DETERMINANTS OF INCOME GENERATING ACTIVITIES CHOICES IN SECONDARY SCHOOLS IN KENYA: A CASE OF NYAMIRA DISTRICT, KISII, KENYA

BY

MAYORA THOMAS NYANDEMA

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTER OF PHILOSOPHY DEGREE IN ECONOMICS OF EDUCATION
SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATIONAL MANAGEMENT AND POLICY STUDIES
MOI UNIVERSITY

OCTOBER, 2010

DECLARATION

This thesis is my original work and has not been presented for the award of a degree in any University. No part of this thesis may be reproduced without the prior permission of the author and/or Moi University.

_____ _____

MAYORA THOMAS NYANDEMA **DATE**
EDU / PGES / 1003 / 06

DECLARATION BY SUPERVISORS

This thesis has been submitted for examination with our approval as University supervisors.

_____ _____

DR. NDEGE TOM **DATE**
Lecturer,
Department of Educational Management and Policy Studies,
Moi University.

_____ _____

MR. KOSGEI ZACHARY **DATE**
Lecturer,
Department of Educational Management and Policy Studies,
Moi University.

DEDICATION

This thesis is dedicated to my parents James Nyandema Mogaka and Trusilah Opande, my dear wife Linet Nyatichi, my children Brian Mogaka and Sandra Kemuma, and my lovely sisters and brothers for their support, love, prayers and encouragement.

ACKNOWLEDGEMENT

My sincere gratitude goes to my supervisors, Dr.Tom Mongare Ndege and Mr. Zachary K. Kosgei for guiding me throughout this study. I am also grateful to principals and persons in-charge of income generating projects in secondary schools who were involved in the study for availing themselves as respondents. Thank you and May God bless you all.

ABSTRACT

The purpose of this study was to investigate the determinants of the income generating activities in Secondary Schools in Kenya. The study was based in Nyamira District in Nyanza Province, Kenya. This was to establish the relationship between the initial capital of an income-generating project, operational costs, school and headteacher characteristics and income generating choices. The study used rational decision-making model, as its conceptual framework. The research was conducted through a descriptive survey design. The target population was 79 secondary schools in Nyamira district,their headteachers and persons in charge of income generation projects. Stratified sampling techniques were used to classify schools into types and gender categories. Purposive sampling technique was used to pick the 2 boys' and 3 girls' schools and respondents. Stratified random sampling technique was used to pick 8 partially boarding schools and 17-day schools to make the sample of 30 secondary schools. The researcher used questionnaire and interview schedule for data collection. The Pilot study was carried out in 2 schools. The data collected was analyzed using both descriptive and inferential statistics. Pearson moment correlation coefficient and chi-square analysis were also used to find out whether there was any relationship between the independent variables and the dependent variable. The study revealed that there was no relationship between the school's operational, school gender, head teacher's age and professional qualifications had no relationship with the income generation choices. The variables, initial capital and yearly operational costs of an income-generating project were found to have a positive relationship with income generation choices in secondary schools. In light of the findings, it was recommended that emphasis should be placed on identifying factors that lead to better income generating choices. When identified, ways and means should be put in place to maximize these factors so as to enhance income generation in secondary schools. School managers should look for ways that improve the financial ability of schools with regard of availing the initial capital for project initiation. The government should look for a way of assisting schools to access funds once they have initiated income generating projects in their schools. This will lead to a mode of financing which gives due considerations to the aspect of sustainability of the projects.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

GOK- Government of Kenya.

ECDE- Early Childhood, Development and Education.

GDP - Gross Domestic Product.

TMF - Teach a Man to Fish.

NGO – Non-Governmental Organization.

IGA – Income Generating Activities.

CHAPTER ONE

INTRODUCTION

This section covers the background of the study, the statement of the problem, purpose of the study, the objectives of the study, research questions, significance of the study, scope, limitations of the study, conceptual framework and definitions of terms.

1.0 Background of the Study

The cost of education in Kenya has continued to rise (Kosgei, Maiyo and Chepkirui, 2006). The brunt of this has been borne by parents through the policy of cost sharing (GOK, 1999). This situation has been aggravated due to rising demand for education. The GOK (2005) notes that since independence, the number of students enrolled at various levels of education has substantially increased. At Early Childhood, Development and Education (ECDE) enrolment grew from 483,148 children in 1982 to 894,295 children in 2003. At the primary school level enrollment in formal public primary schools grew from 891,533 pupils in 1963 to 7.2 million pupils in 2004. At the secondary level enrolment grew from 30,000 students in 1963 to 862,906 students in 2003.

Ngware, Onsomu, and Muthaka, (2007) notes that currently there are about 4,300 public and private secondary schools in the country, which are not adequate to cope with the large number of pupils completing primary education. At a class/pupil ratio of 1:45, 3,515 new classrooms will be required annually for the next four years to meet the needs. The total enrolment in public universities has increased from 3,443 students in 1970 to 58,017 students in 2003 / 2004. In the 2003 / 2004 academic year, the total number of those enrolled in public and private universities rose to 67,558. The teacher training sub-sector's enrollment increased from 14,316 in 1999 to 16,794 in 2003,

(Ngware et al 2007). Increasing demand for education on public finance can only be resolved by either finding additional sources of financial support or reducing unit costs through greater efficiency (World Bank 1980).

GoK (2005) notes that in the financial years 1999/2000 – 2003/2004, the Ministry of Education took more than a half of the Central Government Expenditure on social services. The expenditure on education during this period rose by 32 Millions from 48 Millions to 80 Millions Shillings. GoK (2005) notes that the current heavy investments that is borne to a larger extent, by the government alone, calls for a review to ensure collaboration and partnership with other stakeholders. Without a working partnership on financing of education, it will be hard to address the problem of poor access, inequity, low quality and the current household financial burden, where the average expenditure by the households, amounts to 200% of the total per capita income measured by consumption of the poorest 20% of the Kenyan household (GOK ,2005). The high number of the poor, who cannot afford secondary school fees, makes matters worse.

When the Kenyan government promised to provide free secondary education in 2006, many parents were elated. Under the programme, the government pays tuition fees while the parents cover boarding costs and purchase uniforms. However, due to the government's inability to provide the funds in time, some school administrators have been forced to run the institutions on credit line, while others have opted to reinstate tuition fees to avoid closing down (Mawathe, 2008). The result has been a deluge on the system that has left education crippled and in danger of collapse (Hoerrner,2007). At present, about 60%, of household live below the poverty line. It is due to poverty

that secondary schools are said to be owed huge arrears, estimated at Kshs. 12 Billion by 2006 (Ngware et al, 2007).

Republic of Kenya (1989 – 1993) as cited in Kosgei (2001), noted that if this increasing claim of the education system on national resources was allowed to continue along the same trend, it would adversely reduce the resources available which were meant to meet the growth target set out in the development plan of the country. It should be noted that, Kenya just like any other developing country, does not have inexhaustible source of funds and cannot, therefore, keep on allocating more of the public revenue to education sector (Kosgei, 2001). This observation tends to agree with Psacharopoulos and Woodhall (1985) who observed that although the social and private rates of return to investment in education still seem to be high and the private demand remains strong, many governments are no longer willing to allocate an increasing share of public expenditure to education.

This has led to education facing constraints. Efforts are being put into research and analysis of alternative methods of financing education, particularly cost recovery and the distribution of the financial burden of investing in education. Ominde (1964) Gachathi (1976) and Mackay (1981) through their education commissions, made recommendations aimed at fostering the significance and quality of education. Among their recommendations is the need for adequate financing of education programmes.

Atkinson (1987) notes that it is costly, for any country's educational sector to face a financial burden. Finance is one of the major inputs of education with which the efficient utilization of the other inputs is possible for the achievement of the goals of Education. Coombs (1969) noted that with too little money, education can be

helpless; with amble supply its problems become more manageable even though they do not varnish. This observation points out a serious need for institutions of learning to come up with ways and means of availing financial resources, to make education manageable.

In 1985 the government of Kenya called for new ways of financing education. A move which led to the parents shouldering more financial burden, particularly development projects. The GOK (1999) notes that the idea of income generation in secondary schools is now seen as a viable alternative means of sourcing for educational funds. Some educational institutions in this country have such assets as large pieces of land, real estate, and conference halls and sports grounds, including swimming pools, all of which can be used to generate income. Although fears have been expressed that commercialization of educational facilities can adversely affect the real mission of these institutions, it does not make sense for an institution to suffer financial constraints when it has unexploited income-generating potential.

Njeru and Orodho (2003), points out that activities through which the GOK expects schools to generate revenues include;

- Income generating projects in schools, such as crops, keeping dairy animals, and poultry.
- Renting out houses to staff at subsidized rates. Recently, the government adjusted the teachers' house allowances out of which the teachers are required to rent the BOG houses at subsidized market rates in order to generate income for the schools.
- Hiring out school facilities such as vehicles, halls, and public address systems.

- Seeking financial support from donors and NGOs.
- Fund raising by individual schools.

Ogada (2005) however argues that income generating activities started earlier in secondary schools compared to universities. Schools have owned farms and participated in farming activities, and have also provided catering services. These activities have, however, been considered more of a service than for income generation. In Nyamira District, Secondary schools have capacity for starting a variety of income generation activities. However, some schools end up choosing one or two projects some of which have a very short lifespan. Schools in the Nyamira district make income generating activities choices which do not contribute much in assisting schools to solve financial problems.

1.1 Statement of the Problem

Secondary School education attracts various categories of costs. These costs include tuition and boarding fees. At the household level, the average student cost for secondary education is Ksh25, 900 for a boarding school and Ksh10, 500 for day school. This average expenditure by households amounts to 200 percent of the total per capita income measured by consumption of the poorest 20 percent of the Kenyan households. According to the welfare monitoring survey II, household contribution to secondary education increased by 51.4 percent between 1994 and 2002 (GoK, 2005).

Ngware, Onsomu, Muthaka and Manda (2006) noted that lack of school fees was the main reason why most (33 percent) secondary school going-age children were not in school. A point which the Kenya secondary schools heads Association(KSSHA)

concurred with when it stated that parents owed secondary schools huge amounts of money in form of fees arrears, which was estimated at Kshs. 12 billion by 2006.

When the Kenyan government promised to provide free secondary education in 2006, many parents were elated. Under the programme, the government was supposed to pay tuition fees while the parents were supposed to cater for boarding costs and purchase of uniforms. However, due to the government's inability to provide the funds in time, some schools administrators were forced to run the institutions on credit line, while others opted to reinstate tuition fees to avoid closing down (Mawathe, 2008).Mawathe's argument concur with Hoerrner(2007) who in his article 'Free education for children in Kenya? A free education it's not,' observed that;

> *When the Kenyan government issued the edict of free education for all children in the country, it didn't consider the cost. Some parents in the U.S. pay as much as $ 15,000 per year for a single child to attend private school. In Kenya, the price is closer to $2,000, far out of the reach of most Kenyans who raise families on a couple of dollars a day. Until recently, even public school were costly-$150 a year- and still unattainable for the average family, especially if the family had more than one child. But recently the Kenya government, spurred by a trend of education reform in Africa, opened up public education to all children in the country. The result has been a deluge on the system that has left education crippled and in danger of collapse (p.1).*

Given that more than 56 percent of households in Kenya are poor (GOK 2005), cost reduction strategies would promote enrollment, as households' burden would be low. One of the mechanisms of reducing costs related to secondary school education is to urge Secondary schools in Kenya to engage in income generating activities as a viable alternative sourcing for educational funds (Nafukho, 1991). As Ogada (2005) puts it, there is a huge number of potential income generating activities in which a secondary school may be involved.

In Nyamira District, Secondary schools have capacity for starting a variety of income generation activities. However, some schools end up choosing one or two projects some of which have a very short lifespan. On the other hand, some of the schools in the district do not have even a single income-generating project, despite the fact that they are suffering financial constraints as a result of unpaid school fees. There is a problem in secondary schools in Nyamira district, in that the choices of IGA they make, do not do well in terms of income generating, and hence not doing much in minimizing the financial suffering that schools face. GOK (1999) notes that it does not make sense for an institution to suffer financial constraints when it has unexploited income generating potential. This study, therefore, was intended to identify the determinants of income generating activities choices in secondary schools in Nyamira district.

1.2 The Purpose of the Study

The purpose of the study was to investigate the determinants of the income generating activities choices in Secondary schools in Nyamira District.

1.3 Objectives of the Study

The specific objectives of the study are to:

- Find out the relationship between the school and headteacher characteristics and income generation choices.
- Find out the relationship between the initial capital of an income generating project and income generation choices.

- Investigate the relationship between operational costs of an income generation project and income generation choices.

1.4.0 Major Research Question

In order to meet the purpose of the study the researcher formulated a major research question and Subsidiary Research Questions

1.4.1 Major Research Question

What are the determinants of income generation activities choices in secondary schools in Kenya?

1.4.2 Subsidiary Research Questions

- What is the relationship between the school and headteacher characteristics and income generation choices?
- What is the relationship between the initial capital of an income generating project and income generation choices?
- What is the relationship between operational costs of an income generation project and income generation choices?

1.5 Significance of the Study

This study investigated the determinants of income generation activities choices in secondary schools in Kenya. Data obtained will be useful in many ways.

i) The study would assist the school administration and managers to understand the income generating input variables which will help in improving Income generating choices.

ii) It would provide valuable information to secondary schools administrators and managers in their attempts to improve their state of finance and income choices.

iii) It will provide vital information to policy makers on inputs associated with income generation choices

1.6 Scope of the Study

This study was conducted in Nyamira District in Nyanza province in Kenya. The study involved the principals and persons in charge of Income Generating projects in secondary schools in Nyamira District. The study focused on determinants of Income Generating Activities in secondary schools. It concentrated on the factors identified in the literature review as having an influence on Income Generation project choices in secondary schools. However, it must be observed that the choice of the area did not render other parts of the country less significant.

1.7 Limitations of the Study

The study was faced with the following limitations;

i) Absence of records on Income Generation projects in secondary schools was considered as one of the limitations of this study.

ii) It is common that most institutions are known to be suspicious of strangers and investigation and, therefore, only release limited information. However, a letter of introduction provided assurance of confidentiality of the information collected, thus reducing the impact of this limitation on the study findings.

iv) Another limitation of the study was the small number of the schools sampled. This was due to a limited financial outlay and time constraints. The sampled

number may not have guaranteed the researcher to use powerful inferential statistics, which require a large sample.

1.8 Conceptual Framework

This study was based on the econologic (rational or classical) model of decision-making in educational management. The econologic model represents the earliest attempt to formulate a decision making model. The model assumes that people are economically rational and that they attempt to maximize outcomes in an orderly and sequential process. This implies that: first, when managers make decisions, they are choosing from available alternatives. Secondly, managers have alternatives available when they are making a decision, and it does require wisdom and experience to evaluate several alternatives and select the best one. Thirdly, managers have a purpose in mind, thus carefully making a choice among alternatives. The decision brings them closer to some goal.

In a decision making process three sets of characteristics are identified. The first set refers to those characteristics of the decision maker. This includes how knowledgeable the headteacher is about the problem; the headteacher's ability to solve the problem; and his or her level of motivation towards solving the problem. The second set of characteristics refers to the characteristic of the problem itself – is it familiar or unfamiliar, certain or uncertain, complex or simple, stable or unstable. The third set of characteristic refers to the decision's environmental characteristic such as availability of resources and the significance of the decision. The model assumes that individuals are capable of gathering all the necessary information to enable them make a decision.

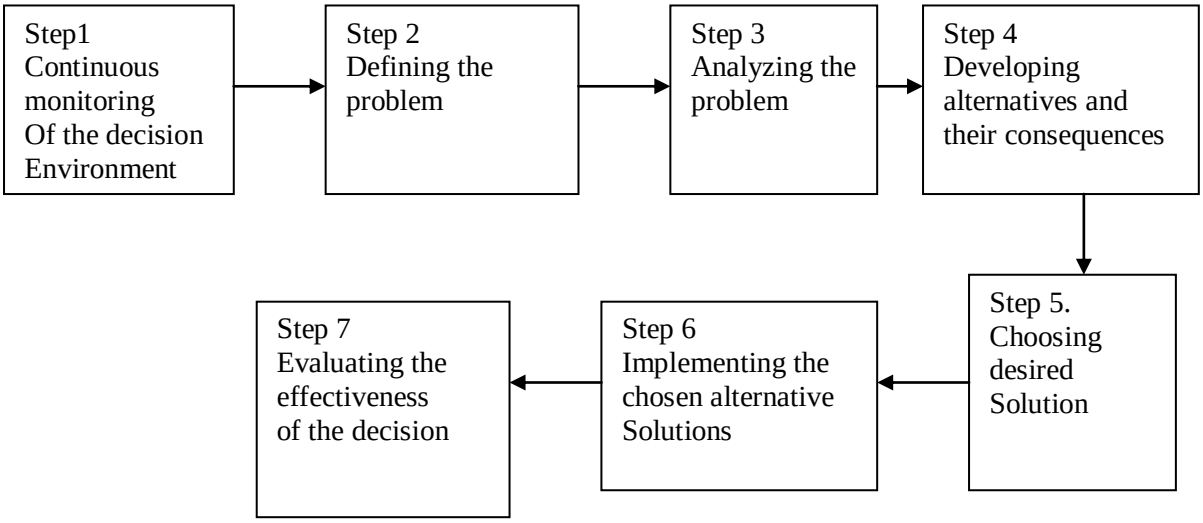

Figure 1: The Econologic Model

(Steers, 1991).

Ogada (2005) wrote that:

> *Critical analysis is required in order to identify the various Income Generating Activities in which a secondary school may be involved. There are a huge number of potential Incomes Generating Activities. This poses a direct difficulty to a principal or manager to decide on the Income generating activities to pursue. A way out is to catalogue all the potential Income-Generating Activities and analyze them (p.5).*

The decision making process can in this light, therefore, be seen as important in Income Generation Activities choices in secondary schools.

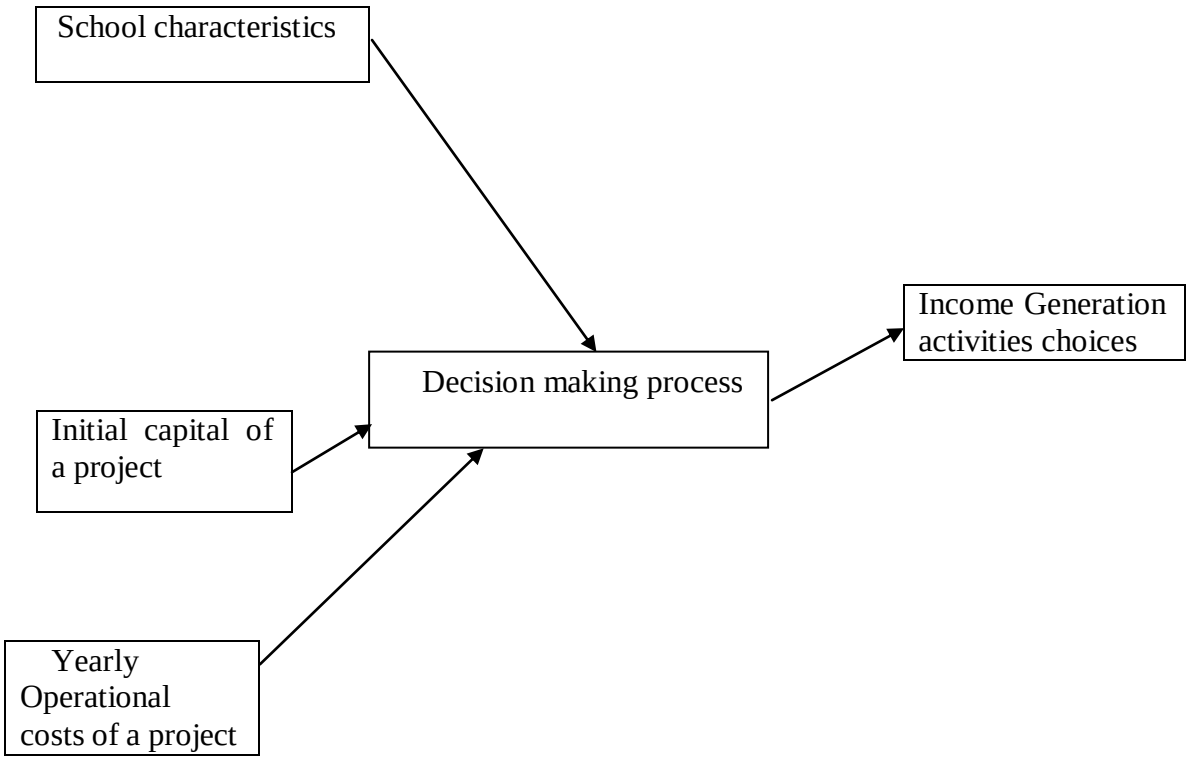

Figure 2: The Conceptual framework

The conceptual framework indicates that before schools arrive at their respective Income Generation Activities Choices, the school characteristics, the principals' characteristics, the initial capital and yearly operational costs of an Income Generation project, should be considered in the decision making process.

The study's variables were explained using the following utility function;

$U = f(I, G)$

Where;

U = Income realized by the school rather than the school fees.

I = Income generating choices.

G = Government funding

Where;

$I = f(IC, OC, SC, Z)$

Where;

I = Income generating Choices.

IC= Initial Capital of an income generating project.

OC = Operational Costs of an income generating project.

SC= School Characteristics.

Z = Other factors.

1. 9. Definition of Terms

Income generating projects

Refers to projects initiated by secondary schools to raise income for school expenditures. These include agricultural projects, hiring out idle resources and rendering services.

School characteristics

Refers to school operational status (type) that is whether the school is boarding or day and School gender that is whether the school is a boys' school, a girls' school or mixed school.

Headteacher's characteristics

Refers to the headteacher's age and Professional qualification.

Persons in-charge of IGA-Persons hired by Board of governors to manage IGA.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section concerns review of literature on the area under study. The aim was to put the current study in proper perspective, and to update the researcher on the work, which others have done in the area of study. This helped the researcher in delimiting and defining the problem.

2.1 General Review of Literature

The World Development Report (2007) focuses on education and justifies this, in part, based on demographic evidence which reveals that many developing countries are now in, or soon to enter a period of peak (Youth Population, World Bank, 2006). The report argues that there are substantial returns to investment in human capital formation, and such interventions are most effective during childhood and adolescence. We are entering a window of increased opportunity – developing countries that are able to support education today, will reap the economic rewards tomorrow. Keith (2008) using case studies in his study on seeking sustainable financing for secondary schooling in sub-Saharan Africa observed that;

> *The role of education and human capital in promoting the growth of economies and improvements in human well-being are broadly recognized. The contribution of primary education is well documented. Recent research findings also highlight the significant additional contributions to economic growth and social outcome that secondary education and training can make. Conversely, sustained economic growth is essential if the resources necessary for accelerated secondary education development are to be mobilized. Secondary education and training in sub-Saharan Africa faces the challenge of improved efficiency and improved Quality simultaneously with a fast growing demand. Sustainable financing will also require more effective public-private partnerships, because governments have many priorities and do not have a lot of room for significant additional public funding of post-primary systems (Keith, 2008 p.ix).*

Over the past 25 years, great achievements have been made in providing universal primary education across the globe. Between the world conference on education in 1990 and 2002, in Sub-Saharan Africa and South Asia, primary school enrolment grew yearly by around 40million. For many countries in the developing world, the official primary school enrolment rate is now approaching 100% (World Bank 2006). The government of Kenya concurs with the World Bank by a asserting that transition rate from primary to secondary school has risen from 45% in 2003 to 60 % in 2006 and this trend is expected to continue. It is only matter of time before the high enrolment rates that have been in primary school move to secondary school (Opondo, Namunane, and Orlale, 2007). Keith (2008) further points out that;

> *Based on official entry ages, the primary-school-age population appears set to increase by about 35 percent between 2002 and 2015, from about 207 million to 280 million. The number of lower-secondary-school-age children is projected to rise from 49.2 million to 66.2 million, while the number of upper-secondary-school-age youth is projected to rise from 45.1 million to 60.9 million (Keith, 2008 p.96).*

Behind these long-term opportunities lies the obvious question as primary school completion rates increase. Kafka and Stephenson, (2006) posed the question, how will developing countries' governments manage to cover the costs of providing sufficient places in post-primary education without resorting to inequitable measures such as fees?. The government of Kenya in assessing this situation, concludes that its better for the government to prepare for it now by creating a fund that will also assist in building schools and hiring teachers (Opondo, Namunane, and Orlale, 2007).

In relation to the question by Kafka and Stephenson, (2006), the government of Kenya asserts that the government is committed to reducing the cost of secondary education and it has implemented measures to that effect. It also realizes that it needs

to do more but this has to be in conjunction with others. It continues to note that in spite of these measures, secondary school education in boarding schools, is still expensive due to indirect charges which have led to Ksh 14 billion outstanding as unpaid fees by those who have completed school (Opondo, et al, 2007).

Keith (2008) in discussing the strategies for sustainable financing of secondary education in sub-Saharan Africa says that:

> *Increasing access to secondary education in Sub-Saharan Africa (SSA) is vital, for a variety of reasons. Across the region, the number of primary graduates is rising rapidly, as a result of successful Education for All (EFA) programs. The Millennium Development Goals (MDGs) commit countries to greater educational access to basic education, which generally includes lower-secondary grades. HIV/AIDS and violent conflict have degraded human resources, which need to be replenished. Poverty reduction requires more-equitable distribution of educational opportunities. Economic growth depends on investment in higher levels of knowledge and skills, enhanced by lower- and upper-secondary schooling. And curricula, learning, and teaching have to be reformed to improve relevance and increase effectiveness so that expanded enrollments contribute to development goals (Keith, 2008, p.59).*

Despite the importance of a secondary education, there are at least 700 million people in countries where gross enrolment rate are below 40%. Further 3 billion people live in countries where the gross enrolment rate hooves between 40% and 70%. The number of children who actually complete their secondary education is probably around half this enrolment (Lewis and Colloids, 2001). Funding is a key issue that could help to reverse these trends.

In the developing world, secondary school systems have not enjoyed the funding rises of their primary counterparts. For instance, the World Bank's lending to secondary education, declined from 50% of all lending during the 1970s to 10% of all lending by 1990. While lending has recovered to just over 20% in recent years, this is still less

than half of 1970 levels. It is calculated that $ 32 billion extra, needs to be spent a year, if global secondary education is to be achieved by 2015 (Cohen and bloom, 2006).

Shultz (1963) in his paper, the Economic Value of Education, noted that if education were free, people presumably would consume it until they were satisfied and they would "invest" in it until the returns would be zero. This puts it clearly that education attracts various categories of costs which have to be met (Bogonko, 1992). The meeting of these costs in educational institutions in many countries is a collective responsibility (Olel, 2000).

This argument is supported by Teach a Man to Fish (TMF), (2006) in its work 'Beyond fees: A guide to income generation in schools,' who assert that, schools have traditionally funded their activities from three key sources, that is charging fees, Government Grants and the altruism of others – religious groups, NGOs, wealthy individuals. Kafka and Stephenson (2006) in their work self-sufficient schools: fostering entrepreneurship to finance sustainable education. The work which was based on two case studies, assert that despite the great need and demand for education in developing countries, the wide-spread lack of its availability suggest that these sources are not sufficient. There is a fourth source: schools generating their own income.

The school should generate more of its own income. Whatever the current sources of funding, if a school had more income it might be able to: hire more teachers, improve school facilities, teach new subjects and reduce school fees and offer scholarships to poorer students. The determinants of the Income Generation Activities choices by secondary schools will be determined by the findings of this study.

In a study by Singh (1998) on school enterprises: combining vocational learning with production, it is observed that:

> *During the 1980s, much attention was given to the combination of education with production at the level of international co-operation in the field of education. In November 1981, the 38th session of the international conference on education adopted recommendation No. 37 on Interaction between Education and production work. It was recommended that member states should co-operate at various levels in the development of programmes and practices through exchange of information and experience, joint experiments and evaluation. In 1984,the Ninth Conference of Commonwealth Education Ministers was partly devoted to discussions on youth unemployment and in this context it was noted that the "criterion of production units within schools, and the integration of work experience with education" were among "a number of different ways of relating schools more closely to the world of work…UNESCO's International symposium on 'innovative methods in technical and Vocational education' held in 1989 in Hamburg, underlined further the international interest in production- oriented learning and teaching(Singh, 1998, P. 6).*

Income Generating Activities within a school can offer a practical environment in which to teach entrepreneurship skills. It can offer experience for the students in all aspects of learning a profitable business and vital feedback about whether approaches taught are up-to-date and capable of producing profit (TMF, 2006).

Singh (1998), in his study of school enterprises: combining vocational learning with production, used case studies from eleven countries and asserted that an important objective of schools' income generating project is the combination of technical and commercial/business curricula. Market analysis, accounting, marketing distribution of goods and services, costing, management and organization of production is considered an opportunity to enhance the curriculum of production lives, such as, tool-making and farming. The knowledge and skills of the students are job-specific which they can use in the provision of goods and services required in the community.

A further basic educational justification for combining learning with market production is learning through hands-on experiences. The close connection between production and education holds a major chance of avoiding the weaknesses of reality removed by technical and vocational education, thus making reality-based learning possible.

Mulinge (2002) in his paper**,** rethinking the role of the state in higher education in Africa in the 21st century: a case of the State as Financier, pointed out that;

> *Income generating activities also offer another viable substitute for state finances in higher education. Two activities are particularly recommended. First, universities should embrace an entrepreneurial (or corporatist) culture marked by involvement in directly productive enterprises. They should invest their monies in market enterprises that give them returns. Technical and professional faculties such as agriculture, law, business and engineering could take a leading role in the establishment of profit driven enterprises. To be more effective universities could establishment units exclusively responsible for investments and income generation. The second activity that is considered to be suitable within the context of income generating activities is consultancy projects undertaken by university staff. Out of such projects the institutions would get a certain percentage of funds accrued. In this regard it is recommended that institutions intensify the undertaking of consultancies for, and providing other services to, external bodies on a commercial basis. This is possible given the professional and technical capacities these institutions are endowed with, (Mulinge, 2002, p. 8).*

The notion of school Income Generating Activities is an approach to learning, involving an organized and direct interaction between the development of knowledge, skills and attitudes and values (competencies) and the production enterprises. The notion 'production enterprise' goes beyond productive activities in a narrow sense, where the specific term 'production enterprise' is used, it is meant to cover those work activities, such as, production process, organizing, planning, designing and marketing aimed at generating value. Only those productive activities in the context

of educational establishments fall in the category of school enterprises where there is a shared conviction about their pedagogical value and their economic necessity (Singh, 1998).

The income generating aspect of educational establishment is to be seen as enhancing the learning potential of learners and as a focus of reflective learning. Singh (1998) in his study on school enterprises: combining vocational learning with production, laud the importance of income generation projects in secondary schools and say that:

> *Despite the present decrease in international recognition given to the idea of vocationalisation in the context of general secondary education, the principle of combining education with production continues to remain an important feature of education and training systems in less developed countries on account of several reasons which arise primarily from its potential contribution to the diversification of finance and relevance of learning for everyday life (Singh, 1998, P. 6).*

The government of Kenya is greatly concerned over the tremendous increase in the costs of education (GOK, 1988). The average Government spending on education and training, excluding the share by households, has ranged between 5 and 7 percent of the GDP. At national level, spending on education amounts to 73 percent out of the social sector expenditure. Education recurrent budget has risen from 35 percent of public sector recurrent budget in 2000, to 39 percent in 2004. Also, development expenditure has increased since 2003 as a result of the implementation of the Free Primary Education (FPE), leaving little allocation to other sub-sectors (GOK, 2005).

Opondo, et al (2007) notes that the government is committed to reducing the cost of secondary education as much as possible and it has implemented measures to that effect . The government also realizes that in order to mobilize adequate resources for the expansion of the envisaged increase in transition from primary level

to secondary level, it needs to do more but this has to be in conjunction with others (GOK, 2005). Njeru and Orodho (2003), points out that the GOK expects schools to generate revenues through utilization of institutional resources, for instance school farm, houses, school facilities such as vehicles, halls, and public address systems.

Ogada (2005) however argues that Income Generating Activities were established earlier in secondary schools than in universities. Schools have owned farms, have participated in farming activities and have even provided catering services. These activities have, however, been considered more of a service. As Njeru and Orodho (2003) notes, these alternative sources of funding have not been introduced into school budgets so as to reduce the fees burden on the parents. There are numerous schools in both developing and developed countries which may have found innovative ways to generate additional income to support their activities from producing items for sale and running small shops, to hiring out their facilities and expertise (Singh, 1998).

While there are many examples of Income Generation in schools, these have tended to be opportunistic in their choice of activities, uncoordinated across institutions and limited in scale (Kafka and Stephenson, 2006). Of particular interest of Asian context, one of the rare examples of state encouragement of income generation in schools comes from China with its antecedents stretching back to before the Cultural Revolution. The creation of income has since 1981 been incorporated into the Chinese government's five year plans, and guidance provided on its use. Although this experience has resulted in many positive outcome by increasing private sector competition combined with loss of government tax breaks, it has led many school factories to close down or be privatized (Ng, 2001).

Ogada (2005), notes that a critical analysis is required in order to identify the various Income Generating Activities in which a secondary school may be involved. He reveals that there is a good potential in creating Income Generating Activities, which include crop farming, keeping dairy animals, and poultry, and renting out houses to staff at subsidized rates.

Starting Income Generating Activities poses a direct challenge to head teachers or managers. A way out is to catalogue all the potential Income Generating Activities and analyze them based on matrix consisting of four quadrants as shown in Table 1

Table 1: Classification of business potentials according to four quadrants matrix model of Amsterdam and Moi University

1 CORE BUSINESS ACADEMIC	3. BUSINESS WHICH SUPPORT THE CORE BUSINESS
2 BUSINESS RELATED TO CORE BUSINESS	4. BUSINESS WHICH DOES NOT SUPPORT AND IS NOT RELATED TO THE CORE BUSINESS.

Source: Ogada (2005)

Quadrant one shows the core business of the institution, for instance, the teaching and preparing the pupils for secondary schools examinations. Quadrant two shows activities related to the core business of the institution, for example, holiday coaching, computer application, music classes, career guidance and counseling and private

tuition, innovations and inventions, short courses and consultancies, laboratory services and banking. These activities related to the core business of the institution can bring profit to the institution. Quadrant three encompasses activities, which support the core business, for example farming, catering, accommodation and transport. These activities which support the core business of schools are mainly for cost reduction. Quadrant four involves activities which are not related and do not support the core business of the institution, for example, passenger transport and hardware. These activities which are not related and do not support the core business of the institution, the institution should not be involved at all. Ogada's work is related to this study in that he has clustered Income Generation Activities into groups. Schools should make a decision on which group of activities it will indulge in to boost its core business. However, Ogada's paper fails to identify what determines the choice which the school will make from the preferred group of activities in which schools are supposed to be involved in. This therefore calls for a study to be carried out to find out what determines specific Income Generation Activity choices which a school chooses to make.

TMF (2006) asserts that no school will successfully generate income without taking a business-like approach. He notes that a way out is to come up with a spectrum. At one end of the spectrum is the school owned enterprises which may be run as a regular business purely to generate income, with no educational component, and making no use of school facilities or personal. In the middle is the student run enterprise, where students have control of all aspects of businesses.

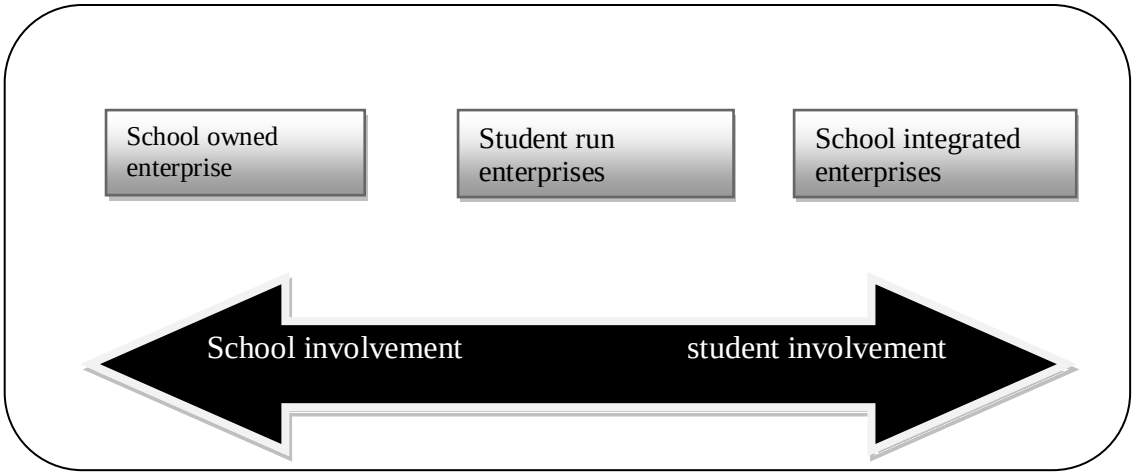

Figure 3: A Spectrum of possible approaches

Source: TMF (2006)

The school can generate income in this way as an equity partner through renting out its facilities. At the end of the spectrum is the School integrated enterprises, where income generation is closely linked to the school's educational mission by providing a platform for skills training and entrepreneurship education.

2.2 Income Generating Projects

In the comparative study of education in Ethiopia ,Kenya and Tanzania , Weele, (1973) in his work, comparison of educational financing in Ethiopia, Kenya and Tanzania, noted that funds for education in any country are generally fiscal resources, school fees paid by pupils, gifts , local fundraising , business support and business operated by individual schools. TMF (2006) in its document, beyond school fees; a guide to income generation in schools, concurs with Weele and asserts that schools have traditionally funded their activities from three key sources: charging

fees, government grants and the altruism of others-religious groups, NGOs and wealthy individuals.

Despite the great need and demand for secondary education in developing countries, the widespread lack of its availability suggests that these sources (charging fees, government grants and the altruism of others-religious groups, NGOs and wealthy individuals) are not sufficient. This calls for another source, which is, schools generating their own income. Achola (1998) in his work mobilizing additional funds for secondary and higher education, indicated that schools in Zambia have their own production units as a means of generating income.

Drucker (1986) also argues that for public institutions to exploit the opportunities that exist, they should become innovative and enterprising. As regards self-financing and the budgetary dimensions of secondary schools, school enterprises provide a good alternative for matching operating costs by means of production for the market. In his paper, Income Generating Activities for secondary schools, Ogada (2005) agrees that an institution can start an Income Generating Activity to provide practical training opportunities for technical subjects. He also suggests that Income Generating Activities can be initiated to maximize the use of available resources, finance improvements and modernization, reduce costs of operation and develop entrepreneurial culture in an institution.

However, Drucker,(1986),agrees out that there are two major factors that hinder innovativeness and entrepreneurship issue in schools. These are the budget and the schools seeing their missions as moral obligations rather than economic obligations. The assertion by Drucker that budgets hinder innovations and entrepreneurships in schools calls for a study on whether initial capital and yearly operational costs of

projects determine the school Income Generation Activities choices in secondary schools.

Riechi (1993), suggests the need to diversify sources of income for institutions rather than depending on the government funding alone. Psacharopoulos and Woodhall (1985), notes that in some cases, teachers and pupils contribute to the costs of education by producing and selling goods in the school and that between 25 and 50 percent of the operating and maintenance costs of a school could be financed by the sale of goods produced in the school .

Keitany (1995), concluded that there was a need of identifying alternative financing methods in secondary schools in order to ease the financial burden placed on the beneficiaries of education. He, like Olembo (1985), suggested that schools should grow their own subsistence crops in order to reduce costs on purchasing food. He further suggested that Income Generating Activities which include planting coffee, pyrethrum, and construction of rental houses and other business enterprises should be started in secondary schools.

This suggestion was supported by Gravenir (1991), in his work on 'An assessment of Trends in Public Financing of Education in Kenya', and Ayodo(1989), in his work on 'Educational Financing in Kenya', who also felt that alternative methods of financing of education have to be identified. Among these alternative methods of financing education in secondary schools are income generation projects.

Nafukho (1991), in his study of determining optimal size and existence of economies of scale in Kenya, found out that secondary schools in Kenya do not involve themselves in income generating projects. He urged secondary schools in Kenya to

involve themselves in income generating projects. Whereas, Olel (2000) in his study on Optimal Utilization of Educational Resources, advised that the trend of secondary schools, not engaging in Income Generating Activities should stop. Given these observations and given the significance of income generation projects, the researcher, therefore, found it enriching to study the determinants of Income Generation choices in secondary schools.

Singh (1998), argues that the introduction of school Income Generation Projects brings the school closer to the realities of life, particularly the factor of motivation for effective learning through combining learning with production. He continues to note that through synthesis of education and income generating activities, schools are expected to exploit new financing options for meeting training costs. The above sentiments summed up, made the researcher to decide to study determinants of Income Generation Activities choices, as an area of investigation.

2.3 School and Headteacher Characteristics

At the heart of the school's success is a strong and entrepreneurial leadership, administration prepared to accept some measure of risk for the positive financial and educational benefits they might bring the school through effective organizational structures. Innovation and experimentation, a recognition that financial and educational progress can only be made by trying new methods and building upon those that succeed.

Literature on school governance confirms that the quality of the principal is a critical factor in the success of a school (Mohajeran and Ghaleei, 2008). Hallinger and Heck (1996) conclude that school principals affect school outcomes through mission

building, effective organizational structures, social networks, and working through people. Mohajeran and Ghaleei (2008) on their study, 'The principal role and school structure', looked at school governance and decision-making and continued that the major influence on these is the principal.

Dinham (2005) and Florez, Carrion, Calero, Gershberb, and Castro (2001) indicate that the levels of participation in school decision-making are dependent largely on the leadership of the principals, and that it is important for the principals to promote democratic leadership in their schools. Although the role of the principal may vary according to the type of school, the principal is still at the focus of decision-making and plays a critical role in management of decision-making within the school (Rice and Schneider, 1992). It is broadly accepted that effective leadership is a key component in achieving school improvement (Stoll, 1997), and successful school reforms (Cheng, 1998, Leithwood, 1998). Dinham (2005) in his study, on Principal Leadership for Outstanding Educational Outcome, indicates that leadership is a critical factor in the attainment of exceptional educational outcomes and in developing effective innovative schools and facilitating quality teaching and learning. Studies by Leithwood and Jantzi (1993), on Using the Appraisal of School Leaders as instruments for School Restructuring, confirm that the principal's leadership has a strong direct effect on in-school processes.

Mohajeran and Ghaleei (2008), in their study on 'Principals' Role and School Structure,' found out that although the principal is perceived to have considerable decision-making authority, there are limitations imposed on in-school decision making by the policies and legislation of the state government and budget constraints.

However, Mohajeran and Ghaleei (2008), assert that in relative terms, the principal plays the major role in decision-making in the school. They further explain that the principal's authority, together with his broad awareness of issues and knowledge of possibilities and limitations are major factors in his position at the locus of decision-making.

The point being made is that the head teacher, in a school set-up, is very influential in decision-making. The researcher therefore, found it necessary to include the headteacher as a major variable in this study. In particular, the study sought to find out the relationship between the head teacher's age and professional qualifications and Income Generation Activities choices. Therefore, whether or not they actually determine the choices, will be revealed the findings of this study.

Tirop (2007) notes that the head teacher has to be conversant with the source of revenue for the school, for example, school fees, government grants, donations, fundraising and income generating projects. The head teacher should help the institution to acquire maximum funds by keeping abreast with the most economically viable means of sourcing funds. The head teacher prepares the school budget, a process that indicates a likelihood of influencing the choice of Income Generating Projects. Singh (1998), asserts that, at the school level, a major consideration in the successful running of Income Generating Projects, combining education with production for the market, is the role and responsibility of the head teachers. The head teacher is crucial in sourcing funds for the school and the researcher, therefore, found useful to have him/her included in this study.

TMF (2007) argues that the range of skills, knowledge and experience of staff at the school will play a vital role in managing the business side of any income generating

activity and deciding which activities to choose and. As Tirop (2007) put it, “in every day running of institutions head teachers come across many challenges, which require, not only, managerial skills, but also experience as well”. The head teacher plays a vital role as the chief executive officer of the school. The head teacher oversees the preparation of the school’s budget, receives revenue, and is responsible for all monies in the school which are received in form of grants, fees and donations. Head teacher also advice on the planning and implementation of development projects in the school, based on priorities. All these put the head teacher in a position that influences the choices of Income Generating Activities in a school. Hence the need to establish whether or not the head teacher determines the Income Generation Activities choices in schools.

Singh (1998) further asserts that the critical variables for successful implementation of school enterprises are good leadership, a common understanding between management staff and the community about the nature and purpose of the programme, transparency in decision making and accounting, economic feasibility of the production and marketing schemes and the balance between economic and educational objectives. TMF (2007) argues that, it requires a teacher with an entrepreneurial mindset to enable a school to generate more of its own income.

The vivid impression created by the literature reviewed, is that headteachers are key players in decision making in secondary schools. It is due to this reason that saw headteacher’s characteristics included in the study. As Olembo, Wanga and Karagu,(1992) put it that financial management involves determining the needs and the means of meeting them on the basis of establishing policies for allocating funds to schools in relation to given vote heads. Effective utilization of resources in schools is

of great value. The Government of Kenya (1988), says that it expects various educational resources including land, finance, teachers, time, facilities and equipment to be managed properly and put in use in a cost effective manner so as to lead to an efficient provision of quality and relevance in education.

The Board of Governors, school committees and managers of schools should strategize in identifying the most effective way of utilizing available institutional land. All these points to the fact that the head teacher plays a vital role in generating and utilizing the school's finance. Frith (1985) also notes that today every head teacher needs to be financially aware and competent whether to offset inflation, resists cuts, support priorities or exploit new opportunities. In his study, on 'Raising costs in Public Secondary Schools: Head teachers Management Strategies in Kisii district,' Makori, (1996) agrees with Frith (1985) and points out that there is need for head teachers' appraisal where emphasis should stress on the success of their ability to attract more funds and use the funds successfully. Kafka and Stephenson, (2006) in their paper on Self- Sufficient schools: Fostering Entrepreneurship to Finance Sustainable Education, also agree with Frith (1985) and Makori (1996) and notes, that there are substantial management challenges in running Income-Generating Projects in schools. The senior administrator requires the skills to be able to balance strategic commercial decision making with the educational needs of their students. Teachers need to be business specialists, as well as, educators and robust systems for financial management, need to be put in place far beyond those reserved by traditional schools.

2.4 Initial Capital and Operational Costs

Singh (1998) notes that the question of who should bear the cost of school's Income Generating Projects as a basic mode within vocational training and education is

becoming increasingly important and relevant because of the pressures of scarce resources. Closely related to this question, and of equal importance, is the mode of financing school Income Generating Projects as income generating projects are not merely commercial institutions oriented to the goals of market production, but primarily oriented to the goals of training and education as well as to social goals.

Singh (1998) continue to argue that:

> *The internal management of the school should consider their investment decisions without overlooking the economic constraints. In some enterprises, educational goals take precedence over economic goals. These schools are very often characterized by a predominantly school organization structure. They provide practical training on the basis of a simple level of equipment, have limited external relations and are normally under state control. These school enterprises tend to confine their objectives to the educational mandate. This type of school enterprises generates no special input costs, however, in order to keep trying to minimize the costs of training, and at the same time maximize the economic benefit of existing resources, a situation may arise whereby learning achievements may have to be reduced in favour of directly marketable output factors, for example, the production of goods by the trainees in the course of instruction (p. 50).*

According to Bush and West-Burnham (1995) financial knowledge is important for effective management of resources. They, therefore, assert that; in order to manage resources effectively in educational institutions, it is necessary to have a clear understanding of the budgetary process and of the detailed costing assumptions that underlie it. This illustrates one of the problems of combining commercial and educational goals in some school enterprises.

There are other schools Incomes Generating Projects, however, which try to achieve an effective balance between educational and economic goals. In such schools, as Singh (1998) argues;

> *Although the costs of the input factors, such as manufactures, equipment infrastructure and material costs are substantially high, this is balanced by high earnings from the sale of goods and services. These schools achieve a positive net cost balance because they are able to earn substantial amounts of sundry income through vocational upgrading measures that utilize the existing inputs. This may be attributed to the fact that same schools are more effective than other schools in adjusting to local market conditions. At the same time, they are able to increase their sale of goods and service without sacrificing their learning achievements. This has been made possible by combining economic and educational goals in the marketing of teaching services, such as offering further vocational training courses for welfare institutions and local industry enterprises (: 51).*

School enterprises are economically efficient institutions as they combine commercial production and educational objectives and most of them are also able to cover their operating costs. They, nevertheless, have to be dependent upon external contributions, especially during the initial phases. Due to the slow development of their financial basis, school enterprises have long take-off periods. At the start of this programme, school enterprises are able to finance running costs to a very small extent and are thus reliant on outside financing.

Kafka and Stephenson (2006) also observed that just as high-growth businesses require capital faster than they can create surpluses, the need to transform schools into financially sustainable institutions on practical timescale, would require substantial up-front investments in production capacity, infrastructure, and human resources. If financially sustainable institution's idea is to move forward, from a few islands of excellence, to a more developed field, it will require the backing of donors with sizeable financial capacity capable of supporting this level of investment.

From the literature reviewed, scholars tend to unanimously agree that availability of finance is critical for Income Generation Activities to succeed. It is due to this reason, therefore, that initial capital and yearly operational cost of Income Generating

Projects was included in this study so as to establish the extent to which Income Generation Activities' choices are influenced by their initial capital and yearly operational costs.

Kafka and Stephenson (2006) tend to agree with TMF, (2007) which asserts that, even once it is profitable; running an Income Generating Project at your school will usually require finance. Some activities, however, will require a lot more finance –to pay for materials and equipment –than others. TMF observed further that part of deciding what activity to undertake will, therefore, depend on whether there are local sources of finance, such as, banks or microcredit programs, that will be prepared to lend money when need arises. Given this observation, and given the significance of initial capital and yearly operational costs of income generation activities, it was found necessary to include initial capital and yearly operational costs in this study.

2.5 Summary

The literature reviewed in this section was geared towards an understanding of what other scholars have done, and how it relates to this study. The literature reviewed reveals that income generation in secondary schools is important in the provision of the much needed finance required for the running of the secondary school institutions. Hence this makes it important for secondary schools to be involved in Income Generation Projects. However, for secondary schools to be involved in Income Generation Projects there are factors which will be taken into account for the income generation choices to be made. The literature reviewed shows that no study had examined the relationship between the Income Generation Activities choices and their determinants. This is the gap that the present study hopes to fill.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction

Methodology is the theory and analysis of how research does and should proceed. It is the plan of action that shapes the choice and application of particular methods and links them to desired outcomes. This chapter gives a presentation of research design, area of study, target population, sample size and sampling procedures, data collection instruments, validity and reliability of research instruments, data collection procedures and data analysis procedures.

3.1 Research Design

A research design is a basic arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Descriptive survey design was used by the researcher to carry out this study. A survey collects data about variables as they are found in a social system, such as, the school. The descriptive survey enabled the researcher to extensively describe, analyze and explore the determinants of Income Generating Activities choices in secondary schools.

3.2 Study Area

The study was carried out on secondary schools in Nyamira District, in Nyanza province in Kenya. Nyamira district is divided into four administrative divisions. The divisions are: - Ekerenyo, Nyamusi, Nyamaiya and Nyamira. There are 79 secondary schools distributed in the four divisions. The District boarders Kisii Central and

Masaba Districts to the West, Kericho District to the East,Rachuonyo District to the South and Bureti District to the North.

The district's original inhabitants are the Kisii people who mainly depend on crops and livestock for their livelihood. The major cash crops are coffee and tea while the major food crops are maize, beans, bananas and finger millets. Dairy and beef animals are kept in the area. The area was selected because the state of Income Generating Projects in secondary schools in the district are varied. Some schools have Income Generating Projects whereas others have not. The researcher was also familiar with the area.

Some of the Income Generating Projects in secondary schools in Nyamira district have a short lifespan that do not favour the generation of sufficient income for the schools. Secondary schools in Nyamira district which cannot generate income face financial constraints in running their daily affairs. The researcher was interested in finding the determinants of income generating activities choices in secondary schools in this area.

3.3 Target population

The target population for the study was 79 secondary schools in Nyamira District, and the 13 persons in-charge of Income Generation Projects in secondary schools. There are 13 secondary schools with persons in-charge of income generation projects. All the 79 principals and 13 persons in charge of the income generating projects in the 13 secondary schools, formed the target population.

3.4 Sample and Sampling Procedure

A sample of 30 secondary schools out of the 79 secondary schools in Nyamira District was used for the study. Stratified sampling technique was used to classify schools as per the type and gender.

Table 2: Sample for the Study

	GENDER						
	BOYS		**GIRLS**		**MIXED (Both boys and girls)**		**TOTAL**
TYPE	Pop.	Sample	Pop.	Sample	Pop.	Sample	
Boarding	2	2	3	3	0	0	
Partially Boarding	0	0	0	0	18	8	
Day	0	0	0	0	56	17	
TOTAL		**2**		**3**		**25**	**30**

Stratified sampling technique was used to sample mixed schools. Eight (8) day and boarding secondary schools were selected using simple random sampling technique from the 18 partially boarding secondary schools in the District. Also using simple random sampling technique, seventeen day schools out of the 56-day schools in the District, were selected for the study. This technique was used to give each individual secondary school an equal chance of being selected for participation. The number of schools sampled from partially boarding and day schools was varied to give each category equal representation. Because, of the small number of boys' and girls' schools, the researcher included all in the study.

All the 30 head teachers of the sampled secondary schools and the 13 persons in-charge of income generating projects, automatically qualified for the study. This is

because the researcher considered them to have information which the researcher was looking for.

3.5 Data Collection Instruments

The following instruments were used in collecting data:

a.) Questionnaire

A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Although they are often designed for statistical analysis of the responses, this is not always the case. Questionnaires have advantages over some other types of surveys in that they are cheap, do not require as much effort from the questioner as verbal or telephone surveys, and often have standardized answers that make it simple to compile data. However, such standardized answers may frustrate users.

Questionnaires are also sharply limited by the fact that respondents must be able to read the questions and respond to them. Thus, for some demographic groups conducting a survey by questionnaire may not be practical. Questionnaires are impersonal, this means that it may be difficult to understand answers and thus to act on them. Also, there is a chance that the question may be misinterpreted, rendering the answer useless. Questionnaires also invite people to lie and answer the questions very vaguely which they would not do in an interview. Open questions can take a lot of time to collect and analyze. People are not always willing to fill questionnaires in so they may just throw them always. Sometimes questions used are too standardized (closed) so some peoples preferred answers may not be included, and this also does not allow for much detail. Peer pressure of embarrassment may cause people to not want to answer certain questions, or they may want to impress the researcher and

fabricate the truth by filling in untrue answers, making questionnaires unreliable and sometimes invalid. As a type of survey, questionnaires also have many of the same problems relating to question construction and wording that exist in other types of opinion polls.

The head teacher's questionnaire aimed at obtaining information from head teachers in relation to the school characteristics, the Income Generating Activity choices and their initial capital and their operational costs. The persons in-charge of Income Generating Activities' questionnaire was used to obtain information on school income generating activities carried out. Also head teacher's questionnaire aimed at obtaining head teacher's opinion on whether school characteristics, initial capital of an income generating project and yearly operational costs of an Income Generating Projects influences the income generating activities choices in secondary schools. The questionnaire is a convenient tool especially where there is large number of subjects to be handled because it facilitates quick and easy derivation of information within a short time Borg and Gall (1983).

b.) Interview Schedule

The researcher designed a semi structured interview schedule with open-ended items that were used to obtain more data from head teachers. The open-ended items were used to give the head teachers an opportunity to discuss freely and exhaustively the issues raised. The interview schedule was used to assist the researcher in getting in-depth data that is not possible to get when using questionnaires. The interview enabled the researcher to clarify and give strength to questionnaire, as the interview schedule may give more complete and honest information. Advantages of using an Interview schedule includes; if the respondent lacks reading skills to answer a questionnaire, are useful for untangling complex topics. The Interviewer can probe

deeper into a response given by an interviewee. Interviews produce a higher response rate. Disadvantages of using an Interview includes; the interviewer can affect the data if he/she is not consistent, it is very time consuming, it is not used for a large number of people, and the Interviewer may be biased and ask closed questions. To solve the disadvantages of the questionnaire and the interview schedule, the researcher used both as they supplement each other in terms of their advantages.

3.6 Validity of Research Instruments

Validity refers to the extent to which results from the analysis of data actually represent the phenomenon under study. The validity of the study instruments was established with consultation of the experts in the department of Educational Management and Policy Studies in Moi University. Their comments were incorporated so as to improve the validity of the instruments.

3.7 Reliability of Research Instruments

Reliability is the consistency with which a test measures whatever it measures. It is the degree to which a research instrument yields consistent results after consistent trials. To ensure the reliability of the questionnaire, a pilot study was carried out in (2) two schools outside those that constituted the sample. The Cronbach's coefficient alpha of 0.50 for head teachers' questionnaire and 0.51 for officers in charge of income generating projects were obtained. This indicated that the instruments were reliable and hence were adopted. In this study a minimum Cronbach's coefficient alpha of 0.50 was taken as a good measure of reliability.

3.8 Data Collection procedure

The researcher obtained a research permit from the Office of the President. He was issued with an introduction letter from the District Commissioner and District Education Officer's offices respectively, to carry out research within the district. The instruments for data collection, that is head teachers' questionnaire, persons in-charge of Income Generating questionnaire and head teachers' interview schedule, were administered by the researcher in person. The interview schedule was used to assist the researcher in getting in-depth data that was not possible to get when using questionnaires. The school head teachers were requested to find time for filling the questionnaire and to respond to the interview schedule. After which the researcher picked the completed questionnaire.

3.9 Data Analysis

The data from the questionnaire, and interview schedule were analyzed using both descriptive and inferential statistics. The researcher used tables, frequencies and percentages, to summarize data for easy analysis. Pearson moment correlation coefficient was used to determine whether there was a relationship between the dependent variable and the independent variables and the direction of the relationship and its magnitude if it existed.

The resultant coefficients of correlation were treated to significance tests at 0.05, 0.01 level respectively. Chi-square analysis was used to test whether there was significance relationship between the dependent variable and the independent variables. The results were tested at 0.05, 0.01 significance levels respectively. The results that were equal or less than the significant level were considered to be significant. Results above the significant level were considered not to be significant.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.0 Introduction

This chapter deals with data analysis, presentation, and interpretation. It provides an overview of the findings of the empirical research on the determinants of Income Generating Activities choices in Nyamira district. It is also is divided into two sections. In the first section descriptive statistics are used to analyze background information on secondary schools in Nyamira District. The second section provides inferential analysis.

4.1 Background Information on Sample Schools

4.1.1 Income Generation Choices

There are benefits inherent in schools involved in Income Generating Projects both for the students, and the institutions themselves. This led the researcher to have an interest in studying the school characteristics and income generation choices in secondary schools in Nyamira District.

Table 3 shows the Income Generating choices most preferred by the sample secondary school in Nyamira. Income generation was measured such that, one denoted the presence of a project in a school, and zero indicated the absence of a project.

Table 3: Income generating choices in secondary schools in Nyamira

INCOME GENERATING CHOICES	FREQUENCY	%
None	8	26.7%
Maize growing	4	13.3%
Beans growing	2	6.7%
Tea farming	1	3.3%
Dairy farming	6	20.0%
Poultry keeping	2	6.7%
Sukuma wiki growing	4	13.3%
Banana growing	1	3.3%
Quarry	1	3.3%
Tree planting	1	3.3%
TOTAL	30	100.0%

Table 3 shows that in the sampled schools, dairy farming accounted for 20.0% of the choices made and it was followed by maize and *sukuma wiki* growing, which had a percentage of 13.3% each. Beans growing and poultry keeping accounted for 6.7% each of the Income Generating Projects of the sample secondary schools. This indicated that dairy farming, maize and *sukuma wiki* farming tended to be the most popular choices among the sample schools. Tea farming, tree planting and banana farming each accounted for 3.3 % of the Income Generating choices in secondary schools in Nyamira district. Eight secondary schools of the sample secondary schools accounting for 26.7 percent of the sample, were not involved in any income

generating project. These findings imply that the majority (73.3%) of the schools, forming the sample, are involved in income generating projects, although the projects do not seem to be viable. This is an indication that schools in Nyamira district are heeding to the call by the Government of Kenya that schools start Income Generating Projects to supplement the government funding (GOK, 1999). As Njeru and Orodho (2003) note, the other activities through which the GOK expects schools to generate revenues include; Income Generating Projects in schools such as crops, keeping dairy animals and poultry.

The data in Table 3 indicates that crops dominated the Income Generating choices made by the sampled schools. They accounted for 39.9% of the choices. This was followed by dairy farming which represented 20.0% of the choices, while poultry accounted for 6.7%. This scenario may be attributed to the fact that Nyamira district is an agricultural region where people tend to involve themselves in crop farming and animal rearing regularly. This type of farming may be cheap in terms of their initial capital and yearly operational costs, hence schools in Nyamira district may be encouraged to practice this IGA.

4.1.2 Schools' Operational Status

The operational status was important to this study. The researcher sought to establish whether Income Generating project choices relate to the operational status of the secondary schools in Nyamira district. The schools, which formed the sample for the study, were varied in relation to the operational status. Table 4 shows the classification of schools as per operational status.

Table 4: Classification of Schools by Operational Status

Operational status	Frequency	Percentage
Boarding	3	16.7
Day	17	56.7
Partially boarding	8	26.7
Total	30	100

Boarding schools refer to those schools whose students live in school during the term. This implies that these types of schools may require generating more income to be able to cater for the needs of their students. This may be unlike day-schools which are attended daily by students living at home and partially boarding schools attended daily by a fraction of students living at home and others live in school during the term. This was important to this study since the researcher sought to establish whether Income Generating Project choices relates to the operational status of the secondary schools.

Table 4 indicates that there were seventeen day schools, accounting for 56.7% of the sample schools. Partially boarding schools accounted for 26.7% while those that were purely boarding, accounted for 16.7% taking the lowest percentage of the sampled schools. This can be attributed to the rising costs of education making most of those seeking education to prefer day schools to boarding schools. This is due to the fact that at the household level, the average student cost for secondary education is Kshs25, 900 for a boarding school and 10,500 for a day school; (GOK 2005).Table 4 shows that most schools in Nyamira district were day schools. This seems to imply low levels of incomes in the households in Nyamira district, hence a high rate of school fees payment default in most schools in the district.

4.1.3 Classification of Schools by Gender.

The number of secondary schools in the district was of varied gender types. The researcher had an interest on these different types to find out whether they had any relationship with Income Generating choices in secondary schools. Table 5 shows their frequencies and percentages.

Table 5: Composition of Schools by Gender.

School type	Frequency	Percentage
Boys	2	6.7
Girls	3	10.0
Mixed	25	83.3
Total	30	100

There were two boys' schools and three girls' schools only. This accounted for 6.7 % and 10.0 % respectively of the sample schools. Mixed schools accounted for 83.3% of the sample schools. This shows that in the District mixed schools are preferred than the other school genders, since the district had only 6.7% boys' secondary schools and 10.0% girls' only schools.

4.1.4 Head teachers' Distribution by Age

The age of head teachers were considered important to this study. The researcher wanted to investigate whether age had a significant relationship with income generating choices. It is often assumed that one gains experience with an increase in age. The experience so far gained is of great importance to decision making by head teachers on the management of school affairs. Experience can be linked to the choice

of Income Generating Activities to be selected in a school. TMF, (2007) notes that, the range of skills, knowledge and experience of staff at school plays a vital role in deciding which activities to choose. It is commonly held that skills, knowledge and experience are accrued through age and one's professional qualifications. Table 6 shows the frequencies and percentages distribution of head teachers by age.

Table 6: Head Teachers' Distribution by Age

Age	Frequency	Percentage
30-39 years	9	30.3
40-49 years	20	66.7
Above 50 years	1	3.3
Total	30	100.0

The majority of the head teachers (66.7%) of the sampled schools fall under the age bracket of 40 years to 49 years. This indicates that most of the head teachers in the sampled schools had the needed experience in school management. Manuel (2007) notes that, the range of skills, knowledge and experience of staff at school plays a vital role in deciding which income generating activities to choose. This age bracket may also imply that the head teachers have been in the profession for a duration that would have enabled them to acquire skills in resource management and mobilization. Nine head teachers were aged between 30 and 39 years, this accounted for 30.0%.

4.1.5 Head teachers' Professional Qualification

Apart from the head teacher's age, another variable that the researcher looked at, was the head teacher's professional qualification. The study sought to establish whether the income generation choices relate with the professional qualifications of the head teacher of secondary schools. As TMF (2007) asserts, skills and knowledge play a vital role in deciding which income generating activities to choose.

Professional qualification contributes a lot to one's skills and knowledge. Head teachers in the sampled secondary schools in Nyamira district had varied levels of professional qualifications. Most of them had Bachelors of Education (B.ed) degree while others had diploma in education. Some of them had a Masters degree. Table 7 shows the Head Teachers' Professional Qualification.

Table 7: Head teacher's professional qualifications

Qualifications	Frequency	Percentage
Diploma	2	6.7
Bachelors	27	90.0
Masters	1	3.3
Total	30	100.0

Headteachers in the district had varied levels of professional qualifications as indicated in Table 7. There were 27 headteachers with a bachelor's degree in education accounting for 90.0%. The headteachers with diploma were 2 representing 6.7%. There was only one headteacher with masters; accounting for 3.3 %. This indicated that the majority of the head teachers had a bachelors degree and above.

4.2 School and Headteacher Characteristics and Income Generation Choices

The researcher sought to find out whether the income generating projects chosen by the schools are determined by the school and headteacher characteristics. Among the school and headteacher characteristics considered are the head teacher's age, professional qualification, school type (operational status), and school gender.

4.2.1 Opinion on the Influence of Head Teachers on Income Generating Choices

The researcher sought the opinion of the head teachers and persons in-charge of income generating in secondary schools on the influence of head teachers on the choices of income generating activities in secondary schools. The result is shown in Table 8 in percentage and frequencies.

Table 8: Persons in-charge and Head Teachers' Opinion on the Influence of Head Teachers on Income Generating Choices

Opinion	Head teachers		Persons in-charge	
	Freq.	Percentage	Freq.	Percentage
Influential	7	23.3	3	23.1
Very influential	23	76.7	10	76.9
TOTAL	**30**	**100**	**13**	**100**

The results indicated that a higher percentage of head teachers 23 (76.7%) pointed out that the head teachers were very influential as far as income generating choices are concerned. While, 10 (76.9%) of the persons in-charge of income generating projects in secondary schools concurred with the head teacher that the head teachers of secondary schools were very influential when it come to income generating choices.

This finding has shown that head teachers of secondary schools and persons in-charge of Income Generating Projects perceive head teachers as having a great influence on the choices of Income Generating Projects in their schools. This is attributed to the fact that the head teachers of secondary schools are the chief advisers of the school management.

4.2.2 Opinion on the Influence of School Type and School Gender on Income Generating Choices

The researcher also sought out the opinion of the head teachers and the persons in-charge of income generating projects in secondary schools on the relationship between the schools' operational status and the school gender on income generating choices. Table 9, shows the 0pinion of headteachers and persons in-charge of income generating projects in secondary schools on the relationship between the school type and school gender on income generation choices.

Table 9: Head Teachers' and Persons in-charge's Opinion on School Type, School Gender and Choices

	Type of school		**School gender**	
Opinion	Head teacher	Person in-charge	Head teacher	Person in-charge
Not influential	3.3%(1)	0.0%(0)	3.3%(1)	0.0%(0)
Least influential	13.3%(4)	15.4%(2)	20.0%(6)	53.8%(7)
Neutral	20.0%(6)	7.7%(1)	23.3%(7)	7.7%(1)
Influential	33.3%(10)	46.2%(6)	30.0%(9)	30.8%(4)
Very influential	30.0%(9)	30.8%(4)	23.3%(7)	7.7%(1)
Total	**100%(30)**	**100%(13)**	**100%(30)**	**100%(13)**

Note: The figures in the parenthesis are the frequencies

Table 9 indicates that on type of school, 10(33.3%) of the head teachers indicated that the school type is influential while 9 (30.0%) indicated that the school type is very influential. On school gender, 9 (30.0%) of the head teachers indicated that school gender is influential on income generation choices while 7 (23.3 %) indicated that it is very influential.

On the persons in-charge's opinion, Table 9 shows that 6 (46.2%) of the persons in-charge of projects said that the type of the school has influential, while 4(30.8%) of them indicated that were very influential. The persons in- charge of income generating projects 7 (53.8%) of them said that the school gender was least influential while 4 (30.8%) indicated that it was influential.

Some of the head teachers interviewed indicated that their income generation choices are based on the type of school they are in-charge of. They pointed out that, for example, in boarding schools they tend to choose activities, which will enhance their

sufficiency in food provision. They noted that this was so because when compared with day school the expenditure on foodstuffs in boarding schools tended to be very high. The head teacher said that they required high proportion of income to run a boarding school compared with day schools. The school type was thus included in the study for the purposes of finding out whether it influenced income generation activities choices in secondary schools in Nyamira.

4.2.3 Variations in Income Generation Choices by School Operational Status

The School operational status (type) was important to this study. The researcher sought to establish whether income generating project choices relates to school operational status. Not all schools in Nyamira district were involved in income generating projects Table 10 shows school type and their level of involvement using percentage.

Table 10: School operational status and involvement in income generating projects

School Type	Not involved	Involved	Total
Day	(5)29.4%	(12)70.6%	(17)100
Boarding	(3)60.0%	(2)40.0%	(5)100
Partially Boarding	(0)0%	(8)100%	(8)100
Total	(8)26.7%	(22)73.3%	(30)100

Note: The figures in the parenthesis are frequencies.

$X2 = 5.816$, $df=2$, $p>0.05$

As shown in Table 10, the number of day schools not involved in income generating projects was 29.4% (5) whereas 70.6%(12) were involved. For the boarding schools

60.0% (3) were not involved while 40% (2) were involved in income generating projects in their schools. Whereas 0% (0) of the partially boarding schools were not involved while 100% (8) were involved. From Table 10 it can be noted that the majority of boarding schools (60.0%) did not indulge in income generation activities. This was despite the fact that they incurred a lot of costs compared with the rest. This hence indicates that boarding schools have to be urged to involve in income generation projects.

Schools that were involved in income generating projects were more than those, which were not involved in all school type categories. Although the projects did not seem to be viable due to the fact that secondary schools in Nyamira were facing financial constraints. Twenty two schools accounting for 73.3% of the sample schools were involved in income generating projects. While 8 schools, representing 26.7% of sample schools were not involved income generation. With the chi-square value of 5.816 with two degrees of freedom and the significance level is 0.05 there was no significant relationship between the schools' operational status and involvement in income generating projects. Table 10 indicates that for a secondary school to involve itself in income generating activities it does not depend on whether it is a day, boarding or a partially boarding secondary school. The findings also imply that although the government urges schools to involve themselves in income generating projects (GOK 1999); there are still some schools that have not heeded to the call. The distribution of income generation choices as per school's operational status was varied in secondary schools in Nyamira district. Table 11 shows the school's operational status and income generation choices.

Table 11: School Operational Status and Income Generating Choices

	SCHOOL TYPE			
Income Generating Choices	**Boarding**	**Day**	**Partially Boarding**	**Total**
None	60.0%(26.0)	29.4%(26.5)	0.00%(26.3)	26.7%(8)
Maize	0.0%(14.0)	17.6%(13.5)	12.5%(13.8)	13.3%(4)
Beans	0.0%(6.0)	11.8%(6.5)	0.0%(6.3)	6.7%(2)
Tea farming	0.0%(4.0)	5.9%(3.5)	0.0%(3.8)	3.3%(1)
Dairy	40.0%(20.0)	17.6%(20.0)	12.5%(20.0)	20.0%(6)
Poultry	0.0%(6.0)	0.0%(6.5)	25.0%(6.3)	6.7%(2)
Sukuma wiki	0.0%(14.0)	11.8%(13.5)	25.0%(13.8)	13.3%(4)
Banana	0.0%(4.0)	5.9%(3.5)	0.0%(3.8)	3.3%(1)
Quarry	0.0%(4.0)	0.0%(3.5)	12.5%(3.8)	3.3%(1)
Tree planting	0.0%(4.0)	0.0%(3.5)	12.5%(3.8)	3.3%(1)
Total	**100%(5)**	**100%(17)**	**100%(8)**	**100%(30)**

Note: The figures shown in the parenthesis are expected values in percentage.

X2 =22.018 df=18, p>0.05

Table 11 indicates that boarding schools had dairy farming accounted for 40.0%, with an expected value of 20.0%. Maize, beans, banana farming, quarrying, tea farming tree planting, poultry and *sukuma wiki* represented 0.00% respectively, with expected values of 14.0% for maize,and 6.0% for beans and poultry each,14% for *Sukuma wiki*, and, 4.0% for banana farming, quarrying, tea farming and tree planting each. For day schools, maize accounted for 17.6% with expected value of 13.5%, followed by dairy farming and beans representing 17.6% and 11.8% respectively with expected values of 20.0% for dairy farming and 6.5% for beans. *Sukuma wiki* accounted for 11.8% with expected value of 13.5%.

Banana farming and tea farming accounted for 5.9% each with expected value of 3.5% respectively. Tree planting and quarry were the least, accounting for 0.0% respectively of the day schools with expected values of 3.5% each. In partially boarding schools maize represented 12.5% of the schools with an expected value of 13.8%. Beans, banana and tea farming each accounted for 0.0%, with expected values of 6.3% for beans, 3.8% for banana farming and tea farming respectively. *Sukuma wiki* accounted for 25.0% with an expected value of 13.8%. Poultry accounted for 25.0% with expected value of 6.3%. Quarry and dairy farming each accounted for 12.5% with dairy farming having an expected value of 20.0% and quarry having an expected value of 3.8%. The observed values and the expected values tend to indicate that the two variables are independent of each other.

From Table 11, it can be seen that the most preferred income generation choice by boarding schools was dairy farming with 40%. In day schools the most preferred choices were dairy farming with 17.6% and maize with 17.6% followed by *sukuma wiki,* and beans with 11.8% respectively. Whereas, in partially boarding schools, the most preferred choices were poultry and *sukuma wiki* farming with 25.0% each. This finding indicates that operational status of the school does not influence income generation choices made by the school. Dairy farming was practiced by both boarding and day schools.

The result of the chi-square test confirmed that the income generating choices in secondary schools in Nyamira district are not dependent on the secondary schools' operational status, $x2 = 22.018, df = 18, p > .05$. There is no significant relationship between the two variables.

Figure 4: Bar chart showing variations in income generation choices by school operational status

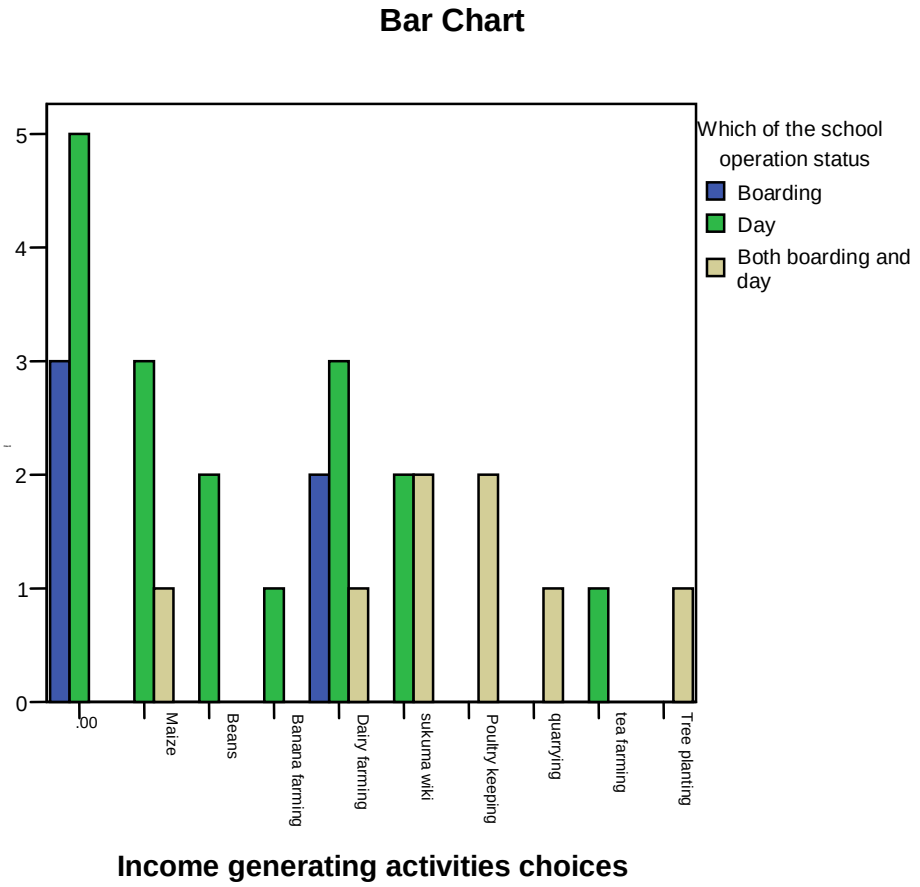

Figure 4 shows that there were 3 boarding schools and 5 day schools which did not have any income generating activities. 3 day schools and one partially boarding school had maize as their choice. Beans was selected by 2 day schools, while dairy farming was picked by 2 boarding schools, 3 day schools and 1 partially boarding school. 2 day schools and 2 partially boarding schools had *Sukuma wiki* as their choice. Poultry was chosen by 2 partially boarding schools. Whereas quarrying was picked by 1 partially boarding school, tea farming and was picked by 1 day school and tree planting by 1 partially boarding school.

4.2.4 Income Generating Choices by School Gender

School gender was the other school characteristic, which was of importance to this study. The number of secondary schools in the district was of varied gender types. The researcher had an interest on these different types in order to find out whether they had any relationship with income generating choices in secondary schools. Not all schools in Nyamira district were involved in income generating projects Table 12 shows school gender and their level of involvement using frequencies and percentage.

Table 12: School Gender and involvement in Income Generating Projects

School Gender	Not involved	Involved	Total
Girls	(2) 66.67%	(1) 33.33%	(3) 100
Boys	(1) 50.00%	(1) 50.00%	(2) 100
Mixed	(5) 20.00%	(20) 80.00%	(25) 100
Total	(8) 26.67%	(22) 73.33%	(30) 100

Note: The figures in the parenthesis are frequencies.

$X2 = 3.580$, $df = 2$, $p > 0.05$

As shown in Table 12, the number of girls' schools not involved in income generating projects were 66.67% (2) whereas 33.33% (1) were involved. 50.00% (1) of the boys' schools was not involved while 50.00% (1) was involved in income generating projects in their schools. Twenty percent (5) of the mixed schools were not involved while 80.00% (20) were involved in income generating projects.

These findings indicate that both schools, irrespective of school gender practiced income generating projects, 73.33% were involved while 26.67% were not involved in income generating projects Hence it can be concluded that school gender does not

influence the school's involvement in income generation. With the chi-square value of 3.580 with 2 degrees of freedom and the significance level is 0.05 there was no significant relationship between the two variables.. The events would be argued to have taken place by chance.

The gender based school type was also important to this study. The researcher sought to establish whether school gender relates with the income generating activities choices. Table 13 shows school gender and income generating choices.

Table13: Income Generating Choices by School Gender

	SCHOOL GENDER			
INCOME GENERATING CHOICES	**GIRLS**	**BOYS**	**MIXED**	**TOTAL**
None	66.7%(26.7)	50.0%(25.0)	20.0%(26.8)	26.7%(8)
Maize	00.0%(13.3)	50.0%(15.0)	12.0%(13.2)	13.3%(4)
Beans	0.0%(6.7)	0.0%(5.0)	8.0%(6.8)	6.7%(2)
Tea Farming	0.0%(3.3)	0.0%(5.0)	4.0%(3.2)	3.3%(1)
Dairy	33.3%(20.0)	0.0%(20.0)	20.0%(20.0)	20.0%(6)
Poultry	00.0%(6.7)	0.0%(5.0)	8.0%(6.8)	6.7%(2)
Sukuma wiki	0.00%(13.3)	0.0%(15.0)	16.0%(13.2)	13.3%(4)
Banana	0.0%(3.3)	0.0%(5.0)	4.0%(3.2)	3.3%(1)
Quarry	0.0%(3.3)	0.0%(5.0)	4.0%(3.2)	3.3%(1)
Tree planting	0.0%(3.3)	0.0%(5.0)	4.0%(3.2)	3.3%(1)
Total	**100%(3)**	**100%(2)**	**100%(25)**	**100%(30)**

Note: The figures shown in the parenthesis are expected values in percentage

X^2 =8.142, df=18, p>.05

Table 13 indicates that dairy farming accounted for 33.3% of the girls' schools; its expected value was 20.0%. Whereas, Maize, beans, banana farming, *Sukuma wiki*, quarrying, tea farming tree planting and poultry farming accounted for 0.0% in each of the girls' schools. Their expected values were 13.3% for maize and *Sukuma wi*ki each, 6.7% for beans, and 3.3% for banana farming quarrying, tea farming and tree planting respectively. Sixty six point six seven (66.67%) of the girls' schools were not involved in any income generating project.

The expected value was 26.7%. Boys' school had only maize farming as their choice, accounting for 50.0% representation of 1 boys' school. The expected value was 15.0%. There were only two boys' schools and only one was involved in income generating project. The other one had no income generating activity. The expected value for this was 25.0%. The choices, beans, banana farming, dairy farming, *Sukuma wiki*, poultry keeping, quarrying, tea farming and tree planting each accounted for 0.00%. Their expected values were, 5.0% for beans, 5.0% for banana farming, and 20.0% for dairy farming. Fifteen percent for *Sukuma wiki* while, 5.0% for poultry keeping, quarrying, tea farming and tree planting respectively.

In mixed schools as shown by Table 13, maize accounted for 12.0%, while its expected value was 13.2%. Dairy farming accounted for20.0% of the mixed schools with an expected value of 20.0%. Beans and poultry each represented 8.0%, with expected values of 6.8% each. *Sukuma wiki* accounted for 16.0% of the mixed schools. It had an expected value of 13.2%. Banana, tea farming and tree planting each represented 4.0%, with expected values of 3.2% each.

From this data, it can be concluded that since dairy farming was the preferred choice by girls' school, maize by the boys' school and dairy farming (20.0%), *sukuma wiki*

(16.0%), maize (12.0%),beans and poultry (8.0%) each, and tea farming, banana farming, quarry and tree planting(4%) each by mixed schools, the school gender does not influence income generation choices.

In testing the significance of the relationship between the school gender and income generation choices, $p<.05$ was chosen as the criterion decision. The result of the chi-square test of independence $X^2 = 8.142$, $df=18$, $p>.05$ indicating that there is no significant relationship between the income generating choices in the sampled secondary schools and school gender. The small margin between the expected values and the observed values confirms the result of the chi-square test of independence hich showed that the choices made by the sampled schools, were independent in relation to the school gender.

Figure 5:Bar chart showing variations in income generating choices and school gender.

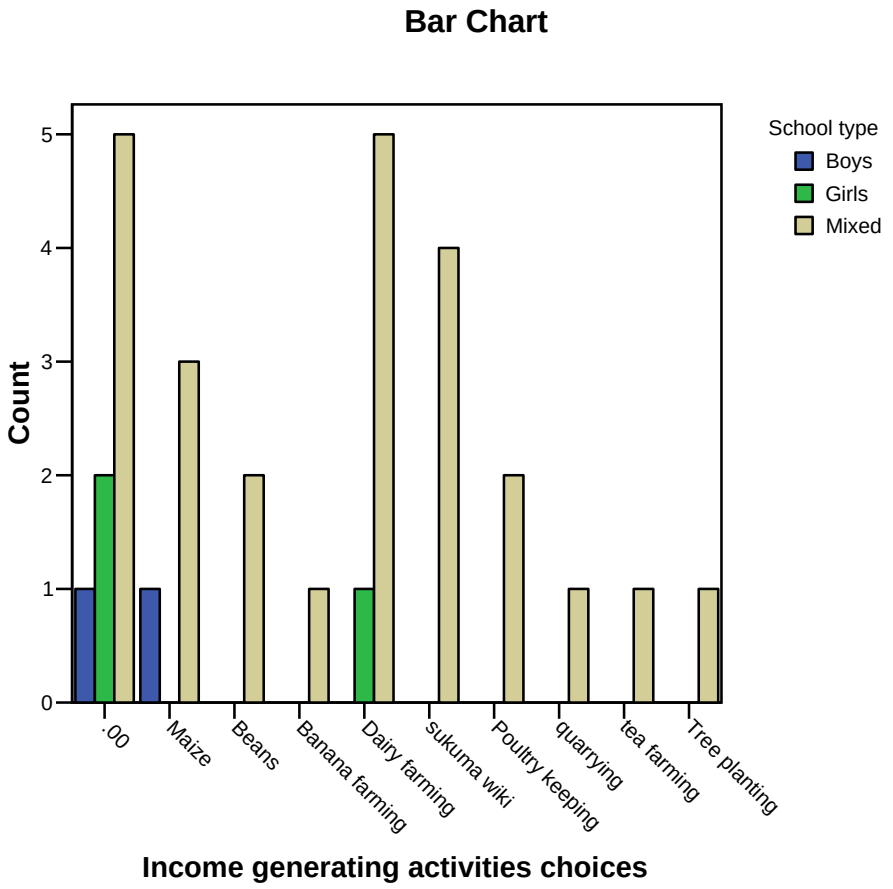

Figure 5 shows that there were 5 mixed schools, 2 girls' schools and 1 boys' school, which did not have any income generating activities. 3 mixed schools and 1 boys' school had maize as their choice. Beans were selected by 2 mixed schools, while 5 mixed schools picked dairy farming, and 1 girl's school. 4 mixed schools had *Sukuma wik*i as their choice. Poultry was chosen by 2 mixed schools. Whereas 1 mixed school picked quarrying, tea farming was picked by 1 mixed school while tree planting was picked by 1 mixed school.

4.2.5 Income Generating Choices by Headteachers' age

The researcher sought to establish whether the headteacher's age relates with the income generating choices. These data was important to the researcher, because the researcher wanted to find out whether the income generating choices in secondary schools have a significance dependence on the headteacher's age. All the headteachers in Nyamira district were not involved in income generating projects Table 14 shows headteacher's age and their level of involvement in income generating projects using frequencies and percentage.

Table 14: Headteachers' Age and involvement in Income Generating Projects

Headteachers' age	Not involved	Involved	Total
30-39	(3)33.3%	(6) 66.7%	(9)100
40-49	(5)25.0%	(15)75.0%	(20)100
50 & above	(0) 0.0%	(1) 100%	(25)100
Total	(8)26.7%	(22)73.3%	(30)100

Note: The figures in the parenthesis are frequencies.

$X^2 = .597$, df=2, $p > .05$

As shown in Table 14, the number and percentage of headteachers falling under the age category of 30-39 who were not involved in income generating projects was 3 (33.3%) whereas 6(66 .7%) were involved in income generating projects. For the headteachers falling in the age bracket 40-49, 5 (25.0%) of them were not involved, while 15 (75.0%) were involved in income generating projects in their schools. For the headteachers who were aged 50 years and above 1 (100%) was involved. From the data in Table 14, majority, of head teachers, aged 40 years and above were

involved in income generation projects in their schools. It can be concluded therefore that the experienced headteachers look for extra sources of funds to run their schools.

The chi-square test of independence was used to test the relationship between the head teacher's age and his decision to be involved in income generation project. With the chi-square value of .597 with 2 degrees of freedom and the significance level is 0.05, there was no significant relationship between the age of the headteacher of a secondary school and the his involvement in income generating projects. The headteacher's age has no relationship to the choice of involvement in income generating activities. The researcher also wanted to find out whether the income generating choices in secondary schools have a significance dependence on the headteacher's age. Table 15 shows headteachers' age and income generating choices.

Table 15: Income Generating Choices by Head teachers' age

	AGE			
Income generating Choices	30-39	40-49	50 and above	Total
None	33.3%(26.7)	25.0%(26.5)	0.0%(30.0)	26.7%(8)
Maize	22.2%(13.3)	5.0%(13.5)	100.0%(10.0)	13.3%(4)
Beans	11.1%(6.7)	5.0%(6.5)	0.0%(10.0)	6.7%(2)
Tea farming	11.1%(3.3)	0.0%(3.5)	0.0%(0.0)	3.3%(1)
Dairy	22.2%(20.0)	20.0%(20.0)	0.0%(20.0)	20.0%(6)
Poultry	0.0%(6.7)	10.0%(6.5)	0.0%(10.0)	6.7%(2)
Sukuma wiki	0.0%(13.3)	20.0%(13.5)	0.0%(10.0)	13.3%(4)
Banana	0.0%(3.3)	5.0%(3.5)	0.0%(10.0)	3.3%(1)
Quarry	0.0%(3.3)	5.0%(3.5)	0.0%(0.0)	3.3%(1)
Tree planting	0.0%(3.3)	5.0%(3.5)	0.0%(0.0)	3.3%(1)
Total	100%(9)	100%(20)	100%(1)	100%(30)

Note: The figures in parenthesis are the expected values in percentage.

X^2 =15.118,df=18,p >0.05

Table 15 indicates that maize and dairy farming for the headteachers aged 30-39 years accounted for 22.2% each within age. The expected values for these choices were 13.3% for maize and 20.0% for dairy farming. Beans and tea farming accounted for 11.1% each. Their expected values were 6.7% for beans and 3.3% for tea farming. 33.3% of the headteachers, aged 30-39 do not have any income generating project in their schools.

However, the expected value for this category of headteacher was 26.7%. For the head teachers aged 40-49, dairy and *Sukuma wiki* farming represented 20.0%. The expected values for dairy farming and Sukuma wiki farming were 20.0% and 13.5% respectively. The choices of maize, beans, bananas and quarrying accounted for 5.0% for the headteachers aged 40-49 years. The expected values for these choices were maize 13.5%, beans 6.5%, banana farming 3.5%, quarrying 3.5% and tree planting 3.5%. Poultry accounted for 10.0% with an expected value of 6.5%.

Twenty five percent of the headteachers aged 40-49 years never practiced any income generating projects. The expected value for this was 26.5%. For the headteachers aged 50 years and above, maize was the only choice of income generating projects practiced. It accounted for 100.0% within age. The expected value was 10.0%. This finding indicates that mostly head teachers aged 40 years and above tend to involve themselves in income generating projects in the schools they are heading; these can be generally attributed to the fact that they would have acquired enough experience on school management due to their age and duration they have taken on the profession. Another section of the table reveals that maize and dairy were the most preferred choices for head teachers aged 30-39, while dairy and *sukuma wiki* were preferred choices for those aged 40-49 and maize for those aged 50 and above. From this data it can be concluded that the head teacher's age does not have any influence the choices as far as income generating choices are concern.

In testing the significance of the relationship between the headteacher's age and income generation choices, $p<.05$ was chosen as the criterion decision. The result of the chi-square test of independence $X^2 =15.118, df=18, p >0.05$confirm that there is no significant relationship between the income generating choices in the sampled

secondary schools and the age of the head teacher. No significant relationship was found between the two variables. This finding is supported by the minimal margin between most of the observed values and the expected values of the income generating choices made by the head teachers of various age categories.

Figure 6: Bar chart showing variations in income generating activities choices and head teachers' age.

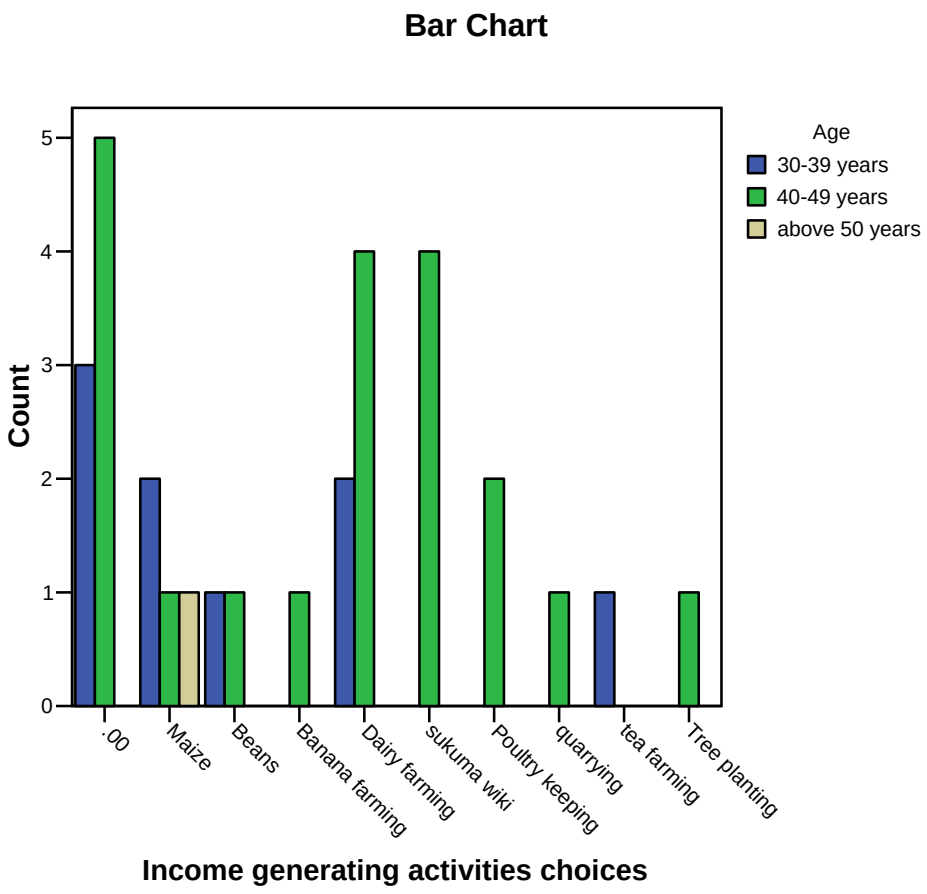

Figure 6 shows that there were 3 headteachers under age bracket of 30-39, and 5 headteachers under the age bracket of 40-49 years of age who did not have any income generating activities in their schools. Two headteachers of 30-39 age categories and 1 headteacher each of 40-49 and above 50 years, had maize as their

choice. Beans were selected by 1 headteacher each in the category of 30-39 and 40-49 years, while banana farming was picked by 1 headteacher in the age bracket of 40-49 years. Four headteachers aged 40-49 years had dairy farming as their choice, while 2 aged 30-39 years picked dairy farming. *Sukuma wiki* had 4 headteachers aged 40-49 years taking it as their choice. Poultry was chosen by 2 headteachers aged between 40-49 years of age. Whereas quarrying was picked by 1 headteacher aged 40-49 years, tea farming by 1 head teacher aged 30-39 years and tree planting by 1 headteacher aged 40-49 years.

4.2.6 Income Generation Choices by Head Teachers Professional Qualification

The researcher sought to establish whether the headteacher's professional qualification relates with the income generating choices. All the headteachers in Nyamira district were not involved in income generating projects. The researcher sought to establish their involvement in income generating activities in relation to their professional qualifications. Table 16 shows headteachers' professional qualifications and their level of involvement in income generating projects through frequencies and percent

Table 16: Headteachers' professional qualifications and involvement in Income Generating Projects

Headteachers' professional qualification	Not involved	Involved	Total
Diploma	(0)0.0%	(2)100.0%	(2)100
Bachelors	(7)25.9%	(20)74.1%	(27)100
Masters	(1)100.0%	(0)0.0%	(1)100
Total	(8)26.6%	(22)73.4%	(30)100

Note: The figures in the parenthesis are frequencies.

X^2 =61.91, df =2, p>.05

As shown in Table 16, the number of headteachers with diploma level of qualification who were involved in income generating projects were 2(100.0%). For the headteachers with bachelor level of professional 7 (25.9%) were not involved while 20 (74.1%) were involved in income generating projects in their schools. The only 1(100%) headteacher with masters' degree was not involved in any income generating activity. Using the data in Table 16, it can be concluded that the majority, 20 (74.1%) of the headteachers with a bachelor's level of qualification and 2(100.0%) with diploma level of qualification were involved in income generating projects, while none with masters degree participated in income generating activities.

In testing the significance of the relationship between the headteachers professional qualification and involvement in income generating projects, p<.05 was chosen as the criterion decision. The chi-square test of independence value was calculated and it was found to be X^2 =61.91, df=2, p>.05, indicating that there was no significant

relationship between the headteacher's level of qualification of a secondary school and the school's involvement in income generating projects. The study sought to establish whether the income generation choices relate with the professional qualification of the head teachers of secondary schools. The results are shown in Table 17.The table shows the income generating choices, their frequencies in relation to headteachers' professional qualifications.

Table 17: Income Generation Choices by Head Teachers Professional Qualification

	Professional qualifications			
Income Generating choices	**Diploma**	**Bachelors**	**Masters**	**Total**
None	0.0%(20.0)	25.9%(26.0)	100.0%(30.0)	26.7%(8)
Maize growing	0.0%(15.0)	14.8%(13.3)	0.0%(13.3)	13.3%(4)
Beans growing	50.0%(5.0)	3.7%(6.7)	0.0%(10.0)	6.7%(2)
Tea farming	50.0%(5.0)	0.0%(3.3)	0.0%(0.0)	3.3%(1)
Dairy farming	0.0%(20.0)	22.2%(20.0)	0.0%(20.0)	20.0%(6)
Poultry	0.00%(5.0)	7.4%(6.7)	0.0%(6.7)	6.7%(2)
Sukuma wiki growing	0.00%(15.0)	14.8%(13.3)	0.0%(10.0)	13.3%(4)
Banana growing	0.00%(5.0)	3.7%(3.3)	0.0%(10.0)	3.3%(1)
Quarry	0.00%(5.0)	3.7%(3.3)	0.0%(0.0)	3.3%(1)
Tree planting	0.00%(5.0)	3.7%(3.3)	0.0%(0.0)	3.3%(1)
Total	**100%(2)**	**100%(27)**	**100%(1)**	**100%(30)**

Note: The figures in the parenthesis are the expected values in percentage.

X^2 =24.72, df=18, p>.05

Table 17 indicates that for the headteachers with diploma level of qualification, were not participating in maize growing, dairy farming, banana growing, *Sukuma wiki growing*, poultry keeping, quarry, and tree planting. Their expected values were 15.0% for maize, 5.0% for banana farming, 20.0%for dairy farming, 15.0% for *Sukuma wik*i, 5.0% for poultry, quarrying, tree planting and tea farming, each. Beans and tea farming represented 50.0% each, with expected values of 5.0% each. For headteachers with bachelor's level of qualification, maize accounted for 14.8% while its expected value was 13.3%.

Dairy farming represented 22.2% whereas the expected value was 20.0%. Beans, banana farming, quarrying, and tree planting, accounted for 3.7% each. Their expected values were 6.7%, 3.3%, 3.3%, 3.3%, and 3.3% respectively. *Sukuma wiki* accounted for 14.8% while its expected value was 13.3%. Tea farming and accounted for 0.0% whereas its expected value was 3.3%. Poultry represented 7.4% with an expected value of 6.7%. Headteachers with the masters' level of qualification had no income generating project.

From Table 17 it can be seen that the headteacher with masters was not involved in any income generating project. Half of the diploma holders preferred beans and tea farming. The majority, 74.1% of headteachers with bachelors' level of qualification preferred varies choices. The choices were in the following order; dairy, maize, and *sukuma wiki*, poultry, beans, tea farming, banana, quarrying and tree planting. It can be concluded that headteachers with bachelors' level of qualification involved in many income generating choices. The data also indicates that choices are not

influenced by headteachers' level of qualification, given that beans farming was chosen by those with diploma level and those with bachelors' level of qualification.

In testing the significance of the relationship between the headteachers' professional qualification and involvement in income generating projects, $p<.05$ was chosen as the criterion decision. The result of the chi-square test $X^2=24.72, df=18$, $p>.05$ indicated that there is no significant relationship between the income generating choices in secondary schools in Nyamira district and the headteacher's professional qualification. There is no significant relationship, which was found between the two variables. The small margin between the observed and the expected supports this finding.

Figure 7: Bar chart showing income generation choices variations by professional qualifications

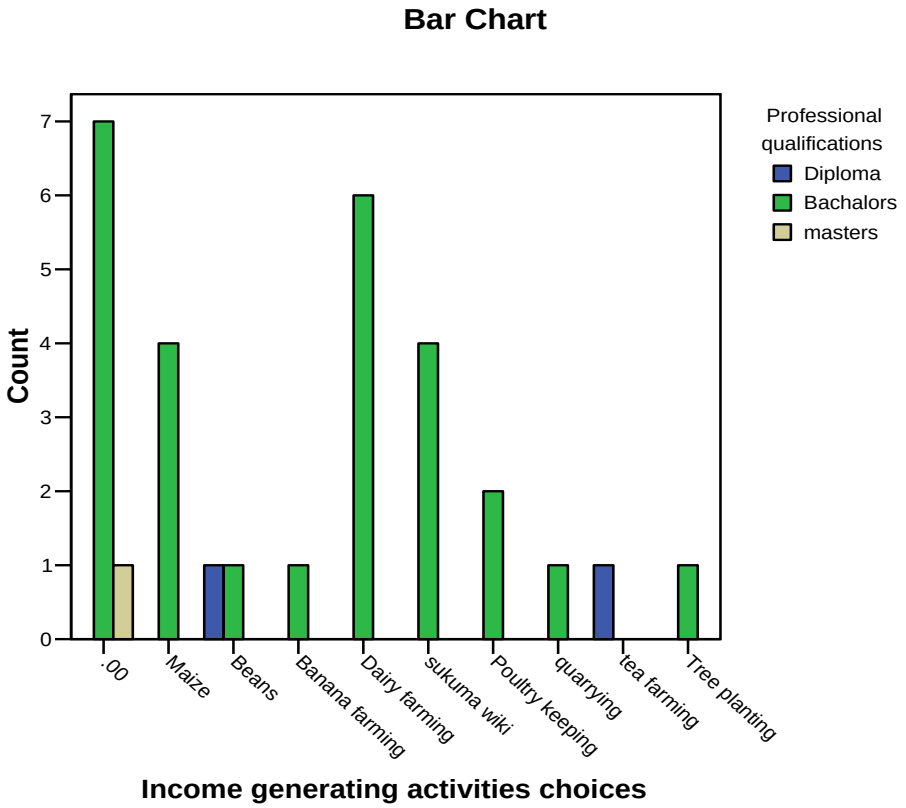

Figure 7 shows that there were 7 headteachers with bachelor's degree and 1 headteacher with master's degree of qualification who did not have any Income Generating Activities. Four headteachers with bachelor's degree had maize as their choice. Beans growing were practiced by 1 headteacher each of diploma and bachelors degree, while banana farming was picked by 1 headteacher with a bachelor's degree. Six headteachers with bachelors' degree, had dairy farming as their choice. While 4 with bachelors degree, chose *Sukuma wiki growing*. Poultry was chosen by 2 headteachers with bachelors' degree, whereas quarrying was picked by 1 headteacher with bachelor's degree, tea farming by 1 headteacher with a diploma, while tree planting was identified by 1 headteacher with bachelors' degree.

In conclusion, headteachers with bachelor's degree made many choices compared with those with diploma and masters degrees. Also beans growing were identified by both headteachers with diploma and those with bachelor's degrees. This finding implies that Income Generation choices are independent of headteacher's professional qualifications.

4.3 Initial Capital and Income Generating project Choices

The initial capital of an income generating project was important to this study. The researcher sought to establish whether the initial capital of a project had any relationship with the income generation choices. In relation to the initial capital, the researcher therefore sought to find out the opinion of headteachers and persons in-charge of income generating projects in secondary schools, on the relationship between the initial capital and income generating choices.

4.3.1 Opinion on Initial Capital and Income generation Choices.

The headteachers' opinion was considered important given that they are institutional administrators; they make and/or assist the management in making major decisions in relation to the running of the school affairs. The initial capital of a project is very important given that one cannot start a project without raising the initial capital.

Table 18 shows the opinion of headteachers and the persons in charge of income generating projects in secondary schools and the relationship between initial capital and income generating choices.

Table18: HeadTeachers' and Persons in-charge's Opinion on Initial Capital and Income generation Choices.

Opinion	Head teachers	Persons in-charge of income generating activities
Least influential	0(0)	(2) 15.4
Neutral	2(6.7)	(0) 0.0
Influential	5(16.7)	(1) 7.7
Very influential	23(76.7)	(10) 76.9
Total	30(100)	(13) 100

The data collected from headteachers as shown by Table 18, indicates that 23(76.7%) of the head teachers had an opinion that initial capital was very influential in choosing an income-generating project in secondary schools. However, 5(16.7%) of them indicated that it was influential while 2(6.7%) of them said it was neutral. This finding indicates that majority of headteachers, 23(76.7%) considered the initial capital of a project as an important factor in starting income generating choices. This implies that with the availability of initial capital, secondary schools will have the

opportunity of making varied choices of income generating projects. In conclusion, it can be noted that initial capital, influences the choices made by secondary schools in Nyamira district.

The opinion of the persons in-charge of the income generating projects in secondary schools under study on the initial capital and income generating choices was also sought by the researcher. This opinion was considered important, in that, the researcher perceived these persons to have knowledge on income generating projects.

The findings on the opinion of the persons in charge of the income generating projects as shown in Table 18, indicates that 10(76.9%) agreed that the initial capital is very influential on income generation choices. Fifteen point four percent, 2(15.4%) indicated that it was least influential only 1(7.7%) indicated it was influential. These findings indicate that the initial capital of a project is perceived to be important in the determination of income generation activities that schools choose. Based on this data it can be concluded that initial capital has an influence on income generation choices in secondary schools.

Most headteachers interviewed about initial capital and their decision to start income generating activities said it was due to the initial capital that they picked on choices, which to start, which require minimal initial capital. They noted that they rarely ventured into income generating projects whose initial capital has very high. They supported their decision by arguing that there was no provision for funds for Income Generating Activities in the vote heads. They further pointed out that it was a matter of economizing the meager resources available for them to come up with income generating projects in their schools. They argued that the Ministry of Education doesn’t allocate a vote head for income generating projects. They also pointed out

that there are no clear policies formulated to guide schools on how to acquire credit facilities from financial institutions. This finding implies that secondary schools have no credit facility and are, therefore limited in borrowing money to use in projects. This limits them on the income generating choices they make.

4.3.2 Variations in Income Generation Choices by Initial Capital.

Table 19 indicates the income generating choices at different levels of initial capital. The initial capital of income generating projects was grouped into categories for ease in analysis. The income generating choices for each category is indicated in percentages.

Table 19: Variations in Income Generation by Initial Capital.

Income generating choices	None	8000&below	8001-15000	15001-20000	20001-25000	25001-30000	30001&above	Total.
None	100.0%(24.6)	0.0%(27.1)	0.0%(26.7)	0.0%(26.7)	0.0%(25.0)	0.0%(30.0)	0.0%(26.7)	26.7%(8)
Maize growing	0.0%(13.8)	28.6%(12.9)	33.3%(13.3)	0.0%(13.3)	0.0%(15.0)	0.0%(10.0)	16.7%(13.3)	13.3%(4)
Beans	0.0%(6.3)	14.3%(7.1)	0.0%(6.7)	0.0%(6.7)	50%(5.0)	0.0%(10.0)	0.0%(6.7)	6.7%(2)
Banana farming	0.0%(3.8)	14.3%(2.9)	0.0%(3.3)	0.0%(3.3)	0.0%(5.0)	0.0%(10.0)	0.0%(3.3)	3.3%(1)
Dairy farming	0.0%(20.0)	0.0%(20.0)	0.0%(20.0)	33.3%(20.0)	0.0%(20.0)	100%(20.0)	66.7%(20.0)	20.0%(6)
Sukuma wiki growing	0.0%(13.8)	14.3%(12.9)	33.3%(13.3)	66.7%(13.3)	0.0%(15.0)	0.0%(10.0)	0.0%(13.3)	13.3%(4)
Poultry	0.0%(6.3)	0.0%(7.1)	0.0%(6.7)	0.0%(6.7)	50.0%(5.0)	0.0%(10.0)	16.7%(6.7)	6.7%(2)
Quarrying	0.0%(3.8)	14.3%(2.9)	0.0%(3.3)	0.0%(3.3)	0.0%(5.0)	0.0%(0.0)	0.0%(3.3)	3.3%(1)
Tea farming	0.0%(3.8)	0.0%(2.9)	33.3%(3.3)	0.0%(3.3)	0.0%(5.0)	0.0%(0.0)	0.0%(3.3)	3.3%(1)
Tree planting	0.0%(3.8)	14.3%(2.9)	0.0%(3.3)	0.0%(3.3)	0.0%(0.0)	0.0%(0.0)	0.0%(3.3)	3.3%(1)
Total	100.0%(8)	100%(7)	100%(3)	100%(3)	100%(2)	100%(1)	100%(6)	100.0%(30)

Note: The figures indicated in the parenthesis are the expected values in percentage. X^2 =84.107, df=54, p<0.0

As shown in Table 19, an initial capital of kshs 8000 and below, maize growing represented 28.6% within the initial capital and its expected value was 12.9%. It was followed by beans, banana, *Sukuma wiki*, quarrying and tree planting with 14.3% each, whose expected values were, 7.1%, 2.9%, 12.9%, 2.9% and 2.9% respectively. At the initial capital of kshs 8001 to kshs 15000 only three alternative choices were taken. Maize, *Sukuma wiki* and tea farming each were representing 33.3% within initial capital; their expected values were 13.3%for maize and *Sukuma wiki* each and 3.3% for tree planting. At the initial capital of kshs 15001 to kshs 20000 there were only two income generating choices namely, dairy farming and *sukuma wiki* growing.

Dairy farming represented 33.3%. *Sukuma wiki* accounted for 66.7% within initial capital, whose expected values were 20.0% and 13.3% respectively. At the kshs. 20001 to kshs 25000 of initial capital, only two choices were made as shown in Table 19. Beans and poultry farming each, were representing 50.0% within initial capital; their expected values were 5.0% for beans and poultry each. At kshs. 25001 to kshs. 30000 of initial capital, dairy farming accounted for 100% with an expected value of 20.0%. At initial capital kshs 30001 and above dairy farming accounted for 66.7%, whereas maize and poultry accounted for 16.7% each, their expected values were, 20.0% for dairy farming, 13.3% for maize and 6.7% for poultry farming.

In conclusion therefore, it can be noted that maize, quarry and banana were most preferred when their initial capital ranged from Kshs. 8000 and below, beans and poultry when their initial capital ranged from Kshs.20001-25, 000, dairy when its initial capital range from Kshs.25001 and above, *sukuma wiki* when its initial capital ranged from Kshs.15001-20,000, and tea farming when its initial capital ranged from

Kshs.8001-15,000. In testing the significance of the relationship between the initial capital and income generation choices, $p<.01$ was chosen as the criterion decision.

The result of the chi-square test indicated that the income generating choices in secondary schools in Nyamira district are dependent on the initial capital of the income generating project. There was significant relationship which was found between the two variables, $X^2=84.107$, df=54, $p<. 01$. It can be concluded that initial capital of an income generating project influences the income generation choices made by secondary schools in Nyamira.

Figure 8: Bar chart on variations in income generation choices by initial capital

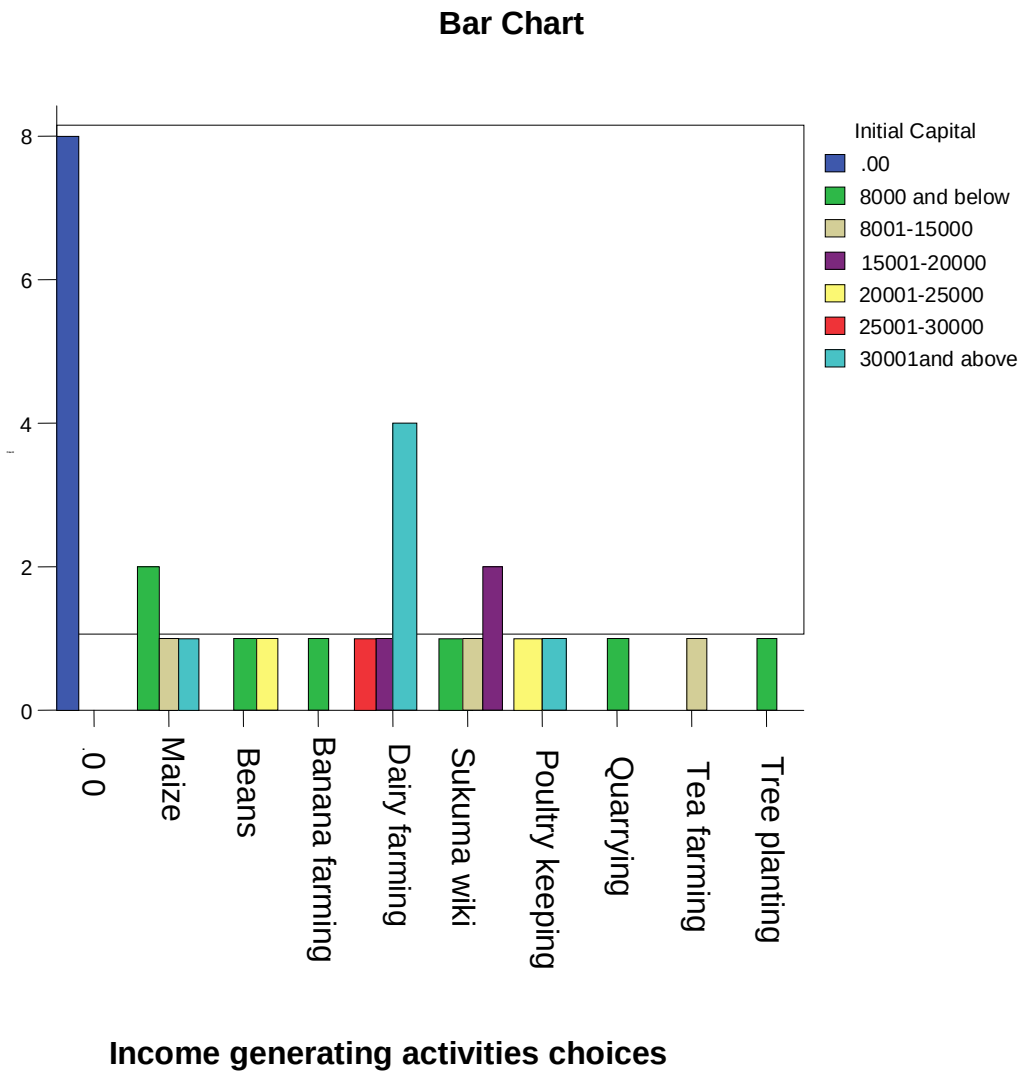

Figure 8 shows that there were 8 schools, which did not have any Income Generating Activities. In the initial capital category of below Ksh. 8000, maize had a frequency of 2, beans, banana farming, *Sukuma wiki*, quarrying and tree planting each, had a frequency of 1. In the initial capital bracket of Ksh. 8001- 15,000, maize, *Sukuma wiki* and tea farming each, had a frequency of 1. In the category of Ksh. 15001- 20000, sukuma wiki had a frequency of 2 and dairy farming a frequency of 1, while in the initial capital category of 20001- 25000 beans and poultry keeping each, had a

frequency of 1. In the initial category of Ksh. 25001-30000, dairy farming was the only choice with the frequency of 1, while in the category of above Ksh. 30001, maize, poultry keeping each, had a frequency of 1, whereas dairy farming had frequency of 4.

4.4 Yearly Operational costs and Income Generating project Choices

Operational cost of an income generating project was another important variable in the study. The researcher's aim was to find out whether the income generating choices of the sample schools had any relationship with the yearly operational costs of the income generating projects.

4.4.1 Opinion on yearly Operational Costs on Income Generating Choices.

The researcher sought to establish the opinion of the headteachers on yearly operational cost of the income generating project and income generating choices by secondary schools. Table 20, shows the opinion of headteachers on the relationship between yearly operational cost and income generating choices.

The yearly operational cost of a project was categorized into cost of inputs, repair and maintenance and labor. Opinion of the headteachers is shown in frequencies and percentages in Table 20.

Table 20: Head Teachers' Opinion on yearly Operational Costs on Income Generating Choices

Opinion	Cost of inputs		Cost of repair and maintenance		Cost of labour	
	Freq.	%	Freq.	%	Freq.	%
Least influential	3	10	1	3.3	1	3.3
Neutral	0	0	5	16.7	0	0.0
Influential	5	16.7	17	56.7	17	56.7
Very influential	22	73.3	7	23.3	12	40.0
Total	30	100	30	100	30	100.0

The opinion is indicated using frequencies and percentages as shown in Table 20. Seventy three point three percent, 22(73.3%) of the headteachers indicated that the cost of inputs was "very influential" on income generation choices. Sixteen point seven percent said it was "influential", while 3(10.0%) of them indicated that it was "least influential". Fifty six point seven percent, 17(56.7%) of the headteachers indicated that the costs of repair and maintenance were "influential". Twenty three point three percent 7(23.3%) said that it was "very influential", while 17(56.7%) of the headteachers indicated that the cost of labour was "influential", while 12(40.0%) of them said that it was" very influential".

From the data in Table 20, it is indicated that the majority of headteachers are of the opinion that yearly operational cost of an income generation project has an influence on the choice of the project. In conclusion, it can be noted that schools consider the

yearly operational costs of the IGA project before making a choice. This may imply that, with the availability of finance to run the income generating projects secondary schools will have the opportunity of making varied choices of those projects.

Table 21, shows the opinion of the person in-charge of income generating projects in schools on the relationship between yearly operation costs on income generating choices. The yearly operational costs of a project were categorized into cost of inputs, labor, repair and maintenance.

Table 21: Opinion of Persons In-Charge on the Yearly Operation Costs on Income Generating Project Choices

Opinion	Cost of inputs		Cost of repair and maintenance		Cost of labour	
	Freq.	%	Freq.	%	Freq.	%
Least influential	0	0	3	23.1	3	23.0
Neutral	0	0	0	0	0	0
Influential	4	30.8	7	53.8	5	38.5
Very influential	9	69.2	3	23.1	5	38.5
Total	13	100	13	100	13	100

Table 21 shows that 9(69.2%) of the persons in –charge of income generating projects in schools indicated that cost of input was “very influential” on income generation choices. Thirty point eight percent, 4(30.8%) said it was “influential”, while 7(53.8%) said the costs of repairs and maintenance was “influential”, while 3(23.1%) of them indicated that the cost of repair and maintenance was “very influential”. Those who indicated that the cost of labour was “influential” were 5 who represented (38.5%).

The yearly operational costs of an income generating project may be of great importance when one is making a choice. From the findings as seen in Tables 20 and 21, it can be argued that on the process of choosing income generating projects, schools take into consideration their yearly operational costs. These findings concur with TMF (2007) which asserts that, part of the decision to undertake the IGA will depend on whether there are local sources of finance to carter for the operational costs, such as, costs of raw materials and equipment. So, schools will tend to go for income generating activities, which do not require a lot of finances for their operations, as this will escalate the cost and consequently may be dropped on the way before completion.

Headteachers interviewed concerning their experiences in relation to operational costs of an income generation project, said that some of the projects end up with a short lifespan due to increasing operational costs. They noted that, as operational costs of projects take an upward trend, they do away with the project, making them to shift from one alternative choice to another. The need to transform schools into financially sustainable institutions on a practical time, scale will require substantial up-front investments in production capacity, infrastructure, and human resources. If the idea of income generating projects in schools is to move forward from a few islands of excellence to a more developed field, it will require the backing of government and donors with sizeable financial capacity capable of supporting this level of investment (Nafka, 2006).

4.4.2 Variations in Income Generation Choices by Yearly Operational costs

The researcher sought yearly operational cost of the income generating project and income generating choices by secondary schools. Table 22, Shows income generation

choices in relation to different categories of yearly Operational costs of an Income Generating Project.

Table 22 Variations in Income Generation Choices by Yearly Operational costs.

	Yearly operational cost								
Income generation Choices	None	8000 &below	8001-15000	15001-20000	20001-25000	30001-35000	35001-40000	40001 & above	TOTAL
None	100%(26.3)	0.0%(27.1)	0.0%(26.7)	0.0%(25.0)	0.0%(25.0)	0.0%(30.0)	0.0%(25.0)	0.0%(25.0)	26.7%(8)
Maize	0.0%(13.8)	28.6%(12.9)	16.7%(13.3)	0.0%(15.0)	0.0%(15.0)	0.0%(10.0)	0.0%(15.0)	50.0%(15.0)	13.3%(4)
Beans	0.0%(6.3)	14.3%(7.1)	0.0%(6.7)	0.0%(5.0)	50.0%(5.0)	0.0%(10.0)	0.0%(5.0)	0.0%(5.0)	6.7%(2)
Banana	0.0%(3.8)	0.0%(2.9)	16.7%(3.3)	0.0%(0.0)	0.0%(0.0)	0.0%(10.0)	0.0%(0.0)	0.0%(0.0)	3.3%(1)
Dairy farming	0.0%(20.0)	14.3%(20.0)	0.0%(20.0)	100%(20.0)	50.0%(20.0)	100.0%(20.0)	50.0%(20.0)	0.0%(20.0)	20.0%(6)
Sukuma wiki	0.0%(13.8)	28.6%(12.9)	33.3%(13.3)	0.0%(15.0)	0.0%(15.0)	0.0%(10.0)	0.0%(15.0)	0.0%(15.0)	13.3%(4)
Poultry farming	0.0%(6.3)	0.0%(7.1)	16.7%(6.7)	0.0%(5.0)	0.0%(5.0)	0.0%(10.0)	0.0%(5.0)	50.0%(5.0)	6.7%(2)
Quarry	0.0%(3.8)	0.0%(2.9)	0.0%(3.3)	0.0%(5.0)	0.0%(5.0)	0.0%(0.0)	50.0%(5.0)	0.0%(5.0)	3.3%(1)
Tea farming	0.0%(3.8)	0.0%(2.9)	16.7%(3.3)	0.0%(5.0)	0.0%(5.0)	0.0%(0.0)	0.0%(5.0)	0.0%(5.0)	3.3%(1)
Tree planting	0.0%(3.8)	14.3%(2.9)	0.0%(3.3)	0.0%(5.0)	0.0%(5.0)	0.0%(0.0)	0.0%(5.0)	0.0%(5.0)	3.3%(1)
Total	100%(8)	100%(7)	100%(6)	100%(2)	100%(2)	100%(1)	100%(2)	100%(2)	100%(30)

Note: The figures in the parenthesis are the expected values in percentage. $X^2 = 88.214$, $df = 63, p < 0.05$

Table 22 indicates that at the level of operational cost of below ksh. 8000, Maize and *Sukuma wiki* growing accounted for 28.6% while their expected value was 12.9% each. Beans, dairy farming and tree planting represented 14.3% each within this yearly operational cost, whereas their expected values were 7.1%, 20.0% and 2.9% respectively.

At operational cost of kshs. 8001 to 15000, banana, maize, tea farming and poultry accounted for 16.7 % each while their expected values were 3.3%, 13.3%, 3.3% and 6.7% respectively. *Sukuma wiki* accounted for 33.3% and its expected value was 13.3%. At the level of kshs 15001 to Ksh. 20000, dairy farming accounted for 100.0% and it was the only alternative income generating choice at this level of operational cost. It was expected to account for 20.0%. Dairy farming and beans were the only choices carried out at the operational cost of Ksh. 20,001 to ksh. 25,000, accounting for 50.0% each. The expected value for dairy farming at this category of yearly operational cost was 20.0% while that of beans was 5.0%. At the operational cost of ksh 25,001-30,000, there was no income generating activity, while at kshs.30, 001 – kshs. 35,000 dairy farming, accounted for 100.0%, whereas its expected value was 20.0%.

Dairy farming and quarrying accounted for 50.0% each as they were the only choices selected at the category of operational cost of ksh. 35001 – 40000. Their expected values were 20.0% and 5.0% respectively. Maize and poultry farming accounted for 50.0% each at the category of operational cost of kshs. 40001 and above. Their expected values were 15.0% and 5.0% respectively.

From the data in Table 22, it can be noted that, in the yearly operational cost of Kshs.8000 and below, maize growing was the most preferred choice followed by *sukuma wiki*, then beans, dairy and tree planting. For yearly operational cost of Kshs.8001-15000, *sukuma wiki* was the most preferred; accounting for 33.3% followed by maize, banana, poultry, and tea farming each accounting for 16.7%.Dairy farming was the most preferred choice under yearly operational cost of Kshs.15001-20000.It was the only choice under this category. Under the operational cost bracket of Kshs.20001-25000, beans and dairy farming were the most preferred, each accounting for 50%.Under this bracket there was no other choice. Dairy farming was the only choice made within the yearly operational cost of Kshs.30001-35000.Within the yearly operational cost of Kshs.35001-40000, dairy farming and quarrying were the most preferred, each accounting for 50%. Maize and poultry farming were the only choices made for the category of Kshs. 40001 and above.

These findings indicate that most of the choices had a yearly operational cost of Kshs.8000 and below. This shows that schools tend to shy away from income generating activities whose yearly operational costs are high. For example, there were only two income generating activities chosen whose yearly operational capital was above Kshs.40001; while, 7 alternatives, were chosen under the category of the yearly operational costs of Kshs.8000 and below. Six activities were selected under Kshs.8001 to 15000.

This data indicates that schools tend to limit the number of income generation choices made as the yearly operational costs of projects tend to be high. As Manuel (2007) asserts, some activities require a lot more finance – to pay for materials and

equipment – than others do. Part of the decision what activity to undertake will, therefore, depend on whether there are local sources of finance or not.

In testing the significance of the relationship between the yearly operational income cost and income generating choices, $p<.05$ was chosen as the criterion decision. The result of the chi-square test indicated that the income generating choices in secondary schools in Nyamira district are dependent on the yearly operational costs, $X^2 =88.214, df=63, p<. 05$. There is a significant relationship between the two variables. In conclusion, it can be noted that yearly operational cost of a project, is considered before a project is selected.

Figure 9: Bar chart on variations in income generation choices by operational costs.

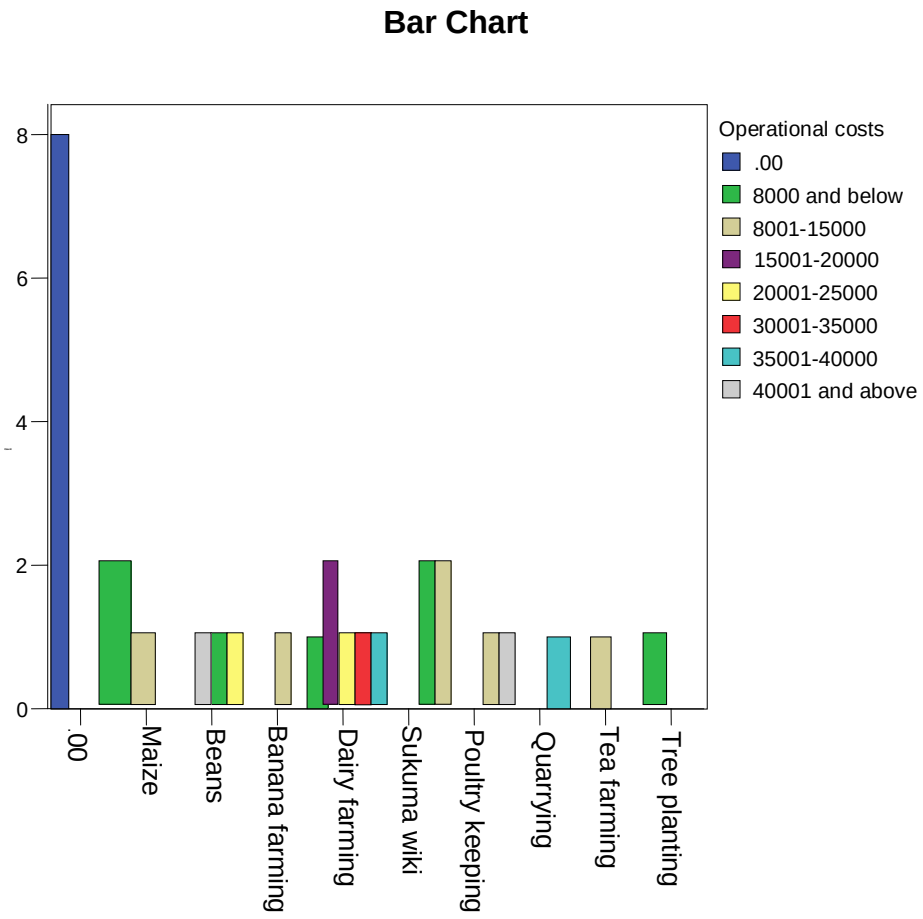

Figure 9 shows that there were 8 schools which did not have any income generating activities. In the operational cost category of Ksh. 8000 and below maize and *Sukuma wiki* growing had a frequency of 2, while beans, dairy farming, and tree planting had a frequency of 1. In the operational cost bracket of Ksh. 8001- 15000, maize, banana farming, poultry keeping and tea farming had a frequency of 1, each while *Sukuma*

wiki had a frequency of 2. In the category of Ksh. 15001-20000 dairy farming had a frequency of 2. In the operational cost category of kshs20001- 25000, beans and dairy farming had a frequency of 1, while in the category of Ksh. 30001-35000 dairy farming had a frequency of 1. In the category of 35001-40000 dairy farming and quarrying had a frequency of 1, each. For Ksh. 40001 and above, maize had a frequency of 1.This result indicates that IGA Projects are not frequently practiced.

4.5 Correlations between Variables Explaining Variation in Income Generation Using Categorized Correlations

Correlation analysis was used to evaluate the degree to which independent variables, (initial capital, operational costs, and school characteristics) influenced income generating choices. The degree of linear correlation is presented quantitatively by the coefficient of correlation whose values range from –1.00 to +1.00; this is a correlation coefficient for categorized data. A value of –1.00 describes a perfect negative correlation and a value of +1.00 shows a perfect positive correlation.

A zero value shows complete lack of correlation between two variables. The sign of the coefficient indicates the direction of the relationship. A higher value of the correlation coefficient indicates a closer relationship between the dependent and independent variables while a smaller value shows a less definite relationship.

Initial capital (Ic), operational costs (Oc), and school characteristics (Sc) were used as independent variables and income generating choices were used as the dependent variables. Using SPSS (Social Sciences Computer Programme) a statistical package the correlation coefficient between the variables were established as shown in Table 23.The table also indicates the correlations between independent variables themselves.

Table 23: Correlation Matrix for Dependent and Independent Variables

	Ig	**Ic**	**Oc**	**Age**	**T. Qua.**	**Sch.Type**	**S.g**
Ig	1.000						
Ic	.356	1.000					
Oc	.405*	.786**	1.000				
Age	.131	.314	.352	1.000			
T.Qua	-.112	-.169	-.272	-.280	1.000		
Sch. Type	.505**	.205	.250	.180	-.107	1.000	
Sg	.089	-.255	-.252	-.191	-.085	.621**	1.000

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

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

I.g - Income generating choices

Ic – Initial capital

Oc – Operational costs

Age- Headteacher's age

H.Qua- Headteacher's professional qualification.

Sch. Type – school type

Sg – school gender

The variables, which had correlations with each other, were period of headship and age, which had a correlation coefficient of 0.458. School gender and school type, had a correlation coefficient of 0.621, and initial capital and operational costs, had a correlation coefficient of 0.786.The correlation coefficient between the period of headship and the headteacher's age can be attributed to the fact that, they depend on

each other because the longer the head teacher stays in the profession the longer will be his period on headship and at the same time the head teacher will be getting older.

The correlation coefficient between school gender and school type of 0.621 arose because these two variables share qualities. School gender refers to boys' school, girls' school, or a mixed school. These schools can either be boarding, day or partially boarding. This explains why the two variables, school gender and school type had a high coefficient correlation between them. The correlation coefficient of 0.621 indicates that there is a modest positive relationship between school gender and school type.

The variables, initial capital and yearly operational cost were also positively related. Their correlation coefficient of 0.786 indicated that their relationship was very high. This could be attributed to the fact that the two variables depend on the size of the income generating project choice. The larger the scale of the project, the higher the amount of initial capital required to set it up and the higher the operational costs required to keep it running throughout the year. The two variables relate to the costs of the income generating project.

The school type had the highest correlation coefficient indicate it with income generating choices, followed by the operational costs. The coefficient of correlation between school type and income generating choices was 0.505; the correlation coefficient was significant at the 0.01 level in a two tailed test of significance. This indicates that there was a modest positive relationship between school gender and income generating choices.

The high correlation coefficient between school type and income generating could be explained by the fact that it is those schools, which practice income generating projects which are able to subsidize their meager resources. It is also possible that these different types of schools had varied choices of income generating projects of different scales.

The correlation coefficient between yearly operational cost and income generation choices was 0.405.This coefficient correlation was significant at the 0.05 level in a two tailed test. This shows that there was a modest positive relationship between the two variables. The coefficient of correlation between yearly operational cost and income generating choices can be explained by the fact that as income generating choices selected by schools increase, the yearly operational costs may also increase. It can also be argued that the more the money invested in the operations of the income generating projects, the more sustainable the projects tend to be.

The other variables namely initial capital, school characteristics (headteacher's age, gender and qualification) had a weaker relationship with income generation choices. The correlation coefficient between initial capital and income generating choices was 0.356. This correlation coefficient was not statistically significant. This showed that the positive relationship that existed between the initial capital and income generation choices was low. The correlation coefficient between head teachers' age and income generating choices was 0.131, which indicated a very low positive relationship between the two variables. The coefficient correlation between the headteachers' qualification was –0.112, showing a very low negative relationship, whereas that of the schools' gender and income generation choices was 0.089, a very low positive relationship. All these coefficients of correlation were not significant. Moreover,

headteachers' professional qualifications registered negative coefficients of correlation with other independent variables. This implies that there was lack of common characteristics, which led to this shared negative association. Therefore, headteachers' professional qualifications cannot be considered to be a significant variable for income generating projects choices.

Head teachers' age and school gender failed to register strong coefficients of correlation with income generation project choices. Their coefficients of correlation of 0.131 and 0.089 respectively underscores a weak association between head teachers' age, head teachers' gender and income generation project choices.

CHAPTER FIVE

SUMMARY OF FINDINGS CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter contains summary of the study findings, conclusions, recommendations and suggestions for further research based on the analysis of data. The purpose of the study was to determine the determinants of income generating choices in secondary schools in Kenya. To carry out this study; survey was used, where questionnaires were administered to persons in charge of income generating projects, head teachers and interview conducted on head teachers. This chapter is divided into four sections. The first section presents a summary of the research findings, the second part presents conclusion, and the third contains recommendations and lastly suggestions for further research.

5.1 Summary of Findings

The study set out to establish the determinants of income generating choices in secondary in Kenya. The summary of the study findings as per the objectives is as follows:

The study established that the operational status of secondary schools does not have any relationship with the income choices. Twenty nine point four percent (29.4%) of day schools and 60% of boarding schools were not involved in income generating projects, while 70.6 %, of day schools, 40.0% of boarding schools and 100% of day/ boarding schools forming the sample population of study, were involved in income generating projects. The chi-square result, $X^2=5.816$, $df=2$, $p>0.05$ indicated that there was unlikely to be a relationship between the operational status of secondary schools and practicing income generating projects.

The study also established that the variations in income generation choices in secondary schools in Nyamira district did not relate to the operational status of the secondary schools. Boarding schools had dairy farming as their preferred choice, which accounted for 40%. Dairy farming and maize, representing 17.6% each, and sukuma *wiki* accounting for 11.8%, were the preferred choices for day schools. Partially boarding schools had poultry and *sukuma wiki* accounting for 25.0% each as their preferred choices. From the findings of the chi-square test of independence, the result showed the chi-square value $X^2=22.018,df=18,p>.05$, confirming that there was no significant relationship between the operational status of the secondary schools and income generation choices in secondary schools in Nyamira district .

The study established that school gender had no relationship with income generation choices. It established that 66.7% of girls' schools, 50.0% of boys' schools and 20.0% of mixed schools were not involved in income generating projects. Thirty three point three (33.3%) of girls' schools, 50.0% of boys' schools and 80.0% of mixed schools were involved in income generating projects. With chi-square value of 3.580 with 2 degrees of freedom and the significance level is 0.05; there was no significance relationship between the secondary school gender and the involvement of the school in income generation projects.

The study further established that income generating choices in the sampled schools did not vary significantly from independence in relation to school gender. Girls' schools preferred dairy farming, boys' schools preferred maize farming while mixed schools prefered dairy farming, *sukuma wiki*, maize, poultry, tea farming, banana farming, quarrying and tree planting as their choices. The chi-square test observed

chi-square value X^2= 8.142,df=18,p>.05; indicating that there was no significant relationship between school gender and income generation choices.

It was also established from the study that the headteachers and the persons in charge of income generating projects in secondary schools were of the opinion that the school type is influential in relation to income generation choices. Over 63.0% of headteachers and over 76.0% of the persons in charge of income generating projects, indicated that school type was influential. The majority of the headteachers (53.3%) indicated that school gender was influential, whereas the minority (38.5%) of the persons in charge of IGA indicated that school gender was influential on income generation choices. The headteachers interviewed were of the view that to some extent, the school type influences the income generation choices. However, this opinion was not supported by the findings of this study.

The study established that the headteacher's age had no relationship with the income generation choices, and the decision to whether a school has to be involved in income generating projects. It was established that 33.3% of the headteachers aged 30-39 years, and 25.0 % of those aged between 40-49 years, were not involved in income generating projects. The study further established that 66.7%, 75.0% and 100% of headteachers, aged 30-39 years, 40-49 years and those aged 50 years and above, respectively were involved in income generating projects. Result of the chi-square test of independence was calculated and no significant relationship was found $X^2(2) =0.597$, p>0.05. This indicated that secondary school's involvement in income generating activity appears to be independent of the headteacher's age. The study established that headteachers aged 30-39 preferred maize,beans,tea and dairy farming

as their choices for IGAs. Chi-square test of independence comparing income generating choices and head teachers' age, showed that there was no significant relationship which was found between the two variables, X^2=15.118,df=18,p>0.05.

The study also revealed that head teachers' professional qualification and income generation choices are not related. Fifty percent (50%) of headteachers with diploma level of qualifications were not involved in income generating projects, whereas 70.4% and 100% of those with bachelors and masters degrees were involved in income generating projects. With the chi-square value of 61.91, with 2 degrees of freedom and the significance level of 0.05, there was no significant relationship between the head teachers' level or qualification and the head teachers' involvement in income generating projects. The study further indicated that there was no interaction between headteacher's professional qualification and income generation choices. Headteachers with diploma had chosen beans and tea farming as their IG projects. Headteachers with bachelor's degree had identified dairy, maize, *sukuma wiki*, beans, poultry, banana farming, quarrying and tree planting as their IG projects. Those with masters' degrees had made no choice as far as IGA were concerned. The chi-square test of independence was calculated comparing the income generation choices for different categories of headteacers' professional qualification, and no significant interaction was found (X^2(18) =24.72, p>0.05. These indicated that IGAs choices appear to be independent of the head teachers' professional qualifications.

The study established that 76.7% and 76.9% of headteachers and persons in charge of income generating projects in secondary schools were of the view that the headteachers are "very influential", as far as income generating choices are

concerned. Those who indicated that the headteachers are influential comprised 23.3% of head teachers and 23.1% of the person's in-charge of income generating projects. The headteachers' and persons in-charge of income generating projects' opinion on the head teachers' influence on income generation choices however, was not supported by this study.

The study established that that income generation choices in secondary schools are dependent on initial capital of the income generating project. Chi-square test of independence was calculated comparing the income generating choices for different categories of the initial capital of income generating projects, a significant interaction was found $X^2(54)=84.107, p<0.01$. This indicates that the income generation choice appears to be dependent on the initial capital required to initiate them. Seventy six point seven percent (76.7%) of the persons in charge of income generating projects in secondary schools were of the view that initial capital of a project is very influential in income generation choice, while 16.7% and 7.7%of headteachers and persons in charge of income generating projects respectively, were of the opinion that initial capital is influential. This supported the findings of the study that the income generation choices in secondary schools in Nyamira have a significant relationship with the initial capital of the project.

Another finding of the study was that the yearly operational costs of an income generating project had a significance relationship with income generation choices. Chi-square test of independence was calculated comparing the income generation choices, and a significant relationship was found ($X^2(63) =88.214$, $p<0.05$. This showed that the income generation choices, appear to be dependent on the yearly

operational costs. It was also established by the study that 73.3% of the headteachers were of the opinion that costs of inputs was very influential on income generation choices. 56.7% of the respondents were of the view that cost of repair and maintenance was influential while 56.7% were of the opinion that cost of labour was "influential" on income generation choices.

It was established that 69.2%, 23.1% and 38.5% of persons in-charge of income generating projects indicate that cost of inputs, cost of repair and maintenance and cost of labour were very influential on income generation choices, while 30.8%.53.8% and 38.5% of them indicated that the cost of inputs, cost of repair and maintenance and cost of labour were influential. Twenty three point one percent (23.1%), and 23.0% indicated that cost of repair and maintenance and cost of labour respectively were least influential.

It emerged clearly from the study that there was no significant relationship between school's operational status and the income generation choices. The findings of the chi-square test of independence indicated that the school's operation status $X^2(18) =22.018$, $p>0.05$, had no significant relationship with income generation choices. However, surprisingly through correlation analysis, this variable showed a modest positive relationship with income generation choices. This is probably explained by the fact that it is these schools, which practice in income generating projects to subsidize their meager resources. It is also possible that these different types of schools were able to have varied choices of income generating projects of different scales. The correlation coefficient between school type and income generating

choices was 0.505. This correlation coefficient was significant at the 0.01 level in a two tailed test of significance indicating existence of a relationship.

The chi-square test of independence showed that the school gender had no significant relationship with income generation choices. The chi-square value of 8.142 at 18 degrees of freedom at the significance level of 0.05 was obtained; indicating that there was unlikely to be a relationship between school gender and income generation choices, the correlation coefficient between school gender and income generating choices was 0.089, showing a very low positive's relationship. These findings imply that income generation projects in secondary schools do not necessarily depend on the school's gender. When making choices the schools do not consider the type of school.

The yearly operational costs of an income generating project chi-square result indicated that the income generation choices in secondary schools are dependent on the yearly operational costs. The correlation coefficient between yearly operational cost and income generation choices was 0.05 levels in a two failed test of significance. This shows that there was a modest positive relationship between the yearly operational costs of an income generating project and the income generation choices in secondary schools.

5.2 Conclusions

In conclusion, the income generating aspect of an educational establishment should be seen as enhancing the learning potential of learners and as a focus of reflective learning. Singh (1998) notes that;

> *Combining education with production continues to remain an important feature of education and training systems in less developed countries on account of several reasons which arise primarily from its potential contribution to the diversification of finance and relevance of learning for everyday life (p. 6)*

While there are many examples of income generation in schools, these have tended to be opportunistic in their choice of activities, uncoordinated across institutions and limited in scale (Kafka and Stephenson, 2006). This study endeavored to find out the determinants of income generating activities choices in secondary schools with the hope that the knowledge of these determinants will lead to a better process of income generation activities choices in secondary schools. The observation that there is no significant relationship between school characteristics and income generation choices in secondary schools in Nyamira district revealed the need for all schools to be urged to encourage the idea of income generating projects.

The initial capital and yearly operational costs of a project were found to have a significant interaction with income generation choices in secondary schools in Nyamira district. Hence this implies that availability of initial capital is highly considered when making income generation choices. For income generation projects to be practiced in secondary schools therefore the government has to look for ways of availing the required resources. The schools mainly require enough funds to initiate and run these income generating projects, which they may choose.

5.3 Recommendations

The following recommendations emerged from the study;

1. The observation that there is no significant relationship between school characteristics and income generation choices in secondary schools in

Nyamira district, points out that income generating activities choices is largely determined by other factors related to income generating projects. Emphasis should be placed on identifying factors that lead to better income generating choices. When identified, ways and means should be put in place to maximize these factors so as to enhance income generation in secondary schools.

2. The initial capital of a project was found to have a significant interaction with income generation choices in secondary schools in Nyamira district. The initial capital of a project is the key to initiating income generation projects. The challenge for school managers will be to look for ways that improve the financial ability of schools with regard of availing the initial capital for project initiation.
3. The yearly operational costs of a project were found to have a significant interaction with income generation choices in secondary schools in Nyamira district. The government should look for a way of assisting schools to access funds once they have initiated income generating projects in their schools. This will lead to a mode of financing which gives due considerations to the aspect of sustainability of the projects.

5.4 Suggestions for Further Research

1. Studies similar to this one on determinants of income generation activities choices in secondary schools in other districts should be carried out
2. Assessment of the effectiveness of income generating projects in maintaining orphans in secondary schools
3. A study on the factors influencing the success of school income generating projects

4. A study on the effect of income generating projects on a school's teaching and learning facilities.
5. A study on the sustainability of income generating activities in secondary schools.

REFERENCES

Achola, P.W. (1988). "Mobilizing additional funds for Secondary and Higher Education," **Kenya Journal of Education,** Vol. 4(1).

Anderson, J.E. (1973). **Organization and financing of self-help Education in Kenya**. Paris: UNESCO.

Anderson, S., Balls, S., Murphy, R. T. (1975**). Encyclopedia of educational evaluation**. New York: Jossey Bass.

Atkinson, G.B.J. (1987). **The Economics of Education.** London: Hodder & Stoughton Educational.

Ayodo, T.M.O. (1977)."**The Political Economy of educational Development in Kenya.**" A Study of Educational Interest Groups.Unpublished thesis, University of Nairobi.

Ayodo, T.M.O. (1989). "Educational financing in Kenya**:** Practices and issues since the Ominde Commission,''.**Journal of East Africa Research and Development**, Vol. 2.

Ayot, H. & Briggs, H .(1992). **Economics of Education**. Nairobi: ERAP.

Bogonko ,S.N .(1992). **Reflections on Education in East Africa**. Nairobi: Oxford University Press.

Borg,R . W and Gall. D .M (1983). **Educational Research: An introduction**. New York: Longman Inc. Vol. 40(4).

Bush,T. & West-Burnham, J. (1995). **The principles of Education Management**. Leicester: Longman, University of Leicester.

Carnoy, M.T & Torres, C. (1991). **Educational change and structural adjustment**, Working document of the ILO UNESCO interagency taskforce on austerity adjustment, Paris: UNESCO

Cheng, Y. C. (1998). The Knowledge Base for Reengineering Schools: Multiple functions and internal effectiveness. **International Journal of Educational Management,** Vol.12(5):203-24.

Cohen, J.E & Bloom, D.E. (2006*). "**Achieving Global Education",*** Bulletin of the American Academy, spring 2006: 4-7.

Coombs, P.H. (1969). **The world crisis in Education: A systems analysis.** New York: Oxford University Press, World Bank.

Dinham, S. (2005). "Principal Leadership for Outstanding Educational Outcomes", **Journal of Educational Administration,** Vol. 43(4):338-356.

Drucker, P.F. (1986). **Innovation and Entrepreneurship.** London: London Pan Books Ltd.

Florez, C. A, Carrion, R. R, Calero, V. S, Gershberb, A.I & Castro, V. 2001).**Lessons Learned from the Nicaraguan Autonomous School Reforms.** The new school university Milano Graduate school of Management and urban policy/community development research centre. Retrieved 15th May 2008 fromhttp://www.newschool.edu/milano/cdrc/schoolreport/index.html.

Frith, M. A. (1985). **School management in practice.** London: Longman Group, UK Ltd.

Ghaleei ,A. & Mohajeran ,B. (2008) "**Principal Role and School Structure", International Journal Of Social Sciences,**Vol.3, No.152.Retrieved 14th October 2008 from http://www.waset. Org/ijss/v3/v3-1-7.pdf.

GOK, (1976). **National committee on educational objectives and policies report.** Republic of Kenya,(Gachathi Report) Nairobi: Government Printers.

GOK, (1981). **Report of the presidential working party on second university ion Kenya;** Republic of Kenya,(Mackay Report) Nairobi: Government Printers.

GOK, (1988). **Report of the presidential working party on Education and manpower training for the next decade and beyond**: Republic of Kenya,(Kamunge Report) Nairobi: Government Printer.

GOK, (2005). "**Kenya education sector support programmed *2005 – 2010* Delivering quality education and Training to all Kenyans".** email:kessp@education.go.ke Nairobi: Government Printers.

Gravenir, F.Q. (1991). "An assessment of trends in public financing of education in Kenya", **Kenya Journal of Education,** Vol. 5(1):1-7.

Hallinger, P. & Heck, R. (1996).**The principal's Role in school Effectiveness.** An assessment of methodological progress. International handbook of educational leadership and administration. The Netherlands: Kluwer Academic Publishers :773-783.

Hans, A. & Carnoy, T. M. (1969). **Cost benefits analysis in education**. A case study of Kenya, Report No. Ec 173, IBRD, IDA.

Hoerrner, M. (2007).**Free Education for Children in Kenya? A Free Education it's not.** Retrieved 20th November 2008 from http://www.buzzle.com/articles.

International Bank for Reconstruction and Development. (2005). **Expanding opportunities and building competencies for young people:** A new agenda for secondary education. Washington, D.C: The World Bank.

Kafka, N. (2006). **Teach a man to fish. Self-sufficiency in education**. London: Teach a man to fish, UK. Ltd.

Kafka, N. & Stephenson, J. (2006). **Self-sufficient schools: Fostering entrepreneurship to finance sustainable education.** A paper presented at the APEID conference "Learning together for tomorrow: Education for sustainable development", Bangkok: December 2006.

Keitany, W.T. (1995). **Education and development: Alternative strategies for financing secondary schools education in Kenya**. London: University of Sussex Institute of education.

Keith, M. L. (2008). **Strategies for Sustainable Financing of Secondary Education in Sub-Saharan Africa.** Africa Human Development Series.World Bank Working Paper no.136.Washington D.C. U.S.A.

Kerlinger, E.N., (1983). **Foundation of behavioral research**. New York: Hott Rinchardt and Winston Inc.

Kosgei, Z .(2001). **"Determining optimal size and operational efficiency of Nandi Secondary School".** (unpublished) M. Phil; Thesis, Moi University, Eldoret.

Kosgei, Z, Maiyo, K.J, Chepkurui, R. (2006). "Challenges facing the Financing of Education in Developing Countries in the 21st Century", *A case of Kenya;* **The Educator,Moi university**: Vol. 1, No. 1, pp.103-111

Kothari, C. (2004). **Research methodology. Methods and techniques**. New Delhi. New Age international publishers ltd.

Leithwood, K. A (1998). "Conditions for Fostering Organizational Learning in Schools", **Educational Administration Quarterly**,Vol.34(2): 243-76.

Leithwood, A. & Jantzi, D.(1993). "**Using the Appraisal of School Leaders as An Instrument for School Restructuring", Peabody journal of education,** Vol.68(2):85-109.

Lewins, K. & Caillods, F.(2001). "**Financing secondary education in developing countries.** Strategies for sustainable growth". Paris: International Institute for Educational planning/UNESCO.

Linderman, H.R, (1971). **Educational measurement**. Bombay: Taraportvala and Co. Private Ltd.

Makori, M. A. (1996). "**Raising costs in public secondary schools:** Head teachers management strategies in Kisii District". Unpublished M.Phil Thesis; Moi University,Eldoret.

Mawathe, A. (2008).**Kenya's Expensive Free Education.**BBC News Africa. Retrieved 25th November 2008 from http://www.news.bbc.co.uk/z/hi/africa.

Meyer J. W., Ramirez F. O., Frank D. J., & Schofer, E. (2006). **Higher education as an institution.** CDDRL Working paper No. 57. Stanford, CA:Center on

Democracy, Development, and the rule of Law. Retrieved December 26, 2008, from http://iis-db.stanford.edu/pubs/21108/meyer No 57.pdf.

Mugenda, M.O & Mugenda, A.G. (1999). **Research methods**. **Quantitative and Qualitative approaches** . Nairobi: ACTS Press

Mulinge, M .M. (2002**). "Rethinking the Role of the State in Higher Education in Africa in the 21st Century:** A Case of the State as Financier" A Paper Presented During the 10th General Assembly of Held at the Nile International Conference Centre, Kampala, Uganda, from 8-12 December 2002.

Nafukho, F.M. (1991). "**Determining optimal size and existence of economies of scale in Kenya"** Unpublished M.Ed Thesis, Kenyatta University.

Ng, H.M., (2001).**Creation of income by schools in China.** A Survey of selected schools in Guangzhou. Education management & Administration, Vol.29(4): 379-395.

Ngware, M. W., Onsomu, E. N.,Muthaka, D. I & Manda, D. K. (2006). "**Improving access to Secondary education in Kenya**. **What can be done?"** KIPPRA, Nairobi Vol .25 No7. Retrieved December 26, 2008, http://www.google.coke

Ngware, M. W., Onsomu, E. N., & Muthaka, D.I. (2007). **Financing secondary education in Kenya: Cost reduction financing options**. Education policy Analysis Archives, 15 (24). Retrived 5th may 2008 from htt://www.epa.asu.edu/epaa/VI/5n24/.

Ogada, T.P. (2005). **Income Generating Activities for Secondary Schools.** A paper presented at an induction course in education management for principals of secondary schools, Eldoret Polytechnic

Ogutu, G .E .M.(2005). **A Report of the provincial education board's task force on the improvement of performance at national examinations by Nyanza schools.** Kisumu: PEB.

Olel ,M.A. (2000). "**Optimal utilization of educational resources" Unpublished Thesis** Maseno University.

Olembo, J. O. (1985). **Financing secondary education in Kenya**. Research report no 2. Nairobi: bureau of Educational research in Kenyatta University.

Olembo, J. O., Wanga, P.E.,& Karagu,N.M. (1992). **Management in Education.** Nairobi: Educational Research and Publications.

Ominde, (1964). **Education Commission Report Part 1**.Nairobi: English Press.

Opondo, O., Namunane, B., & Orlale, O. (2007, August 9th). **Kenya MPS support bid to set up education levy fund**. Nairobi: Daily Nation 9th August Nation media.

Psacharopoulous, G. & Woodall, M. (1985). **Education for development, an analysis of investment choices.** Washington: Oxford University Press, World Bank.

Republic of Kenya, (1999). **Totally integrated Quality Education and Training**, Nairobi: Government Printers;

Riak, I.C. (1986). **The costing and financing of education for development in Kenya.** Nairobi: BER KU

Rice, E. and Schneider, G. (1992). "A decade of Teacher Empowerment. An empirical analysis of teacher involvement in decision –making", **Journal of Educational Administration.** Vol.32: 43-58.

Riechi, A.R.O. (1993).**Internal Sources of funding. A survey of Kenya's Public Universities.** Unpublished M.Ed thesis, Kenyatta University

Rono, P.K. (1988). **Cost sharing in education**, B.E.R. seminar paper, Kenyatta University.

Shultz, T.W. (1963). **The Economic value of education**. Colombia: Colombia University Press.

Singh, M. (1998). **School Enterprises: Combining Vocational learning with Production**. Berlin: UNESCO-UNEVOC PUBLICATIONS:

Steers, R. M. (1991). **Introduction to Organizational Behaviour, 4th Edition**, and New York: Harper Collins Publishers.

Stoll, L. (1997). **Successful Schools: Linking School Effectiveness and School Improvement.** Paper presented in LARTV conference Melbourne,pp.319.Retrieved21stNovember2008fromhttp.//www.//scholar.google.com.

Teach a Man to Fish. (2006). **Beyond Fees. A guide to Income Generation in Schools.** Teach a man to fish UK Ltd. Retrieved 3rd October 2007 from http://www.teachamantofish.org.uk.

Thomas, E. (2002). **Healthy Futures: Reducing barriers to primary school completion for Kenyan girls. Special publication No.23.Baltimore:** Johns Hopkins University: Center for communication programs, population communication services; Washington, DC: The Academy for Educational Development.

Tirop, C.K (2007). **The Roles and Responsibilities of the Head Teachers; A paper presented at an induction course in education management for principals of secondary schools**, Eldoret Polytechnic.

Weele, A. H. T. (1973). **Comparison of Educational financing in Ethiopia, Kenya and Tanzania Addis Ababa***:* Planning and programming office, Ministry of Education and fine Art.

World Bank, (1980). **World development report**, New York: Oxford University Press.

World Bank, (2006) .**World Development Report 2007**: Development and the Next Generation.Retrieved15thMay2008fromhtt://siteresources.worldbank.org/INTWDR2007/Resources/1489782-1158107976655/overview.

APPENDICES

APPENDIX I: COVER LETTER TO SCHOOL HEADS

My name is Mayora Thomas. I'm undertaking a Masters course in Educational Management and Policy Studies (Economics of Education) at Moi University. I have selected you to participate in responding to a survey on the determinants of Income generating choices by schools. By agreeing to participate in the study you signal your informed consent for your voluntary participation. This questionnaire will not take more than 20 minutes to complete and I'm seeking for your honest opinion. Please feel free to respond to the items.

All the responses will be kept confidential and the researcher will be the only person to see the responses in their raw form. Do not indicate your name or the name of your school anywhere in the document. In case of any difficulty please do not hesitate to call me on 0722475611/0733932648. I will be forever grateful for your kind assistance.

Yours faithfully

Mayora Thomas Nyandema

APPENDIX II : QUESTIONNAIRE FOR HEADTEACHERS

This Questionnaire is for collecting data on the determinants of income generating activities choices in secondary schools in Kenya. All the information given shall be treated as confidential. To enhance confidentiality, do not enter your name or that of your school in the Questionnaire.

Please read the following statements and then respond by placing a check mark (√) or (X) in the box or space that best represents your opinion on the issue addressed in the statement.

1. What is your Gender? Male ❑ Female ❑

2. What is your age? (Tick where applicable)

Below 30 years ❑ 30-39 years ❑ 40-49 ❑ Above 50 years ❑

3. For how long have you been in Headship?

Less than 2 years ❑ 2-5 years ❑ 6-10 years ❑ More than 10 years ❑

4. What are your Professional Qualifications? (Tick where appropriate)

Diploma ❑ Bachelors ❑

Working on Masters ❑

5. What professional courses have you attended in the last five years?

_____

_____

_____

SECTION.II: GENERAL INFORMATION ABOUT THE SCHOOL

1. Which is the schools operation status *(Tick as appropriate)*

Boarding ☐ Day ☐ Both boarding and Day ☐

2. School type

Boys ☐ Girls ☐ Mixed ☐

3. When was the school started?

_____

4**. Show the school enrolment, and the number of streams**

YEAR	TOTAL ENROLMENT	NO. OF STREAMS
2007		
2006		
2005		
2004		

5. What is the size of your school land in terms of acreage._____?

6. What are the characteristics of Head teachers of the school since 2004 up to date?

Duration		**Age at the time of departure**	**Educational qualification**	**Professional qualification**
FROM	**To**			

SECTION B: SOURCES OF FUNDS

7. In your opinion how do you rate the importance of the following sources of funds to schools?

	SOURCE OF FUNDS	Not Important at all	Slightly Important	Undecided	Important	Very Important
i.	Government grants					
ii.	Donors / sponsors					
iii.	Fees					
iv.	Harambee					
v.	Income generating Activities					
vi.	Other*(specify)*					

8. Indicate the income generating activities and their initial capital, operational costs and income using the table below:

Year	**Activity**	**Initial Capital**	**Operational Cost**	**Income**
2004				
2005				
2006				
2007				

9. Outline areas where the incomes generated from these activities are spent.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

10. What is your opinion on the influence of the following stakeholders on the choice of income generating activities in your school?

	Stakeholders influence on choices of income generating activities	Not Influential	Least Influential	Neutral	Influential	Very influential
	School Head teacher					
	Parents					
	Teachers					
	Students					
	Non teaching staff					
	School Neighborhood					
	B.O.G. members					

11. What is your opinion on the influence of the following issues on choices of an income generating activity?

		Not Influential	Least Influential	Neutral	Influential	Very influential
Operational costs						
	…..costs of inputs and or raw materials					
	..cost of labor					
	….costs of repair and maintenance					
Initial costs						

	….amount of initial capital required					
	..availability of the initial capital required					
	…time required to start the project					
School characteristics						
	….Size of land					
	..availability of rooms and buildings					
	….availability of Human capital (employees)					
	…The type of school(boarding or day)					
	…The type of school (girls, boys or mixed)					
External Forces						
	….experiences of other schools with similar projects					
	….Influence of technological changes					
	…..Pressure to conform and be like other “big” schools					
	…….Market for product and services					
	….Pressure from parents during parents days					

Thank you very much for taking your time to fill this questionnaire

APPENDIX III: COVER LETER TO PERSONS IN CHARGE OF INCOME GENERATING ACTIVITIES

Hi! My name is Mayora and currently undertaking a Masters course at Moi University. You have been selected to participate in responding to a survey on the determinants of Income generating choices by schools. By agreeing to participate in the study you signal your informed consent for your voluntary participation. This questionnaire should not take more than 20 minutes to complete and your honest opinion is sought .Please feel free to respond to the items.

All the responses will be kept confidential and the researcher will be the only person to see the responses in their raw form. Do not indicate your name or the name of your school anywhere in the document. In case of any difficulty please do not hesitate to call me on 0722475611/0733932648. I will be forever grateful for your kind assistance.

Yours faithfully

Mayora Thomas Nyandema

APPENDIX IV: QUESTIONNAIRE FOR OFFICERS IN CHARGE OF INCOME GENERATING ACTIVITIES.

Please read the following statements and then respond by placing a check mark (√) or (X) in the box or space that best represents your opinion on the issue addressed in the statement.

1. What is your Gender? Male ☐ Female ☐

2. For how long have you worked in the present station?

Less than 2 years ☐ 2- 5 years ☐ 5 – 10 years ☐ More than 10 years. ☐

3. What are your Professional Qualifications? _____

SECTION B: INCOME GENERATING ACTIVITIES

1. **What are some of the income generating activities in your school activities**

1.	2.	3.	4.	5.
6.	7.	8.	9.	10.

2. What other potential income generating activities do you think can be started by your school?

_____

_____

c.) What is your opinion on the influence of the following stakeholders on the choice of income generating activities in your school?

	Stakeholders influence on	Not Influential	Least Influential	Neutral	Influential	Very influential
	School Head					
	Parents					
	Teachers					
	Students					
	Non teaching staff					
	School					
	B.O.G. members					

3. What is your opinion on the influence of the following factors in the decision to start an income generating activity.

	Factors in decision making on Income generating activities	Not Influential	Least Influential	Neutral	Influential	Very influential
Operational costs						
	…..costs of inputs and or raw materials					
	..cost of labour					
	….costs of repair and maintenance					
Initial costs						
	….amount of initial capital required					
	..availability of the initial capital required					

	…time required to start the project					
	….Pressure from parents during parents days					
School characteristics						
	….Size of land					
	..availability of rooms and buildings					
	….availability of Human capital (employees)					
	…The type of school(boarding or day)					
	…The type of school (girls, boys or mixed)					
External Forces						
	….experiences of other schools with similar projects					
	….Influence of technological changes					
	…..Pressure to conform and be like other “big” schools					
	…….Market for product and services					

Thank you very much for taking your time to fill this questionnaire

APPENDIX V: INTERVIEW SCHEDULE FOR HEADTEACHERS

1. How would you describe your school in terms of enrolment and type of school?

2. In view of the need to generate additional income, how has your school ventured in starting income generating projects.

3. What do you think is the role of initial capital (human and financial) in the decision to start income generating activities? Please cite some relevant examples from your school.

4. Apart from the initial cost, the operational costs may be a factor to consider in choosing an income generating activity. What have been your experiences in this area?

5. Are there some unique school characteristics that influence your decision to start an income generating activity? Please share your experiences.

6. What suggestions would you make to other heads who are considering starting income generating activities?

END

APPENDIX VI: RESEARCH PERMIT

APPENDIX VII: RESEARCH AUTHORIZATION LETTER