# FACTORS INFLUENCING STUDENTS ACHIEVEMENT IN TECHNICAL EDUCATION PROGRAMMES IN KENYA: THE CASE OF KIRINYAGA UNIVERSITY COLLEGE, KIRINYAGA COUNTY, KENYA

BY

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## DECLARATION

**This research project report is my original work and has not been presented for a degree or other award in any other University.**

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## DEDICATION

This research project report is dedicated to my beloved husband Ephantus Gate, our children Carol, Janet, Millicent and Denis for their prayers and support during this study.

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| **ERSP** | Economic Recovery Strategy Programme |
| **GOK** | Government of Kenya |
| **GMR** | Global Monitoring Report |
| **IIEP** | International Institute for Educational Planning |
| **KENPRO** | Kenya Projects Organization |
| **KNBS** | Kenya National Bureau of Statistics |
| **KTTC** | Kenya Technical Teachers College |
| **MYAS** | Ministry of Youth Affairs and Sports |
| **NCAPD** | National Coordinating Agency for Population and Development |
| **NCCK** | National Christian Council of Kenya |
| **NGO** | Non Governmental Organization |
| **PRSP** | Poverty Reduction Strategy Plan |
| **TIVET** | Technical, Industrial, Vocational and Entrepreneurship Training |
| **TVET** | Technical and Vocational Education and Training |
| **UN** | United Nations |
| **UNESCO** | United Nations Education, Scientific and Cultural Organisation |
| **UNICEF** | United Nations Children's Fund |

## ABSTRACT

Kenya's Vision 2030 blueprint envisages a country that has achieved middle income status supported by five key sectors of the economy namely Agriculture, ICT, Manufacturing/Industry, Education and Finance (Nelly,2007). This will improve provision of education to students in technical institutions and hence achieve the vision 2030 of making Kenya an industrialized nation by 2030. The purpose this study is to investigate the factors influencing students' achievement in technical education programmes in Kenya: a case study of Kirinyaga University College, Kirinyaga County, Kenya. The objectives of the of the study are to establish the effect of availability of teaching personnel on achievement of students in technical education programmes, determine the influence of learning facilities and resources on students achievement in technical education programmes, assess the influence of teaching Pedagogy on students' achievement in technical education programmes and identify how finances influence students' achievement in technical education programmes. The study used a descriptive survey design and the theoretical framework of this study was derived from the human capital theory. The target population of the study was 189 and a sample of 123 was picked. This sample was picked using stratified sampling and proportionate sampling. Questionnaire were used to collect data and ten (10) respondents used for Pilot testing before the commencement of the study and errors in the data collection instruments were corrected. Data analysis was done using Statistical Package for Social Sciences, descriptive statistics computed and data presented using tables. The findings of the study indicated that most of teaching staff (78.4%) had diploma level of education; the institution has mechanic course and tools, equipments and materials used for training as indicated by 37.2 % of respondents. Demonstration is an effective method of instruction in technical institutions as indicated by 52% of respondents. Students (64.5%) relied on their parents for their fees and upkeep since only 4.1 % of respondents received scholarship funds. The study findings will be useful to future scholars as it will add to the existing body of knowledge and this will improve provision of education in technical institutions and hence achieve the Vision 2030. Technical institutions should have well educated and experienced teaching personnel, suitable and adequate classroom physical facilities, use a variety of Pedagogy to improve students' achievement.

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# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

Technical and vocational education programmes and training is back on the development agenda of many African countries after years of benign neglect, instigated by a complex set of reasons that included budgetary constraints and criticisms of the World Bank in the early 90's on its direction and focus by Afeti (2014). The World Bank had argued at the time that the cost of technical and vocational education programmes was too high compared with the returns to the economy, that the quality of training was poor and that there was considerable mismatch between training and the needs of industry. That is, the delivery of vocational education and training was not cost-effective. However, since the beginning of the new millennium, a fresh awareness of the critical role that technical and vocational education programmes and training can play in economic growth and national development has dawned among policy makers in many African countries and within the international donor community. Nelson (2013) reported that the increasing importance that African governments now attach to technical and vocational education programmes and training is reflected in the various Poverty Reduction Strategy Papers that governments have developed in collaboration with the World Bank. Technical and vocational education programmes and training delivery systems are therefore well placed to train the skilled and entrepreneurial workforce that Africa needs to create wealth and emerge out of poverty. Technical and vocational education programmes and training respond to the needs of different types of industries, also to the different training needs of learners from different socio-economic and academic backgrounds, and prepare them for gainful employment and sustainable livelihoods. A skilled workforce is a basic requirement for driving the engine of industrial and economic growth and therefore technical, vocational education programmes and training holds the key to building this type of technical and entrepreneurial workforce.

KENPRO (2013) stated that after Kenya becoming a republic in 1964, Kenyan leaders vowed to eradicate poverty, disease and illiteracy but according to the proportion of the population living on less than one US dollar a day, that is the poverty line is higher than ever before. Poverty has been recognized as one of the factor that affects the education programmes. This is because of economic crisis and prevalence of HIV/AIDS pandemic. Wanjohi (2013) reported that if Kenya

is to achieve education for all by 2015, early Childhood Care and Development, Primary education, Secondary Education, Special Education, Girl child education, out of School Education and adult Education, and Curriculum Development should be taken seriously. He further stated that in order to achieve this, various tangible measures are needed through combined efforts by the government and development partners. However, according to UNESCO (2005), Kenya continues to face a number of challenges following the introduction of Free Primary education in 2003 and Free Secondary Education in 2008 which include lack of adequate teachers and physical resources. According to UNESCO Institute of Statistics (2009), education can be improved through supply of quality teachers. It is estimated that the world will need approximately 18 million additional primary school teachers by 2015. The most pressing need is in sub-Saharan Africa, where an estimated 3.8 million additional posts must be recruited and trained by 2015. According to GMR (2007), many countries face a crisis of teacher morale that is mostly related to poor salaries, working conditions and limited opportunities for professional development.

Quaisie (2010) indicated that technical education has been seen as less dignifying and only suitable for dropouts in school and children of low income groups. The Kenya Ministry of Higher Education, Science and Technology (2012) reported that the revitalization of technical institutions would empower youth through provision of accessible, appropriate and quality training in technical, vocational, industrial, entrepreneurship and life skills. Hence the Youth Training Department aimed at enhancing the capacity of the technical institutions personnel in order to improve the institution's quality of the training education. It aimed at equipping, refurbishing and upgrading infrastructure in technical institutions countrywide. The new curriculum is modular and competency-based: it comprises of agro-business development, food processing technology, electrical and electronics technology, metal processing technology, building technology, refrigeration and air conditioning, appropriate carpentry and joinery, information communication technology, leather work technology, fashion design and garment making technology, hair dressing and beauty therapy and general education (mathematics, biology, communication skills, entrepreneurship, life skills, physics, chemistry, Information Communication Technology (ICT) and technical drawing). The technical institutions also provide pathways for attaining higher education through technical and vocational education.

Kirinyaga University College initially known as Kirinyaga Technical Institute is one of the oldest institution and therefore classroom facilities and teaching personnel might be adequate

### 1.2 Problem Statement

Technical education has been seen less dignifying and only suitable for dropouts in school and children of low income groups (Quaisie, 2010). The Kenya Ministry of Higher Education, Science Technology (2012) reported that the revitalization of technical institutions was aimed at empowering youth through provision of accessible, appropriate and quality training in technical, vocational, industrial, entrepreneurship and life skills. The Youth Training Department aimed at enhancing the capacity of the technical institution teaching personnel in order to improve the quality of the training education. Owano (2012) reported that youth unemployment has remained a serious problem in many Third World Countries during the past three decades. Efforts to solve the problem have included initiation of education and training education for youths both in school and out of school. However, John (2013), reported that students achievement in technical courses is poor. This study therefore, seeks to investigate factors influencing students' achievement in technical education in Kenya, a case study of Kirinyaga University College.

### 1.3 Purpose of the Study

The purpose of the study was to investigate the factors influencing students achievement in technical education programmes in Kenya: a case of Kirinyaga University College, Kirinyaga County, Kenya

### 1.4 Objectives of the Study

The objectives of the study are:

i. To establish the effect of availability of teaching personnel on achievement of students in technical education programmes at Kirinyaga University College.
ii. To determine the influence of learning facilities and resources on students achievement in technical education programmes at Kirinyaga University College.
iii. To assess the influence of teaching Pedagogy on students' achievement in technical education programmes at Kirinyaga University College.
iv. To identify how finances influence students' achievement in technical education programmes at Kirinyaga University College.

### 1.5 Research Questions of the Study

The study seeks to answer the following research questions:

i. To what extent do availability of teaching personnel influence achievement of Students in Technical education programmes at Kirinyaga University College, Kirinyaga County, Kenya?

ii. How do classroom physical facilities influence student's achievement in technical education programmes at Kirinyaga University College, Kirinyaga County, Kenya?

iii. To what extent do Pedagogy influence students' achievement in technical education programmes at Kirinyaga University College, Kirinyaga County, Kenya?

iv. How does finances influence students' achievement in technical education programmes at Kirinyaga University College, Kirinyaga County, Kenya?

### 1.6 Significance of the Study

The research findings generate new information which would help technical institutions administrators and instructors to be able to understand the factors influencing students' achievement in technical education programmes. The generated information will also help government departments in the Ministry of education to come up with interventions which will improve the achievement of students in technical institutions. The study findings will also help policy makers in planning for technical education programmes systems for technical institutions. Finally the study will be of help to researchers interested in technical education programmes.

### 1.7 Limitations of the study

There was limited time for this study since the researcher is employed full time. The researcher applied for leave to carry out the research.

### 1.8 Delimitations of the study

The study focuses on the factors influencing students' achievement in technical education programmes focusing on Kirinyaga University College in Kirinyaga County. The respondents of the study are the 25 teaching staff and 164 students undertaking electrical installation, building construction, mechanical engineering and fashion design and hospitality courses at the University College.

### 1.9 Basic Assumptions of the study

The study had assumed that all respondents would be available and that they would answer the questions correctly without any bias. As shown in 4.2, the respondents were cooperative with a very high return rate of 98%.

### 1.10 Definition of significant terms

| | |
|---|---|
| **Academic achievement in technical education programmes** | Refers to achievements of distinction, credit and pass in technical courses. It also refers to how well a student is accomplishing his or her tasks and studies. |
| **Availability of finances** | Presence of sources of funds for student uses. |
| **Availability of teaching staff** | Presence of staff who can readily be employed |
| **Institutional methods** | Refers to Pedagogy like discussion, lecture, demonstration and case study used in technical institutions. |
| **Institutional physical facilities** | Refers to facilities like example classrooms, desks, chairs and blackboard |
| **Pedagogy** | The art of teaching which encompasses all to do with classroom, teaching and management |

### 1.11 Organization of the study

This study has five chapters. Chapter One covers the background of the study, statement of the problem and purpose of the study. This was followed by research objectives, research questions, justification of the study, limitations of the study, delimitations of the study, significance of the study, definition of significant terms and concludes with the organization of the study.

Chapter Two entails literature review from various sources to establish work done by other researchers, their findings, conclusions and identification of knowledge gaps which forms the basis of setting objectives and research questions of the study. The theoretical and conceptual frameworks were also explained.

Chapter Three covers the research design, target population of the study, sample size and sampling procedures. This was followed by data collection procedures, data collection instruments, validity of instruments, reliability of instrument, data analysis techniques, ethical considerations and concludes with operational definition of variables.

Chapter Four contains findings from data analysis, presentation of findings and interpretation of findings. It was concluded with summary of the chapter.

Chapter Five covers summary of findings, discussion, conclusions and recommendations of the study. It was concluded with suggested areas for further research and contribution to the body of knowledge.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter presents a review of empirical literature on factors influencing students' achievement in technical education programmes look as from global, Africa and local perspectives. The chapter also presents the theoretical frame work and conceptual framework on which the study was based.

## 2.2 Technical education programmes and teaching personnel

Globally, Read (2009) reported that in United States of America, states vary widely in how they carry out and evaluate technical- education programmes programs financed by the federal government's Perkins Career and Technical Education Act, preventing the government from gaining a broad perspective on which programs work and which do not, says a report released today by the U.S. Government Accountability Office. West Virginia Department of education (2010) reported that Career and Technical Education Global 21 Achievement Assessment Program assessments are designed to integrate the achievements of writing, speaking, and applying knowledge and skills into a culminating evaluation for each concentration. This approach validates the essence of career and technical education by requiring the students to demonstrate what they know and can do.

Afonja (2005) reported that education particularly technical education programmes is considered to be a prime stimulant for the development and growth of endogenous technological capability. Japan's rapid industrialization was fuelled by the accumulation of technical skills which in turn was based on its already high level of literacy and a strong commitment to the education programmes, especially the training of engineers. Korea adopted a similar strategy about 50 years ago by launching strong education programmes focused on universal primary education, utilizing both internal and external training facilities. Education affects economic and industrial growth in many ways: it hence enhances the ability to imbibe and adapt technological innovations. It promotes entrepreneurship and entrepreneurial ability characterized by a combination of moderate risk-taking, individual responsibility, long range planning and organizational ability. Education also has a positive influence on enterprise size and productivity. Recent studies indicate that increasing the average amount of primary education of a labour force

by one year raises GDP by 9 percent. However, Swart (2013), identified lack of capacity as one of Africa's most disenabling problems, cutting across the entire range of challenges to national development, from policy analysis to effective delivery of basic social services. He identified capacity building through education the region's most important need to catalyse its economies to sustainable.

Nyerere (2009) reported that education is acknowledged as a means for transforming and empowering communities. The youth especially gain skills, knowledge and attitudes to enable them become productive members of the society. Education contributes to sustainable development and is recognized in Kenya as a priority area of development intervention as is reflected in policy documents. The Government of Kenya has developed key policy documents over the last ten (10) years; Poverty Reduction Strategy Plan (PRSP) of September 2002 and its successor the Economic Recovery Strategy education programmes (ERSP) of 2003 and the Vision 2030 of 2008; they all emphasize the importance of education programmes in development. The Bonn Resolution of October 2004 noted that technical and vocational education and training (TVET) is the master key for alleviation of poverty, promotion of peace, and conservation of the environment, in order to improve the quality of human life and promote sustainable development. Kenya can reorient itself towards sustainable development, using TVET as a vehicle for socio-economic and technological transformation. It is critical that Kenya, through TIVET meets the challenges of increased unemployment, poverty, food insecurity and environmental degradation. The skills development is important for economic growth, poverty alleviation, youth and women's empowerment and social inclusion. Nevertheless, the role of TVET is absent to a large extent in most policy documents. This gap is particularly puzzling, Governments and donor countries consistently emphasize the need for concerted efforts to build the human assets of the poor. Yet TVET is accorded limited importance in donor financing schemes and discussions since the late 80s' (Bennell, 2009). Owano (2012) stated that technical institutions provide technical, vocational, industrial, entrepreneurial and life skills training to young people in order to increase employment opportunities, reduce dependency levels and increase self-reliance among the youth. However, Quaisie (2010) stated that technical education programmes has been seen less dignifying and only suitable for dropouts in school and children of low income groups.

UNESCO (2012) reported that according to the Sessional Paper No. 5 on Education and Training in Kenya, the country has 4 national polytechnics, 17 Institutes of Technology, 1 Technical Teachers' Training College and 21 Technical Training Institutes. In addition, there are over 600 youth polytechnics distributed throughout the country. However, only 350 of the youth polytechnics receive Government assistance. The private sector operates close to 1,000 commercial colleges that offer courses in computers and non-technical areas of training. The total enrolment in public TIVET institutions in Kenya increased to over 79,000 in 2003. Female students enrolment constituted 44 percent of the total, but there exists serious gender disparities in terms of overall enrolment in science and technology related professions. Majority of female students (52.4 percent) are enrolled in business studies related courses compared to less than 5 percent in engineering. The Kenya Polytechnic recorded the highest enrolment of women students at 4,562 out of 10,472 students in 2003. In the vision 2030, there is a flagship project involving the revitalization of technical institutions to facilitate the training of youth in technical, vocational and entrepreneurial skills in an effort to increase their productivity and equip them with skills to participate fully in productive activities (Opiyo, 2013).

Kirinyaga University College (KYUC) is a constituent college of JKUAT and was established by an act of parliament in 2011. Kirinyaga University College aimed at offering technical and vocational education programmes in order to train skilled and entrepreneurial workforce that Africa needs to create wealth and emerge out of poverty. Nelson (2013) reported that a skilled workforce is a basic requirement for driving the engine of industrial and economic growth and therefore technical, vocational education programmes and training holds the key to building this type of technical and entrepreneurial workforce. This study intends to assess the factors influencing students' achievement in technical education programmes in Kenya in Kirinyaga University College, Kirinyaga County.

**2.3 Technical education programmes and teaching personnel**

According to Kenya Technical Teachers College (2013), this college was established with the primary objective of training technically skilled personnel to not only teach in the technical training institutions but also for employment in all sectors of the economy. Kenya's industrialization goal cannot be achievement unless technical training is given the emphasis it deserves. It is in recognition of this fact that KTTC endeavors to train highly qualified and

competent technical teachers and technologists who can help to inculcate a technical culture amongst the youth in our country. Over the years, KTTC has continued to produce technical teachers for secondary schools, youth polytechnics, technical institutes, institutes of technology and national polytechnics. Eleweke and Rodda (2010) reported that inadequate personnel training programs is one of the problems faced by developing countries. However, Ngome (2009) indicated that the declining quality of staff is affecting the ability of TVET institutions to accomplish their role in society. These institutions are generally unable to attract and retain high calibre academic staff. This is mainly due to the low level of remuneration, which they offer.

According to Ministry of education (2012), human capital is one of the most critical resources needed for social-economic development of an organization or nation. Successful nations and individual organisations invest heavily on human resource capacity development. Therefore, a critical mass of educated people who are equipped with appropriate knowledge, skills and attitudes is required in order to achieve the country's political, economic and social goals that are articulated in Kenya Vision 2030. For these aspirations to be achieved there is need for the Ministry of education to be an efficient and effective organization This requires enhanced capacity by way of informed and pro-active leadership; clear management goals, targets and structures; development and implementation of a staff development policy and an effective system of staff appraisal. Where this does not exist, it will have to be developed.

**2.4. Learning resources and their impact on technical Education achievement**

A good classroom environment should promote independent learning (Kireria 2007). Students should be exposed to numerous learning activities so that they can take pride in their accomplishments thus learning activities in themselves are motivators for students to continue learning and take interest in their progress. Adikinyi (2007) suggests that teachers should make proper organization of class resources to facilitate a good atmosphere for learning such as textbooks use, chalk board use and maintain cleanliness and tidiness of the classrooms. Nyerere (2009) pointed out that under-investment in skill training for institutions such as Youth Polytechnics has resulted in understaffing, lack of physical infrastructure (workshops) and tools leading to low quality of education which is not synchronized with what the labour market or local livelihoods require. Thus graduates from TVET institutions tend to get excluded from the world of work because they lack productive skills. Core values and attitudes which translate into positive work ethics are also lacking as they tend to be given passing recognition within the

institutional setting. Disconnect between the institution and the work situation is a challenge that TVET policy-makers must confront and resolve. Ngome, C (2009) reported that over the past two decades, TVET institutions have continued to receive less financial allocations from the government than the estimated annual expenditure, a trend which is expected to continue. Consequently, physical facilities are dilapidated and lack maintenance. Equipment used for training in most institutions is outdated while vital aspects of the training support system are wanting with such areas as library acquisitions being relegated to the periphery with negative impact on the quality of TVET programme.

According to Walubengo (2007) reported that some technical institutions lack a policy framework for youth development. For instance youth polytechnics are not mainstreamed in the national programmes and training system, most youth polytechnics are ill prepared for training, as their physical facilities are run down and equipment are inadequate, absolute or not working, their programmes do not allow for horizontal and upward mobility and are not market oriented, quality assurance mechanism are lacking in the sector. The image of youth polytechnic is very low since they are perceived as inferior institutions for primary school failures and dropouts. Bwisa (2014) further observed that in technical institutions, courses like motor mechanics are delivered using obsolete equipment constituted by non functional old engine models. Some instructors do not have adequate exposure to modern technology. Infrastructure for industrial attachment is lacking and hence graduates have no grounding in practical's.

**2.5. Pedagogy and technical Education**

The National Task Force mandate to restructure the education programmes system in Kenya(2012) noted that quality of education was not clearly spelt out in a way that specific competences can be assessed it recommended the introduction of a system of Competence Assessment Tests that would measure knowledge and skills. Okulo (2010) argues that tasks and duties can be delegated but not responsibility. Thus teaching staff should learn the art of supervising and guiding every assignment left behind (Adikinyi,2007),views assessment as marking exercise books of learners setting and marking examinations, maintaining a student's progress record, giving assignments to learners frequently and marking them and administering continues assessment tests (CATs) To her as a method of assessment students should be given time to prepare for examination since examinations are meant to identify specific problems in problems in master of content and not drilling students.

In Kenya, Kiio (2010) noted that teachers use several instructional methods, however they rely more on expository methods rather than heuristic methods. Steeves (2001) Research also indicates that lecture is not the most effective daily method s for the diverse learners in today's schools. At the very least, the lecture method must be combined with active discussion and with exercises that involve the use of tool equipment and materials. Mwai (2007) stated that most teachers use wrong methodologies and thus failing to deliver goods to. To her, students learn in different ways at different rates and for different purposes and therefore a teacher should use a variety of method s that will capture the attention of each learner. Adikinyi (2007) added that teachers should use different methods of instruction to facilitate learning instructional methods that encourage students in observation as the teacher demonstrates instructional methods are important in achievement of high achievement of students. Mwai (2007) pointed out that methods impact on the students' ability to comprehend ideas presented to him/her in the learning process. There are various factors affecting the selection of an instructional method namely the number of students in a class, time to be spent at a particular lesson, the cognitive level of student, social climate in which learning takes place and available learning aids. Thus any teacher is limited in their selection of instructional method by the above factors.

According to Adikinyi (2007), time is of particular concern when it comes to the selection of an instruction method. To her, adequate time needs to be provided that would allow the use of learner centered instruction method. On the same, Mwai (2007) observed that the more the hours allow in instruction in a subject the higher the achievement of the student. Teachers should therefore provide opportunities for students to take part in a variety of experiences that relate to the subject matter being taught. Through the selection of the right instructional method a teacher is able to respond to different needs of the various students during teaching such as gender, special needs, physically handicapped, hearing /visual/mental impaired (Adikinyi 2007). The selection will allow the teacher equally involve all students in classroom interaction despite their differences. The teacher will ensure that all learners equally access learning resources like textbooks and equipment. She continues to add that the learners with learning difficulties will be adequately catered for through remedial work while fast learners through being given supplementary work.

Quality of instructional methods according to Mwai (2007) is facilitated by preparation and keeping of teaching records. Teaching records include course outline record of work and

teachers notes. Adequate preparation of Pedagogy helps the extent of syllabus coverage and at the same time note areas of inadequacies. Kireria (2007) asserts that teachers can only be able to achieve this if they are adequately equipped with knowledge and skills that enhance their productivity and consequently improve the quality of learning, precisely that of History and government in secondary schools.

### 2.6 Influence of availability of finances on achievement of students in technical education programmes

According to Wanjohi (2011), most countries were hopeful that opportunities provided by strengthened democratic governance, and improving economies will accelerate progress. However, poverty levels still remain high. On becoming a republic in 1964, Kenyan leaders vowed to eradicate poverty, disease and illiteracy. Today the proportion of the population living on less than one US dollar a day, that is the poverty line, is higher than ever before. However, Kirimi (2012), the rationale for introduction of safety nets such as bursaries and constituency development fund in the technical sector, there are increasing concerns over the limited finances in youth polytechnics to provide quality technical education programmes and training. This is because, almost all educational institutions in Kenya face serious financial constraints due to failure by parents to pay fees promptly.

UNESCO(2005) indicated that governments, policy makers and civil society have emphasized that developing countries need to invest more in technical education programmes and ensure that systems of education programmes is efficiently managed, that limited funds allocated to the sector have maximum impact, and that cost-saving and cost-recovery measures are adopted. Expanding education programmes systems appears to imply a proportional increase in resources, but governments are proving increasingly unable to cope with the higher costs. Diaa (2006) reported that finance is one of the basic pillars upon which the educational system depends in achieving its goals and implementing its plans but Kirimi (2012), stated that through cost sharing and cost-saving measures, the government was to reduce the high public expenditure in education programmes. This gave institutions in Kenya a big blow because technical education programmes is expensive due to tools and equipments required for the education programmes and training. Parents were to provide with building, teaching and learning materials but these efforts to curb high expenditure in education programmes have made successful and quality training in youth polytechnics elusive. Wolf (2011) observed that school unit cost rise when

education becomes more technical or science oriented. However, the government since the introduction of cost sharing seems to neglect technical training sector in favor of academic educational sectors. Njihia (2005) affirmed that under funding of educational programs in the technical training institutions has greatly jeopardized their capacity to offer quality training thereby eroding their external efficiency in the job market because the quality of graduates is compromised. According Kirimi (2012), financial management is one of the important tasks in the realization of the goals of a school as an organization. Despite the rationale for introduction of safety nets such as bursaries and constituency development fund in the education sector, there are increasing concerns over the limited finances in youth polytechnics to provide quality education programmes and training. Therefore for youth polytechnics to succeed in the endeavor of education programmes and training, they require a sound financial base to run smoothly. Financing of Technical Vocational education and Training (TVET) programs has always been shared amongst government, local communities, beneficiaries, religious and private organizations, donors and private business. Ibrahim (2012), pointed out that each of the partners in financing the education programmes have given more than her equal share and therefore, institutions especially youth polytechnics should look for viable alternative sources of finances by mobilizing new sources of funds to be financiers of their training programs.

According to the International Institute for educational Planning (IIEP) (2007), The delivery of Technical and Vocational education and Training (TVET) requires smaller classes and expensive equipment and further observed that TVET is privileged to have private partnership and that in many countries private providers are many with linkages of employers for apprenticeship education programmes. Companies also fund apprenticeship education programmes or give allowances to students within the dual system (where the students learn on the job), non-governmental organisations run short community-based courses and foundations sponsor training institutions. Yamada (2005) stated that Kenya's allocation of funds among the sub-sectors of the education programmes is different when compared to Ethiopia and Tanzania. It allocates less to primary school and more to TVET and secondary school. This shows that EFA has more meaning to Kenya than in the other countries. This is proven by the government subsidy of Ksh 15,000 per student in YP as compared to Ksh 10,000 per student in secondary school. There are about 600 Youth Polytechnics of which 395 are government aided. The government started the support for the Youth Polytechnics in 1971. At first the assistance used to be top-up salaries for

the instructors as well as providing the equipment needed for instruction. However in a bid to capture more youths, the government recently subsidized the fees the learners should pay by allocating Ksh.10,000 per student per year since the year 2006 and more recently the subsidy has been raised to Ksh 15,000. The student was left with only payments for boarding facilities or for lunch for the day scholars. At basic level the financing of the education programmes and training is the responsibility of the government and parents.

According to Aguda (2013), technical and vocational education and training represents a significant feature of the education programmes and training provision through which both continuing and training requirements are met. It attempts to straddle the needs of lifelong education programmes and training as well as the immediate requirements of the work place. Favorable attitude towards institutions physical facilities and quality teaching learning resources promote transition in Technical and Vocational education and Training. Usunsung (2013) reported that the role of TVET in furnishing skills required to improve productivity, raise income levels and improve access to employment opportunities has been widely recognized. Developments in the last three decades have made the role of TVET more decisive; the globalization process, technological change and increased competition due to trade liberalization necessitates requirements of higher skills and productivity among workers in both modern sector firms and Micro and Small Enterprises (MSE).

Miyandazi (2013) indicated that skills development encompasses a broad range of core skills (entrepreneurial, communication, financial and leadership) so that individuals are equipped for productive activities and employment opportunities (wage employment, self-employment and income generation activities).Due to global economic changes, necessitating implementation of structural adjustment education programmes (SAP) in developing countries, workers have been displaced, this poses great challenges; they need retraining for new occupations. The impact of HIV/AIDS has necessitated emphasis on Skills development to replace skills lost across a wide range of occupations; AIDS depletes scarce human resources. HIV/AIDS also reduces the capacity of TVET systems to deliver their functions, since it decreases the supply of highly trained personnel and causes deterioration in the quality of the system. According Kirimi (2012), he reported that several countries; developed and developing, such as Italy, Brazil, China, Sweden and Japan have given more recognition to TVET through adequate funding. As a result, students get exposed to vocational training and to a culture of scientific investigation and

application at an early age. In Europe, at least 50 percent of the students in upper secondary education pursue some form of technical or vocational education. In China, India and South East Asia the figure is 35-40 percent, whereas in Africa it is less than 20 percent. The use of Technical, Industrial, Vocational and Entrepreneurship Training in Kenya encompasses technical training institutions, MSE training and demonstration centers, youth polytechnics and national youth service skills development centers. TIVET education programmes is offered in Youth Polytechnics (YP), Technical Training Institutes (TTIs), Institutes of Technology (ITs) and in National Polytechnics. Nyerere (2009) stated that there are also other institutions that offer TIVET education programmes spread across government ministries as well as private institutions. In Kenya there have been deliberate efforts to structure and deliver formal TVET education programmes through establishment of TVET institutions either by the government or the private sector. However Non formal TVET sector just like the informal sector has been neglected by the government particularly in relation to the organization of systems and structures. The Government has policies for the sector but they are implemented, enabling the private sector to exploit it for cheap labour. The sector has been generally left to civil societies (USK, OAIC), religious organizations among others to intervene, which is done at education programmes levels hence few target groups reached.

According to George Afeti (2014), technical and vocational education and training is back on the development agenda of many African countries after years of benign neglect, instigated by a complex set of reasons that included budgetary constraints and criticisms of the World Bank in the early 90's on its direction and focus. The World Bank had argued at the time that the cost of technical and vocational education was too high compared with the returns to the economy, that the quality of training was poor and that there was considerable mismatch between training and the needs of industry. That is the delivery of vocational education and training was not cost-effective. However, since the beginning of the new millennium, a fresh awareness of the critical role that TVET can play in economic growth and national development has dawned among policy makers in many African countries and within the international donor community. The increasing importance that African governments now attach to TVET is reflected in the various Poverty Reduction Strategy Papers that governments have developed in collaboration with the World Bank. In its poverty reduction strategy document, Cameroon for example intends to develop vocational and professional training to facilitate integration into the labour market; Cote

d'Ivoire talks about strengthening vocational training; Ghana links vocational education and training with education programmes of the youth and the development of technical and entrepreneurial skills; Lesotho and Rwanda focus on linking TVET to businesses while Malawi emphasises the need to promote self-employment through skills development. Other countries that have prioritised TVET initiatives in their national development policy documents include Chad, Ethiopia, Guinea, Senegal, Sierra Leone, Uganda and Zambia.

**2.7 Theoretical frame work**

Human capital theory was postulated by Joyce, Weil and Calhoun, (2003).The concept is of learner characteristics as an important dimension of the social foundation of TVET. Thompson, (1973) observed that this concept influences how to prepare, structure and execute education in technical and vocational education programmes. It is seen increasingly as a key determinant of economic achievement. A key strategy in determining economic achievement has been to employ a conception of individuals as human capital and various economic metaphors such as technological change, research, innovation, productivity, education and competitiveness. In modern Human Capital Theory all human behaviour is based on the economic self-interest of individuals operating within freely competitive markets. Thompson asserts that there is a rather general agreement today that the conditions for gaining knowledge are much more favourable when those concerned experience feelings of need for subject matter and when mastery of subject results in personal satisfaction. Institutions should therefore endeavour to have trainees learn only things and processes which are of use and value in real life situation. In the study, the researcher intends to assess the factors influencing students achievement in technical education programmes in Kenya: a case study of Kirinyaga University College, Kirinyaga County, Kenya and give recommendations in an attempt to make technical institutions perform their intended functions of enrolling students and providing them with training and skills for employability and provide the country with the much needed cadre for formal employment and self employment

## 2.8 Conceptual Framework

A conceptual framework on which this study is based appears in Figure 1

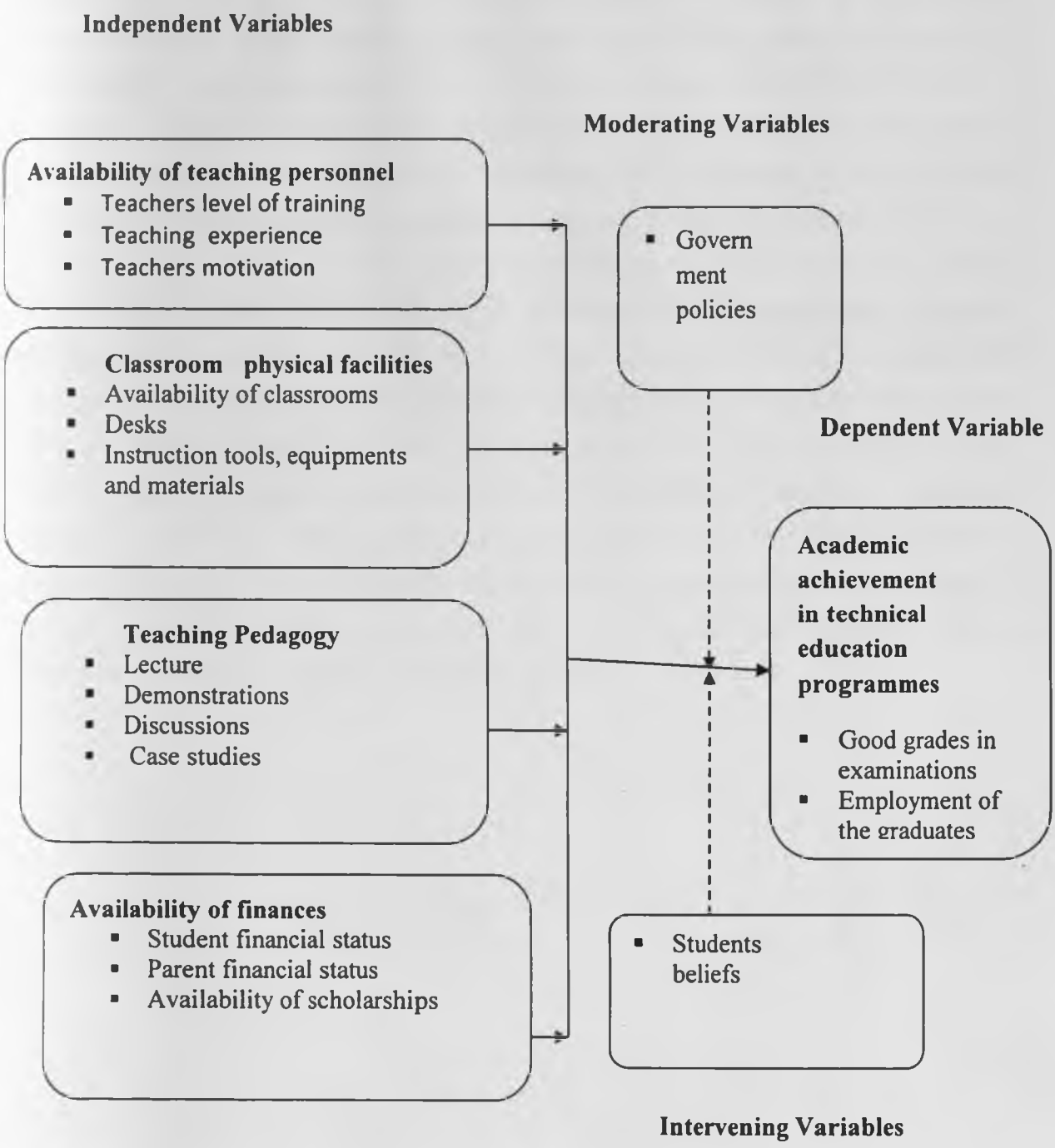


**Figure 1: Conceptual Framework**

## 2.9 Knowledge gap

Technical and vocational education education programmes and training is back on the development agenda of many African countries after years of benign neglect, instigated by a complex set of reasons that included budgetary constraints and criticisms of the World Bank in the early 90's on its direction and focus (Afeti, 2014). The literature review of this study shows that the declining quality of staff is affecting the ability of TVET institutions to accomplish their role in society. These institutions are generally unable to attract and retain high calibre academic staff. This is mainly due to the low level of remuneration, which they offer. The physical facilities in some technical institutions many are dilapidated and lack maintenance. Equipment used for training are outdated while vital aspects of the training support system are wanting with such areas as library acquisitions being relegated to the periphery with negative impact on the quality of Youth Polytechnic education education programmes. The study reflects on how teaching personnel influence student achievement in technical education education programmes, how institutional physical facilities influence student achievement in technical education education programmes, how instructional methods influence student achievement in technical education education programmes and how economic factors influence student achievement in technical education education programmes.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter outlines the research methodology which was used to find answers to the research questions. The research design, target population, sampling procedures and sample size, data collection methods, instruments of data collection, reliability and validity of the data collection instrument and finally the data analysis are presented in the chapter and ethical considerations.

## 3.2 Research Design

Blumberg (2008) describes a research design as a plan, structure and strategy of investigation to obtain answers to research questions and control variance. This study adopted a descriptive survey design. The design was used because it looked at the phenomena, events and issues the way they are (Mugenda and Mugenda, 2003). The design was used because it examined the problem at hand thoroughly to define it, clarify it and obtain pertinent information that can be of use to stakeholders in technical education programmes. The design was also able to accommodate large sample sizes and it is good in generalization of the results. It was easy to administer and to record answers in the design.

## 3.3 Target Population of the Study

According to Ogula, (2005), a population refers to any group of institutions, people or objects that have common characteristics. The study focused at a total population of 189. That is, all the 164 students and 25 teaching staff. Students from electrical installation 40, building construction 79, mechanical engineering 24 and fashion design and hospitality 21 in Kirinyaga University College, Kirinyaga County, Kenya.

## 3.4 Sample size and sampling procedures

A sample is a smaller group or sub-group obtained from the accessible population (Mugenda and Mugenda, 1999). Sampling is a procedure, process or technique of choosing a sub-group from a population to participate in the study (Ogula, 2005).

According to Krejcie and Morgan (1970) as shown in Appendix 4, a total population of 189 requires a sample of 123 respondents. Stratified random sampling and proportionate sampling

was used in this study resulting to 123 respondents as shown in Table 3.1. This study used stratified sampling since four technical courses and teaching staff were considered. Proportionate sampling was used because each course was allocated a sample of students depending on its proportion to the total number of respondents. Proportionate sampling enabled the researcher to achieve greater representativeness in the sample of the population. This was accomplished by selecting individuals at random from subgroups (stratified random sampling) in proportion to the actual size of the group in the total population (Van Dalen, 1979).

**Table 3.1 Sample of respondents as per Krejcie and Morgan from** Kirinyaga University College

| **Technical Course** | **Number of students (total Population)** | **Sample size** | **Percentage** |
|---|---|---|---|
| Electrical installation | 40 | 26 | 21 |
| Building construction | 79 | 52 | 42.3 |
| Mechanical engineering | 24 | 15 | 12.2 |
| Fashion design and hospitality | 21 | 14 | 11.5 |
| Teaching staff | 25 | 16 | 13 |
| **Total** | 189 | 123 | 100 |

### 3.5 Data Collection Instruments

Data was collected by use of questionnaires. According to Owens (2002), questionnaires have potential in reaching out to a large number of respondents within a short time; give the respondents adequate time to respond to the items, offer a sense of security (confidentiality) to the respondents and it is an objective method since no bias resulting from the personal characteristics. The questionnaires had both open and closed ended questions which facilitated easier analysis as they were in immediate usable form; while the unstructured questions were

used to encourage the respondent to give an in-depth and felt response without feeling held back in revealing of any information.

### 3.6 Validity of the Instruments

Validity is the accuracy, soundness or effectiveness with which an instrument measures what it is intended to measure (Kumar, 2005). In this study, the instruments were first discussed with experts in technical education programmes at Kirinyaga University College and then reviewed with the researcher's supervisor.

### 3.7 Reliability of the Instruments

Shuttleworth (2009) stated that in test retest method, the instrument is administered at two different times and then the correlation between the two sets of scores computed. This research study used test-retest method which involved administering the same scale or measure to the same group of respondents at two separate times. This was after a time lapse of one week. This was conducted with 10 technical students from Kirinyaga University College who were not part of the main study. Reliability of the instruments was computed using Pearsons Product Moment correlation coefficient Formula. A correlation coefficient of 0.8 was obtained and hence the instruments were deemed to be reliable and measurable.

### 3.8 Data Analysis techniques

The questionnaires were edited for the purpose of checking on completeness, clarity and consistency in answering research questions. The data was coded, tabulated and analysed using Statistical Package for Social Sciences based on study objectives. Descriptive statistics was computed and study findings were presented using tables and percentages and interpretations made.

### 3.9 Ethical considerations

All respondents were treated with courtesy and respect in order to avoid misunderstanding between the enumerators and respondents and they were informed of the purpose of the study. Each respondent was politely requested to fill the questionnaire and assured of confidentiality with regard to any information they provided.

### 3.10 Operationalization of variables

The operationalization of variables is given in the Table 3.2

**Table 3.2: Operationalization of variables**

| Objectives | Type of Variables | Indicator(s) | Measure(s) | Measurement scale | Tools of analysis |
|---|---|---|---|---|---|
| **To establish the effect of availability of teaching personnel influence achievement of Students in Technical education programmes** | **Independent** Availability of teaching personnel | Teachers level of training | Number of teachers with diploma, degree or masters | Ratio | Percentages Mean |
| | | Teachers experience | Number of years in teaching | Ratio | Percentages Mean |
| | | Motivation | Number of times motivated or rewarded | Ratio | Percentages mean |
| **To determine the influence of learning facilities and resources on students achievement in technical education programmes** | **Independent** Classroom physical facilities | Classrooms/ workshops | Number of classrooms | Ratio | Percentages Mean |
| | | | Number of classrooms | Ratio | Percentages Mean |
| | | Equipments /tools | Number of equipments available | Ratio | Percentages Mean |
| **To assess the influence of teaching Pedagogy on students' achievement in technical education programmes** | **Independent** Pedagogy | Lectures | Total number of lectures attended | Ratio | Percentages Mean |
| | | Demonstration | Total number of demonstration attended | Ratio | Percentages Mean |
| | | Discussions | Number of discussions held | Ratio | Percentages Mean |
| | | Case study | Number of case studies | Ratio | Percentages Mean |

| | | | | | |
|---|---|---|---|---|---|
| **To identify how finances influence students' achievement in technical education programmes** | **Independent**<br><br>Availability of finances | Source of finances | Number of finance sources | Ratio | Percentages<br>Mean |
| | | Student financial status | Amount of students | Ratio | Percentages<br>Mean |
| | | Parent status | Funded by parents | Ratio | Percentages<br>Mean |
| | | Scholarships | % of students on scholarships | Ratio | Percentages<br>Mean |
| | **Dependent**<br><br>Achievement in technical education programmes | Increased enrollment | Number of youths enrolled | Ratio | Percentages<br>Mean |
| | | Improved employment | Number of youths graduated in the last 3 years | Ratio | Percentages<br>Mean |
| | | open businesses by graduates | Number of businesses opened | Ratio | Percentages<br>Mean |

# CHAPTER FOUR

# DATA ANALYSIS, PRESENTATION AND INTERPRETATION

## 4.1 Introduction

This chapter contains data analysis, presentation and interpretation of findings. Factors considered in the study were, availability of teaching personnel, classroom physical facilities, Pedagogy and social economic influence achievement of students in technical education programmes at Kirinyaga University College.

## 4.2 Questionnaire Return Rate

The questionnaire return rate was high at (98%), as 121 questionnaires out of 123 were filled and returned. As Mugenda and Mugenda (2003) observe, a response rate of 50% is considered good of this study.

## 4.3 Bio data of the respondents

This section presents the respondents' gender, age, level of education programmes and marital status. These social attributes were relevant to the study since they enabled the respondent to provide information that is valid, reliable and relevant to the study.

### 4.3.1 Study responses by gender

The respondents from Kirinyaga University College who were students and teachers were asked to indicate their gender. The responses are shown in Table 4.1 and Table 4.2 respectively.

**Table 4.1 Gender of the students**

| Gender of respondent | Frequency | Percentage |
|---|---|---|
| Male | 70 | 63.1 |
| Female | 41 | 46.9 |
| **Total** | 111 | 100 |

From the findings, 70 respondents (63.1%) are male gender while 41 respondents (46.9) are female gender. This shows that more males undertake technical courses than females.

**Table 4.2 Gender of the teaching staff**

| Gender of respondent | Frequency | Percentage |
|---|---|---|
| Male | 7 | 70 |
| Female | 3 | 30 |
| **Total** | 10 | 100 |

From the findings, 7 respondents (70%) are male gender while 3 respondents (30%) are female gender. This shows that more teachers in the technical institution are male.

### 4.3.2 Respondents by age

The respondents who were both students and teaching staff were asked to indicate their ages from among choices of age classes given. The respondents' responses are shown in Table 4.3 and Table 4.4 respectively.

**Table 4.3 Age of students**

| Age of student in years | Frequency | Percentage |
|---|---|---|
| Below 30 | 111 | 100 |
| 31-40 | 0 | 0 |
| 41-50 | 0 | 0 |
| **Total** | 111 | 100 |

The findings show that the students in the University College were youthful, all them being under 30 years of age.

**Table 4.4 Age of teaching staff**

| Age of staff in years | Frequency | Percentage |
|---|---|---|
| Below 30 | 40 | 95.0 |
| 31-40 | 30 | 2.5 |
| 41-50 | 30 | 2.5 |
| **Total** | 100 | 100 |

The findings show that staff members at the University College are youthful with a whole 95% being under 30 years of age.

### 4.3.3 Marital status of the respondents.

The respondents were asked to indicate their marital status. Table 4.5 and Table 4.6show the marital status of students and teaching staff respectively

**Table 4.5 Marital status of the students**

| Marital status | Frequency | Percentage |
|---|---|---|
| Married | 0 | 0 |
| Single | 111 | 100.0 |
| **Total** | 100.0 | 100.0 |

The findings indicate that all students 111 (100%) interviewed in the University College were singles.

**Table 4.6 Marital status of the teaching staff**

| Marital status | Frequency | Percentage |
|---|---|---|
| Married | 8 | 80 |
| Single | 2 | 20 |
| **Total** | **100.0** | **100.0** |

The findings show that 8 respondents (80%) of the teaching staff in the University College are married while 2 respondents (20%) are single.

### 4.4 Influence of availability of teaching personnel on achievement of students in technical education programmes

This section examines how availability of teaching personnel influences achievement of students in tertiary education programmes.

#### 4.4.1 Position held in the institution

The respondents were requested to indicate their position in the institution. Table 4.7 gives this information.

**Table 4.7 Position held in the institution**

| Position held | Frequency | Percentage |
|---|---|---|
| Teacher | 9 | 90 |
| Examiner | 1 | 10 |
| **Total** | 10 | 100.0 |

The study showed that 9 respondents (90 %) were teachers while 1 respondent (10%) was an examiner.

### 4.4.2 Period in the position

The respondents were asked to indicate how long they held position. Table 4.8 shows the responses

**Table 4.8 Period in the position**

| Period in the position | Frequency | Percentage |
|---|---|---|
| Less than 1 year | 20.0 | 20 |
| 1-3 years | 70.0 | 70 |
| More than 10 years | 10.0 | 10 |
| **Total** | 100.0 | 100.0 |

The study showed that of 7 teaching staff (70 %) had held their position of either being in the teaching staff for 1-3 years while 1 respondent (10 %) has been in the teaching staff for more than 10 years.

### 4.4.3 Level of education

The respondents were asked to indicate their highest level of education and Table 4.9 shows the results.

**Table 4.9 Highest level of education**

| Period in the position | Frequency | Percentage |
|---|---|---|
| Masters | 20.0 | 20 |
| Bachelors | 30.0 | 30 |
| Diploma | 50.0 | 50 |
| **Total** | 100.0 | 100.0 |

The findings show that most of the teaching staff (50 %) has attained Diploma level of education while 20 % of the teaching staff has attained Master's level of education.

### 4.4.4 Staff situation

The respondents were asked to indicate whether teachers are adequate. Table 4.10 shows the responses.

**Table 4.10 Staff Situation**

| Whether teachers are adequate | Frequency | Percentage |
|---|---|---|
| Yes | 95 | 78.5 |
| No | 26 | 21.5 |
| **Total** | 121 | 100.0 |

From the study, 95 respondents (78.5%) indicated that teachers are adequate. Adequate teachers ensured that the lessons were well covered and syllabus was covered on time.

### 4.4.5 Teaching personnel issues influencing achievement in technical institutions

The respondents were asked to indicate teaching personnel issues influencing achievement in technical institutions. Table 4.11 shows teaching issues influencing achievement in technical institutions.

**Table 4.11 Teaching personnel issues influencing achievement in technical institutions**

| Aspect | Strongly agree | | Agree | | Neutral | | Disagree | | Strongly disagree | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Freq. | % | Freq. | % | Freq. | % | Freq. | % | Freq. | % |
| The institution has adequate teaching personnel | 41 | 33.9 | 48 | 39.7 | 19 | 15.7 | 8 | 6.6 | 5 | 4.1 |
| The staff are | 40 | 33.1 | 61 | 50.4 | 17 | 14 | 0 | 0 | 3 | 2.5 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| well educated | | | | | | | | | | |
| The staff are well experienced | 51 | 42.1 | 43 | 35.5 | 23 | 19 | 1 | 0.8 | 3 | 2.5 |
| The staff are highly motivated by the management | 4 | 3.3 | 27 | 22.3 | 74 | 61.2 | 12 | 9.9 | 4 | 3.3 |
| The teaching personnel do not transfer from these institution | 60 | 49.6 | 48 | 39.7 | 10 | 8.3 | 0 | 0 | 3 | 2.5 |
| Teaching personnel influence students achievement in technical institutions | 7 | 5.8 | 16 | 13.2 | 49 | 40.5 | 22 | 18.2 | 27 | 22.3 |
| **Mean** | 34 | 28.1 | 41 | 33.9 | 32 | 26.4 | 7 | 5.8 | 8 | 6.6 |

The study showed that 48 respondents (39.7 %) agreed the institution has adequate teaching personnel, 61 respondents (50.4 %) agreed that the staff are well educated, 51 respondents (42.1 %) strongly agreed that the staff are well experienced, 74 respondents (61.2 %) remained neutral that the staff are highly motivated by the management , 60 respondents (49.6 %) strongly agreed that the teaching personnel do not transfer from these institution while 49 respondents (40.5%) remained neutral that teaching personnel influence students achievement in technical institutions.

On average 41 respondents (33.9 %) agreed on all aspects. Number of teaching personnel should be increased, since 60.3% of respondents disagreed that teaching personnel was adequate.

### 4.5 Influence of classroom physical facilities on achievement of students in technical institutions

This section examines how classroom physical facilities influence achievement of students in technical institutions.

#### 4.5.1 Physical facilities influencing achievement of students

The respondents were asked to indicate how physical facilities influence achievement of students. Table 4.12 shows the responses

**Table 4.12 Physical facilities influencing achievement of students**

**Physical facilities influencing achievement of students in technical institutions**

| Aspect | Strongly agree | | Agree | | Neutral | | Disagree | | Strongly disagree | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Freq. | % | Freq. | % | Freq. | % | Freq. | % | Freq. | % |
| The institution has adequate physical facilities | 7 | 5.8 | 16 | 13.2 | 49 | 40.5 | 22 | 18.2 | 27 | 22.3 |
| The classrooms are suitable and adequate | 10 | 8.3 | 16 | 13.2 | 27 | 22.3 | 53 | 43.8 | 15 | 12.4 |
| The chairs and tables are suitable and adequate | 13 | 10.7 | 51 | 42.1 | 27 | 22.3 | 13 | 10.7 | 17 | 14 |
| The workshop | 12 | 9.9 | 27 | 22.3 | 26 | 21.5 | 30 | 24.8 | 26 | 21.5 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| has adequate tools, equipments and materials required for training of students | | | | | | | | | | |
| The institution has mechanic course and tools, equipments and materials used for training are up to date | 7 | 5.8 | 45 | 37.2 | 26 | 21.5 | 19 | 15.7 | 24 | 19.8 |
| Classroom physical facilities influence students achievement in academics | 41 | 33.9 | 23 | 19 | 16 | 13.2 | 37 | 30.6 | 4 | 3.3 |
| **Mean** | 15 | 12.4 | 30 | 24.8 | 29 | 24.0 | 29 | 24.0 | 19 | 15.7 |

The study shows that 23 respondents (19%) agreed that physical facilities influence students achievement in academics while 64 respondents (52.9%) agreed that the chairs and tables in the University College are suitable and adequate. The study further shows that 52 respondents (43 %) agreed that the institution has mechanic course and tools, equipments and materials used for training are up to date while 39 respondents (32.2 %) agreed that the workshop has adequate tools, equipments and materials required for training of students.

### 4.5.2 Availability of physical facilities

The respondents were asked to indicate whether the institution have enough physical facilities. Their responses are in Table 4.13.

**Table 4.13 Availability of physical facilities**

| Whether physical facilities are enough | Frequency | Percentage |
|---|---|---|
| Yes | 35 | 28.9 |
| No | 86 | 71.1 |
| **Total** | 121 | 100.0 |

From the study, 35 respondents (28.9%) indicated that the institution had enough physical facilities. The physical facilities enabled effective dissemination of technical knowledge to the students.

### 4.5.3 State of your training equipment

The respondents were asked to indicate their state of training equipments. Their responses are in table 4.14.

**Table 4.14 State of training equipments**

| State of your training equipments | Frequency | Percentage |
|---|---|---|
| Modern | 19 | 15.7 |
| Good | 57 | 47.1 |
| Neutral | 30 | 24.8 |
| Bad | 15 | 12.4 |
| **Total** | 121 | 100.0 |

From the study, 57 respondents (47.1%) indicated that the training equipments are in good working condition. The state of training equipment affects the learning of the technical courses.

### 4.6 Influence of Pedagogy on students achievement

This section shows the influence of Pedagogy on students' achievement in the University College.

#### 4.6.1 Effectiveness of Pedagogy

The respondents were asked to indicate whether Pedagogy used in technical institutions are effective. Their responses are in table 4.15.

**Table 4.15 Effectiveness of Pedagogy**

| Whether Pedagogy are effective | Frequency | Percentage |
|---|---|---|
| Yes | 81 | 66.9 |
| No | 40 | 33.1 |
| **Total** | 121 | 100.0 |

From the study, 81 respondents (66.9%) indicated that the Pedagogy used in technical institutions are effective. The effectiveness of teaching method will determine the understanding of the various courses by the technical students.

#### 4.6.2 Areas which require improvement

The respondents were asked to indicate the areas which require improvement.

Their responses are in Table 4.16.

**Table 4.16 Areas requiring improvement**

| Areas which require improvement | Frequency | Percentage |
|---|---|---|
| Apply effective instructional methods like demonstrations | 63 | 52.1 |
| Automate approaches | 58 | 47.9 |
| **Total** | 121 | 100.0 |

From the study, 63 respondents (52.1%) indicated that to make Pedagogy effective, teachers should apply effective Pedagogy like demonstrations while 58 respondents (47.9%) indicated that teachers should apply automated approaches as Pedagogy.

### 4.6.3 Pedagogy influencing achievement of students in technical institutions

The respondents were asked to indicate their number of litter per doe per year. Their responses are in Table 4.17.

**Table 4.17 Pedagogy influencing achievement of students in technical institutions**

**Pedagogy influencing achievement of students in technical institutions**

| Aspect | Strongly agree | | Agree | | Neutral | | Disagree | | Strongly disagree | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Freq. | % | Freq. | % | Freq. | % | Freq. | % | Freq. | % |
| The institution use effective Pedagogy | 32 | 26 | 58 | 48 | 16 | 13 | 9 | 7 | 6 | 5 |
| Lecturing is a very effective method of instruction in technical institutions | 12 | 10 | 8 | 7 | 22 | 18 | 57 | 47 | 22 | 18 |
| Students discussion is a very effective method of instruction in technical institutions | 62 | 51 | 43 | 36 | 12 | 10 | 3 | 26 | 1 | 1 |
| Demonstrations are very effective method of | 63 | 52 | 47 | 39 | 7 | 6 | 4 | 3 | 0 | 0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| instruction in technical institutions | | | | | | | | | | |
| Case studies are very effective method of instruction in technical institutions | 14 | 12 | 18 | 15 | 33 | 27 | 30 | 25 | 26 | 22 |
| Classroom physical facilities influence students achievement in academics in technical institutions | 9 | 7 | 26 | 22 | 32 | 26 | 25 | 21 | 29 | 24 |
| **Mean** | 32 | 27 | 33 | 27 | 20 | 17 | 21 | 18 | 14 | 12 |

The study showed that 74% of the respondents agreed that the institution use effective Pedagogy especially the more interactive ones such as discussion (87%) and demonstration (91%).

### 4.7 Influence of availability of finances on students' achievement

This section will establish how availability of finances influences students' achievement in technical institutions.

#### 4.7.1 Rating of financial status

The respondents were asked to rate their financial status. Their responses are in Table 4.18.

**Table 4.18 Rating of respondents financial status**

| Financial status | Frequency | Percentage |
|---|---|---|
| Very good | 10 | 8.2 |
| Good | 26 | 21.5 |
| Satisfactory | 32 | 26.4 |
| Bad | 25 | 20.7 |
| Very bad | 28 | 23.1 |
| **Total** | 121 | 100.0 |

From the study, 68 respondents (56.1%) indicated that their financial status as very good, good or satisfactory. Good financial status ensured that the students remain in the institution without being sent home for fees.

### 4.7.2 Main sources of income used while in the institution

The student respondents were asked to indicate their main sources of income. Their responses are in table 4.19.

**Table 4.19 Main sources of income used while in the institution**

| Source of income | Frequency | Percentage |
|---|---|---|
| Parents | 71 | 64 |
| Guardian | 38 | 34.2 |
| Scholarships | 2 | 1.8 |
| **Total** | 111 | 100.0 |

From the study, 109 respondents (98.2 %) got their income from the parents and guardians while 2 respondents (1.8 %) from got their income from their scholarships. When the fees are well paid, the institution can afford to meet its requirements.

# CHAPTER FIVE

# SUMMARY OF FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This chapter focuses on the summary of findings of the study which formed the foundation for discussion. The discussions provided a firm basis upon which conclusion and recommendations were advanced to address factors influencing students' achievement in technical education programmes in Kirinyaga University College. It also includes suggested areas for further research.

## 5.2 Summary of Findings

The summary of findings is presented based on the four objectives of the study.

### 5.2.1 Influence of availability of teaching personnel on achievement of students in technical education programmes.

From the responses, the institution has adequate teaching staff that is well qualified and experienced for the subjects assigned to them. It was also revealed that most of them are motivated and would rather continue working at the institution. The institution has both teachers and examiners. Availability of teaching personnel has influenced achievement of students in technical education programmes at Kirinyaga University College.

**5.2.2 Influence of classroom physical facilities on** influence students achievement in technical education programmes.

The study shows that the institution had adequate classroom space, equipment and other materials needed for the technical courses it offers. Although there are a few old equipment and machinery, tools and equipment, the institution is well equipped with modern and up to date devises suitable for the needed training.

### 5.2.3 Influence of Pedagogy on students' achievement in technical education programmes.

The study shows that the institution used effective Pedagogy such as demonstrations and discussion that allowed interaction and easier assimilation of technical subjects.

**5.2.4 Influence of availability of finances** on students' achievement in technical education programmes.

The study indicates that the students had adequate finances that enabled them to complete their education. Most came from parents, guardians and very little in terms of scholarship.

## 5.3 Discussion of Findings

A discussion of findings of the study is presented based on the four objectives of the study.

### 5.3.1 Influence of teaching personnel on achievement of students in technical education programmes

The study established that, the institution has adequate teaching staff that is well qualified and experienced for the technical subjects assigned to them. This collaborates study by Kenya Technical Teachers College (2013) who indicated that this college was established with the primary objective of training technically skilled personnel to not only teach in the technical training institutions but also for employment in all sectors of the economy. Kenya's industrialization goal cannot be achieved unless technical training is given the emphasis it deserves. It was also revealed that most of them are motivated and would rather continue working at the institution. The Ministry of Education said that a critical mass of educated people who are equipped with appropriate knowledge, skills and attitudes is required in order to achieve the country's political, economic and social goals that are articulated in Kenya Vision 2030.The institution has teachers and examiners who are well qualified, experienced and motivated. These staff indicated that they would rather continue working at the institution than transfer from this institution. This collaborates study by Ngome (2009) who indicated that the quality of staff is affecting the ability of TVET institutions to accomplish their role in society. This agrees with report by Kenya Technical Teachers College (2013), that indicated that KTTC endeavors to train highly qualified and competent technical teachers and technologists who can help to inculcate a technical culture amongst the youth in our country. KTTC has continued to produce technical teachers for secondary schools, youth polytechnics, technical institutes, institutes of technology and national polytechnics.

### 5.3.2 Influence of physical facilities students' achievement in technical education programmes

The study shows that the institution had adequate classroom space, equipment and other materials needed for the technical courses it offers. Classroom physical facilities influence students' achievement in technical education programmes. This agrees with Kireria (2007) who stated that a good classroom environment should promote independent learning.

### 5.3.3 Influence of Pedagogy on students' achievement in technical education programmes

The study shows that the institution used effective Pedagogy such as demonstrations and discussion that allowed interaction and easier assimilation of technical subjects. This agrees with Mwai (2007) who reported that quality of Pedagogy is facilitated by preparation and keeping of teaching records. Teaching records include course outline record of work and teachers notes. Adequate preparation of Pedagogy helps the extent of syllabus coverage and at the same time note areas of inadequacies. The teachers should apply automated approaches in their teaching. This collaborates study by Adikinyi (2007) who reported that teachers should use different methods of instruction to facilitate learning Pedagogy that encourage students in observation as the teacher demonstrates.

### 5.3.4 Influence of availability of finances on students' achievement in technical education programmes

The study indicates students had adequate finances that enabled them to complete their education. Most came from parents, guardians and very little in terms of scholarship.This agrees with Kirimi (2012) who indicated that financing of Technical Vocational education programmes and Training (TVET) programs has always been shared amongst government, local communities, beneficiaries, religious and private organizations, donors and private business. This is supported by Njihia (2005) who affirmed that under funding of educational programs in the technical training institutions has greatly jeopardized their capacity to offer quality training thereby eroding their external efficiency in the job market because the quality of graduates is compromised. Parents came in to provide with building and teaching and learning materials but these efforts to curb high expenditure in the education programmes though these have made successful and quality training in technical institutions abit elusive. A small percentage of students got scholarships for their study in the University College. This agrees with Kirimi

(2012) who reported that the rationale for introduction of safety nets such as bursaries and constituency development fund in the technical education sector is important in providing quality education programmes and training.

### 5.4 Conclusion

The study concludes that availability of teaching personnel in the University College influences achievement of students in technical education programmes. Since teachers are adequate, well qualified and experienced, lessons and syllabus are well covered. The institution has adequate classroom space, equipment and other materials needed for the technical courses it offers. The institution use effective Pedagogy such as demonstrations and discussion that allowed interaction and easier assimilation of technical subjects.

### 5.5 Recommendations

On the basis of the results of this study the recommendations are as follows:

1. The technical institutions should have adequate of teaching personnel who are, well educated and experienced in order to impart technical knowledge to students and thus improve student achievement.
2. The teaching staff in the technical institutions should use a variety of Pedagogy like discussion, demonstrations and automated approaches that will capture the attention of each student.
3. Bursaries should be enhanced in technical institutions to support needy students.

### 5.6 Suggested areas for further Research

This study suggests: Further research should be carried out on the factors influencing students' achievement in technical education programmes in other parts in the Country.

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## APPENDIX 1. LETTER OF INTRODUCTION

**NELIUS GATE**
**L50/83144/2013**
**P.O. Box 649**
**Kerugoya-10300**
**Cell phone; 0722436537**

**The Principal**
**Kirinyaga University College,**
**P.O Box 143-10300,**
**Kerugoya.**

Dear Sir/Madam,

**RE: PERMISSION TO CARRY OUT ACADEMIC RESEARCH**

I am a graduate student undertaking Masters of Arts Degree in Project Planning and Management in the University of Nairobi and I am conducting a research study entitled "the factors influencing student achievement in technical education programmes: A Case Study of Kirinyaga University College, Kirinyaga County".

The purpose of this letter is to request for permission to interview teaching staff and pupils using the attached questionnaire. The information obtained is strictly for academic purpose and shall be treated with utmost confidentiality.

Thank You

Yours faithfully,

**NELIUS GATE**
**L50/83144/2015**

## APPENDIX 2. LETTER OF TRANSMITTAL TO THE RESPONDENTS

**NELIUS GATE**
**L50/83144/2015**
**P.O. Box 649**
**Kerugoya-10300**
**Cell phone: 0722436537**

**Dear Sir/Madam,**

**RE: FILL IN THE QUESTIONNAIRES**

I am a graduate student undertaking Masters of Arts Degree in Project Planning and Management at the University of Nairobi. I am conducting a research study entitled "the factors influencing student achievement in technical education programmes: A Case Study of Kirinyaga University College, Kirinyaga County".
You have been selected to assist in providing the required information because your views are considered important to this study.

I am therefore kindly requesting you to fill this questionnaire. Please note that any information given will be used for research purpose only and your identity will be treated with utmost confidentiality.

Thank You.

Yours faithfully

**NELIUS GATE**
**L50/83144/2015**

## APPENDIX 3. QUESTIONNAIRE FOR ALL RESPONDENTS

**Instructions**

Kindly fill the following questions by ticking or filling in the appropriate spaces provided except where otherwise indicated.

**Section A: Background Information**

1. Please indicate your gender?

(a) Male [ ] (b) Female [ ]

2. Please indicate your age.

(a) Below 30 [ ] (b) 31 – 40 [ ] (c) 41 – 50 [ ] (d) 51 – 60 [ ] (e) above 61 [ ]

3. What is your marital status?

(a) Married [ ] (b) Single [ ] (c) Divorced [ ] (e) Widow [ ] (f) Widower [ ]

**Section A: Teaching personnel**

4. What position do you hold in this technical institution?

(a) Student [ ] (b) Teacher [ ] (c) Examiner [ ] (d) Any other [ ] Please specify.....

5. How long have you held this position?

(a) 0 [ ] (b) 1-3 [ ] (c) 4-5 [ ] (d) 6-10 years [ ] (e) more than 10 years [ ]

6. What is your highest academic qualification?

(a) Masters [ ] (b) Bachelors [ ] (c) Higher Diploma [ ] (d) Diploma [ ]

(e)Certificate [ ] (f) Others [ ] (please specify).....

7 (a).In your own opinion, are the teachers adequate in your institution

(a) Yes [ ] (b) No [ ]

(b). Please explain your answer in Question 7(a)

.....

.....

.....

8. The following are some of the teaching personnel issues influencing achievement in technical institutions. What is your level of agreement. Use a scale where 1- strongly agree, 2- agree, 3- neutral, 4- disagree and 5-strongly disagree.

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **Influence of teaching personnel on achievement of students in technical institutions** | | | | | |
| The institution has adequate teaching personnel | | | | | |
| The staff are well educated | | | | | |
| The staff are well experienced | | | | | |
| The staff are highly motivated by the management | | | | | |
| The teaching personnel do not transfer from these institution | | | | | |
| Teaching personnel influence students achievement in technical institutions | | | | | |

**Section B: Influence of classroom physical facilities**

9. The following are some of the classroom physical facilities influencing achievement of students in technical institutions. What is your level of agreement? Use a scale where 1- strongly agree, 2- agree, 3- neutral, 4- disagree and 5-strongly disagree.

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **Influence of classroom physical facilities on student achievement** | | | | | |
| The institution has adequate physical facilities | | | | | |
| The classrooms are suitable and adequate | | | | | |
| The chairs and tables are suitable and adequate | | | | | |
| The workshop has adequate tools, equipments and materials required for training of students | | | | | |
| The institution has mechanic course and tools, equipments and materials used for training are up to date | | | | | |
| Classroom physical facilities influence students achievement in academics | | | | | |

10. (a). Does your institution have enough physical facilities?

(a)Yes [ ] (b No [ ]

(b) If no in (a) above list the facilities lacking

1.....

2.....

3.....

©. Does the lack of facilities hinder the smooth running of your training programs?

(a)Yes [ ] (b No [ ]

Please explain your answer in question 8C

.....

.....

.....

9. (A).How would you rate the state of your training equipment?

(a). Modern [ ] (b). Good [ ] (c). Neutral [ ] (d). Bad obsolete [ ]

(B).If in (question 9 (a) above you rate the state of equipment as either bad or obsolete, does this erode the effectiveness of your training programs?

(a)Yes [ ] (b No [ ]

©. If yes in question 9 (B), briefly explain

.....

.....

.....

**Section C Influence of instructional methods on students achievement**

12. (a). In your own opinion, are the instructional methods used in technical institutions effective

(a)Yes [ ] (b No [ ]

(b) If the answer is No, please indicates two (2) areas which require improvement

i.....

ii.....

The following are some of the instructional methods influencing achievement of students in technical institutions. What is your level of agreement? Use a scale where 1- strongly agree, 2- agree, 3- neutral, 4- disagree and 5-strongly disagree.

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **Instructional methods influencing achievement of students in technical institutions** | | | | | |
| The institution use effective instructional methods | | | | | |
| Lecturing is a very effective method of instruction in technical institutions | | | | | |
| Students discussion is a very effective method of instruction in technical institutions | | | | | |
| Demonstrations are very effective method of instruction in technical institutions | | | | | |
| Case studies are very effective method of instruction in technical institutions | | | | | |
| Classroom physical facilities influence students achievement in academics in technical institutions | | | | | |

**Section C: Influence of economic factors on students achievement**

10. What is the financial status? (Please tick)

(a) Very good [ ] (b) Good [ ] (C) Satisfactory [ ] (d) Bad [ ] (e) Very bad [ ]

11. Please List the main sources of income which you use while in your institution

1.....2.....3.....

4.....5.....6.....

12. Please indicate the percentage of funds provided by your parents

(a) 0% [ ] (b) 1-10% [ ] (c)11-20% [ ] (d) 21-50 [ ] (c) 51-100% [ ]

13. Please indicate the percentage of funds provided through scholarship

(a) 0% [ ] (b) 1-10% [ ] (c)11-20% [ ] (d) 21-50 [ ] (c) 51-100% [ ]

14 Please indicate the percentage of funds provided by self

(a) 0% [ ] (b) 1-10% [ ] (c) 11-20% [ ] (d) 21-50 [ ] (c) 51-100% [ ]

14. (A). Has your institution set up any internal income generating activities?

(a)Yes [ ] (b No [ ]

**Thank you for your time and participation**

## APPENDIX 4. DETERMINATION OF SAMPLE SIZE FOR A GIVEN POPULATION BY KREJCIE AND MORGAN

Table for Determining Sample Size for a Given Population

| N | S | N | S | N | S | N | S | N | S |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 10 | 100 | 80 | 280 | 162 | 800 | 260 | 2800 | 338 |
| 15 | 14 | 110 | 86 | 290 | 165 | 850 | 265 | 3000 | 341 |
| 20 | 19 | 120 | 92 | 300 | 169 | 900 | 269 | 3500 | 246 |
| 25 | 24 | 130 | 97 | 320 | 175 | 950 | 274 | 4000 | 351 |
| 30 | 28 | 140 | 103 | 340 | 181 | 1000 | 278 | 4500 | 351 |
| 35 | 32 | 150 | 108 | 360 | 186 | 1100 | 285 | 5000 | 357 |
| 40 | 36 | 160 | 113 | 380 | 181 | 1200 | 291 | 6000 | 361 |
| 45 | 40 | 180 | 118 | 400 | 196 | 1300 | 297 | 7000 | 364 |
| 50 | 44 | 190 | 123 | 420 | 201 | 1400 | 302 | 8000 | 367 |
| 55 | 48 | 200 | 127 | 440 | 205 | 1500 | 306 | 9000 | 368 |
| 60 | 52 | 210 | 132 | 460 | 210 | 1600 | 310 | 10000 | 373 |
| 65 | 56 | 220 | 136 | 480 | 214 | 1700 | 313 | 15000 | 375 |
| 70 | 59 | 230 | 140 | 500 | 217 | 1800 | 317 | 20000 | 377 |
| 75 | 63 | 240 | 144 | 550 | 225 | 1900 | 320 | 30000 | 379 |
| 80 | 66 | 250 | 148 | 600 | 234 | 2000 | 322 | 40000 | 380 |
| 85 | 70 | 260 | 152 | 650 | 242 | 2200 | 327 | 50000 | 381 |
| 90 | 73 | 270 | 155 | 700 | 248 | 2400 | 331 | 75000 | 382 |
| 95 | 76 | 270 | 159 | 750 | 256 | 2600 | 335 | 100000 | 384 |

Note: "N" is population size
"S" is sample size.

*Source: Krejcie & Morgan, 1970*