. Majority (75.8%) of the managers do not offer any of their courses though distance education mode. This implies that there is low participation in distance education among the university managers.

Further examination on the proportion of courses taught through distance was carried out. The findings of the results are summarized in Table 4.37.

Table 4.37: Proportion of Programmes Offered Through DE Mode

Response	Frequency	Percentage
N/A	71	71.7
Below 25%	19	19.2
26-50%	5	5.1
51-75%	4	4.0
Above75%	1	1.0
Total	99	100.0

The findings summarized in Table 4.37 indicate that 71.7% of the managers sampled in the study do not offer courses through distance education mode; 19.2% of the sampled

university managers offer below 25% of their courses through distance mode; 5.1% of the managers offer a proportion of 26-50% of the courses through distance education mode; 4.0% of the managers offer a proportion of 51% - 75% of the courses through distance education mode; and 1.0% of the managers offer over 75% of their courses through distance mode; 26%-50% category to be low participation; 51%-75% category to be high participation; and 76% and above to be very high participation. This indicates low participation in distance education with a mean of 1.17. This may have contributed to fewer courses being offered through distance education mode in most departments.

4.9.5 Distance Education Workshops and Seminars Organised for Staff

Distance education workshops and seminars organized for the staff was considered important in determining university managers' participation in distance education. This is because the managers play a key role in determining the direction of the university. When they organise workshops and seminars, they create awareness and train members of staff to be able to participate more in distance education. The findings on this factor are summarized in Table 4.38.

Table 4.38: Percentage of Staff Participation in Distance Education Workshops and Seminars

Response	Frequency	Percentage	Remarks on level of participation
0-25%	101	70.6	Very Low
26-50%	13	9.1	Low
76-100%	13	9.1	Very high
N/A	15	10.5	
		100.0	
Mean Score			Low

The results indicated that 70.6% of the sampled university managers have below 25% of their staff who have attended distance education workshops and seminars. Ten point six per cent (10.6%) of the sampled university managers did not respond and this may imply that they have not attended any distance education workshops and seminars. Majority (70.5) of the university staff have not attended workshops and seminars on distance education. This contributes to low participation in distance education in the universities. Considering 0-25% category to indicate very low participation with a score of 1; 26%-50% category to be low participation with a score of 2; 51%-75% category to be high participation with a score of 3 ; and 76% and above to be very high participation with a score of 4. The factor analysis results are presented in Table 4.39.

Table 4.39: Factor Analysis

Factor of Analysis	Initial	Extraction
Purpose For Use Of E-mail Address	1.000	.787
Purpose of Using Personal Computer In The Office	1.000	.698
Proportion of Programmes Offered Through DE Mode	1.000	.675
Percentage of Staff Participation In Training In DE Instruction Methods	1.000	.688
Participation In Training In DE Instruction Methods	1.000	.727

Extraction Method: Principal Component Analysis.

A total of eighteen factors were analysed to explain the level of participation in distance education activities by the university managers. When the factors were subjected to factor analysis, the factors were reduced to six as presented in Table 4.39.

4.10 Hypotheses Testing

This section presents the results of hypotheses analysis and interpretations of relationships among variables in the study as presented in research objectives. The hypotheses are non-directional. They are stated in null and alternative forms.

4.10.1 University Managers' Level of Knowledge in DE and Participation in DE Activities

The relationship among variables in objective one were analysed to establish the influence of university managers' level of knowledge in distance education on their

participation in distance education activities. The independent variables in objective one were: Training in distance education of the university managers had gone through; training in computer application skills; number of hours of training; purpose for personal computer; purpose of email address; and participation in distance education. The first null and alternative hypotheses were derived from the relationship among these variables and are presented as follows:

H_o: University managers' level of knowledge in distance education has no significant correlation with their participation in distance education activities.

H_a: University managers' level of knowledge in distance education has significant correlation with their participation in distance education activities.

To test these hypotheses, a correlation of university managers' level of knowledge and their participation in distance education activities was done. Spearman's rank correlation coefficient was used to measure the correlation. This is a measure of the correlation that exists between two variables. Correlation coefficient reveals the magnitude and direction of relationships, (Cooper & Schindler, 2006). It is a device to show whether any one set of variables have an effect on another set of variables. It uses rho, r, which falls between +1 and -1. It is a non-parametric measure of statistical dependence between two variables. It is based on the assumptions that the data is on ordinal or nominal scales, the relationship is linear and the sample is representative.

The results of the correlation test between level of knowledge and participation in distance education are summarized in Table 4.40.

Table 4.40: Correlation of Level of Knowledge in Distance Education and Participation in Distance Education Activities.

			Participation In DE Activities	Level of Knowledge in DE
Spearman's rho	Participation In DE Activities	Correlation Coefficient	1.000	.115
		Sig. (2-tailed)		.628
		N	.143	.143
	Level of Knowledge in DE	Correlation Coefficient	.115	1.000
		Sig. (2-tailed)	.628	
		N	143	.143

The results of spearman's rank correlation test gave r of 0.628. This showed that the two variables have positive relationship.

The results showed that there is a statistical significant positive relationship between the managers' level of knowledge in distance education and their participation in distance education activities with r=0.628, P-value=0.023 which is less than 0.05. The assumption was that managers, whose level of knowledge in distance education was high, participated more in distance education activities compared to their counterparts who had low level knowledge in distance education. The null hypothesis (H_o) that managers' level of knowledge has no significant influence on their participation in distance education activities was rejected. However, the alternative hypothesis (H_a) that managers' level of knowledge in distance education has significant influence on their participation in distance education activities was not rejected.

4.10.2 University Managers' Attitude towards DE and their Participation in DE Activities

The testing of the second set of hypotheses, relationships among variables in objective three were analyzed to establish the influence of university managers' attitude towards distance education on their participation in distance education activities. The independent variables in objective three were: Disciplines deemed to be appropriate for distance learning mode; perceived usefulness of distance education; factors deemed to be influencing distance education; and participation in distance education.

The second null and alternative hypotheses were derived from the relationship among these variables and are presented as follows:

H_o: University managers' attitude towards distance education has no significant correlation with their participation in distance education activitie.

H_a: University managers' attitude towards distance education has significant correlation with their participation in distance education activities.

To test these hypotheses, a correlation of university managers' attitude and their participation in distance education activities was done using Kendall's tau correlation coefficient was used. This is non-parametric test of relationship. It is used to determine the degree of association between measured variables, (Munyoki & Mulwa, 2012). It is a non-parametric measure that tests for statistical dependence. Its assumptions are: The sample must be representative; and the data should be nominal or ordinal. These assumptions are fulfilled in this test hence Kendall taw test was applied at 95% confidence level. The results are represented in Table 4.41.

Table 4.41: Correlation of Managers' Attitude towards DE and their Participation in DE Activities

			Managers' attitude towards DE	Participation In DE activities
Kendall's tau_b	Managers' attitude towards DE	Correlation Coefficient	1.000	.498
		Sig. (2-tailed)	.	.497
		N	143	143
	Participation In DE activities	Correlation Coefficient	.498	1.000
		Sig. (2-tailed)	.497	.
		N	143	143

The results of the correlation test indicated that there is positive relationship between managers' attitude towards distance education and their participation in distance education activities. The results showed that there is a statistical significant positive relationship between the managers' n distance education and their participation in distance education activities with b=0.497, P-value=0.029 which is less than 0.05. The assumption was that managers who hold a supportive attitude towards distance education participated more in distance education activities compared to their counterparts who hold a neutral or non-supportive attitude towards distance education. Therefore the null hypothesis (H_o) that managers' attitude towards distance education had no significant influence on their participation in distance education activities was rejected. However the alternative hypothesis (H_a) that managers' attitude towards distance education had

significant influence on their participation in distance education activities was not rejected.

4.10.3 Managers' Participation in Distance Education Activities at Different Levels of Management

The relationship between variables contained in objective four was analyzed in order to establish how managers' participation in distance education activities differed in different management levels. The variables in this relationship were: Distance education workshops and seminars attended; distance materials prepared; use of computers for teaching purposes; use of email communication for teaching purposes; courses offered through distance; distance education workshops and seminars organized. The third set of null and alternate hypotheses formulated from these variables are presented as follows:

H_o: There is no significant difference in the factors that influence different levels of university managers' participation in distance education activities.

H_a: There is significant difference in the factors that influence different levels of university managers' participation in distance education activities.

To test these hypotheses, F-test was done. This involved the analysis of factors that influenced university managers' participation in distance education activities. The factors considered for analysis are: Distance education workshops and seminars attended; distance materials prepared; use of computers for teaching purposes; use of email communication for teaching purposes; courses offered through distance; distance

education workshops and seminars organized. The results of factor analysis is summarized in Table 4.42.

Table 4.42: Factor analysis of factors that nfluence university managers' participation in distance education activities

Factor of Analysis	Mean Score Chairmen	Mean Score Deans	Mean Score Principals
Participation in Distance Education Development Workshops and Seminars	2.0	1.75	1.0
Use of Computer in the Office for teaching purposes	2.0	1.5	2.0
Use of e-mail address for teaching purposes	2.0	2.0	1.5
Proportion of programmes offered through DE mode	1.0	2.0	2.0
Percentage of staff participation in distance education workshops and seminars	1.75	2.5	2.75
Average Score (median)	**2.0**	**2.0**	**2.0**

The results showed that there was no statistical significant difference in factors that influence managers' participation in distance education activities at different management levels with r=0.591, P-value=0.029 which is less than 0.05. The assumption was that managers' at different levels are influenced by similar factors in their participation in distance education activities. Therefore the null hypothesis (H_o) that there is no significant difference in the factors that influence different levels of managers' participation in distance education activities was rejected. However the alternative hypothesis (H_a) that there was significant difference in the factors that influence different levels of managers' participation in distance education activities was not rejected.

4.11 Qualitative Data Analysis

The study used both qualitative and quantitative research methods. The two methods differ in that quantitative methods use numbers and statistical methods and is based on the numerical measurements of specific aspects of a phenomenon (King et al 1994). Qualitative research does not rely on numerical measurements. It uses in depth interviews and observations techniques (Singleton et al 1988). It also uses general discussions in open ended questions in questionnaires.

This study used open ended questions in the questionnaires which were aimed at obtaining in depth discussion on factors that influenced university managers' participation in distance education. The questions were based on formulated objectives and research questions. Content analysis method of quantitative data analysis was used to analyze the responses received from qualitative sections of the questionnaire.

The presentation is based on responses related to university managers' level of knowledge in distance education, the attitude university managers hold towards distance education, and the distance education support facilities available at the universities. Finally, the managers were required to freely raise any issue that they felt influenced participation in distance education.

4.11.1 University Managers' Level of Knowledge in Distance Education

The managers cited the examination procedure as a challenge in distance education since they do not see how possible it is to administer examinations through distance mode. There is need for more research to come up with modalities of administering examinations through distance mode without compromising the quality. They further

admitted that there was need for provisions for training of staff on distance educatio they are to participate in distance education more.

4.11.2 Availability of Distance Education Support Facilities

The managers identified inadequate computers, poor internet connection, lack of wire internet connection in universities. Low band width requires to be increased to enha distance education.

Managers cited the ICT support as a major support needed in distance education. entails provision of computers for teaching and learning purposes and providing inte connection for distance educators. Other support required was to ensure there is a desk to ensure they get support whenever they need it. The issue of lack of sk manpower was raised as a hindrance to participation in distance education. S managers indicated that it is necessary to have the support at lower level like department level because at times there is frustration when one requires support and not available immediately, especially in areas that are new. There is need to educators in distance education skills.

4.11.3 University Managers' Attitude towards Distance Education

'How can you expect to teach dissection through distance mode? I feel distance educ time is not yet due'. Such responses received from the managers indicate that attitude towards distance education is non-supportive. Some managers still wonder some programmes can be offered effectively through distance learning mode.

4.11.4 Other Issues Related to Participation in Distance Education

The managers freely cited other factors that influenced participation in distance education. Budgetary allocation of university finances that is used for distance education. Promotion criteria at the university hardly touches on achievements and participation in distance education. Some said that writing distance education materials could be equated to writing several papers in refereed journal to motivate more to participate in distance education. The distance learners should be planned for just as the regular students ensuring that the facilities are available to all. Currently, the presence of distance learners on campus together with regular learners means that the regular will be timetabled perfectly well while their counterparts are left to wonder and use any facility that is not being used. There is need for prior planning. There is high lack of awareness among the university community and this makes it difficult to participate in distance education. For distance education to be expanded and achieve its goal of improving access, quality and equity, more awareness need should be facilitated to all stakeholders.

There is not much use of open, distance and open learning at the universities and even at the lower levels and this makes it difficult for the managers to participate in distance education. There was also a mention of programmes that are believed that they cannot be offered through distance especially the natural sciences.

4.11.5 Incentives necessary for increased participation in distance education

Managers' responses indicated that incentives were necessary if participation in distance education was to be increased. The incentives cited, included recognition of faculty

members who were involved in distance education particularly the preparation of materials and conversion of materials into e-format. They felt that writing of a module should warrant a promotion since this required much time and effort. There was also need to reduce work load for distance education personnel to allow them time to concentrate on distance education and to ensure quality. The facilities available to distance education learners need to be improved to encourage more participation and create a conducive environment to participate more in distance education.

4.12 Chapter Summary

This chapter presented the data analysis, presentation, and the related interpretation. The chapter has presented the description of the study's respondents. The respondents were the public university managers who in this study comprised of chairmen of academic units; deans and directors of schools, faculties and institute; principals of colleges and campus; and the deputy vice chancellors of the public universities. This chapter further presented the demographic characteristics of the respondents. It was established from the survey data that factors that influenced university managers' participation in distance education activities were: university managers' level of knowledge in distance education. This was determined by use of indicators: training in distance education, training in computer application skills, duration of training, use of computers and email address. University managers' attitude towards distance education was another factor. This was established through the following indicators: disciplines deemed as appropriate for distance instruction mode of teaching, perceived usefulness of distance education, factors deemed to be influencing participation in distance education activities, and participation in distance education activities. Finally, availability of distance education support

facilities. This was determined through the analysis of the following indicators: availability of computers, Internet availability, level of Internet connectivity, availability of opportunities for training, and availability of ICT help desk.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides summary of findings, discussions, conclusions and recommendations of the study. The presentation of chapter sections is based on the objectives of the study. Recommendations are made based on the major findings, contribution to knowledge and policy and practice in distance education at the public universities in Kenya. Finally, a recommendation for further researcher is made.

The purpose of this study was to investigate the factors influencing university managers' participation in distance education. Four objectives were formulated to guide this research. The first objective was to establish the extent to which university managers' level of knowledge in distance education influenced their participation in distance education activities.The second objective was to establish the extent to which availability of distance education support facilities influenced managers' participation in distance education activities. The third objective sought to establish the extent to which university managers' attitude towards distance education influenced their participation in distance education activities. The study was guided by three null and three alternative hypotheses that were formulated in line with the research objectives.

5.2 Summary of Research Findings

This section presents a summary of the research findings which are presented according to the sub-themes that were generated from the objectives of the study. The study sought to investigate the factors that influence university managers' participation in distance education activities. The study was carried out at the public universities in Kenya. The study was guided by the following objectives: To establish the extent to which university managers' level of knowledge in distance education influences their participation in distance education activities: To establish the extent to which availability of distance education support facilities influences managers' participation in distance education activities; To establish the extent to which university managers' attitude towards distance education, influences their participation in distance education activities. The study was further guided by the following hypotheses: Managers' level of knowledge has significant influence on their participation in distance education activities; The university managers' attitude towards distance education has significant influence on their participation in distance education activities; There is no significant difference in the factors that influence different levels of managers' participation in distance education activities.

The study adopted a cross-sectional descriptive survey design. The target population of this study was the Kenyan public universities managers. These formed the units of analysis and they included the chairmen of academic units at the universities, deans and directors of schools, faculties and institutes, principals of colleges and campuses, and the deputy vice chancellors. Data was collected using questionnaires as the research instruments.

5.2.1 Level of Participation in Distance Education

The study sought to establish the level of university managers' participation in distance education first, before looking at the factors that influenced participation. This was the dependent variable in this study. It was studied under the following indicators: distance education training workshops and seminars attended; use of computers for teaching purposes; use of e-mail for teaching purposes; courses offered through distance education; and distance education workshops and seminars organized by the managers for their staff. The study established that 59.7% of the managers sampled in this study had not attended distance education workshops and seminars. The study also found out that university managers use their computers and emails mainly for administration purposes, personal purposes and less on teaching purposes. It was found out that majority of the departments (76%) sampled in this study did not offer courses through distance education. It was further established that over 70% of the sampled managers had only between 0 and 25% of their staff who had participated in distance education workshops and seminars. This translated to very low participation in distance education with a mean of 1.38. This then led to further analysis of what influenced this remarkable low university managers' participation in distance education activities.

5.2.2 Level of Knowledge in Distance Education and Participation in Distance Education

To establish the managers' level of knowledge in distance education and its influence on university managers' participation in distance education activities, five factors were studied. These are: university managers' training in distance education; university

managers' training in computer application skills; duration of training in computer application skills; teaching of courses through distance education mode; and writing of distance education materials.

The findings on this variable indicated that over 50% of the university managers had not participated in distance education training. This makes it difficult for the managers to participate in distance education activities. This is because currently one cannot participate in distance education without some knowledge in distance education.

The study findings indicated that all the managers had been trained in computer application skills. Based on Kirkpatrick's model of evaluating training, it is apparent that the managers have gone through the first two levels of the model, Level 1 and Level 2, where there is reaction to the training in Level 1, and learning to improve knowledge and skills, in level 2; but what is not evident is behavior change in terms of increased participation in distance education, level 3 and results showing benefits that the universities have acquired as a result of training, that is level 4. In this study, 52.4% of the university managers had been trained in computer application skills for more than 40 hours. This is above the recommended 30 hours UNESCO (2005) to be adequate for ICT application in teaching. Spearman correlation coefficient gave r of 0.628 indicating a strong positive relationship between level of knowledge and participation in distance education.

5.2.3 Availability of Distance Education Support Facilities and Participation in Distance Education

The factor 'influence of availability of distance education support facilities on university managers' participation in distance education' was studied guided by the following factors: internet availability; internet connection points; computer availed to the lectures for teaching purposes; access to personal computer; and availability of ICT help desk. Access to a personal computer was considered key factor in determining the university managers' participation in distance education. This is because one cannot assert to possess distance education knowledge without some computer skills. From the study, it was established that over 50% of the departments had 1-5 computers. This is an indicator that there are not adequate distance education facilities to promote participation in distance education activities.

It was further established that 38% of the departments had not availed any of the available computers to lecturers for teaching purposes. This is an indicator that there is not much participation in distance education in these departments. The study also established that there were departments in the universities (19.6%) that had no internet connection. This indicates that there is very low, if any, participation in distance education. This is because most of distance education materials can be accessed through internet. The sampled managers however agreed that there were ICT technical help desks to assist the staff on any issue related to use of computers and related technology. The distance education support facilities were found to be available at the universities. Upon correlating the availability of distance education facilities and participation in distance education activities, spearman correlation coefficient was used and this gave an r of

0.591. This indicates that there is weak positive relationship between availability of distance education support facilities and participation in distance education activities.

5.2.4 Attitude towards Distance Education and Participation in Distance Education

Attitude is the tendency to respond to an object, a person, a situation or an idea positively or negatively (Baker, 1991). In this study, attitude was measured using the Five Point Likert's Scale to assess attitude items on the questionnaires that indicated if the university managers had supportive or non-supportive attitude towards distance education. The questionnaire items were addressing the specific indicators as follows: Disciplines deemed to be appropriate for distance learning mode; Perceived usefulness of distance education; Participation in distance education; and factors deemed to be influencing participation in distance education activities.

On courses that managers felt could be offered through distance mode, general trend was that courses in humanities and education had positive attitude, since managers agreed to a great extent that the courses can be offered through distance. Other courses that are under health sciences, engineering and architecture, and agriculture and veterinary sciences had negative attitude. Managers felt that these courses could not be offered through distance. The overall attitude was found to be moderate with a mean score of 3.38.

On usefulness of distance education, the sampled managers indicated that their attitude was moderate with a mean of 3.24. Considering all the twenty three items of the questionnaire analysed to assess the university managers' attitude towards distance education, an overall score of 3.88 was obtained. This implies that the university

managers' attitude towards distance education is not negative. The managers appreciate the usefulness of distance education in promoting education in universities. Spearman correlation gave r of 0.590 showing that there is a positive relationship between the attitude the managers hold towards distance education and their participation in distance education activities.

The formulated hypotheses were tested and the results are summarized in Table 5.1.

Table 5.1: Factors Influencing University Managers' Participation in DE Activities

Objectives	Research questions	Variables	Hypothesis	Results	Remarks
To establish the extent to which managers' level of knowledge in DE influence their participation in DE activities	How does the managers' level of knowledge in DE influence their participation in DE activities?	Level of knowledge in DE Participation in DE activities	Managers' level of knowledge has significant influence on their participation in DE activities	R=.0.628, R2=0.628, P-value .023	Positive relationship exists (Hypothesis not□□ rejected)
To find out the extent to which managers' attitude towards DE influences managers' participation in DE activities	How do the attitude managers hold towards DE influences managers' participation in DE activities?	Mangers attitude towards DE Participation in DE	University managers attitude towards DE has significant influence on their participation in DE activities	b=0. 768, b2=0.590, P-value . 029	positive relationship exists (Hypothesis□□ not rejected)
To establish the extent to which factors that influence different levels of managers participation in DE activities differ	Is there any significant difference in the factors that influence different levels of managers' participation in DE activities?	Factors that influence different levels managers participation in DE activities Participation in DE activities	There is no significant difference in the factors that influence different levels managers participation in DE activities	U=0.0136, R2=0.0191, P-value 0. 029	Minimal difference exists (Hypothesis□□ not rejected)

5.3 Discussions of the Findings

The survey set out to find out the factors that influence university managers participation in DE activities. From the findings, it has been established that several factors influence university managers participation in DE activities. This section of the survey presents the

discussions of the research findings. It also presents the comparison between the findings and the related existing literature.

5.3.1 Level of Knowledge in Distance Education and Participation in Distance Education

The study established that managers' level of knowledge in DE is related to their participation in DE activities. This is shown by the fact that the low level of knowledge in distance education among the university managers sampled in this study. It was established that 33.4% of the respondents had only 10 to 30 hours of computer training, and only 16.7% of the respondents had over 40 hours of computer training. This is shown by a correlation, r, of 0.628 between training and participation as indicated by modules written, programmes offered through distance mode in the departments. Correlation coefficient r takes value from -1 to +1 for positive or negative. The perfect correlation of +1 or -1 indicates that the value of one variable can be determined by knowing the value of other valuable. Scatter plot of relationship is straight line. r of zero indicates that there is no relationship between two variables. That is, knowing one cannot help know the other. Scatter plot would show a circle of points without any evident pattern. The interpretation of the values between zero and one varies but guideline suggested by Cohen (1988) was used in this study. Spearman correlation coefficient was used to correlate level of knowledge and participation in distance education activities.

Considering that the training may not have been taken at a specific time, then the managers lack adequate knowledge to comprehend the distance education and relevant technology. Closely related to this is the number of hours of training in computer application skills is the availability of computers and their use by the managers. The

findings further agrees with the findings of Barnes (1966) who established that it is expected that at a certain level, the knowledge one has determines how ones participation and competencies in issues affecting them. In this study university managers' participation in distance education will depend on the knowledge and competencies in distance education that the managers possess.

5.3.2 Availability of Distance Education Support Facilities and Participation in Distance Education

The availability of distance education support facilities was found to be important in determining the level of participation in distance education activities by the university managers. The managers admitted that the support facilities available were not adequate. This negatively influenced their participation in distance education. This is in concurrence with the findings of Preston (2000) who established that lack of technical support and other support facilities was a hindrance to the use of computers and other information technology in teaching. It also agrees with what Keiyoro (2010) established that access to computers and internet connectivity determine the success of teaching through technology. There is a positive relationship between the availability of distance education support facilities and participation in distance education activities.

A correlation between the availability of distance education support facilities and participation in distance education gave r=0.591. This is a positive relationship. This indicates that the two are related. Therefore, availability of support facilities influences participation in distance education activities.

5.3.3 Managers' Attitude towards Distance Education and Participation in DE

The university managers' attitude towards distance education was also found to have some significant influence on participation in distance education activities. Keiyoro (2010) established that innovations in education are dependent on attitude, beliefs and conceptions of all its players (teachers, leaders and students). Similarly, Gakuu's (2006) findings established that lecturer's attitude towards distance education had significant influence on their adoption of distance education. This was also in agreement with the findings of Keiyoro (2010) who established that teachers' attitude had significant influence on their use of ICT in teaching and learning. He further suggested that in order to transform attitude towards distance education by managers, hands on practical training, peer learning, sharing of experiences, securing reliable infrastructure, is necessary.

5.3.4 Level of Knowledge in DE and Participation in Distance Education Activities

The managers' level of knowledge in distance education was found to have significant influence on the participation in distance education activities. This was shown by the number of hours the managers have been trained in computer application skills. The findings show that the more the hours, the more the participation in distance education activities. According to UNESCO (2005), at least thirty hours and above should give teachers enough training to enable them to use the computer effectively and apply the knowledge in integrating ICT in teaching. A correlation between the number of hours of training in computer application skills and participation in distance education activities

gave r = 0.68. This shows a positive relationship between number of hours of training in computer application skills and participation in distance education activities.

Training in computer application skills is important if managers are to participate in distance education activities. Distance education requires use of technology to bridge the gap between the learner and the teacher and computer skills are important in this. The study findings agree with the findings of Clark (2008). He revised Kirkpatrick's four levels of learning model and who argued that for effective results to be evident in practical work, the four levels have to be realized. The university managers lack adequate knowledge in distance education and hence, are not adequately participating in distance education activities.

University managers' use of computers for teaching purposes was also an important indicator of their participation in distance education activities. The results indicated that not all managers use their computers for teaching purposes. Some managers do not use their computers for teaching purposes at all, despite the fact that all managers are primarily academic members of staff, charged with the responsibility of administration.

A correlation between use of computers for teaching purposes and participation in distance education activities gave r = 0.57. This showed a positive relationship. This implies that the more computers are available for teaching purposes, the more likely the use of these computers for distance education activities. This agrees with the findings that, a learning institution (schools) leadership play a crucial role in using ICT integration in education and can hinder or facilitate use of technology in education, (early et al., 2004; Fink, 2005; Fullan, 2003). Keiyoro (2010) also established that equipment such as

computers were necessary for effective use of technology in teaching. This implies that for universities to adopt distance education, there is need for provision of computers for teaching purposes and also internet connection.

5.3.5 Availability of Support Facilities and Participation in Distance Education Activities

The support facilities available at the universities influence participation in distance education activities. The survey findings established that university managers agreed that the various support facilities were available at the universities. The overall median of all the support facilities listed was 3. This falls within the class of uncertain. This shows that most of the support facilities are seen by the university managers to be inadequate or not available at all. The university managers rated the availability of special projects to stimulate use of technology as the lowest with a median of 2. This was followed by the availability of materials via web, and guidance and counseling unit in distance education with a median of 3. The university managers rated the clear examination and certification procedure highest with a mean of 4. This may be explained by the fact that the examinations and certification is a core component in the universities and they are handled centrally for both the regular and distance programmes. The fact that the managers agree that there are not many projects to stimulate use of technology, is an indicator of the low participation in distance education activities.

Technology is important in promotion of distance education and related activities, and therefore the fact that there is little being done to promote technology use shows that participation in distance education activities is still low at the public universities. Access

to computers and internet connectivity determine the success of teaching. A learning institution (schools) leadership plays a crucial role in using ICT integration across education and can hinder or facilitate use of technology in education, (Early et al., 2004; Fink, 2005; Fullan, 2003;) and this also applies to distance education.

5.3.6 Attitude towards Distance Education and Participation in DE Activities

Attitude refers to the disposition or tendency to respond to an object, a person, a situation or an idea positively or negatively. The findings indicate that most of items presented to the managers to determine their attitude towards distance education, ranged between a mean of 2.6 and 4.9. The average mean is 3.58. This shows that managers' attitude is not very supportive as it falls within the midpoint of uncertainty for most items with over 66% of the items falling below a mean of 4.0. This is opposed to what Gakuu (2006) found on the attitude of lecturers towards distance education. He established that lecturers' attitude was supportive. Omwenga (2003) established that the attitude of the students towards distance education was also not negative. This study establishes that managers' attitude towards distance education is not quite supportive and this may explain why most of the support facilities are not provided at the public university. This may also explain why the level of knowledge in distance education is still low and hence, low participation in distance education activities.

5.3.7 Factors that Influence Participation in DE Activities at Different University Management Levels

The analysis of the factors that influenced university managers' participation in distance education activities at different management levels was done using Mann-Whitney U test.

The different management levels considered were chairmen of academic departments, deans or directors of schools and institutes, and the principals of colleges and campuses. Mann-Whitney U test is non-parametric test that can be used to test hypothesis that means of two groups are statistically different from each other. This analysis is appropriate whenever one wants to compare the means of two groups, (Shier, 2004). In this study, an attempt is made to determine if there is any difference between means of different managers. For the null hypothesis not to be rejected, U-value would be almost zero. A U-value of 0.0136 was established and this showed that there is no difference among the factors that influence university managers' participation in distance education activities at the different levels of managers.

5.3.8 Factors that Influence University Managers' Participation in Distance Education Activities in Different Universities

The analysis of the factors that influenced university managers' participation in distance education activities in different public universities in Kenya was done using Mann-Whitney U test. Managers from different public universities considered were University of Nairobi, Kenyatta University, Moi University, Egerton University, Jomo Kenyatta University of Agriculture and Technology, Maseno University and Masinde Muliro University. The factor level of knowledge was considered for this analysis and it was established that the level of knowledge in distance education among the managers in different universities differed, as presented in Table 5.2.

5.4 Conclusions of the Study

Based on the findings of the study, the following conclusions were made: The university managers' level of participation in distance education activities in Kenyan public universities is very low. This was indicated by the following specific factors that were analysed: low number of university managers who have participated in distance education training workshops and seminars; the limited use of computers available and emails for teaching purposes; the low number of courses that are offered through distance education mode; and the distance education workshops and seminars organized for staff by the managers. The overall level of participation was found to be very low with a mean of 1.38. This was the dependent variable in this study.

The study further addressed the following factors that influenced the university managers' participation in distance education: level of knowledge in distance education; availability of adequate distance education support facilities; and the attitude the university managers hold towards distance education. These were independent variables in this study.

It was also concluded that the university managers' level of knowledge in distance education influenced their level of participation in distance education activities. This was studied under the following indicators: training in distance education; training in computer application skills; duration of training; courses taught through distance mode; and writing of distance education modules. The study findings indicated that the managers' level of knowledge in distance education is low, with a mean of 2.75. This in turn influenced participation in distance education negatively.

Availability of distance education support facilities were found to influence participation in distance education. These were studied under the following: access to personal computer; internet availability; internet connection points; computers available for teaching; and availability of ICT help desk. It was concluded that for increased level of participation in distance education, the necessary distance education support facilities should be available at the universities. The findings of this study established that the university managers sampled indicated that there were distance education facilities available but they were not adequate. This is shown by the calculated mean of 3.5.

The attitude the university managers hold towards distance education was found to be moderately supportive with a mean of 3.88. This shows that the managers' attitude towards distance education is supportive. Other issues that influenced university managers' participation in distance education as elicited from the qualitative data included formulation of policy to guide the universities' participation distance education. The issue of budgetary allocation of the available resources to distance education was also raised as an important factor that influenced participation in distance education. Resources are required to plan and implement trainings, procure support facilities and develop distance learning materials among other things. Therefore, there is need for sizeable budgetary allocation to distance education activities.

5.5 Recommendations

This study has elicited several useful lessons which have become evident throughout the study and some recommendations are made that can guide the planning on how distance education can be expanded as the country struggles with issues of access and equity in higher education.

5.5.1 Attitude towards Distance Education

University managers need to appreciate and believe that distance education is viable, and that the distance education instructional mode of delivery is viable and can be used to deliver content as well as the regular mode of instruction. There is need for attitude change among the University managers to be supportive towards distance education and the related activities. Attitudes can change for a number of reasons. Attitudes commonly change in response to social influence. There are certain conditions that must exist for a person's attitude to change. To orchestrate attitude change towards distance education among the university managers, there is need for persuasive communication that targets attitude change. This should be done by the distance education experts themselves highlighting the benefits of distance education and assurance of quality that equals or even better than the conventional mode of teaching and learning. Attitude transformation could also be achieved through hands on training of the managers. This can also be enhanced through sharing of experiences and securing reliable infrastructure to allow for participation in distance education activities. This can further be hastened by motivating the distance education players to ensure more participation.

5.5.2 Level of Knowledge in Distance Education

Knowledge in distance education and computer application skills plays a major role in determining how well one participates in distance education activities. There is need to train managers on distance education and related skills, to raise their levels of knowledge of distance education hence increase their participation in distance education activities.

5.5.3 Availability of Distance Education Support Facilities

Distance education support facilities are necessary for participation in distance education activities. This then calls for the university management to avail the necessary support facilities to ensure participation in distance education activities. This will include provision of computers for teaching, adequate internet provision with reliable speed, incentives, support services and motivation among other support facilities.

5.5.4 Policy Formulation and implication

Survey indicates that none of the seven public universities have a guiding policy in distance education. This is a major drawback on participation in distance education activities. There is need for policy framework to be developed nationally and within the university which will guide the universities mangers on how to increase participation in distance education activities. The policy implication that arose from this study are that, university managers' attitude towards distance education is not supportive, particularly managers in the health sciences and other natural sciences related disciplines, engineering and the related disciplines; but managers in the humanities and education and related disciplines seem to have supportive attitude. The universities need to plan and implement training programmes for managers in these disciplines.

Participation in distance education may not be achieved without clear policy framework in place. There should also be clear operational structure. The main issues in distance education that relate to support, motivation and training should be guided by clear policies.

Budgetary considerations should be instituted since increased participation will require use of funds and other resources for support facilities, training, motivation and incentives, and other issues that relate to distance education activities.

5.6 Contribution to Knowledge

The study established that participation in distance education activities is dependent on level of knowledge in distance education and computer application skills. Participation is also dependent on the availability of distance education support facilities and services. Participation further depends on the attitude the managers hold towards distance education, and a clear policy framework that guides operations in distance education activities. The study also established that factors that influence university managers' participation in distance education activities are not different at different management levels. This implies that as universities work towards identifying strategies that can improve managers' participation, different levels of managers should be taken into consideration. Further, the study established that if distance educators at the universities are to succeed in their campaign for alternative methods of teaching, the managers' participation in distance education activities should be enhanced. This may be achieved through attitude transformation and training on distance education. In addition, the necessary distance education facilities should be availed at the universities.

5.7 Suggested Areas for Further Research

Based on the findings of this research, it is evident that there is low participation in distance education activities in the public universities in Kenya. This needs to be addressed by advocating for attitude change by the managers and other stakeholders towards distance education. There is also need to provide the necessary support facilities

which include administrative support, incentives, trainings and physical facilities that will enable more participation in distance education activities. There is also need to raise the knowledge level in distance education among the stakeholders if they are to participate in distance education activities. This research has not exhausted issues that affect participation in distance education activities and therefore, recommends that further research be carried out in the following areas:

i. Factors that influence university managers participation in distance education in private universities in Kenya

ii. A comparative study on factors influencing university managers' participation in distance education in public and private universities in Kenya.

iii. Technology advancement is causing inevitable changes in all areas, and distance education is not spared. There is need therefore to carry out a replica research after a number of years to ascertain whether the situation in the public universities will have changed with time.

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Appendix I: Transmittal Letter

UNIVERSITY OF NAIROBI

COLLEGE OF EDUCATION AND EXTERNAL STUDIES

SCHOOL OF CONTINUING & DISTANCE EDUCATION

Telephone: +254 722 974 112 *P.O. Box 92, KIKUYU, Kenya*

20th December 2010

Dear Prof/Dr./Mr./Mrs./Miss.....

Re: Request for Participation in Questionnaire for PhD Research Project

I am a Ph.D candidate at the University of Nairobi conducting a survey to investigate the university managers' participation in distance education at the public universities in Kenya. I will be glad if you will assist me to attain this end by filling the attached questionnaire, which will take you less than fifteen minutes. I wish to particularly obtain your responses because of your experience in university management. This will contribute significantly towards the research findings.

I will appreciate if you will complete the enclosed questionnaire before 30th March 2011 and return it either through the self-addressed envelope enclosed or online via email.

Kindly feel free to forward any comment that relates to this study. The information obtained through this research is purely for academic purposes and will be treated with utmost confidentiality.

Thank you for your time and cooperation.

Naomi W.M. Gikonyo

naomi.mwangi@uonbi.ac.ke

Appendix II

QUESTIONNAIRE FOR THE CHAIRMEN OF ACADEMIC DEPARTMENTS

Please indicate the following appropriately:

1. Name of your:

   (i) University.

   .....

   (ii) College /Campus

   .....

   (iii)Faculty/School/Institute

   .....

   (iv)Department.....

2. What is your management position in the Department? .....

Please respond to the following questions by ticking [√] appropriately:

3. How long (in years) have you held your current position in the Department?

   Less than 5 years [ ] 5-10 years [ ] Over 10 years [ ]

4. How long (in years) have you been teaching in the University?

   Less than 5 [ ] 5-10 years [ ] 11-15 [ ] Over 15 [ ]

5. What is your gender?

   Male [ ] Female [ ]

6. What is your age bracket?

   Below 25 [ ] 25-35 [ ] 36-45 [ ] 46-55 [ ] Above 55 [ ]

7. Have you had any training in computer application skills?

(a) Yes [ ] No [ ]

(b) If yes, how many hours of training have you had?

Below 10 [ ] 11-20 [ ] 21-30 [ ] 31-40 [ ] Above 40 [ ]

8. How many computers are there in your Department?

None [ ] 1-5 [ ] 6-10 [ ] 11-15 [ ] 16-20 [ ] over 20 [ ]

9. How many of these computers are available to the lecturers for teaching purposes?

None [ ] 1-5 [ ] 6-10 [ ] 11-15 [ ] 16-20 [ ] Over 20 [ ]

10. (a) Are the computers in the Department internet connected?

Yes [ ] No [ ]

(b) If yes, how many connection points do you have in the Department?

None [ ] 1-5 [ ] 6-10 [ ] Over 10 [ ]

(c) How would you describe the internet speed in the Department?

Extremely fast (over 150mbps) [ ]

Fast (100mbps) [ ]

Satisfactory (80mbps) [ ]

Slow (50mbps) [ ]

Extremely slow (below 50mbps) [ ]

11. (a) Do you have access to a personal computer in your office?

Yes [ ] No [ ]

(b) If yes, for what purposes do you use this computer? Tick **[√]** as applicable:

Teaching [ ]

Administration [ ]

Personal use [ ]

Others (specify) [ ]

12. (a) Do you have an e-mail address?

Yes [ ] No [ ]

(b) If yes, for what purposes do you use the e-mail address? Tick [√] as applicable:

Teaching [ ]

Administration [ ]

Personal use [ ]

Others (specify) [ ]

13. Have you written any distance education course material in any form, either print or online materials?

Yes [ ] No [ ]

Available Support	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
An ICT technical unit/help desk					
Materials made available via web					
Short courses or workshops					
Special projects to stimulate use of technology					
Guidance and counseling unit for DE					
Clear admission procedure					
Proper records keeping for DE students					
Clear examination and certification procedure					
Others (specify)					

14. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that the following support services and facilities are available for instructors?

15. Have you ever participated in any of the following distance education activities? Tick [√] as applicable:

DE Activities	YES	NO
Computer training		
Training in DE instruction methods		
Participated in online learning		
Taught course(s) through distance		
Participated in DE material writing workshops/seminars		

16. What proportion, in percentage, of the staff in your Department participated in any of the following distance education activities? Tick [√] as applicable:

DE Activities	0-25%	26-50%	51-75%	76-100%
Computer training				
Training in DE instruction methods				
Participated in online learning				
Taught course(s) through distance				
Participated in DE material development workshops/seminars				

17. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that courses in the following disciplines can be offered through distance learning mode. Tick [√] as applicable:

Academic Disciplines	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Agricultural and veterinary science					
Architectural and engineering					
Biological and physical science					
Educational Studies					
Health Science					
Humanities and social science					

18. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that distance instruction help in the following areas of learning and teaching. Tick [√] as applicable

Area of Learning and Teaching	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Desire to get students more involved with technology like online learning, computers.					
Opportunity to use technology more innovatively to enhance course quality					
Opportunity to meet and interact with students at a distance					
Increased flexibility in working hours and location					
Response to students asking for distance educational programs					
Provide more and varied training sessions to teachers					
Continue to provide technology support as needed by instructor and student					
Provide more detailed understandable instructional materials that can be used in DE					

19. (a) Does your Department offer any course/programme through distance learning mode?

Tick [√] as applicable.

Yes [ ] No [ ]

(b) If 'yes', what proportion of the programmes in your Department is offered through distance education mode?

Below 25% [ ] 26-50% [ ] 51-75% [ ]] Above 75% [ ]

20. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that the following factors influenced participation in distance education activities in your Department. Tick [√] as applicable:

Factors	**Strongly Agree**	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
Uncertainty of intellectual property rights					
Technology is not a financial priority within the university					
Inadequate knowledge of technology application					
Personal motivation to use technology					
Ability to reach new audiences that cannot attend classes on campus					

Resistance to changing traditional teaching practices					
Dismissive attitude because of early experiences (real or perceived)					
Lack of release time					
Lack of technical support					
Lack of materials					
Workload					
Lack of incentives					
Generational divide between older and younger staff in use of technology					
Others (specify)					

21. (a) Does your Department have a policy to guide the development of distance, online and e-content materials?

Yes [ ] No [ ]

22. What institutional support does your Department require for it to participate more in distance education

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23. Please use the space provided for any additional comments you wish to make about any issue(s) concerning university managers' participation in distance education

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Thank you.

Appendix III

QUESTIONNAIRE FOR THE DEANS AND DIRECTORS OF FACULTIES, ACADEMIC INSTITUTES AND SCHOOLS

Please indicate the following appropriately:

1. Name of your:

   (v) University.

   ……..

   (vi)College/Campus

   ……

   (vii) Faculty/School/Institute

   ……...

2. What is your management position in the Faculty/School/Institute?

   ……

   Please respond to the following questions by ticking [√] appropriately:

3. How long (in years) have you held your current position in the Faculty/School/Institute?

   Less than 5 years [ ] 5-10 years [ ] Over 10 years [ ]

4. How long (in years) have you been teaching in the University?

   Less than 5 [ ] 5-10 years [ ] 11-15 [ ] Over 15 [ ]

5. What is your gender?

   Male [ ] Female [ ]

6. What is your age bracket?

Below 25 [ ] 25-35 [ ] 36-45 [ ] 46-55 [ ] Above 55 [ ]

7. Have you had any training in computer application skills?

(c) Yes [ ] No [ ]

(d) If yes, how many hours of training have you had?

Below 10 [ ] 11-20 [ ] 21-30 [ ] 31-40 [ ] Above 40 [ ]

8. (a) Do you have access to a personal computer in your office?

(b) Yes [ ] No [ ]

(c) If yes, for what purposes do you use this computer?

Teaching [ ] social activities [ ] Research work [ ] Others (specify) [ ]

9. (a) Do you have an e-mail address?

Yes [ ] No [ ]

(b) If yes, what do you use the email for?

Teaching [ ] social activities [ ] Research work [ ] others (specify) [ ]

10. Have you written any distance education course material in any form, either print or online materials?

Yes [ ] No [ ]

11. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that the following support services and facilities are available for instructors?

Available Support	**Strongly Agree**	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
An ICT technical unit/help desk					
Materials made available via web					
Short courses or workshops					
Special projects to stimulate use of technology					
Guidance and counseling unit for DE					
Clear admission procedure					
Proper records keeping for DE students					
Clear examination and certification procedure					
Others (specify)					

12. Have you ever participated in any of the following distance education activities? Tick [√] as applicable:

DE Activities	**YES**	**NO**
Computer training		
Training in DE instruction methods		
Participated in online learning		

Taught course(s) through distance		
Participated in DE material writing workshops/seminars		

13. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that courses in the following disciplines can be offered through distance learning mode. Tick [√] as applicable:

Academic Discipline	**Strongly Agree**	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
Humanities and social sciences					
Education					
Health Sciences					
Architectural and engineering					
Agriculture and veterinary sciences					
Biological and physical sciences					

14. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that distance instruction help in the following areas of learning and teaching. Tick [√] as applicable:

Areas of Learning and Teaching	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Desire to get students more involved with technology like online learning, computers.					
Opportunity to use technology more innovatively to enhance course quality					
Opportunity to meet and interact with students at a distance					
Increased flexibility in working hours and location					
Response to students asking for distance educational programs					
Provide more and varied training sessions to teachers					
Continue to provide technology support as needed by instructor and student					
Provide more detailed understandable instructional materials that can be used in DE					
Provide more and varied training sessions to teachers					

Continue to provide technology support as needed by instructor and student					
Provide more detailed understandable instructional materials that can be used in DE					

15. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that the following factors influenced participation in distance education activities in your Department. Tick [√] as applicable:

Factors	**Strongly Agree**	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
Uncertainty of intellectual property rights					
Technology is not a financial priority within the university					
Inadequate knowledge of technology application					
Personal motivation to use technology					
Ability to reach new audiences that cannot attend classes on campus					
Resistance to changing traditional teaching practices					
Dismissive attitude because of early experiences (real or perceived)					
Lack of release time					
Lack of technical support					

Lack of materials					
Workload					
Lack of incentives					
Generational divide between older and younger staff in use of technology					
Others (specify)					

16. What incentives are available for the faculty to participate more in DE activities?

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17. Does your faculty/school/institute have a policy to guide the development of distance, online and e-content materials?

Yes [ ] No [ ]

18. What institutional support do you feel your faculty/school/institute requires for it to participate more in distance instruction

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19. Please use the space provided for any additional comments you wish to make about any issue(s) concerning university mangers' participation in distance education in your school/faculty/institute

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Thank you.

Appendix IV

QUESTIONNAIRE FOR THE PRINCIPALS OF THE UNIVERSITY COLLEGES AND CAMPUSES

Please indicate the following appropriately:

1. Name of your:

   (i) University.

   .....

   (ii) College /Campus

   .....

2. What is your management position in the College/Campus? ..... **Please respond to the following questions by ticking [√] appropriately:**

3. How long (in years) have you held your current position in the College/Campus?

   Less than 5 years [ ] 5-10 years [ ] Over 10 years [ ]

4. How long (in years) have you been teaching in the University?

   Less than 5 [ ] 5-10 years [ ] 11-15 [ ] Over 15 [ ]

5. What is your gender?

   Male [ ] Female [ ]

6. What is your age bracket?

   Below 25 [ ] 25-35 [ ] 36-45 [ ] 46-55 [ ] Above 55 [ ]

7. Have you had any training in computer application skills?

   (e) Yes [ ] No [ ]

(f) If yes, how many hours of training have you had?

Below 10 [ ] 11-20 [ ] 21-30 [ ] 31-40 [ ] Above 40 [ ]

8. How many computers are there in your College/Campus?

Below 5 [ ] 25-50 [ ] Over 50 [ ]

9. What percentage of the computers is available to the lecturers for teaching purposes?

Below 25% [ ] 25-50% [ ] Over 50% [ ]

10. Are the computers in the College/Campus internet connected?

Yes [ ] No [ ]

11. If yes, how would you describe the internet speed in the College/Campus?

Extremely fast (over 150mbps) [ ]

Fast (100mbps) [ ]

Satisfactory (80mbps) [ ]

Slow (50mbps) [ ]

Extremely slow (below 50mbps) [ ]

12. (a) Do you have access to a personal computer in your office?

Yes [ ] No [ ]

(b) If yes, for what purposes do you use this computer?

Teaching [ ] social activities [ ] Research work [ ] others (specify) [ ]

13. (a) Do you have an e-mail address?

Yes [ ] No [ ]

(b) If yes, for what purposes do you use this address?

Teaching [ ] social activities [ ] Research work [ ] others (specify) [ ]

14. Have you written any distance education course material in any form, either print or online materials?

    Yes[ ] No [ ]

15. What proportion of the staff in your College/Campus has undergone DE training?

    Below 25% [ ] 25-50% [ ] 50-75% [ ] Over 75% [ ]

16. (i) Does your College/Campus offer programmes through distance learning mode?

    Yes [ ] No [ ]

    (iii) If 'yes', what percentage of the programmes available in your college are offered though distance learning mode?

    Below 25% [ ] 25-50% [ ] 50-75% [ ] Over 75% [ ]

17. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that courses in the following disciplines can be offered through distance learning mode. Tick [√] as applicable:

Academic Disciplines	**Strongly Agree**	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
Agricultural and veterinary science					
Architectural and engineering					
Biological and physical science					
Educational Studies					

Health Science					
Humanities and social science					

18. What incentives are available for the college to participate more in distance education?

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19. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that the following support services and facilities are available for instructors?

Available Support	**Strongly Agree**	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
An ICT technical unit/help desk					
Materials made available via web					
Short courses or workshops					
Special projects to stimulate use of technology					
Guidance and counseling unit for DE					
Clear admission procedure					

Proper records keeping for DE students					
Clear examination and certification procedure					
Others (specify)					

20. To what extent do you agree that the following factors influence participation in distance education activities in your College/Campus?

Factors	**Strongly Agree**	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
Technology is not a financial priority within the universities					
Uncertainty of intellectual property rights in an electronic environment					
Resistance to changing traditional teaching practices					
Inadequate knowledge of technology application					
Dismissive attitude because of prior experiences (real or perceived)					
Generational divide between older and younger staff in responding to use of technology					

21. Does your College/Campus have a policy guiding the lecturers on the development of distance learning materials?

Yes [ ] No [ ]

22. Please use the space provided for any additional comments you wish to make about any issue(s) concerning participation in distance education in your College.

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Thank you.

Appendix V

QUESTIONNAIRE FOR THE DEPUTY VICE CHANCELLORS

Please indicate the following appropriately:

1. Name of your University

   .....

2. Your management position in the University

   ....

Please respond to the following questions by ticking [√] appropriately:

3. How long (in years) have you held your current position in the University?

   Less than 5 years [ ] 5-10 years [ ] Over 10 years [ ]

4. How long (in years) have you been teaching in the University?

   Less than 5 [ ] 5-10 years [ ] 11-15 [ ] Over 15 [ ]

5. What is your gender?

   Male [ ] Female [ ]

6. What is your age bracket?

   Below 25 [ ] 25-35 [ ] 36-45 [ ] 46-55 [ ] Above 55 [ ]

7. Have you had any training in computer application skills?

   (g) Yes [ ] No [ ]

   (h) If yes, how many hours of training have you had?

   Below 10 [ ] 11-20 [ ] 21-30 [ ] 31-40 [ ] Above 40 [ ]

8. How many computers are there in your College/Campus?

Below 50 [ ] 51-100 [ ] Over 100 [ ]

9. What percentage of the computers is available to the lecturers for teaching purposes?

Below 25% [ ] 25-50% [ ] Over 50% [ ]

10. What proportion of staff in your University is trained on distance teaching mode?

Below 10% [ ] 10-25% [ ] 26-50% [ ] 51-75% [ ] over 75% [ ]

11. Are the computers in the University internet connected?

Yes [ ] No [ ]

12. If yes, how would you describe the internet speed in the College/Campus?

Extremely fast (over 150mbps) [ ]

Fast (100mbps) [ ]

Satisfactory (80mbps) [ ]

Slow (50mbps) [ ]

Extremely slow (below 50mbps) [ ]

13. (a) Do you have access to a personal computer in your office?

Yes [ ] No [ ]

(c) If yes, for what purposes do you use this computer?

Teaching [ ] social activities [ ] Research work [ ] others (specify) [ ]

14. (a) Do you have an e-mail address?

Yes [ ] No [ ]

(b) If yes, for what purposes do you use this address?

Teaching [ ] social activities [ ] Research work [ ] others (specify) [ ]

15. Have you written any distance education course material in any form, either print or online materials?

Yes[ ] No [ ]

16. (a) Does your university have an ICT unit?

Yes [ ] No [ ]

(b) If yes, what is the size of the ICT unit?

Department [ ] Faculty [ ]

College [ ] Others (specify [ ].....

17. What is the annual percentage budgetary allocation for the ICT unit?

.....

18. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that the following support services and facilities are available for instructors?

Available Support	**Strongly Agree**	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
An ICT technical unit/help desk					
Materials made available via web					
Short courses or workshops					

Special projects to stimulate use of technology					
Guidance and counseling unit for DE					
Clear admission procedure					
Proper records keeping for DE students					
Clear examination and certification procedure					
Others (specify)					

19. Does your University have a policy guiding the development of DE materials?

    Yes [ ] No [ ]

20. (a) Does your University offer programmes through distance learning mode?

    Yes [ ] No [ ]

    (b) If 'yes', what percentage of the programmes available in your University are offered though distance learning mode?

    Below 25% [ ] 25-50% [ ] 51-75% [ ] Over 75% [ ]

21. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that courses in the following disciplines can be offered through distance learning mode. Tick [√] as applicable:

Academic Disciplines	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Agricultural and veterinary science					
Architectural and engineering					
Biological and physical science					
Educational Studies					
Health Science					
Humanities and social science					

22. What incentives are available for the university to undertake distance education?

.....

.....

.....

23. On a scale of 1-5, where 5 is "strongly agree" and 1 is "strongly disagree", please indicate the extent to which you agree that the following factors influence participation in distance education activities in your University. Tick [√] as applicable:

Factors	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Technology is not a financial priority within the universities					

Uncertainty of intellectual property rights in an electronic environment					
Resistance to changing traditional teaching practices					
Inadequate knowledge of technology application					
Dismissive attitude because of early experiences (real or perceived)					
Generational divide between older and younger staff in responding to use of technology					

24. What institutional policy and support do you feel your University requires for it to engage more on distance instruction

.....

.....

25. Please use the space provided for any additional comments you wish to make about any issue(s) concerning university mangers' participation in distance education in your university

.....

.....

Thank you.

APPENDIX VI

SAMPLE SIZE OF DIFFERENT POPULATION SIZES

Population size	Sample size
10	10
20	19
30	28
40	35
50	44
60	52
70	59
80	66
90	73
100	80
150	108
200	132
250	162
300	169
400	169
1,500	306
2,000	322
3,000	341
4,000	351
5,000	357
10,000	370
20,000	377
50,000	381
100,000	384

Source: Krecie and Morgan (1970) in Kasomo (2006)

APPENDIX VII: SUMMARY OF FACTOR ANALYSIS

Variable	No. of indicators	Description	Rotated Compound Matrix	Commonalities
	1	Level of Knowledge	0.714	0.545
	2		0.795	0.778
	3		0.614	0.756
	1	Attitude	0.665	0.692
	2		0.795	0.789
	3		0.692	0.651
	1	Availability of support	0.797	0.713
	2	facilities	0.880	0.775
	3		0.896	0.812