FACTORS INFLUENCING DEMAND FOR TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING IN NYERI COUNTY, KENYA.

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DECLARATION

This research project is my own work and has not been presented for a degree in any other university

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This research project has been submitted for examination with our approval as university supervisors.

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DEDICATION

I wish to dedicate this research project to my husband Charles and our children: Patrick, Jedidah and Ian.

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I acknowledge the Almighty God for giving me life and strength to pursue my studies. I would also like to thank The University of Nairobi for giving me a chance to further my studies.

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LIST OF ABBREVIATIONS AND ACRONYMS

ABD	Asian Development Bank
ADE	Association for Development of Education in Africa
AIDS	Acquired Immuno Deficiency Syndrome
CARICOM	Caribbean Community Secretariat
CSME	CARICOM Single Market and Economy
ILO	International Labour Organisation
ISTE	Indian Society for Technical Education
KIE	Kenya Institute of Education
SAP	Structured Adjustment Programs
TVET	Technical and Vocational Education and Training
UN	United Nations
UNESCO	United Nations Educational Scientific and Cultural Organization.
UNEVOC	International Centre for Technical and Vocational Education and Training
USAID	United states Agency for International Development

ABSTRACT

Vision 2030 singles out education and training as the vehicle that will drive Kenya into becoming a middle-income economy. The enrollment of technical and vocational training institutions has gone up in the recent past. This has led to the government expanding the institutions in terms of manpower and infrastructure. In 2010-2011 budget, the Kenya government allocated sh. 560millions to institutes of Science and Technology to upgrade their facilities. The high demand has also led some institutions to increase their minimum requirements for some courses. The purpose of this study was to investigate the factors that influence the demand for Technical and Vocational Education and Training in Nyeri County. The study sought to achieve this by investigating the influence of growth in technology, rural electrification, subsidized secondary school education as well as introduction of new TVET courses on the demand for Technical and Vocational Education and Training. The study adopted a descriptive study design. The study targeted all principals, heads of departments, teachers and graduating students of technical training institutions in Nyeri County. Using stratified random sampling, the researcher identified a total of 67 respondents comprising 53 students, 2 principals and 12 heads of departments to participate in the study. Data was collected using questionnaires and interview schedule. Quantitative and qualitative techniques were employed in data analysis. The study found that growth in technology, rural electrification, subsidized secondary school education as well as introduction of new TVET courses increased the demand for Technical and Vocational Education and Training. The study concluded that growth in technology influences demand for TVET in that technology and especially information technology has opened up new markets and opportunities which require skills which can be got from courses offered in TVETs. The study concluded that rural electrification empowers people residing in rural areas to startup business; those businesses that require skills such as welding and construction force such people to pursue courses in the respective courses. These courses are available in TVETs. The study concluded that subsidized secondary enables more parents to pay and clear their children's fees to enable them graduate from high school. The study concluded that introduction of new courses means that students can chose courses that are within their interests. This attracts more students to pursue such courses increasing the enrollment in TVETs. The study recommended that the government should provide impetus to the citizenry to promote growth in technology in other areas apart from ICT such as farming and alternative energy.

CHAPTER ONE

INTRODUCTION

1.1 Back ground to the study

Work is a major feature in most people's lives. Not only does it provide them with means of survival in terms of food, clothing and shelter but also the type of work undertaken by individuals and groups has a major impact upon their self-identity, social status and standard of living (UNESCO, 2013). Skill development is very important for enhancing productivity, by stimulating competitiveness and bring about economic development.

Basically, if people lack in technical skills, knowledge and entrepreneurial skills, the natural resources will tend to remain unutilized, underutilized or even misutilised, (Wairimu 2009). Skills are vital for poverty reduction, economic recovery and sustainable development. As a consequence, policy attention to technical and vocational education and training (TVET) is increasing world wide.

Technical and Vocational Education and Training is defined as all forms and levels of the educational process involving in addition to general knowledge the study of technologies and related sciences and the acquisition of practical skills, know-how, attitudes and understanding relating to occupations in various sectors of economic and social life (UNESCO, 2013).

UNESCO convened the Third International Congress on TVET in Shaghai, China in 2012. The congress which was attended by more than 500 representatives from 107 member countries concluded that transforming TVET should be a top priority in the need to building greener societies and tackle global unemployment. According to Wang (2008:22) established that in China the population employed by the first industry that is Agriculture has decreased by 60%while the population employed by second and third industry that is manufacturing and construction and service and Tourism had increased to 25.2% and 32.7% respectively. This is a clear indication of a country's economy shifting from a Agriculture and Primary goods based economy towards an industrial oriented economy (Wang, 2008). Thus the developments of manufacturing and construction industries are the forces or the drive for enhancing and revitalizing TVET to be responsive to the needs of the economical growth.

Workers who are trained in a demand driven occupations not only posses the skills which will be attractive and in need by employers, but they will be employed longer and in an occupation that will be around for a while. Graduates can develop career ladders and participate in industry associations and Unions within their vocations because they are working longer in the sector and developing long term relationships (Bunning, 2006). If they are ever unemployed they have a greater chance of finding work through their network of employers and workers in the trade. In USA trends in TVET include employers involved in the training of the future workforce through training networks. This include partnership formed through an agreement and signed memorandum of understanding (MOU) where TVET institutions, employers, industry

associates, education entities and community stakeholders all contribute to the training of the emerging and incumbent work force. This training can take place in various places; in classrooms, in the field through on the job training, through Employers Company or industry, in collaboration with secondary schools that is, vocationalism.

A number of African nations have adopted TVET reforms since the 1990's. This has resulted in formulation of policies. These policies have sought to address the social-economic challenges faced by various nations. One major concern of policy makers is to ensure a TVET system that is relevant and accessible while addressing issues of quality (Konayuma, 2008). Of the ten countries examined in Palmer (2007:23), Rwanda has the highest enrolment in TVET at the secondary level (35%), followed by Tanzania (13%) and South Africa (5.8%). The study notes that Sub- Saharan Africa (6.1%) and South and West Asia (1.2%) have little room for TVET at the post-primary school level. Given the above, it is a matter of concern that Africa lags behind the rest of the world in technology and still it continues to pay little attention to technical education and technological research.

TVET systems in a growing number of African countries are undergoing or have undergone promising reforms that are designed to build on the inherent strengths of the systems. According to Afeti (2006) the major reforms concerns; adopting national policies and strategies for TVET; Burkina Faso, Senegal Mali, Ghana, Gambia, Niger and Nigeria, have or are in the process of setting up of national TVET bodies; Gambia, Ghana and Nigeria. Have or are in the process of developing

National qualification frameworks (NQF), adopting updated competence based curriculum more aligned with the labour market needs. For instance Nigeria, Gambia, Senegal, Burkina Faso. Linking training to employment (either self of paid employment)

Kingombe (2011:34) points out that Ethiopia has achieved the highest increase of 5.565% in TVET enrolment from 1999 to 2007 and ranks second in the countries of Africa in terms of number of training institutions. He also points out that huge part of talent nurturing occurs through technical education. Technical and Vocational Education and Training was one of the surest ways to stem the tide of graduate and youth unemployment. He further says that many technical and academic reports have given impetus to the fact that technical and vocational education and training is one of the most effective human resource development strategies that a developing economy needs to embrace in order to train and modernize the technical workforce for rapid industrialization, job creation and overall national development.

Hailu (2012) establishes that in Ethiopia TVET enrolment in both government and non government ownership has increased the total enrolment in TVET in the year 2007 was only 191,157 and in 2011, enrolment had increased to 371,347 (Hailu 2012:76). The increase is an assumption that TVET programme would offer relevant and demand driven training that corresponds to the needs of economic and social sectors for self employment. With the intention of making TVET graduates self employed, the number of TVET institutions as well as trainees is increasing considerably.

Okello (2013) sought to find out the factors influencing the attitude towards technical vocational education and training in Uganda. Results indicated that there is a positive attitude to technical and vocational careers. About 30% of responses indicated that a negative attitude still exists. The reasons for the attitude include are basically socio economic. The factors influencing the attitude of people positively towards TVET are the economic benefits derived from TVET skills. It was further found out that a drastic change of attitude in favour of women participation in TVET has taken place in Uganda. Most of the informants interviewed supported women in their bid to take up TVET. The study further revealed policy challenges government is facing to elevate the status of TVET.

In Kenya TVET has seen tremendous and dramatic increase both in number and status. Due to global economic changes necessitating implementation of Structural Adjustment Programmes (SAP) in developing countries, workers have been displaced, this poses great challenges, they need retraining for new occupations Nyerere (2009). The impact of HIV/Aids has necessitated emphasis on skills lost across a wide range of occupations; HIV/AIDs depletes scarce human resources as well as reducing capacity of TVET systems. Skills development is important for economic growth, poverty alleviation, growth and women's empowerment and social inclusion.

In 2009, the enrolment of students to Technical, Industrial, Vocational and Entrepreneurship Training institutions in Kenya stood at 71,513 compared to 85,200 students in 2008 (Kingombe, 2011:34). The lower enrolment was due to upgrading of

the Kenya Polytechnic and Mombasa Polytechnic to university college status in 2009. Kisumu and Eldoret polytechnics have 6,999 students. The youth polytechnics had the highest enrolment among TIVET institutions at 43.8 per cent from 29,697 in 2008 to 31,344 in 2009. Technical institutes' numbers rose from 22,008 in 2008 to 22,437 in 2009. Enrolment in institutes of technology increased marginally from 10,575 in 2008 to 10,733 in 2009. In the 2010-2011 Budget, 14 institutes of science and technology were allocated Sh560 million to upgrade their facilities (Gachie, 2013:12). Figure 1.1 shows the enrollment trends of students to TIVET institutions from 2003 to 2010.

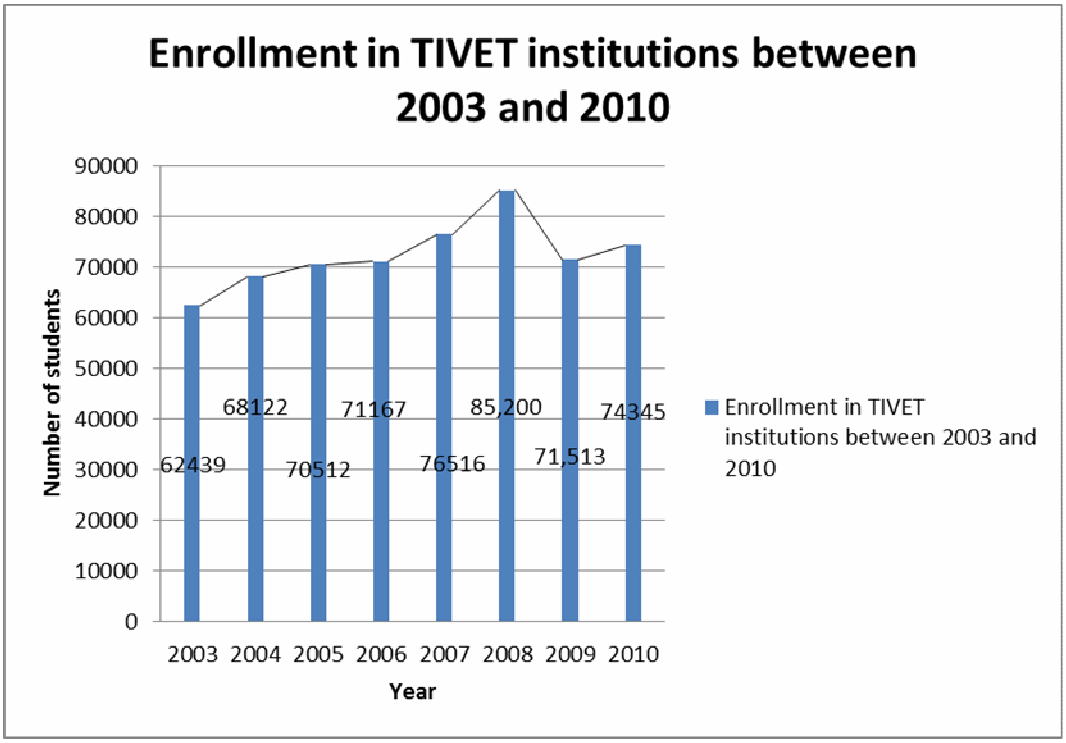

Figure 1.1: Enrollment in TIVET institutions between 2003 and 2010

Source: Kigombe, 2011:56

Engineering and technological training is a primary element in the establishment of Technical, Industrial, Vocational and Entrepreneurship Training institutions. The enrolment in engineering courses has never surpassed 30% of the total enrollment in Technical and vocational education and training institutions. Under higher education, there are two polytechnic university colleges, 2 national polytechnics and 37 Technical Training Institutions that provide various courses which include; engineering, medical sciences, applied sciences, ICT, business studies among others. The Ministry of Higher Education statistics shows that only 10,657 students enrolled in engineering courses nationally against 88,833 total enrollment in TIVET institutions representing 27.9% in 2007. In 2010 13,232 students enrolled in engineering against 121730 representing 10.86% (Gachie, 2013:15).

Nyanjom (2012) studied determinants of students' enrollment for engineering courses in Technical, Industrial, Vocational and Entrepreneurial Training Institutions in Nyanza region-Kenya. On socio demographic characteristics, the study established that more males than females enrolled for engineering courses in TIVET institutions. Majority of the students were aged between 21-24 years and from Christian background. On environmental factors, majority of the students agreed that lack of college fees, poverty, orphan hood, college levies, use of drugs and substance of abuse, indiscipline, peer influence, and family size significantly did affect students' enrollment for engineering course. On government policies, majority of the students agreed that the government provided teachers, workshops, laboratories and that ICT at was necessary for the engineering and that training activities were supported by

business plans and guidance and counseling services. On- institutional infrastructure, the majority of the respondents strongly agreed that the departments had links with the industry, parents and guardians were involved in training activities, the institutions were profit oriented, the teachers were qualified, the support staff had good public relation, technicians were very supportive, the institutions had work study programme the community was involved in training activities, the institutions was an active operator in the market training and that the. institutions provided career talks hence enhancing the enrolment of students for engineering courses.

In Kenya, TVET graduates are awarded certificates and Diplomas in various disciplines. In 2009, two national polytechnics; Kenya National and Mombasa national polytechnics were upgraded to University colleges offering degrees in TVET disciplines but will continue to offer certificate and diploma programmes. This can be interpreted to be a government's way of luring more youth to enroll in the technical institutions (Wairimu, 2009).

In 2008 the Ministry of Higher Education, Science and Technology announced the release of TIVET Bursary. The bursary targets students in public technical institutions under the Ministry. The bursary kit targets youths from poor households, orphans, women in under-represented subject areas particularly science, engineering and technology and youth with special needs,. This move by the government is posed to increase access to Technical, Industrial, Vocational and Entrepreneurship Training. Since the bursary had been in operation for only 4 years at the time of the current

study, empirical evidence on the impact of the bursary kit on enrollment of students to TIVET institutions were scarce.

Table 1.1: Nyeri Technical Training Institute enrolment rate

Year	Rate of enrolment
2007	900
2008	1600
2009	1680
2010	1720
2011	1800
2012	1600
2013	1723

Source: Registrar, NTTI 2013

It is apparent from all the literature [UNESCO, 2013; Wairimu 2009; Nyanjom,2012] obtained on the revival of TVET across the world, Kenya included, that there is demand for technical and vocational education. TVET is receiving more attention than it initially received years after independence. Policies on TVET now have been formed. Many TVET institutions are now receiving government funding to enhance their facilities. For instance, in the 2010-2011 budget, the Kenya government allocated sh. 560millions to institutes of Science and Technology to upgrade their facilities.

1.2 Statement of the problem

The enrollment of technical and vocational training institutions has gone up in the recent past as can be seen in Figure 1.1 and Table 1.1. Applications for village polytechnics have shot up well beyond the capacity of some institutions. Unlike in the past where TVETs were composed of students from the locality of the institutions, some polytechnics are getting applications from students who live and study from other districts. This has led to the government expanding the institutions in terms of manpower and infrastructure. The high demand has also led some institutions to increase their minimum requirements for some courses. For example to pursue a diploma in Library Science Information at Nyeri Technical Training Institute, one requires to have completed secondary school and acquired a grade of C or above up from D+ in 2005.

Little empirical evidence exists on the predictors of the demand for technical and vocational training institutions. Much of the studies on technical and vocational institutions such as [Wairimu (2009); Kingombe (2011)] has concentrated on the capacity of TVETs in producing competent graduates as well as the role of TVETs in curbing unemployment. The demand for technical and vocational institutions has been largely ignored. It is against this backdrop that the study intended to investigate and analyse the factors that influence the increased demand for Technical and Vocational Education and Training in Nyeri County of Kenya and contribute to development of the regulatory framework that would contribute to skills development.

1.3 Purpose of the study

The purpose of this study was to investigate the factors that influence the demand for Technical and Vocational Education and Training in Nyeri County.

1.4 Objectives of the study

The specific objectives of this study were:

i) To establish how growth in technology influences demand for Technical and Vocational Education and Training in Nyeri County.

ii) To investigate the influence of rural electrification on demand for Technical and Vocational Education and Training in Nyeri County.

iii) To establish the effect of subsidized secondary education on demand for Technical and Vocational Education and Training in Nyeri County.

iv) To investigate how introduction of new courses influences demand for Technical and Vocational Education and Training in Nyeri County.

1.5 Research questions

i) How does growth in technology influence demand for Technical and Vocational Education and Training in Nyeri County?

ii) In what way does rural electrification influence demand for Technical and Vocational Education and Training in Nyeri County?

iii) How does subsidized secondary education influence demand for Technical and Vocational Education and Training in Nyeri County?

iv) How does introduction of new courses influence demand for Technical and Vocational Education and Training in Nyeri County?

1.6 Significance of the study

The research established the factors contributing to the demand for technical and vocational education and training. The findings will serve as an eye opener to the youth and the community at large on the prevailing labour market and job opportunities in the fast growing economy. It will also sensitize the youth and unemployed population in the various ways in which they can utilize the resources available without necessarily migrating to the urban centres. It will also enlighten the youth and women on the importance of TVET for self employment and offer alternatives to those who do not perform well in academics to join university as a step up to high levels and not an end in itself. The research will sensitize the administrators in the village polytechnics on the need to expand their institutions to tap the growing demand.

1.7 Limitation of the study

Some technical institutes especially the village polytechnics were in remote and inaccessible places especially during the rainy season; coincidently, the period the research was conducted was usually a rainy season in Nyeri County and the researcher was bound to walk to the institutions. The researcher was also forced to

reschedule the data collection to coincide with the time the respondents were available.

1.8 Delimitations

The research only focused the factors influencing demand for technical and vocational education in technical institutions in Nyeri County. This consisted of 2 technical institutions.

1.9 Basic assumptions

The study assumed that the principals, the heads of departments, the students of TVET were aware of the factors influencing demand for TVET.

1.10 Definition of Terms

Education refers to process of acquiring skills for work.

Rural electrification refers to supply of energy in rural areas for production oriented activities like minor, irrigation rural industries etc.

Technical refers to practical, mechanical, arts or the applied sciences o acquire skills for world of work.

Technical education refers structured system aimed at providing recipients with the necessary knowledge and skills to perform practical and industrial tasks.

Technology refers to Body of knowledge and application of this knowledge combined with resources to produce outcome in response to human desire and needs.

Training refers to organized activity aimed at imparting practical skills, knowledge and attitude to perform industrial tasks.

Unemployment refers to adult population who are not employed in formal sector.

Vocational training refers System which aim at providing the recipients with the necessary knowledge and skills to exercise a profession in order to be integrated in the labor market.

1.11 Organization of the of the study

This study is organized into five chapters. Chapter one provides background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, and significance of the study, limitation and delimitation, assumptions of the study, definition of the significant terms and the organization of the study. Chapter two presents a review of literature which will include the factors influencing the demand for TVET in Nyeri County. Chapter three covers research design, target population, sample size and sampling procedures, research instruments, validity and reliability of the instruments, data collection and data analysis procedures. Chapter four presents data analysis, interpretations and findings

followed by chapter five which provides a summary of the study, conclusions, recommendations and suggestions for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter presents an overview of the factors influencing demand for Technical and Vocational Education and Training (TVET). It gives an overview of literature on TVET demand from past studies. It examines how the factor of technology growth has influenced TVET in the past, reviews how rural electrification has influenced demand for TVET, how subsidized secondary education has influenced demand for TVET and how introduction of new courses has influenced demand for TVET in other places. The chapter also shows the conceptual framework and theoretical framework.

2.2 Technical, Industrial, Vocational and Entrepreneurship Training in Kenya

The use of Technical, Industrial, Vocational and Entrepreneurship Training (TIVET) in Kenya encompasses technical training institutions, MSE training and demonstration centers, youth polytechnics and national youth service skills development centers. Innovations in the current Education and Training Organization have been proposed in the Sessional Paper No. 1 of 2005. This is intended to offer learners equal opportunities to advance to the highest level of learning either through the academic or TIVET channel. The TIVET's informal sector is still spearheaded mostly by NGOs such as Nairobits (ICT based TIVET) (LecKenya, 2013).

TIVET programmes are offered in Youth Polytechnics (YP), Technical Training Institutes (TTIs); Institutes of Technology (ITs) and in National Polytechnics. There are also other institutions that offer TIVET programmes spread across government ministries as well as private institutions. Graduates from TIVET institutions are awarded Certificates and Diplomas in various disciplines. Currently two national polytechnics; The Kenya and Mombasa polytechnics have been upgraded to university colleges offering degrees in TIVET disciplines, however both institutions continue to offer certificate and diploma programmes.

Kenya has 818 TIVET institutions: 467 of which are fully registered while 283 are operating with provisional registration. Another 68 have applied for registration, according to data from the Directorate of Technical Accreditation and Quality Assurance (Gachie, 2013:2). A draft Bill to regulate the operations of colleges in Kenya has proposed the establishment of the TIVET Authority that will be tasked with licensing, registering, accrediting, monitoring and evaluating training institutions to protect parents and students from fraudsters seeking profits (Herbling, 2012).

Low investment in technical courses like engineering and electronics is a major setback to Kenya's economy (Herbling, 2012). The courses, which require large amounts of capital, have been left to government yet they are most crucial in producing mid-level professional such as engineers, plumbers, mechanical technicians—who are crucial in supporting an industrial economy. In 2011, the Ministry of Higher Education, Science and Technology mounted a crackdown on unregistered technical, industrial, vocational and entrepreneurship training (TIVET)

colleges resulting in the closure of 63 institutions and the arraignment of 21 managers in court.

Whereas the enrollment of students in TIVET institutions has been increasing countrywide, There has been slow growth of TIVET institutions with available statistics showing over 60 % of TIVET Institutions country wide have approached the Ministry of Higher Education Science and Technology, Directorate of Technical Education, Bursaries and Grants department every year. The institutions requesting for funding of their operations citing difficulties in fees collections from students as the main cause of their cash flow problem (Nyagah, 2012). Many institutions have closed with no information available to explain these trends. A study carried out on the effects of receivables management on financial performance of Technical, Industrial, Vocational and Entrepreneurial Training (TIVET) institutions showed that that quite a number of TIVET institutions face challenges meeting their short term obligations due to their funds being tied in receivables. According to the Nyagah (2012) a partnership between the TIVET institutions and the independents examination bodies be formed so that the examination bodies can be channeling students' certificates through the TIVET institutions which will act as a security against bad debt.

The task force on the realignment of the education sector to the constitution of Kenya 2010 noted that the current system of education, curriculum and assessment does not include Early Childhood Development and Education (ECDE). In addition, the quality of education was not clearly spelt out so that the curriculum delivery could focus on

development of specific expected competences to be assessed. In view of this, it was found necessary to recommend a more flexible and comprehensive structure for Kenya's education system and curriculum reform to specify the expected competences at every level of learning. The recommended structure was 2 years of Pre-primary, 6 years of Primary (3 years lower and 3 years upper), 6 years Secondary (3 years junior and 3 years senior), 2 years minimum of Middle level Colleges and 3 years minimum University education. As a whole this structure would have two cycles; Basic Education cycle of 14 years which is free and compulsory, and a Higher Education cycle.(Wairimu 2009).

The 2012 TIVET bill establishes anticipated statutes that will govern the management of TIVET institutions (Republic of Kenya, 2012). In a new development it establishes a director of TIVET and a directorate of TIVET. It proposes the establishment of technical, industrial, vocational and entrepreneurship authority (TIVETA) which shall oversee issues of accreditation, registration, licensing and quality standards for TIVET institutions among other functions. The authority shall operate as an autonomous government agency. There shall be a TIVET board established which shall look into the system of accreditation of institutions, manage and control the assets of the TIVET authority among other tasks. The bill provides for appeals tribunal for conflict resolution for the TIVET sector. It also provides for disciplining of students, teaching staff and non-teaching staff in TIVET institutions. Once enacted to law it will provide for a well-coordinated TIVET sector that will

ensure quality skills development and benchmarking against the best practices in the world (Kariithi, 2013)

2.3 Growth in Technology and demand for TVET

Most people recognize that technology has changed the world, but few people understand the various aspects of technology and how pervasive technology is. (Howard, 2002). Technology education has four main domains: Sciences, humanities, technologies and formal knowledge to cope with the changing technology TVET has the capacity to offer the much needed training.

All countries developed and developing are undertaking the important and complex task of restructuring the education and training systems to meet the development requirements in the context of the changing environment (Middleton et al., 1993). TVET programs are expected to produce a new breed of competence workforce who can compete and excel in a rapidly changing environment and improve the countries economy. It's the largest contributor in developing human resource with the expertise to cope with the changing environment. Nearly every unit of production in the economy involves technology including Agriculture, Asian Development Bank (2008) press statement revealed, that the Asian Development Bank (ADB) is helping thousands of unemployed and underemployed Bangladeshi adults attain better wages and employment prospect by improving the country's technical skills training system. The fast growing industries in manufacturing and construction in Kenya requires skilled workers.

UN (2012) indicates ideally that the TVET outcome on the labour market should be measured by the share of TVET graduates that obtained a job after completion of training, the time span between graduation and placement, the ratio between the average wage of TVET graduates and the average wage of those who did not follow TVET path.

Addis Ababa Agency (2010) TVET institutions are mainly expected to replicate new and selected technologies and transfer the same to the relevant industry in order to increase the competitiveness of the sector according to international standards. It is also needed that these technologies focus on creative capacity building and greatly contribute to the economic development of the country in a bid to mitigate regional problems (Elkins et al, 2012)

Skilled labour force produced by an effective training system enables economies worldwide to achieve headway's in technology, productivity and global competitiveness. KIE (2012) The TVET Bill is responsible for developing curriculum for specialized organization in need of training. It develops curriculum that fills the gap in the society and responds to the industrial demands.

The pace of technical change is increasing and it is beyond the capacity of society to understand and manage its impact. Technical change has helped people in their daily battle for survival. Technology innovations are vital for growth and poverty reduction in developing countries. ICT and Human Development Efforts in Eritrea are recognized as a major determinant of economic growth. However, Nirmala,

Karthikeyan, Appalabatla & Patharaj (2012) found that the technologies to meet these needs are growing in Eritrea , but they are not accessible to the people who need them most. According to the authors, The fact that ICT transfer has no direct link to poverty reduction stems from the reality that most poor people do not depend on employment in the formal sector, where Foreign Direct Investment (FDI) is directed. Although Nimala et al (2012) study highlighted the significance of technology in TVETs, the study was biased on ICT and ignored other areas of technology such as art, music, metal and wood work.

TIVET investment in ICT has been found to be low. The TIVET Baseline Survey (2011) found that almost one third of the institutions do not have an ICT specific budget, signaling that ICT is not apriority issue for a significant number of institutions. The institutions that have an ICT specific budget specify mainly ICT infrastructure such as hardware, software and maintenance of equipment. Professional development (i.e. use of ICTs) is only present in 33% of the budgets and hence not as prioritized. The different priorities between equipment and classroom integration/training in ICT budgets at institutional respective departmental level indicate inconsistent priorities by different professional groups at TIVET institutes (Republic of Kenya, 2012).

The research establishes how residents of Nyeri County are looking forward and moving in line with the changing technology in view of job opportunities in the upcoming industries. Kenya aims to become middle income state by the year 2030. Much of the expected economic growth will be contributed by the informal sector. A

2004 report by the World Bank found out that out of a total of about 500,000 people employed in Kenya's manufacturing sector, 56% were in the informal sector. In 2000, the informal sector contributed 18.5% of GDP; the report indicated that much more growth is expected (World Bank, 2004:13).

2.4 Rural Electrification and demand for TVET

Availability of electricity has greater booster of rural development. With electricity, the residents in rural areas can start new small scale industries like bakery and welding. Kirubi (2007) found out that electricity made it possible to start garage for repair and maintenance of tractors in Mpeketoni while previously simple repair and welding jobs could only be done in Mombasa 450km away. This can be a motivator for the Mpeketon residents to demand skills in tractors repairs and welding prompting them to enrich their skills in the nearby TVET institutions. Rural electrification project has the potential to enhance irrigation agriculture.

Maundu (1997) in the recommendation on enhancing the jua kali industries said roads should be provided to jua kali workers, thus there is need for the rural electrification programme to be speeded up if the jua kali industry is to be decentralized. Decentralization of jua kali would enable rural residents to go for TVET in order to be able to set up micro enterprises like bakery, salons.

TVET best Practices on Entrepreneurship Education says because of entrepreneurship initiatives over 40% of TVET graduates in primary and secondary schools who have passed through the training becomes self employed and over 20% of those who enter

salaried employment also start their own businesses, hence creating jobs for others mostly in carpentry and joinery, masonry, electricity, electronics, automotives, mechanics, automotive-electric. Sign writing, food and beverages, authentic and tailoring among others. Rural electrification also has made it possible for the village polytechnics to introduce new courses in their curriculum such as wielding which wholly depends on the availability of the electricity (Elkins et al, 2012).

Khandker, Barnes, Samad & Minh (2009) examined the welfare impacts of households rural electrification based on panel surveys conducted in 2002 and 2005 for some 1,100 households in rural Vietnam. The econometric estimations suggested that grid electrification had significant positive impacts on households cash income, expenditure, and educational outcomes. The findings on educational outcomes indicated that only boys benefit from rural electrification. Boys' school enrollment goes up by 11% and schooling years by 0.67% as a result of the household connecting to the grid. However the study did not provide data on the effects of electrification on enrollment of students in TVETs.

Mbatia (2005) evaluated the socio-economic effects of the Rural Electrification Programme. She found that the programme had improved education standards, health standards and in general the living standards of the people. The study concluded that the Rural Electrification Programme can be an effective strategy of alleviating poverty in the rural areas if well planned. Her study however did not expound on how the rural electrification programme affected education and especially in the area of TVETs.

Thus the literature review on rural electrification reveals how it has influenced generation of home based industries and impacted on the decentralization of jua kali industry to rural areas. All these industry demand for skilled labour which is acquired through TVET. The research has established that rural electrification has influenced demand for TVET in Nyeri county though to a lesser extent as compared to growth in technology. .

2.5 Subsidized secondary school education and demand for TVET

In order to meet the challenges which the future holds, society needs young people who are independent, creative and willing to work. They need training which enables them to apply their own personal capabilities and to play a creative role in the development of the changing working world technology, environmental protection and regional and international cooperation. Cabrera (2000) says more than half of high school graduates are not academically prepared for college, yet they do not have significant learning disabilities preventing them from succeeding in a traditional classroom setting.

In order to enter special vocational school, students are required to have finished secondary school. Many student attend to specifically get professional certificates and it is not uncommon for university students to take classes at vocational schools to complete these same certificates (Elkins et al, 2012).

According to the 2008 African Economic Outlook, African countries can be grouped in three categories on the basis of the percentage in total secondary enrolment of

technical and vocational programmes as at 2005. The first group encompasses 10 countries re-ordered according to ranking scores: Rwanda (36%), Cameroon, DRC, Egypt, Libya, Congo, Mauritius, Benin, Algeria and Mali (10%) all with a proportion of TVET enrolment in general secondary education with 10 % or more. The second group has a proportion of TVET enrolment in general secondary education between 5% and 9 %. This group of 10 countries includes Burkina Faso (8 %), Burundi (8 %), Djibouti (8 %), Mozambique (8 %), Tunisia (8 %), Botswana, Morocco, South Africa, Cape Verde and Togo (5 %). Finally, the third group of 15 countries includes Mauritania (4 %), Uganda (4 %), Niger, Ethiopia, Ghana, Guinea-Bissau, Zambia, Chad, Eritrea, Gambia, Kenya, Lesotho, São Tomé and Principe, Senegal, and Sudan (1 %) (African Economic Outlook, 2008:17).

The Kenya Government through the Sessional Paper No. 1 (2005) on A Policy Framework for Education Training and Research had anticipated that in the long run, secondary education would be integrated as part of basic education. The move taken to provide subsidized secondary education aims at ensuring that children from poor households acquire quality education that enables them to access opportunities for self advancement and become productive members of society. Subsidized Secondary Education is an effort to attain EFA goals by 2015, by increasing transition rates from primary to secondary by 70% in 2008. The move is quite timely since many households cannot afford to educate their children especially through the current hard economic times. The Kenya Government has undertaken far-reaching measures, such as increasing enrolment in classrooms from 40 to 45 students, tuition waiver and

provision of instructional materials to targeted schools in order to increase access, quality, equity and completion rates. However, as observed by Asayo (2009) (Cited in Akaranga, 2012) problems are already being experienced in the provision of educational resources like shortage of teachers, overcrowded classrooms and limited materials.

Subsidized secondary education is an effort to attain education for all goals by 2015 by increasing transition ratios from primary to secondary by 70% in 2008 (Akaranga, 2012). The subsidized secondary education was implemented in Kenya in 2008. As a result the secondary schools recorded a high increase in enrolment. This resulted to a large number of KCSE graduates who could not get vacancies in the formal tertiary institutions. As a result, many turned to technical and vocational education and training institutes.

This study has established that subsidized secondary education has influenced demand for TVET in Nyeri County. TVET has the potential to curb high rates of unemployment especially among the youth and women. TVET appears to be an effective tool in poverty reduction. The vast majority of students who participate in TVET acquire skills that enable them to adequately respond to the demands of the labour market. Most of them find salaried employment while others become self employed. The technical courses mainly lead to wage employment while beauty, hair dressing, tailoring, food and beverages among others.

2.6 Introduction of new courses in TVET Institutions and demand for TVET

The field of technical and vocational education and training has changed throughout history, usually in response to the demands made upon it by the societies it serves. Some of the new courses that may be introduced in line with the indigenous ones include advanced manufacturing skills, computer design, machine shop technology, machine ship math tracking, book keeping, accounting and auditing, veterinary technology, food services, computer support, hair styling and cosmetology among others (Bunning, 2006).

In Ghana, JICA implemented research on the TVET sector from 2000 to 2001 along with the Government of Ghana. The study showed that TVET in Ghana lacked consistently among TVET institutions and did not correspond to the demand of industry. In 2005 Ghanaian Government convened a round table conference to discuss the guidelines for the introduction of a competency based approach to TVET (JICA, 2000). However the study did not address the demand for TVET education.

The basic design of TIVET is to pass on hands-on skills in technical fields as opposed to professional or university training. This, it has been realized, lacks the element of soft training, which is now key in the job market. In the Ministry of Higher Education, Science and Technology strategic plan for 2008-2012, the government calls for quality and relevance in TIVET institutions, citing that skills from universities and TIVET do not often match the requirements of the production sector, thereby imposing higher costs to investors who have to retrain new staff.

found that the institutions do not provide sufficient training specific to the textile machines, there are no specialized clothing/textile industrial engineering programmes, nor any undergraduate or post graduate degrees in clothing and textile management focusing on operational performance and production organization and insufficient cross functional knowledge leading to inefficient soft skills to manage shop floor people. The researchers recommended that review and develop curriculum that addresses the emerging needs of the industry; introduce adequate, relevant contents and curriculum delivery modes to cater for new and emerging job performance trends (Nguku, 2012).

Kenya has set an ambitious goal of becoming industrialized by the year 2030. The availability of well educated and relatively well trained workforce is regarded as critical to industrialization. To achieve this goal, Technical, Vocational, Education and Training (TVET) institutions are charged with the major responsibility of preparing trainees with relevant knowledge and skills required in the labour market in order to enhance their productivity.

According to Fortunate (2011) The Kenya Institute of Education (KIE) is developing a new curriculum for Technical, Industrial, Vocational and Entrepreneurship Training

(TIVET) to equip students with skills beyond practical know-how in technical fields. The new curriculum will be competency-based; the idea being to make students go through training that include the previously absent soft skills. Students will have to be equipped with all the elements of the course they are undertaking, and will be expected to be all-rounders to enable them fit in this competitive job market. They will need to learn marketing skills, give options to clients, and also look for a wider market and not restrict themselves to a specific area. The move, the author adds, is aimed at providing market driven courses that will also be aligned to the country's Vision 2030 development blueprint, which seeks to elevate Kenya to an industrialising middle-income country by the year 2030.

Simiyu (2009) assessed the factors influencing the attractiveness of a Technical and Vocational Education and Training Institution. Using Kaiboi Technical training institute, his findings revealed that The institution offered technical craft and artisan courses during the early days when the institution was under the management of the missionary and even thereafter, until 1987 when it started offering diploma courses and some craft and artisan certificate courses. He found that Apart from marketing the courses in terms of employability, both in industry and self, the institution seemed to have gone out of its way to make a concerted effort to advertise the courses. The adverts were placed in the dailies, brochures and calendars. Radio and television were also used to announce the courses and times to apply. The shortcoming of this study was that it focused on only institution and therefore the findings cannot be generalized.

Limboro (2013) investigated the relevance of knowledge and skills acquired at the Institutes of Technology (IT) to the needs of the labour market. Contrary to Simiyu (2009) the findings of the study revealed that there was an education and training gap, suggesting that the Institutes of Technology did not adequately prepare the graduates with the knowledge and skills needed in the labour market. However, the study was biased on three courses namely: Building and Civil Engineering, Electrical & Electronics, and Building and Civil Engineering which represent a small portion of the courses offered in TVETs. However, the study did not look into the enrollment of students into TVET institutions

2.7 Summary of literature review

The literature reviewed helps to identify the gap in knowledge towards demand for TVET and trends in the labor market. The research shows that there has been increasing demand for TVET world wide which every government is trying to address through policy frame work but the issue of factors influencing this increase has not fully been addressed especially in Nyeri County where the research was undertaken. The study however has established that growth in technology and rural electrification increase enrollment of students to TVET due to creation of new opportunities as well as growth of the job market which increases demand for people with related skills. The literature review has determined that subsidized secondary education increases enrollment through the high number of students who graduate from secondary schools. Introduction of new courses has influenced demand for TVET by providing choices to potential students to fit their interests.

2.8 Theoretical Frame work

The research will be based on human capital theory that was proposed by Theodore William Schultz (Becker, 1964). Human capital is the stock of competencies, knowledge, social and personal attributes including creativity embodied in the ability to perform labour so as to produce economic value.

Human Capital theory suggests that education or training raises the productivity of workers by imparting useful knowledge and skills, hence raising workers future income by increasing their lifetime earnings (Becker, 1994) Human capital theory is the idea that humans are a factor of production in a typical business along with other factors of production namely land, building and money. Once a return on investment in skills is known to exist, it is logical to ask how much a worker should spend acquiring the skills that provide higher wages. Since TVET advocates on enhancing people's skills, knowledge and attitude to enhance performance it agrees with human capital theory.

2.9 Conceptual framework

This section provides a schematic presentation of interrelationship between variables in the context of the problem being investigated. Figure 2.1 represents the relationship in the independent variables and the dependent variables. The diagram shows the conceptual model which encompasses the major variables and their possible pattern of influences. It shows the interdependence of the variable.

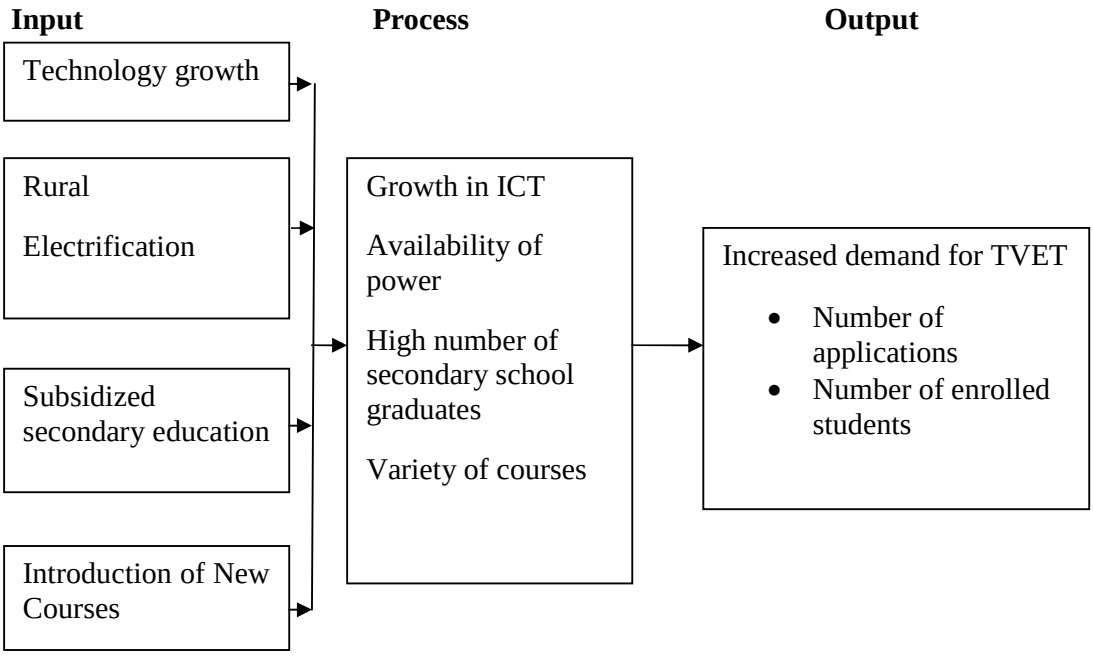

Fig 2.1: Conceptual framework

The purpose of this study was to investigate the factors that influence the demand for Technical and Vocational Education and Training in Nyeri County. The study sought to achieve this by assessing the influence of growth in technology, rural electrification, subsidized secondary school education as well as introduction of new TVET courses on the demand for Technical and Vocational Education and Training. Growth in technology especially in ICT leads to market demand for computer savvy individuals, this demands leads to increased demand for IT education which is provided by TVETs. Rural electrification opens up rural areas and new markets which increase the demand for various skills; TVETs offer courses in informal skills such as wielding, carpentry and masonry. Subsidized secondary education brings with it

increased access to secondary education which results in a high output of KCSE graduates; this increases potential candidates for TVET education since the available universities cannot accommodate all secondary school graduates. Introduction of new courses by TVETs increases the attractiveness of such institutions as graduates have a a choice in a variety of courses.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter outlines the type of research design sample and sampling procedure, target population, data collection procedure, research instruments that the study adopted. It has given insight on data analysis procedure.

3.2 Research design

The study adopted a descriptive design of the case type to establish factors influencing demand for TVET in Nyeri County by comparing the perception of students, principals, HODs and teachers. This design was appropriate for gathering information, summarizing (Orodho, 2004).

Presenting and interpreting it for purpose of clarification The method assisted the researcher to produce statistical information on factors influencing demand for TVET in Nyeri County. Descriptive approach is designed to obtain information concerning the current phenomenon and whenever possible to draw valid conclusions from facts obtained.

3.3 Target population

The study targeted all principals, heads of departments, teachers and graduating students of technical training institutions in Nyeri County. According to the ministry of higher education, there are two technical training institutions in Nyeri County:

Nyeri technical institute and Mathenge technical training institute. Nyeri technical training institute has 7 technical departments with 123 teachers serving 288 fourth year students (NTTI, 2013) while Mathenge technical training institute has 5 technical departments with 82 teachers serving 240 fourth years students (MTTI, 2013).

Table 3.1 Target population

Technical training institute	Student population	Teacher population
Nyeri	288	123
Mathenge	240	82
Total	323	205

3.4 Sample size and sampling procedure

Stratified random sampling was used to sample students to participate in the study. The researcher chose this technique since every individual in the population has a an equal chance of being selected and thus justifies generalizability of the findings. Stratified sampling technique is a method in which the researcher divides the entire target population into different subgroups and then randomly selects the final subject proportionally from different subgroups. Mugenda and Mugenda (2003) who suggest that 10% of the accessible population is adequate to serve as a study sample.

Table 3.2 Sampling frame

Technical training institute	Student population	Student sample (n = 10*total population)
Nyeri	288	29
Mathenge	240	24
Total	528	53

The study therefore had 53 students participate in the study. In addition the study employed a census technique in selecting principals (2) and heads of departments to participate in the study (12); the total sample was therefore 67 respondents.

3.5 Data collection Instruments

The study employed two data collection instruments: questionnaires, and interview schedule. The questionnaires were used to collect information from the graduating TVET students. A questionnaire is easy to administer. Questionnaires reduce bias since the researchers' own opinions will not influence the respondents to answer questions in a certain manner unlike if it were telephone or face to face surveys (Best & Kahn, 1993). The questionnaire was divided into two sections A and B and contained both open-ended and close-ended questions. Section A aimed at gathering the respondents demographic and background information. Section B aimed to establish the factors affecting demand for TVET

Interview schedules collected more information from the heads of TVETs and their heads of department. This particular instrument was selected because the principals and head of departments are resourceful individuals who have good knowledge of the trends in education in the district and would be able to shed more light on factors influencing demand for TVET in their institutions. The main advantage of the interviews is that the researcher (interviewer) can adapt the questions as necessary, clarify doubt and ensure that the responses are properly understood, by repeating or rephrasing the questions.

3.6 Instrument validity

In order to improve validity of the instrument the researcher pre-tested the questionnaires in a pilot study. Orodho (2005) recommends that a population of 10% of the sampled population can be used in a pilot study. Therefore, the researcher conducted a pilot study on 7 respondents who would later not participate in the main study.

The responses obtained were used to guide the researcher in making some changes in the questionnaire to enhance its validity. A question of general comment on the aspect of each variable to be used in the study was included to obtain relevant and adequate information.

3.7 Instrument reliability

Reliability is the ability of a research instrument to consistently measure the characteristic of interest over time. Reliability is influenced by random error, thus, as

error increases, reliability decreases. A pilot study was conducted to find the instruments reliability and the procedures of administration as described in 3.6. Reliability co-efficient was obtained by correlating the scores of odd numbered statement with the score of even numbered statement in the questionnaire. The researcher used test-retest to ascertain the coefficient of internal consistency or reliability.

The instrument was administered twice to the same group of subjects at an interval of two weeks. The scores of the first and the second were correlated using Pearson product moment correlation coefficient formula. The responses obtained were analyzed and compared. A Pearson product coefficient of 0.6 was obtained which qualified the instruments as reliable since the coefficient obtained from the pretesting data was above 0.5 (Orodho, 2005).

Qualitative data generated from interview schedules was organized into themes, categories and patterns pertinent to the study. In addition, the qualitative data in this study was analyzed thematically through discussion, comparing of possible relationships or significant differences between various variables as well as substantiating the possible causes of some research findings

3.8 Data analysis

Data analyses are the techniques used to analyze data so that it can be interpreted. Research analysis breaks down data into constituent parts to obtain answers to

research questions. Quantitative data was analyzed using descriptive methods such as frequency distribution; percentages were used to analyze demographic data.

In the interpretation of the open-ended item, answers were compared, various responses analyzed quantitatively using the descriptive statistics and this was done in relation to stated objectives of the study. Qualitative data generated from interview schedules was organized into themes, categories and patterns pertinent to the study. The Statistical Package for Statistical sciences (SPSS) version 20 was used to analyze data with the aid of a computer.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the findings from the analysis of the data collection. The section also presents the interpretation of the results of analysis in relation to factors that influence the demand for Technical and Vocational Education and Training in Nyeri County. The analysis was done in respect to the study objectives and aimed to establish how growth in technology influences demand for Technical and Vocational Education and Training, ways in which rural electrification influence demand for Technical and Vocational Education and Training , how subsidized secondary education influences demand for Technical and Vocational Education and Training and how does introduction of new courses influence demand for Technical and Vocational Education and Training in Nyeri County?

4.1.1 Response rate

The study sampled 53 students, 2 principals and 12 heads of departments to participate in the study. Three (3) questionnaires from the students were not returned leaving 50 questionnaires for analysis. This accounts for a response rate of 94% which is higher than the 70% recommended by Kothari (2004).

4.2 Demographic information of respondents

The study collected demographic data from the students in the study. The demographic data comprised of gender and age of respondents. This would enable the researcher to establish the demographic characteristics of the students enrolled in the TVETs in the study.

4.2.1 Distribution of the respondents by gender

Figure 4.1 shows the gender of the students in the study.

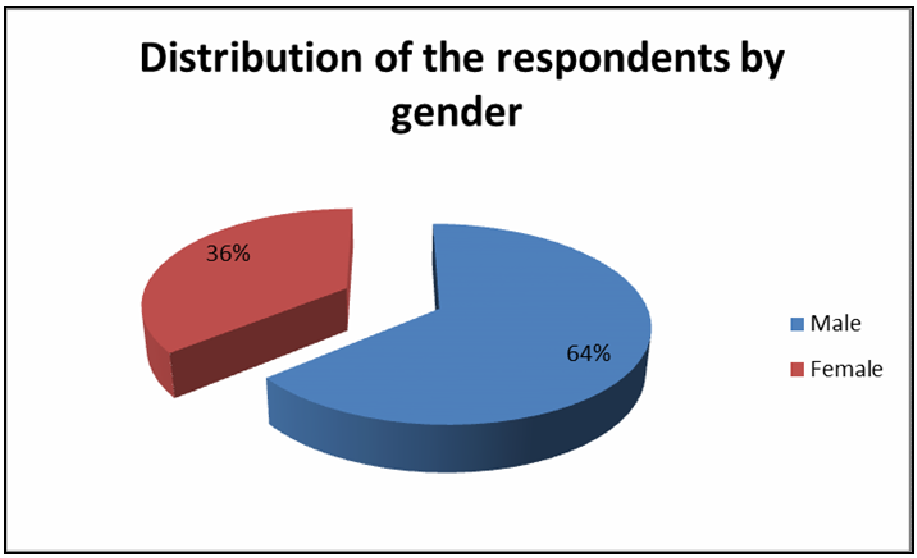

Figure 4.1: Distribution of the respondents by gender

Majority (64%) of the students who participated in the study were of male gender. This shows that there is a great gender disparity among the student body. The gap in the gender distribution could be attributed to the fact that TVETs in the study offered a lot of engineering courses which are not favorites for the female population.

4.2.2 Distribution of respondents by age

Figure 4.2 shows the age of the students' in the study.

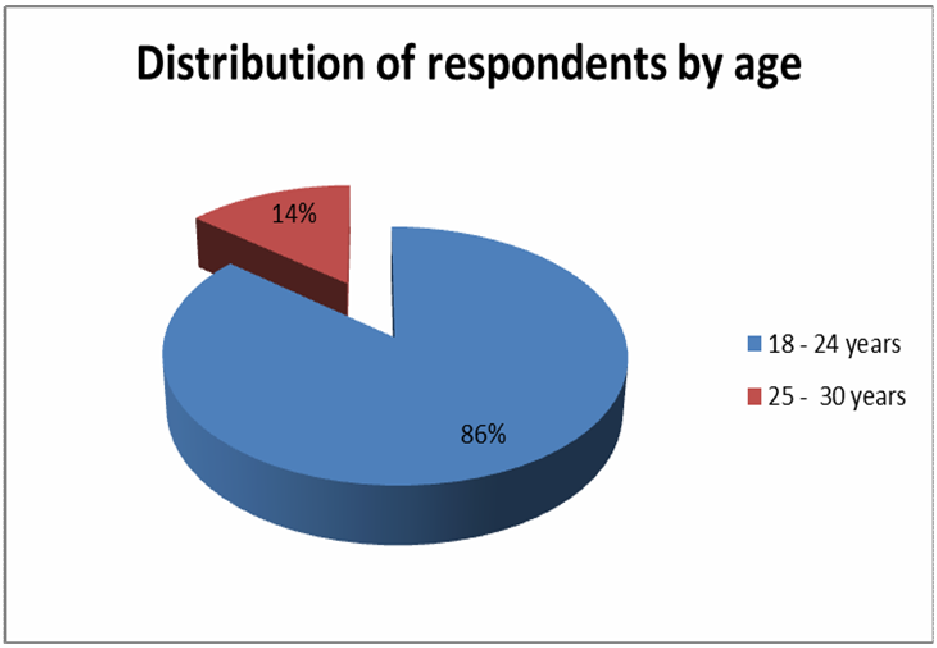

Figure 4.2: Distribution of respondents by age

Findings in Figure 4.2 show that majority (86%) of the students in the study were aged between 18 and 24 years. This shows that the bulk of enrolled students for TVET were young. Although TVETs accept students of all ages above 18 years, the majority of entrants to these institutions are students who have just finished secondary school education. These findings are in agreement with Akaranga (2012) who found that subsidized secondary education results to a large number of KCSE graduates who could not get vacancies in the formal tertiary institutions.

4.3 Courses offered in TVETS

The study sought to find out the popular courses offered in the TVETs where the respondents were drawn from. This was achieved by asking the students what courses they were pursuing in the TVET institutions.

Table 4.1: Courses pursued by students

Course	Number of students	Percentage
Engineering	22	44%
Food and beverage	18	36%
Clothing and textile	4	8%
Business related	6	12%
Total	50	100%

Findings in table 4.1 reveal that most (44%) of the students in the study were pursuing Engineering courses in the TVETs. These findings can explain the gender disparity seen among the students (Figure 2) in that engineering courses are more popular with males.

4.4 Reason for joining TVET

The study sought to find out from the students on why they chose the TVETs to pursue their courses. The findings would assist the study in determining factors that influence the demand for Technical and Vocational Education and Training in Nyeri County.

Table 4.2: Reason for joining TVET

Reason	Frequency	Percentage
The institution offered the course I want	42	84%
The institution is close to home	1	2%
TVETs tuition fees was affordable to my parents	4	8%
My grade could not qualify me to join other institutions like university	3	6%
Total	50	100%

Majority (84%) of the students in the study revealed that they joined the Technical and Vocational Educational institution because the institution offered the courses they wanted. This shows that courses offered by the Technical and Vocational Education and Training institutions not only had demand but were also not easily available from other institutions.

4.5 Growth in Technology and demand for TVET

Question one sought to establish how growth in technology influences demand for Technical and Vocational Education and Training in Nyeri County. This section presents findings related to the first objective of the study.

4.5.1 Principals' responses on growth in technology and demand for TVET

The study sought information from the TVET principals in the study regarding the growth in technology and its impact on demand for Technical and Vocational Education and Training. This was important for the study to ascertain how growth in technology influences demand for Technical and Vocational Education and Training in Nyeri County.

Both of the TVET principals in the study agreed that growth in technology had influenced demand for Technical and Vocational Education and Training. The head of Nyeri Technical Institute explained that students were continually asking for more modern technology oriented courses. The head of Mathenge Technical Training institute explained that the market had a high demand for technical experience and as such technical courses like automotive engineering that are mainly offered by Technical and Vocational Education and Training institutions were in high demand. These findings from the principals' responses show that technology fuelled the demand for increased demand for Technical and vocational Education and Training. The findings are in agreement with Elkins et al (2012) who found that growing

technology can contribute to the economic development of the country in a bid to mitigate regional problems by capacity building through education.

4.5.2 HODs responses on growth in Technology and demand for TVET

The study sought information from the TVET heads of departments in the study regarding the growth in technology and its impact on demand for Technical and Vocational Education and Training. The findings would assist the study establish how growth in technology influences demand for Technical and Vocational Education and Training in Nyeri County.

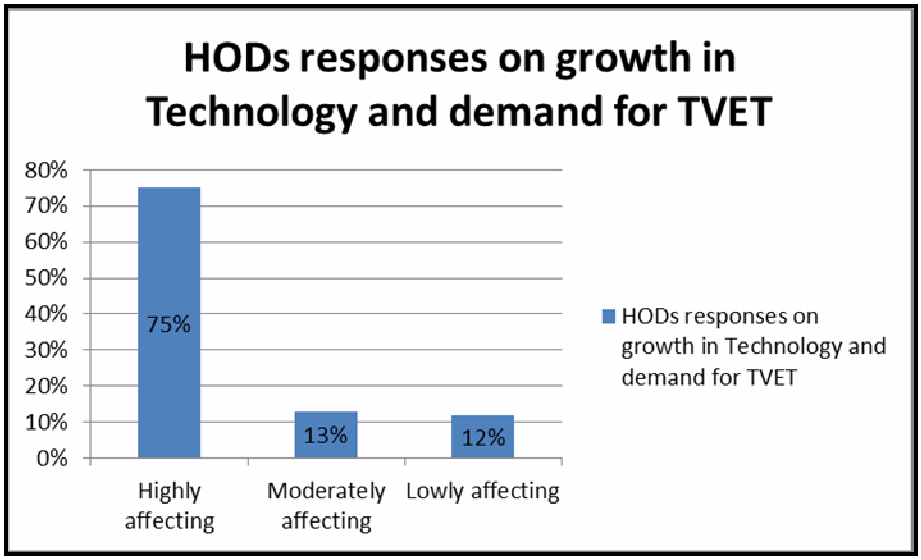

Figure 4.3: HODs responses on growth in Technology and demand for TVET

Majority (75%) of the heads of departments opined that the growth in technology had a high effect on the demand for Technical and Vocational Education and Training. The HODs indicated that technology development especially in Information communication and Technology (ICT) had made it easier to get information and at a

low cost. The heads of departments also agreed with the principals that technology had opened up new markets that required skilled graduates from various technical courses. The findings are in agreement with findings of Nimala et al (2012) who highlighted the significance of technology in TVETs in the growing technology era.

4.5.3 Students' responses on growth in Technology and demand for TVET

The study sought the opinion of the students on the effect of technology and demand for TVET. This was necessary for the researcher to establish how growth in technology influences demand for Technical and Vocational Education and Training in Nyeri County.

Table 4.3: Students' responses on growth in Technology and demand for TVET

Response	Frequency	Percentage
Strongly Agree	24	48%
Agree	17	34%
Uncertain	1	2%
Disagree	7	14%
Strongly disagree	1	2%
Total	50	100%

Majority (82%) of the students agreed that growth in technology had led more and more people to seek education in for Technical Vocational and Education and Training institutions. This shows that growth in technology was a strong predictor of demand for TVET courses. These findings are in line with the findings of Nirmala et .al.(2012) who found that the growth in ICT influenced demand for courses in engineering and information technology.

4.6 Rural electrification and demand for TVET

Question two of the study sought to establish the influence of rural electrification on demand for Technical and Vocational Education and Training in Nyeri County.

4.6.1 Principals responses on rural electrification and demand for TVET

The study sought to find out from the heads of TVET institutions the effect of rural electrification on demand for Technical and Vocational Education and Training. The findings would enable the study answer question two of the study on influence of rural electrification and demand for Technical and Vocational Education and Training in Nyeri County.

Both of the heads of TVET institutions who participated in the study agreed that rural electrification had increased the demand for Technical and Vocational Education and Training courses. The head of Nyeri Technical Training institute explained that rural electrification had increased the need for skills in operation of power driven equipment and hence demand for these skills from courses offered in Technical and Vocational Education and Training institutions. The principal of Mathenge Technical

Institute explained that availability of power has encouraged the introduction of rural institutions. These findings show that rural electrification increased the demand for courses offered in Technical and Vocational Education and Training. The findings are in agreement with Kirubi (2007) who in a similar study in Mpeketoni, Mombasa found that rural electrification in the area made it possible to start garage for repair and maintenance of tractors in Mpeketoni while previously simple repair and welding jobs could only be done in Mombasa 450km away. This turned out to be a motivator for the Mpeketon residents to demand skills in tractors repairs and welding prompting them to enrich their skills in the nearby TVET institutions.

4.6.2 HODs responses on rural electrification and demand for TVET

The study sought to find out from the heads of departments on the influence of rural electrification on demand TVET courses. The findings would assist the study answer question two of the study on influence of rural electrification and demand for Technical and Vocational Education and Training in Nyeri County.

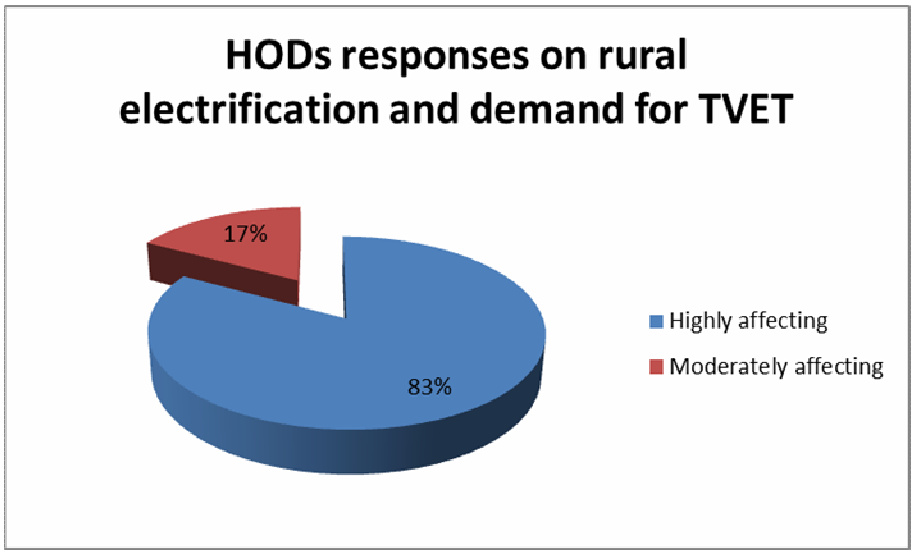

Figure 4.4: HODs responses on rural electrification and demand for TVET

Majority (83%) indicated that rural electrification had a high effect on the demand for Technical and Vocational Education and Training courses. Most of the heads of departments explained that rural electrification opens up opportunities for people residing in the rural areas and for people who would like to start their small businesses from their home area like welding and bakery among others. These findings are in agreement with Maundu (2007) who found that there was a need for the rural electrification programme to be implemented country wide for the *jua kali* industry to grow.

4.6.3 Students' responses on rural electrification and demand for TVET

The study sought to find out from the students on the influence of rural electrification on demand for TVET courses. This was important for the study to determine the

influence of rural electrification and demand for Technical and Vocational Education and Training in Nyeri County

Table 4.4: Students' responses on rural electrification and demand for TVET

Response	Frequency	Percentage
Strongly Agree	10	20%
Agree	18	36%
Uncertain	3	6%
Disagree	14	28%
Strongly disagree	5	10%
Total	50	100%

Majority (56%) of the students' agreed that availability of electricity in rural areas had influenced people to seek education in Technical and Vocational Education and Training institutions. This shows that rural electrification had a high effect on the demand for TVET courses. These findings are in tandem with result of Mbatia (2005) who in evaluating the socio-economic effects of the Rural Electrification Programme found that the programme had improved education standards.

4.7 Subsidized secondary education and demand for TVET

Question three of the study sought to establish the impact of subsidized secondary education on demand for Technical and Vocational Education and Training in Nyeri County.

4.7.1 Principals responses on subsidized secondary education and demand for TVET

The study sought to find out from the principals on the effect of subsidized secondary education and demand for courses offered in Technical and Vocational Education and Training institutes in Nyeri County. The findings from the principals' responses would enable the researcher answer question three of the study which sought to establish the impact of subsidized secondary education on demand for Technical and Vocational Education and Training in Nyeri County.

Both of the principals agreed that subsidized secondary education had increased the demand for courses offered in Technical and Vocational Education and Training institutes. The principals explained that the transition rate from secondary to technical training institutes had been increasing over the years. These findings are in tandem with Akaranga (2012) who explained that subsidized secondary education is an effort to attain education for all goals by 2015 by increasing transition ratios from primary to secondary by 70% in 2008.

4.7.2 HODs responses on subsidized secondary education and demand for TVET

The study sought to find out from the heads of departments as to the effect of subsidized secondary education on demand for courses offered in Technical and Vocational Education and Training institutes. The findings from the heads of departments responses would enable the researcher answer question three of the study which sought to establish the impact of subsidized secondary education on demand for Technical and Vocational Education and Training in Nyeri County.

All the heads of departments (n=12) in the study indicated that subsidized secondary education had increased demand for courses offered in Technical and Vocational Education and Training institutes. The HODs explained that as a result of subsidized secondary education, parents were able to clear tuition fees for their children in various secondary schools. This meant that the turnover form the secondary schools was very high.

In addition, the HODs explained that most of the students who graduate from secondary schools meet the minimum grade required for a majority of the courses in Technical and Vocational Education and Training institutes. These findings are in line with the results of Akaranga (2012) who found that the subsidized secondary education resulted in a large number of KCSE graduates who could not get vacancies in the formal tertiary institutions. As a result, many students turned to technical and vocational education and training institutes. The findings are in agreement with Elkins et al (2012) who found that many students attend to specifically get professional

certificates and it is not uncommon for university students to take classes at vocational schools to complete these same certificates.

4.7.3 Students' responses on subsidized secondary education and demand for TVET

The study sought to find out from the students the effect of subsidized secondary education on demand for courses offered in Technical and Vocational Education and Training institutes. This was important for the study to establish the impact of subsidized secondary education on demand for Technical and Vocational Education and Training in Nyeri County.

Table 4.5: Students' responses on subsidized secondary education and demand for TVET

Response	Frequency	Percentage
Strongly Agree	10	20%
Agree	31	62%
Uncertain	2	4%
Disagree	5	10%
Strongly disagree	2	4%
Total	50	100%

Majority (82%) of the students agreed that subsidized secondary education had influenced people to seek education in technical and training institutions. These findings show that subsidized secondary education increased the demand for courses

offered in in Technical and Vocational Education and Training institutes. These findings are in agreement with (Akaranga, 2012) who established that the subsidized secondary education recorded a high increase in enrolment which resulted in a large number of KCSE graduates who could not get vacancies in the formal tertiary institutions. As a result, many turned to technical and vocational education and training institutes.

4.8 Introduction of new courses and demand for TVET

Question four of the study sought to establish whether introduction of new courses influences demand for Technical and Vocational Education and Training in Nyeri County.

4.8.1 Principals responses on introduction of new courses and demand for TVET

The study sought to find out from the principals of TVET institution the effect of introduction of new courses on the demand for TVET. The findings would enable the study answer question four of the study which sought to establish whether introduction of new courses influences demand for Technical and Vocational Education and Training in Nyeri County.

Both of the heads of Technical and Vocational Education and Training institutions in the study indicated that introduction of new courses increased demand for TVET. The principals explained that the introduction of new courses gives potential candidates a wide variety of courses from where to choose from hence increasing demand. These

findings are in agreement with the results of Simiyu (2009) who discovered that introduction of new courses was accompanied by higher enrollment of students.

4.8.2 HODs responses on introduction of new courses and demand for TVET

The study sought to find out from the heads of departments in TVET institutions the effect of introduction of new courses on the demand for TVET. The findings would enable the study answer question four of the study which sought to establish whether introduction of new courses influences demand for Technical and Vocational Education and Training in Nyeri County.

All heads of departments (n=12) shared the principals' sentiments that new courses increased demand for Technical and Vocational Education and Training institutes. The HODs explained that new courses helped to serve individual interests in that students get a wider choice of courses to select from.

4.8.3 Students' responses on introduction of new courses and demand for TVET

The study sought to find out from the students the effect of introduction of new courses on demand for courses offered in Technical and Vocational Education and Training institutes. The findings would enable the study answer question four of the study which sought to establish whether introduction of new courses influences demand for Technical and Vocational Education and Training in Nyeri County.

Table 4.6: Students' responses on introduction of new courses and demand for TVET

Response	Frequency	Percentage
Strongly Agree	19	38%
Agree	26	52%
Disagree	5	10%
Total	50	100%

Majority (90%) of the students agreed that introduction of new courses increased demand for courses offered in Technical and Vocational Education and Training institutes. This shows that introduction of new TVET courses enhanced the demand for TVET. The findings are in agreement with Simiyu (2009) who in a case study of Kaiboi Technical training institute found that introduction of new courses was accompanied by higher enrollment of students.

4.9 Major factor increasing the demand for TVET courses

Among the factors under investigation, the respondents were asked to pick the factor which in their opinion affected the demand for courses in TVETs the most. This was important for the study to establish the factors that influence the demand for Technical and Vocational Education and Training in Nyeri County most.

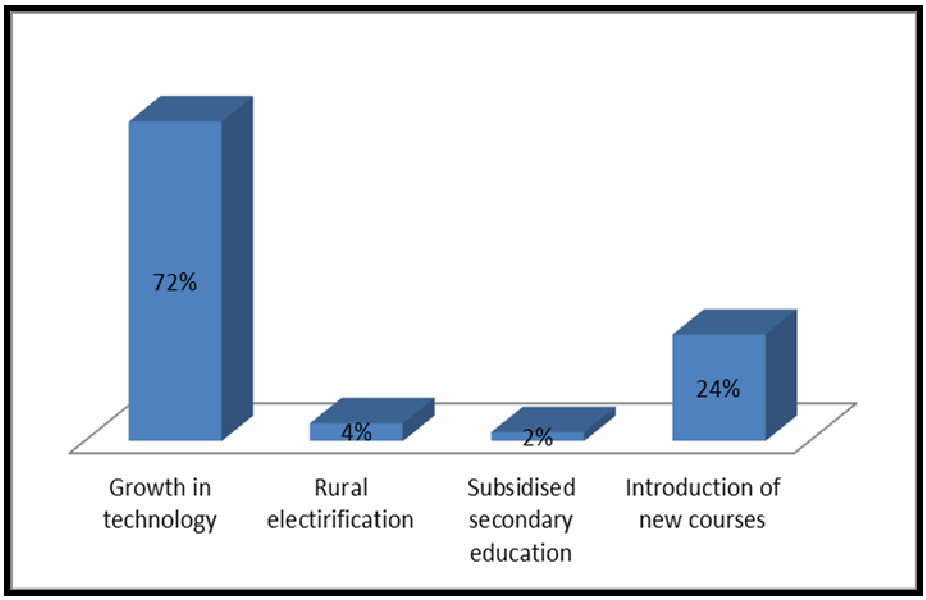

Figure 4.5 Major factor increasing the demand for TVET courses

According to the majority (72%) of respondents, growth in technology is the factor fuelling the demand for TVET courses the most. This can be attributed to fast paced growth of technology especially in information technology which has opened up new opportunities which were not present a decade ago. These opportunities require skills, skills that can be gained by pursuing technical courses offered in Technical and Vocational Education and Training institutes in Nyeri County.

4.10 Other factors increasing demand for TVETs

The respondents in the study were asked to list other factors increasing demand for courses offered in Technical and Vocational Education and Training institutes. This was important for the study to establish other factors that influence the demand for

Technical and Vocational Education and Training in Nyeri County other than the ones under investigation in the study.

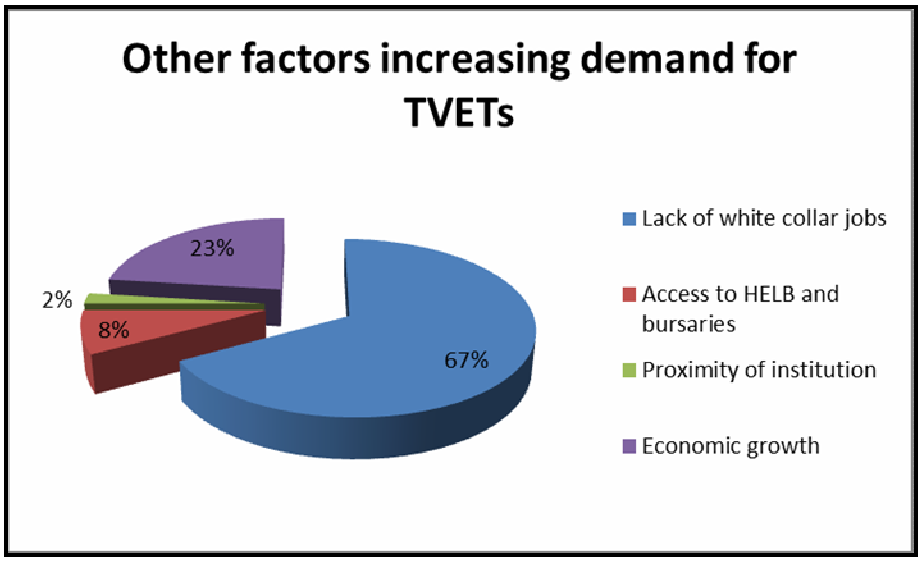

Figure 4.6 Other factors increasing demand for TVETs

According to the majority (67%) of the respondents, joblessness due to lack of adequate white collar jobs has led to increased demand for courses offered in Technical and Vocational Education and Training institutes. The economic growth was another strong factor that came out. According to the respondents, the improved economy has led to more disposable income which means more and more people are able to educate their children up to tertiary levels.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section presents a summary of the major findings of the study. In addition, the section presents conclusions made from the findings in relation to the factors that influence the demand for Technical and Vocational Education and Training in Nyeri County. Recommendations made by the researcher are also presented.

5.2 Summary of the study

The purpose of this study was to investigate the factors that influence the demand for Technical and Vocational Education and Training in Nyeri County. The study sought to achieve this by assessing the influence of growth in technology, rural electrification, subsidized secondary school education as well as introduction of new TVET courses on the demand for Technical and Vocational Education and Training. The study sampled 53 final year students, 2 principals and 12 heads of departments drawn from the 2 technical and training institutes in Nyeri County to participate in the study. Data was collected using questionnaires and interview schedule. Quantitative and qualitative techniques were employed in data analysis. The following are the major findings of the study presented in the order of the study objectives.

On the first question of the study as to how the growth in technology influences demand for Technical and Vocational Education and Training in Nyeri County, both

of the TVET principals in the study agreed that growth in technology had influenced demand for Technical and Vocational Education and Training. Majority (75%) of the heads of departments opined that the growth in technology had a high effect on the demand for Technical and Vocational and Education and Training. Majority (82%) of the students agreed that growth in technology had led more and more people to seek education in for Technical and Vocational Education and Training institutions.

On the second question of the study as to how rural electrification influences demand for Technical and Vocational Education and Training in Nyeri County, both of the heads of TVET institutions who participated in the study agreed that rural electrification had increased the demand for Technical and Vocational Education and Training courses. Majority (83%) indicated that rural electrification had a high effect on the demand for Technical and Vocational Education and Training courses. Majority (56%) of the students' agreed that availability of electricity in rural areas had influenced people to seek education in Technical and Vocational Education and Training.

On the third question of the study as to how subsidized secondary education influences demand for Technical and Vocational Education and Training in Nyeri County, both of the head teachers agreed that subsidized secondary education had increased the demand for courses offered in Technical and Vocational Education and Training institutes. All the heads of departments (n=12) in the study indicated that subsidized secondary education had increased demand for courses offered in Technical and Vocational Education and Training institutes. Majority (82%) of the

students agreed that subsidized secondary education had influenced people to seek education in technical and training institutions.

On the fourth question of the study as to how introduction of new courses influences demand for Technical and Vocational Education and Training in Nyeri County, both of the heads of Technical and Vocational Education and Training institutions in the study indicated that introduction of new courses increased demand for TVET. All heads of departments (n=12) shared the principals' sentiments that new courses increased demand for Technical and Vocational Education and Training institutes. Majority (90%) of the students agreed that introduction of new courses increased demand for courses offered in Technical and Vocational Education and Training institutes.

5.3 Conclusions

Growth in technology influences the demand for courses offered in Technical and Vocational Education and Training institutes in Nyeri County. In fact, among the factors, under investigation, growth of technology emerged as the factor with the highest influence. Growth of technology influences demand for TVET in that technology and especially information technology has opened up new markets and opportunities which require skills which can be got from courses offered in TVETs.

Rural electrification influences demand for courses offered in Technical and Vocational Education and Training institutes in Nyeri County. This is because as the study found, rural electrification empowers people residing in rural areas to startup

business; those businesses that require skills such as welding and construction force such people to pursue courses in the respective courses. These courses are available in TVETs.

Subsidized secondary education influences demand demand for courses offered in Technical and Vocational Education and Training institutes in Nyeri County. This is because subsidized secondary enables more parents to pay and clear their children's fees to enable them graduate from high school. This phenomenon brings with it a high turnover and transition rate from secondary schools increasing the demand for TVET.

Introduction of new courses n influences demand for courses offered in Technical and Vocational Education and Training institutes in Nyeri County. Introduction of new courses means that students can chose courses that are within their interests. This attracts more students to pursue such courses increasing the enrollment in TVETs.

5.4 Recommendations

The government should provide impetus to the citizenry to promote growth in technology in other areas apart from ICT such as farming and alternative energy.

The government should combine rural electrification with improvement in the road infrastructure to enable growth of entrepreneurship and building of more TVETs in rural areas.

TVET institutions should raise the entry grade so that such institutions are not seen as fall backs for students who fail to qualify for university.

The government should empower available TVETs to provide more courses instead of converting them into universities.

5.5 Suggestions for further studies

The current study focused on the factors that influence the demand for Technical and Vocational Education and Training in Nyeri County. The study did not however look into the quality of education and graduates produced. Future studies should concentrate on finding out the quality of TVET graduates.

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APPENDICES

Appendix I: Letter of introduction

University of Nairobi

College of Education and External Studies,

Department of Educational Administration & Planning

P. O. Box 30197

Nairobi

……

P. O. Box…….

Dear Sir/ Madam

RE: REQUEST TO COLLECT DATA

I am a post-graduate student currently working on my research project to investigate and analyse the factors that influence the demand for Technical and Vocational Education and Training in Nyeri County. Your institution has been selected through sampling to participate in the study. I hereby request your permission to collect data from yourself, heads of department and graduating students. Your assistance will be highly appreciated.

Yours faithfully,

Mercy Heti Muriithi

Appendix II: Questionnaire for students

The objective of this Questionnaire is to collect data on factors that influence the demand for Technical and Vocational Education and Training in Nyeri County. Kindly read the items carefully and provide a response that best represents your opinion. To provide confidentiality, do not indicate your name on the questionnaire. The questionnaire has several sections. Please answer accordingly with a tick in the provided gaps.

Section A: Demographic profile

1. What is your gender?

- ☐ Male
- ☐ Female

2. What is your age?

- ☐ 18 – 24 years
- ☐ 25 – 30 years
- ☐ 31- 35 years
- ☐ 35 – 40 years
- ☐ Over 40 years

3. What course do you pursue?

- ☐ Engineering course
- ☐ Food and Beverage/Catering
- ☐ Clothing/textile/fashion
- ☐ Carpentry/metalwork

- ☐ Art/music
- ☐ Accounting

Others (specify)…….……..

4. Why did you choose to pursue your course in this institution?

- ☐ It offered the courses I want
- ☐ It is close to home
- ☐ It was affordable to my parents
- ☐ It is close to home
- ☐ My grade could not qualify for other institutions
- ☐ Others (specify)……..

B: Factors that influence the increased demand for Technical and Vocational Education and Training

5. Growth in technology has led many people to seek education in Technical and Vocational Education and Training institutions

- ☐ Strongly agree
- ☐ Agree
- ☐ I don't know
- ☐ Disagree
- ☐ Strongly disagree

6. Give a reason for your answer in question 5.

……

……

7. Availability of electricity in rural areas have influenced people to seek education in Technical and Vocational Education and Training institutions

- ☐ Strongly agree
- ☐ Agree
- ☐ I don't know
- ☐ Disagree
- ☐ Strongly disagree

8. Give a reason for your answer in question 7.

……

……

9. Subsidized secondary education has influenced people to seek education in Technical and Vocational Education and Training institutions

- ☐ Strongly agree
- ☐ Agree
- ☐ I don't know
- ☐ Disagree
- ☐ Strongly disagree

10. Give a reason for your answer in question 9.

……

……

11. Introduction of new courses has influenced people to seek education in Technical and Vocational Education and Training institutions

- ☐ Strongly agree
- ☐ Agree
- ☐ I don’t know
- ☐ Disagree
- ☐ Strongly disagree

12. Give a reason for your answer in question 11.

……

……

13. Which of these factors do you think has influenced the demand for education in technical and vocational institutions the most?

- ☐ Growth in technology
- ☐ Availability of electricity in rural areas
- ☐ Subsidized secondary education
- ☐ Introduction of new courses

14. What other factors do you think have influenced the demand for education in technical and vocational institutions?

……

……

Appendix III: Interview schedule for heads of TVETs

The purpose of this interview is to collect information on the factors influencing the demand for Technical and Vocational Education and Training in Nyeri County. Please answer accordingly with a tick in the provided gaps. Please answer the questions to the best of your knowledge.

1. Please comment on the demand for Technical and Vocational Education and Training.

   ……

   ……

   ……

2. How does growth in technology influences demand for technical and vocational education and training in your institution?

   ……

   ……

   ……

3. How rural electrification does influences demand for technical and vocational education and training in your institution?

   ……

   ……

   ……

4. How does subsidized secondary education influences demand for technical and vocational education and training in your institution?

……

……..

……

……

5. How does introduction of new courses influence the increase in demand for Technical and Vocational Education and Training in your institution?

……

……..

……

6. What other factors influence the increase in demand for Technical and Vocational Education and Training in your institution?

……

……..

……

Appendix IV: Interview schedule for heads of departments in TVETS

The purpose of this interview is to collect information on the factors influencing the demand for Technical and Vocational Education and Training in Nyeri County. Please answer accordingly with a tick in the provided gaps. Please answer the questions to the best of your knowledge.

1. Please comment on the demand for Technical and Vocational Education and Training

……

……..

……

2. How does growth in technology influences demand for technical and vocational education and training in your institution?

……

……..

……

3. How does rural electrification influences demand for technical and vocational education and training in your institution?

……

……..

……

4. How does subsidized secondary education influences demand for technical and vocational education and training in your institution?

……

……..

……

5. How does introduction of new courses influence the increase in demand for Technical and Vocational Education and Training in your institution?

……

……..

……

6. What other factors influence the increase in demand for Technical and Vocational Education and Training in your institution?

……

……..

……

Appendix V: Research Authorization Letter

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telephone: 254-020-2213471, 2241349, 254-020-2673550
Mobile: 0713 788 787 , 0735 404 245
Fax: 254-020-2213215
When replying please quote
secretary@ncst.go.ke

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: **NCST/RCD/14/013/899** Date: **30th May 2013**

Mercy Heti Muriithi
University of Nairobi
P.O Box 92-0902
Kikuyu.

RE: RESEARCH AUTHORIZATION

Following your application dated **23rd May 2013** for authority to carry out research on ***"Factors influencing demand for technical and vocational education and training in Nyeri County, Kenya."*** I am pleased to inform you that you have been authorized to undertake research in **Nyeri District** for a period ending **30th June, 2013.**

You are advised to report to **the District Commissioner and District Education Officer, Nyeri District** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. M. K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY

Approved 7/7/2013

RECEIVED - 07 JUN 2013 NYERI CENTRAL

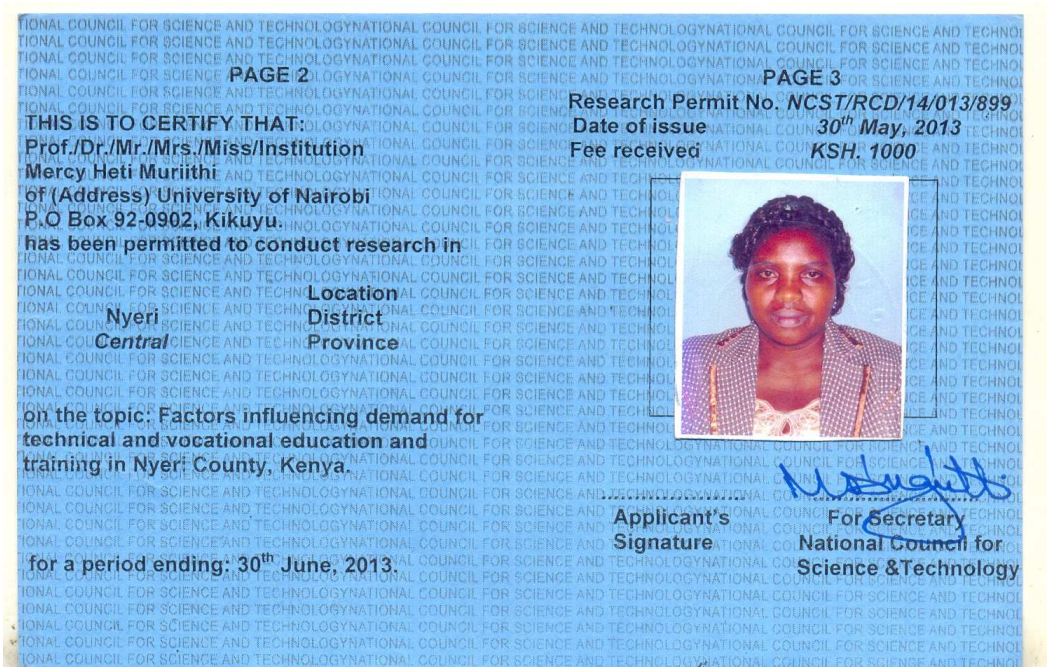
Copy to:
The District Commissioner
The District Education Officer
Nyeri District

Authorized
D. Ntegue W
For the DEO
Nyeri Central

DISTRICT EDUCATION OFFICER NYERI

"The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development".

Appendix VI: Research Permit



PAGE 2

THIS IS TO CERTIFY THAT:
Prof./Dr./Mr./Mrs./Miss/Institution
Mercy Heti Muriithi
of (Address) University of Nairobi
P.O Box 92-0902, Kikuyu.
has been permitted to conduct research in

Location	
Nyeri	District
Central	Province

on the topic: Factors influencing demand for technical and vocational education and training in Nyeri County, Kenya.

for a period ending: 30th June, 2013.

PAGE 3

Research Permit No. *NCST/RCD/14/013/899*
Date of issue *30th May, 2013*
Fee received *KSH. 1000*

Applicant's Signature

For Secretary
National Council for Science &Technology