INFLUENCE OF UNIT COST OF EDUCATION ON STUDENTS ENROLMENT RATES IN PUBLIC SECONDARY SCHOOLS IN THARAKA SOUTH SUB-COUNTY, KENYA

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DECLARATION

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

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I dedicate this work to all children whose transition from primary to secondary education was through chance.

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TABLE OF CONTENTS

CHAPTER TWO

REVIEW OF RELATED LITERATURE

CHAPTER THREE

RESEARCH METHODOLOGY

CHAPTER FOUR

RESEARCH FINDINGS, INTERPRETATION AND DISCUSSION

LIST OF TABLES

Content **Page**

LIST OF FIGURES

Content **Page**

LIST OF ABBREVIATIONS AND ACRONYMS

CSC	Capital Social Cost
DEO	District Education Officer
EFA	Education For All
FTSE	Free Tuition Secondary Education
FPE	Free Primary Education
GDP	Gross Domestic Product
GNP	Gross Domesctic Product
KESSP	Kenya Education Sector Support Programme
MoEST	Ministry of Education Science and Technology
NGOs	Non-Governmental Organizations
NTA	National Transfer Account
OECD	Organisation for Economic Co-operation and Development
RSC	Recurrent Social Cost
TSC	Total Social Cost
UNESCO	United Nations Educational, Scientific and Cultural Organization

ABSTRACT

Education forms the basis upon which economic, social and political development of any nation is founded. Due to its contribution to economic growth, enhanced productivity, national and social development, and social equity, goverments and households heavily invest in all forms of education. Despite the heavy expenditure on education by the governments and households, little attention has been given to the unit cost of education of each student, especially by age and gender. The absence of age and gender in the existing literature of unit costs of education was the source of interest for this study. This study tries to answer three questions. First, to what extent does the average household expenditure on education of every student influence enrolment in secondary schools in Tharaka South Sub-county? Secondly, to what extent does average government expenditure on every student's education influence enrolment in secondary schools in Tharaka South Sub-County? Thirdly, is there age and gender education unit cost differentials in Tharaka South Sub-County? The study used correlational research design to establish the relationship between unit cost of education and students' enrolment rates in public secondary schools. The data was collected from household heads and principals of secondary schools and also from Ministry of Education offices. The target population comprised all the 23,275 household heads and 26 principals of secondary schools in Tharaka South Sub-county. The Yamane's formula was used to get a sample of 393 household heads while census was used to get the number of school principals who participated in the study. The questionnaires, interview schedule and education document analysis by interviewers were the main tools for data collection. The data were analyzed using both SPSS and STATA softwares. Through data analysis, the study established that most of households have more girls in secondary school than boys. The study also established that there is high correlation between parents' level of education and children enrolment in secondary schools with r=0.891and $p<0.05$. On transport cost, the average distance from home of student to school is 24km, with day schools being closer at 12km and boarding schools being 28km away. The study revealed that the cost of girls' school uniform is 12% higher than that of boys, and there was evidence of a high correlation between uniform cost and a student's gender ($p<0.05$). Regarding the household average expenditure on education for children in public secondary schools, the study established that the unit cost of education for girls is higher than that of boys in boarding schools (the average cost for girls was Ksh 52, 474 while that for boys was Ksh 49,194). However, the situation is reversed in day schools where the unit cost for boys is higher than that of girls. The study also established that the average government expenditure per student was Ksh 27,189. The study also established that a child is less likely to enroll in a secondary school if the household expenditure is higher than the government expenditure. Thus, government education subsidies may be promoting enrollments in secondary schools. On the basis of the foregoing findings, the study recommends that more day secondary schools be built; school uniform cost for girls be subsidized; the cost of school facilities, especially buildings and laboratory equipment be provided by the government; banks and other financial institutions be given incentives to extend education loans to students; and school principals be required to adhere to secondary school fees guidelines set by the Ministry of Education

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The economics of education asserts that investment in education has a long gestation period before its returns are received by investors (Mingat and Tan, 1996, Manda, Mwabu and Kimenyi, 2002 and Gropello, 2006). It is against this background that education is viewed as the root source of human, social, cultural, and economic progress. Education is also perceived as legitimate determinant of well-being in terms of both individual and collective goods, resulting into rapid growth at both national and global levels (Meyer, Ramirez, Frank, and Schofer, 2005).

Since education is viewed as an investment, governments of various countries, societies and individuals have been concerned with how to finance it. The process of education financing has been dogged with complexities because it is done at pre-school level, primary level, secondary level and tertiary level. Scholars have been attempting to come up with methods of establishing the average cost of education per student with the aim of easing the complexities of education financing. For instance, the Organisation for Economic Co-operation and Development, (OECD, 2011) asserted that the average cost of education per student can be calculated by dividing the total expenditure by educational institutions at that level by the corresponding full-time equivalent enrolment. This is in line with Delmonico (2001) who also calculated the average cost of education per student by dividing public spending on education by the number of students,

expressing the number as a percentage of GNP per capita. The same formula was applied by United Nations Educational, Scientific and Cultural Organization (UNESCO 2011) to calculate the average cost of education per student in Sub-Saharan countries including Kenya. However, the UNESCO (2011) formula was applied in calculating the average cost of education per student in primary schools and excluded other levels of education like secondary school as well as the private cost of education.

On the private cost, Mikiko, Takashi and Yuichi (2005), calculated the average cost of education per student for children in Uganda by focusing on what the household spends on education. This method also avoided inclusion of the government expenditure in calculating the average cost of education per student. This clearly shows that each of these two methods ignores the government component of the cost of financing education that the National Transfer Accounts (NTA) methodology considers important (Lee and Mason, 2011). The NTA approach combines the contributions of the government and the households to the cost of schooling in calculating average cost of education per student and disaggregate it by age and gender, and is the methodology preferred in this study.

In Kenya, the cost of education is met by the government and household memnbers. The public spending on education by the Government of Kenya is driven by the Sessional Paper No. 1 of 2005 on a Policy Framework for Education, by the Training and Research and the Second Kenya Education Sector Support Programme (KESSP II) as well as by the Basic Education Act, 2013. This Act and the associated programmes, coupled by the direct and indirect benefits attributed

to education and by conventional laws that safeguard the rights of children, have led the government of Kenya to give the education sector the highest public education allocation compared to allocations by other East African countries. For instance, in 2004-2005 and 2005-2006, the share of education expenditure in total government expenditure was 27% and 26%, respectively. However, it declined to 23.9% in 2008-2009 fiscal years Republic of Kenya (2012). In terms of education expenditure as percentage of Gross Domestic Product (GDP) Table 1.1 gives the summary in the three East African countries.

Table 1.1: Education expenditure as percentage of GDP in East African countries

Country	2008	2009	2010	2011	2012
Kenya	6.03	6.10	6.18	6.54	7.00
Tanzania	4.3	3.9	-	-	-
Uganda	0.9	0.8	1.0	-	-

Source Kenya economic survey 2012

Table 1.1 shows that Kenya spends more on education as a percentage of GDP than both Uganda and Tanzania.

Before the introduction of Free Tuition Secondary Education (FTSE) in 2008 in Kenya, education financing was based on the cost-sharing policy of 1988, which required most costs in education to be met through partnership between the public sector and Non-Governmental Organizations (NGOs), religious organizations,

development partners, communities/individuals, and private sector (Republic of Kenya, 1998). With this funding policy framework, the overall government role included the professional development of teachers, teachers' remuneration in public institutions, provision of infrastructure, administration and management, and provision of bursaries and scholarship for needy students. The responsibilities of other players included physical infrastructure development and maintenance; payment of tuition, public examinations, catering and accommodation in boarding schools, and payment of school/college amenities such as transport, water, energy and communication. Other players also takes care of student's personal expenses and remuneration of school/college non-teaching staff. Coupled with rapid education expansion, the policy led to escalating cost of schooling, especially at post-primary level of the school system and increased upward pressure on the government budget over time (Republic of Kenya 2003).

In a bid to address illiteracy, low quality education, low completion rates at the secondary level and high cost of education, the governemnt of Kenya launched Free Tuition Secondary Education (FTSE) in January 2008. The FTSE policy also geared towards increasing transition rates from primary to secondary schools by 70% percent in all districts (Ohba, 2009). Guided by this policy, the government is expected to meet the tuition fees of KShs 10,265 per student, while the parents were required to meet other requirements like lunch, transport, uniform and boarding fees for those in boarding schools. Parents are also expected to contribute towards schools development projects such as construction oif classroomes, dormitories, school buses among others. This was in line with the government

commitment to ensure that regional special needs and gender disparities were addressed (Ohba, 2009).

According to Republic of Kenya, (2002), MoEST, (2004), MoEST, (2005) the costs of secondary education in Kenya is the main reason for the low transition rate from primary to secondary education. With the introduction of Free Tuition Secondary Education, the cost of secondary education was expected to go down and subsequently increase the transition rates from primary school to secondary school. However, despite the government intervention of making secondary education affordable in order to increase access to secondary education, the cost of education is still high because public schools levy fees for students lunch, school buildings and boarding equipment, a cost which is met by households alongside other non-discretionary items such as school uniforms, sports uniforms, text books, stationary and pocket money (Ohba, 2009)

A study by Mutegi (2005) established that cost of education was one of the main factors that negatively affects students demand for secondary education in Tharaka central division, currently referred to as Tharaka South Sub county. However, the study focused on the general factors that affect demand for secondary education while ignoring the cost items that scales up the cost of education. This study therefore focused on the establishing the education items that scales-up unit cost of education and how it influences students' enrolment in secondary schools.

The statistics at the Tharaka South Sub county Office indicates that the transition rate from primary to secondary is 65% which is below the national transition rate of 70%. This suggests that the cost of education could still be denying students a

chance to enjoy secondary education even after the government subsidy on secondary education in 2008.

This study therefore sought to establish the amount of money that the government spends on every students through meeting the cost such as professional development of teachers, teachers' remuneration in public institutions, provision of infrastructure, administration and management, bursaries, scholarship, physical infrastructure development and maintenance, tuition fees, catering and accommodation in boarding schools, and payment of school/college amenities such as transport, water, energy and communication.

On the household perspective the study sought to establish the amount of money spent by household on education of children through buying books, uniform, paying for students' lunch, transport cost, development levy and pocket money. These cost variables were assessed in respect to how they influence enrolment in secondary schools in Tharaka South Sub County.

1.2 Statement of the Research Problem

In most African countries, the governments are the main financier of education. However, external partners, users and beneficiaries of school systems (students and their families), private entities such as non-governmental organizations (NGOs), religious institutions, communities and private companies have been suplimenting the government subsidy in education. (UNESCO 2011). In Kenya, from the year 2008, the governement in partnership with international bodies have been increasing funds going to the education sector with the view of lowering the

amount of money that households spent on their children who are in secondary schools.

Despite the government effort to lower the amount of money spent by parents as they take their children through secondary education, the data on full financial burden borne by parents who have children in secondary schools is absent. The absence of this data may lead to an inability of the stakeholders of education to act accordingly when dealing with matters of education cost. The absence of accurate cost data is attributed to the earlier methods of establishing the unit cost of education where they only focus either on government cost or household cost.

The absence of data on full education finacial burden borne by households, coupled by challenges of improving education under tight budgetary constraints as well as the uproar by the civil society, parents and donors who seek clarification on the actual cost of education prompted this study to be carried out. The study sought to determine the average cost of education met by households/government and the extent to which it influences students' enrolment rates in secondary schools. The study further disaggregate the cost of education by age of the student, gender, class level and school type.

1.3 Purpose of the Study

The purpose of this study was to determine the influence of average cost of education on students' enrolment rates in secondary schools in Tharaka South Sub-County using National Transfer Accounts approach.

1.4 Objectives of the Study

The main objective of this study was to determine the influence of unit cost of education on students' enrolment rates in public secondary schools in Tharaka South Sub-County

The specific objectives were;

i. To establish the influence of average household education expenditure on students enrolment rates in secondary schools in Tharaka south Sub County.
ii. To determine the influence of average government education expenditure on students' enrolment rates in secondary schools in the in Tharaka south Sub County.
iii. To establish the unit cost of education differentials by age and gender and its influence on students enrolment rates in secondary school
iv. To analyse the measures that have been put in place to address students' enrolments rates in secondary schools in the county.

1.5 Research Questions

This study was guided by the following research questions;

i. What extent does average household expenditure on every student's education influence enrolment in secondary schools in the study area?
ii. To what extent does average government expenditure on every student's education influence enrolment in secondary schools?
iii. To what extent does unit cost of education by gender and age of the student influence enrolment rates in secondary schools?

iv. What measures can be put in place to address students' enrolments rates in secondary schools?

1.6 Significance of the Study

This study findings may be of use to many stakeholders in education. First, the educational planners and managers may use it as a guide to calculate the cost of producing a graduate at secondary level of education. The information can be used for planning and budgeting for education in secondary schools in Kenya.

The study findings may also give an insight to the government on the patterns of educational expenditures. The government may use the various cost concepts to come up with good educational choices and decisions. For example, the government may use the findings of this study to make projections on education cost over the years. This may help either for expanding existing facilities or build new schools and decisions about alternative educational technologies.

The study findings may also be used by educational policy makers to address the issue of educational efficiency, which is measured in terms of the utilization of real resources. Cost analysis is often used to identify possible cost reductions strategies and indeed, the need for cost reducing measures and more generally for policies towards cost-effectiveness in education provision.

The households may also use the study findings to plan for their children's education because the study will indicate the cost of every item in education; therefore the household can use the findings of the study to budget for the education of all the children.

The researchers may use the findings of the study to come up with other methods of measuring the average cost of education per student and hence add more knowledge on how to address the cost issues related to education expansion.

1.7 Limitations of the Study

One of the limitations of this study was that it was not possible to control the influence of intervening variables. To overcome this, the researcher employed random sampling technique and collected data from a large proportion of respondents.

The other limitation was that there was no population data at the sub county levels that would have been used to map it with the survey data in line with NTA methodology, this was countered by getting involving more household head in the study.

1.8 Delimitations of the Study

This study only focused on public secondary schools in Tharaka south Sub County because the private secondary schools do not receive government funding which constitute part of the average cost of education per student as per National Transfer Account methodology. Secondly, the study only sought views of the household heads and the principals of sampled schools.

1.9 Assumptions of the study

This study was built on the assumptions that;

The average costs of education per student vary by the category of the school, age of the students, gender of the students, the distance of the school from the household and locale of the school.

1.10 Definition of Significant Terms

Cost of education - Expenditure incurred during acquisition of education.

Child- means an individual who has not attained the age of eighteen years.

Enrolment- It refers to registering people in a particular level of education. In this case it means registering students in secondary school level of education.

Literate – Means people who can read and write simple statements with understanding in a given language.

Tuition fees -Means fees charged to cater for instruction or instructional materials.

Poverty line – Minimum income level (Kenya Shillings 1, 239 per month in rural areas and KShs.2, 648 per month in urban areas) that a person should have in order not to be considered poor.

Cohort- a group of students in the same level of education.

Unit cost- it is the average cost incurred by both household and government on every student in school.

National Transfer Accounts comprise a system of accounting that calculates the amount of money spent (in this case) on education per every child, disaggregated by age and gender of the child.

Household refers to a unit of dwelling with one or more people living together and sharing resources together.

Household head is a member of the family who is relied upon on fees payment, this could be the father or the mother.

1.11 Organization of the Study

This study is organized into five chapters. Chapter one focuses on background to the research problem, statement of the problem, purpose and objectives of the study, research questions, study significance and assumptions. Chapter two deals with literature review on the cost of education in Kenya, and chapter three consists of research methodology focusing on research design, target populations, sample and sampling procedures, research instruments, validity and reliability of the research instruments, data collection procedures and data analysis techniques. The rest of the chapters such as chapter four focuses on data analysis and discussion of findings and chapter five gives the summary, conclusions, recommendations and suggestions for further research.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

According to Gall and Borg (1989) literature review provides one with means of getting to the frontier in one's particular field of knowledge. He further asserts that unless, one learns what has been done by others in one's area of study; one may not develop a project that would contribute to additional knowledge. According to Hart, (1998) literature review is an objective, thorough summary and critical analysis of the relevant available research and non- research literature on the topic being studied. The goal of literature review is to bring the reader up-to-date with current literature on a topic and form the bias for another goal, such as the justification for future research in the area.

Other researchers such as Boote & Beile, (2005), Combs, Bustamante, & Onwuegbuzie, (2010) and Onwuegbuzie, Collins, Leech, Dellinger, & Jiao, (2010), noted that literature review represents the most important step of the research process in qualitative, quantitative, and mixed research studies. They furthers opined that, a thorough, literature review is the foundation and inspiration for substantial, useful research.

This study focused on literature review within the following sub headings; the economic and social benefits of secondary education, the concept of unit cost of education, expenditure on education in Kenya, the concept of subsidized secondary education in Kenya, the rationale for Investing in education by governments and families, the National Transfer Accounts Concept (NTA), private education

consumption/household expenditure, Public education consumption/Government expenditure, Theoretical Framework and Conceptual framework.

2.2 The concept of Unit Cost of Education

The cost of education is comprised of real resources in terms of sacrifices made and money paid to produce an educated person. Akangbou (1987) classified education cost into social and private costs. In this case the social costs refers to the cost incurred by the government or society in order to educate its citizens while the private cost of education represented the cost incurred by an individual in the process of acquiring education. The social cost of education is comprised of direct and indirect cost where the direct cost represented the cost directly attributed to the provision of education to its citizens while the social indirect cost is the forgone earnings that is what government is losing by providing education to its citizens. Psacharapoulos and Woodhall (1997), further categorized direct social cost of education as Recurrent Social Cost (RSC) and Capital/development Social Cost (CSC), the two are added to form Total Social Cost (TSC) of education, expressed as TSC=RSC+ CSC.

The recurrent social cost is also viewed as the costs that recurs regularly (Akangbou (1987). It covers expenditures on goods and services that bring immediate and short-lived benefits. Thus, expenditures on consumable goods such as materials and personnel salaries, rent, interests and grants falls in this category. All these are items are funded within an accounting year, hence, recurrent expenditure (cost). According to Akangbou (1987) the capital/development (cost)

is the cost of education incurred to purchase durable assets such as buildings or equipment, that are expected to yield benefits over a longer period.

These classification by Akangbou (1987) was contradicted by Psacharapoulos and Woodhall (1997) who opined that the classification of recurrent and capital expenditure in education cost lies on the source of finance. According to Psacharapoulos and Woodhall (1997), the recurrent expenditures are financed from current income or revenue, while capital expenditures are financed by loans from international agencies as well as other sources of income. This study adopted the Akangbou (1987) view of recurrent and capital cost by treating recurrent cost of education as to the costs that "recurs regularly in provision of education and covers expenditures on goods and services that bring immediate and short-lived benefits" and capital (cost) as expenditures incurred in provision of education for purchasing durable assets such as buildings or equipment, that are expected to yield benefits over a longer period.

Psacharopoulos and Woodhall (1997) asserts that that all the educational inputs should be translated into monetary value in order to quantify the cost of producing a graduate in any educational level. Thus, in actual cost analysis, educational planners, like economists, use most, the unit cost concept as bias for measurement of education cost.

Based on Psacharapoulos and Woodhall (1997) concept of translating all educational inputs in school operation into monetary value, several attempts have been made to calculate the average cost of education per student. For instance Delmonico et al (2001) calculated the unit cost by dividing public spending on

education by the number of students expressing the number as a percentage of GNP per capita while Mikiko, Takashi and Yuichi, (2005) calculated the education cost per pupil by obtaining the average per pupil spending on education from households that have children either in primary or secondary school. They then calculate the average per capita spending for the primary and secondary levels and obtained the ratio of primary to secondary education costs at 1:8.7.and then applied the ratio to the education spending of households that have children in both primary and secondary schools. These two method of establishing the unit cost have been faulted by Lee (2003) by introducing National Transfer Account which calculates the unit cost by combining the unit cost from the household and the government and then disaggregating it by age and gender.

This study focused on the social (Government) and Private (households) direct cost of education by calculating all the direct cost of education incurred by the government to produce a secondary school graduate and all the cost incurred by the household on children in secondary education. The study ignored the indirect costs (also called opportunity costs) from both the social and private perspectives. According to Richard (2001), the opportunity cost of education includes the value of students' time, typically measured as earnings foregone. The student's time is considered as cost because a student could be earning an income or performing other activities if he or she was not spending time studying.

In economic terms, the value of the student's time is called an opportunity cost since it is not a direct, out-of-pocket expense. Even though indirect, the opportunity cost of time is a very important cost to consider in evaluating

investments in education. This study did not focus on calculating the opportunity cost of education. The study only focused on direct cost of education incurred by both household and government.

The opportunity cost on the government and household are viewed differently, for instance Richard (2001), opined that from society's perspective, the opportunity cost is the before-tax foregone income, whereas from the individuals perspective (or that of the individuals family), it is the after-tax income foregone. Table one summarizes the unit cost of education incurred directly or indirectly by the government or the household

Table 2. 1: The Social and Private Costs of Education

	Private cost	Social cost
Direct Costs	Out-of-pocket expenses borne by the student or the student's family, including: • Fees actually paid by the family; (Boarding fees, examination fee and Motivation fee) • Transportation costs incurred by the family; • Family's purchase of books, school uniforms	All the resources directly used in the production of education including: • Time of teachers and other school employees (measured by salaries and benefits); • Cost of recurrent inputs, for instance books, materials, heating and electricity • Other recurrent costs (sometimes borne by government), such as transportation, uniforms, meals • Cost of capital goods, for example buildings and equipment (measured by their rental value).
Indirect cost (opportunity cost	After-tax income foregone by the family, That is the value to the family of the best alternative use of the student's time, including: • Earnings foregone, • Value of production foregone in family business/farm.	Before-tax income foregone. (These are the same as private indirect costs except for taxes that would have been levied on the student's higher income; in other words, social indirect costs are higher than the private indirect costs by the amount of taxes foregone.

Source Richard (2001)

Table 2.1 identifies private direct cost as the out-of-pocket expenses borne by the student or the student's family, including: Fees paid by the family such as boarding fees, examination fee and Motivation fee and other cost such as transportation costs, cost of books and purchase of uniform. The social direct cost includes time of teachers and other school employees measured by salaries and benefits, cost of recurrent inputs, for instance books, materials, heating and electricity, other recurrent costs sometimes borne by families such as transportation, uniforms, meals Cost of capital goods, for example buildings and equipment measured by their rental value. This study focused on both private direct cost and social direct cost

2.3 The Economic and Social Benefits of Secondary Education

In recent years, stakeholders in education have been debating on the nature and functions of secondary education. This is because the need for its development has become apparent with the changing context of schooling. Besides, its contributions to the formation of active citizens (Government of India, Secondary Education Commission, 1953; Kabir, 1955; Alvarez, 2000; Lewin and Caillods, 2001; Briseid and Caillods, 2004; World Bank, 2003, 2009), secondary education plays a critical role in addressing the emerging human development concerns in countries engaged in building knowledge societies for staying connected to the globalisation process.

For several decades, it has been argued that secondary education needs to be expanded both as a response to increased social demand and as a feeder cadre for higher education, giving little emphais to its other important functions. It is also argued that investment in secondary education yields considerable social and

economic returns, making it crucial for national development (World Bank, 1993, 2005, 2009; Tilak, 2001; Mukhopadhyay, 2007; Alain and Tan, 1996; Lewin and Caillods, 2001; Duraisamy, 2002; Lewin, 2006, 2008a). Despite this, secondary education continues to be the most neglected segment of school education in many developing countries, including India.

Secondary education has two functions, that is individual and social (Alvarez, 2000). At the individual level, secondary education empowers and prepares youth for life in respects such as, personal development, preparation for the labour market, training for higher cognitive functioning; and as part of its social function, advances 'human and social capital' for nation building, redistributes income and wealth and alleviates income poverty. Its development, therefore, can greatly contribute towards acquiring global competitiveness and achieving the MDGs. It is argued that: "investing in youth will provide the longest and most effective dividend towards meeting the MDGs by building the social capital needed to foster pragmatic development (Farmanesh, et al., 2005)"

Based on Alvarez, (2000) urguement, it is clear that, for economic growth to take place, a high proportion of the population has to have received secondary education" (UNESCO, 2001). Similarly, participants at the World Education Forum argued that "no country can be expected to develop into a model open economy without having a certain proportion of its work force completing secondary education" (UNESCO, 2001). The World Education Forum has gone so far as to include secondary school enrollment as a component of the Global Competitiveness Index. International comparisons show that exclusive emphais on

primary schooling may result in a labor force that is educationally behind the anticipated level of industrial development (Alvarez, 2001). As globalization acts to integrate developing countries into the "new economy," differences in post-primary educational opportunities will increasingly distort the benefits of economic growth in favor of rich countries: "Without a sustained improvement in coverage and quality of secondary education, developing countries will fall further behind relative to developed countries" (Watkins, 2000). Alternative Models for Secondary Education in Developing Countries: Rationale and Realities.

Other than the economic advantages of expanding secondary education, many countries are also realizing the social benefits of doing so. Over 100 countries now have democratically elected governments, twice as many as a decade ago. For these new democracies to survive, their citizens must be educated so that they are able to understand difficult issues, make informed decisions, and hold officials accountable for their actions (World Bank, Education, 1999). Statistical evidence attests to the marked impact of education on democracy and civil liberties (USAID, 2000).

Secondary education also increases the voice of the poor, particularly at the local level, where the poor gain the self-confidence needed to engage in dialogue and influence decisions. It raises young people's awareness of their civil rights and responsibilities and encourages a sense of national loyalty. A general secondary education can develop in young people attitudes, such as civic sense and tolerance, that contribute to the proper functioning of society (UNESCO, 2001). Increasingly, secondary education is taking on new roles in terms of promoting the values and

practices associated with citizenship and democratic participation in young people (Wolff & de Moura Castro, 2000). Governments and families are beginning to see in secondary education a unique opportunity to advance the socialization of their children.

2.4 Expenditure on Education in Kenya

Expenditure in education started since the introduction of education in Kenya by colonial government. According to Kinyanjui (1979), there were disparities on the government expenditure in education. The European children received more than the African (Kenya) children. For instance, in 1936 the European children got Ksh 528, the Asian Ksh 100 and African children got Ksh 16. Fifteen years later the trend did not change because in 1951 the European children received Ksh 1441, Asian children 252 and African children Ksh 32 (Kinyanjui 1979). This implies that the colonial government favoured the schools attended by children of European origin; however this trend was reversed after Kenya gained independence. This was due to the governments' emphasis to produce manpower to fill in the gap left by the colonial masters (Eshiwani, 1993). The government opened more schools hence increasing its expenditure on education from 14.6% to 30% of the national budget in 1970/71 fiscal year and later to 34.9% in 1974/75 fiscal year when free primary education was provided up to standard four. However, according to Ngware (2007) the imbalance on government budget allocation was evidenced along the government sectors where the education sector received the highest share of government spending.

According to Eshiwani (1993) the ever increasing cost of providing education and financial demand of other sectors of the economy led to the introduction of cost-sharing. The Kenyan government fully embraced the idea of cost sharing by showing commitment to implement the Structural Adjustment Programmes (SAP) as recommended by Bretton Wood. This commitment was in the session paper no 1 of the 1986 on economic management for renewed growth and session paper no 6 of the 1986 and 1988. This provided the long term framework within which the next three five year development plan would be formulated beginning with 1989-1993 development plan launched in 1989. According to Republic of Kenya (1998) the cost-sharing policy of 1998, required most cost in education to be met through partnership between the public sector and Non-Governmental organizations, religious organizations, development partners, individuals and the private sector. Within this policy framework the government role includes the professional development of teachers, teacher's remuneration in public institutions, provision of infrastructure, administration and management, and provision of bursary and scholarship for needy students.

The responsibility of other players include physical infrastructure development and maintenance, payment for tuition, public examination, catering and accommodation in boarding schools, and post-school institutions; payment of school /college amenities, personal expenses, and remuneration of college non-teaching staff.

According to Ayot (1980) through the shared responsibility of the government and household in financing education, Kenya was possibly the only country in East

Africa in which the highest proportion of education cost are borne by the parents, students and communities. This underlies the fact that the weight the cost of education was exerting on parents and communities was heavy. The household bore heavy financial burden in meeting the ever increasing cost of education. He further categorized the cost of education into private and public cost, where the private cost constitutes of indirect and direct cost. The direct cost includes what a student pays directly in order to acquire education. It constitute of the cost like paying the school fees, books, uniform, transport and school meals while indirect cost consist of strictly those expenditures which are not made directly for instance time or what is regarded as the opportunity cost of education

The public or the social costs according to Ayot (1980) are the costs incurred directly by the government or the society in providing a student with education. It can also be subdivided into the direct or indirect cost where the direct cost include cost of paying teachers and other staff, buying of text books, heating, lighting, provision of milk and other meals through the school feeding programme and the value of buildings and equipment. The indirect cost on the other hand is the cost of the productivity forgone by the society like provision of security or investments on agricultural sector. This study focused on the direct cost borne both by the household and the government in provision of education.

2.5 The Concept of Subsidized Secondary Education

According to Psacharopoulous (1995), since the World Bank first begun to finance educational investment in 1962, it has contributed to a sustainable increase in educational provision in developing countries. This has led to improvement in the

geographical and social distribution of education opportunities, and raising standards of quality of Education in many countries. Psacharopoulous (1995) asserted that poor families certainly find it difficult to pay fees, out-of-pocket expenses for cloths, travel, books or materials. Moreover, poor families on average tend to have more school age children than higher income families hence the person will even have to look after the many children in the family Students' access to textbooks is an important factor in what and how much they learn.

A study by UNESCO (2007) indicated that in many developing countries, the availability of textbooks and other reading materials is severely limited. The study further opined that while the student textbook ratio is a significance measure of education quality, many classrooms in developing countries especially in poor and rural areas possess only one textbook, which is mainly found in the possession of the teacher. For instance, in Liberia, the government estimated the student textbook ratio at 27:1 (Liberia MoE, 2007) which is clearly inadequate for proper learning.

In developed countries, education beyond the compulsory level was usually financed in part and sometimes wholly by the state. In Britain, education up to secondary school level was fully financed by the government (Moon & Mayes, 1994). Parents are only required to ensure that children attend school. In Britain, Education Authority and Central Government are required by Section 7 of the 1944 Act to make education facilities available. This enables parents to carry out their legal duty. Parents are seen as the school's prime legal clients until the child is 16 years of age. Section 36 of the Act states that it shall be the duty of the parent of every child of compulsory school going age to cause him to receive full-time

education suitable to his age, ability, and aptitude, either by regular attendance at school or otherwise (Moon & Mayes, 1994).

In Japan, the government fiscal policies provide for free education up to secondary school level. Those of school going age have no option other than attend school to acquire education that is fully funded by the government (Nyaga, 2005). In the United States of America, the Federal Government supports public education. The government is empowered by the Constitution Welfare Clause, Article 1 Section 8, to levy taxes and collect revenues for the support of education (Moon & Mayes, 1994). However, the Congress decides the extent of such support (Nyaga, 2005).

In Canada, school fees are an integral part of the education system. Parents are asked to contribute to their children's education through payment of fees (Nyaga, 2005). However, the government recognizes that some parents are not in a position to pay so the government makes provisions to ensure that a child is not denied access to education because of inability to pay fees. The department of education in Canada works with school boards, parents, teachers, and other partners to ensure that policies governing school fees are implemented consistently in all the provinces (Nyaga, 2005).

According to Suddho (2001) Free Secondary Education was introduced in 1977, in Mauritius. Prior to 1977, only scholarship winners of primary school-leaving examinations were entitled to free education in state schools. Non-Scholarship winners were allocated a few places with a moderate fee ranging from Rs 10 per month for form one to Rs 40 per month for form four. This implies that form one students received less money from the government than the children in form four.

Suddho (2001) asserts that the government of Mauritius promoted basic education as part of its social-economic development strategy. The education is tuition free with parents paying for extra-tuition, uniform and text books, fifty two percent of the children receive secondary education which takes 7 years. In 1996, the country had 29 state secondary schools and 98 private secondary schools. The pupil/teacher ratio was higher in public than in private schools due to the wide range of subjects offered in state schools.

Free Secondary Education was also introduced in Sri Lanka. According to Colelough and Lewin (1993) Sri Lanka achieved free education due to its widely distributed schooling facilities throughout the Island. The quality of education has been enhanced by free textbook scheme for all children up to junior secondary, innovative curriculum development and high quality teacher training and in-service programmes, In Zimbabwe, resources are allocated to schools for payment of teachers' salaries and purchase of school books and equipment on the bias of the number of subjects and topics are rationalized, examinations localized and science teaching improved. The government provides for construction of school buildings, maintenance, salaries of all staff and all other materials and running expenses. The free education programme is 80% a success (Colelough and Lewin 1993).

In other countries like Egypt, financing of education depends mainly on the state budget. The Egyptian constitution article number 20 stipulates that education in state schools is free on all different levels, while pre-university education as stipulated in the education law number 139 article 2 of 1981 education is a right to all citizens to be obtained in state schools for free. Students should not be asked to

pay fees unless they are provided with educational or learning services. Secondary education in Egypt comprises academic and technical education. Fees are collected in return for additional services provided to the students. In Egypt Parents provide for uniforms and copybooks, external books and references.

In Mali, basic education is going from six to nine years, in Senegal and Zambia, basic education lasts for eight years. Longer basic education allows more time for the consolidation of learning (Holsinger &Cowell, 2000). In South Africa, user fees are identified as a barrier to education (Veriava, 2002). While school budgets are funded by allocations from state revenue, school fees are required to supplement these budgets so that schools are able to run smoothly. The South Africa School Act provides that a majority of parents at a public school may determine whether or not school fees are charged and the amount to be paid. The parents who could not afford paying school fees were exempted from paying. The exemption of fees payment was also extended to parents whose income was less than 30 times, but not more than 10 times the amount of fees (Veriava, 2002).

The situation in Kenya is not different from that of Japan and America as the government and the community participates in the provision of education. The introduction of both the free Primary Education and subsidized secondary education by the government of Kenya were initiatives toward creating open access to education for all citizens. Under the Free Tuition Secondary Education in Kenya, the government has a uniform allocation criterion for secondary tuition, meaning that every student in secondary education receives the same amount of

money regardless of the type of school, age of the students and gender of the students as well as the category of the school.

According to MoE (2007) before the cost sharing policy by the government, secondary schools used to be provided with funds from the central government. The MoE (2007) report indicated that parents were spending over Kshs.25, 000 per student per year, while the government spent Ksh. 22,000. This implies that households were spending more to educate a child in secondary school compared to the cost incurred by the government. The cost also varied by the category of school where parent spent Ksh. 30,000 on children in boarding school and Ksh. 20,000 for children day schools. Onsomu et al., (2006) observed that the provision and expansion of quality secondary education continued to escalate as resources dwindled and that the majority of parents were unable to meet the cost of secondary education.

In 2005 the government of Kenya proposed a strategy of integrating Secondary education as part of basic education Government of Kenya (2005). This strategy was among other strategies such as promoting development of day schools to expand access and reduce costs to parents. Providing targeted instructional materials to needy public secondary schools as well as encouraging parents to provide infrastructure and operational costs. The Ministry of Education (2007) adopted the above policies through provision of teachers, issue of bursary funds and promotion of development of day schools to expand access and reducing the cost to parents.

These interventions were followed by the introduction of Free Tuition Secondary Education in the year 2008. This substantially increased enrolment by 15.0 % to reach 1,382,211. The enrolment in public schools grew from 841,608 students in 2004 to 1,211,114 in 2008, an increase of 369506 (43.9%). The enrolment increased by 184350 (18.0%) in 2008 from 123718 (13.7%) in 2007. The introduction of FTSE was relieved the parents a big burden of paying school fees and significantly reduced the amount of money that household owed the schools in terms of huge school fees balances. The evidence of huge balances that parents owed school is contained in a speech delivered at an annual Heads' Conference on 27 June 2007, the then KSSHA Chairman, disclosed that the secondary institutions in the country were owed over Ksh. 15 billion in unpaid fees by parents. He revealed that 90% of the parents who had failed to clear their debts were genuinely poor but insisted that head teachers had nothing better to do to help out but to send the students home.

The justification of providing FTSE is anchored in human Rights declaration in Addis Ababa in 1960 which regarded to as a basic good. Apart from international conventions, other document such as development plan of (2003-2008), listed education as one of the basic needs for the Kenyan population together with health, and nutrition, housing social services and water. Education is therefore, a basic consumer good just like food, clothing and shelter, water and sex. Education is the main key to overall development of any nation.

The Kenya government's main intention is that all children access secondary education without discrimination in accordance with the United Nation's charter of

1947 where every child has a right to education. The UN has initiated concerned efforts towards the achievement of this endeavor by its member countries through various conferences, principle 7 of the 1959. Declaration of the Rights of the Child emphasizes that every child is entitled to education which shall be free and compulsory at least in the elementary stages''. The provision of subsidized secondary education is an attempt to fulfill the Jomtien Declaration of 1990 (EFA) in which citizens are given an opportunity to explore their abilities to ensure equitable distribution of development. The initiatives saw two conferences being held in 1990, the Jomtien, Thailand followed by another in 2000 in Dakar Senegal. These both advocated for suitable access to education as a development strategy and considered a literate population the key to overall development to any nation. The declarations gave the impetus to education in many countries to ensure that learning of all young adults were met through equitable access to appropriate learning and life skills programme (Republic of Kenya, 2003).

To implement the declaration of education as a basic human right, the United Nations established UNESCO and UNICEF. The two United Nation's agencies have over the years conducted conferences and workshops to promote awareness. The Convention on the Rights of the Child reaffirms the right to free and compulsory basic education and access to higher levels of education by saying that secondary education in its different forms including technical and vocational secondary education shall be made generally available and accessible to all by every appropriate means, and in particular by the progressive introduction of free education. Njeru and Orodho (2003) observe that availability and adequacy of

learning resources such as teaching force, physical facilities and instructional materials influence quality of education.

The Kenya Education Sector Support Programme (KESSP, 2010), observes that the massive increase in enrolment in primary schools with the introduction of FPE is already putting pressure on the demand for access to secondary education. The immediate challenge therefore, is how access to secondary can be expanded at a relatively low cost while improving the quality of education at the same time. MoEST, (2007) observes the need to put in place an equitable system with resource allocation to ensure 70% transition rate from primary to secondary in 2008 with a target of 80% in five years. The transition rate from primary to secondary increased from (45.8%) in 2003 to (64.1%) in 2008. The launch of Subsidized Secondary Education in February 2008 was therefore a bold move by the coalition government in Kenya as it can be justified by the continued increase in the transition rate from primary level to secondary school level. Secondary Education plays a very important role in providing the youth with opportunities to acquire human capital that will enable them to pursue higher education and to improve their skills, leading to higher labor market productivity. Despite the Subsidized learning programme, the cost of education still remains high due to boarding expenses, thus more than half of the school age population do not access secondary education. UNESCO (2007) observes that the quantity, quality and distribution of the teaching workforce are critical factors for reaching the EFA goals. As observed in Republic of Kenya, (2009) the need for recruiting more teachers since the number of teachers in secondary schools had declined by 2.9 per cent from 44,305 in 2007 to 43016 in 2008 due to the rising number of students in

secondary schools. The ratio of students to teachers had moved from 23:1 in 2007 to 28:1 in 2008. A total number of 4,700 secondary school teachers were recruited in 2008 as compared to 3,500 in 2007 (Republic of Kenya, 2009).

2.6 Rationale for Investing in Education by Governments and Families

According to Todaro (1982) education expansion immensely contributes to high growth rate of GNP. Through formal education middle and high skilled personnel's are developed hence providing leadership to plan and manage the economy. Therese sentiment were also amplified by Vaizey (1962) who highlighted that the supply of skilled manpower and technicians is one of the key roles of education geared towards sustainable economic growth. The need for skilled manpower provokes that government and household to feel obliged to meet the cost of education among its citizens for the government and for the family members for the households.

According to Psacharopoulas and Woodhall (1985) the direct benefits of education are lifetime earnings to an individual. They farther mentioned that the higher the level of education the higher the private benefits. Using the age earning profile in developing countries Psacharopoulas and Woodhall (1985) established that there is a strong relationship between earnings and education. Through the analysis they established that the average lifetime earnings of educated workers surpass those of the uneducated workers. This implies that the more the skills one get thorough higher education the higher. According to Coombs (1968) families invest in education with a hope that the educated person will easily get employment than the illiterate person.

According to Atkinson (1987) there is a relationship between education and crime. He further affirmed that education reduces unemployment subsequently leading to low crimes because an employed person commits fewer crimes. He demonstrated this by use of the prisoners as an example. He asserted that, prisoners have lower educational achievements or higher illiteracy rates than the average person hence making them prone to crimes. Atkinson (1987) therefore concluded that families and government commits themselves to spending on education because education inculcates acceptable social values in children hence reducing their vulnerability to indulging in crime activities.

Education has also been considered as a means of eradicating poverty both directly and indirectly. According to Psacharopoulas and Woodhall (1985) since education was viewed as a mean of fighting poverty, the development policies 1970s and 80s focused on provision of education to the citizens by the government as a strategy of reducing inequalities in income and wealth and raising of individuals productivity.

Education also has been viewed as a means of promoting agricultural productivity, a Survey by World Bank established that there is relationship between education and agricultural efficiency and productivity, measured in terms of crop production. The survey also established a farmer who has completed four years of elementary education; his/her productivity on average is 8.7 percent higher than that of a farmer with no education (Psacharopoulas and Woodhall 1985). The effect is even greater when inputs such as fertilizers or new type of seeds are available. Further studies by World Bank in Korea, Malaysia and Thailand indicated that the effects

of education on agriculture are positive, statistically significant, and quantitatively important hence governments and families invest in education.

Education on the other hand promotes equity and equality. Psacharopoulas and Woodhall (1985) emphasized on the need to invest on education in order to promote equity and. They argued that if education was provided under market conditions only those who could afford to pay for tuition could enroll. Not only would there be under investment from the social point of view, but income inequalities would be preserved from one generation to the next since education itself is a determinant of lifetime income. If all individuals had access to private capital markets, then those who could not afford to pay tuition fees could borrow Psacharopoulas and Woodhall (1985). The private rate of return to investment in education was higher than the cost of borrowing it could still be profitable private investment; Many imperfections can be found in capital markets; however, individual students cannot normally borrow to finance their education without providing collateral and investment in education is risky and uncertain. Therefore governments in many countries provide loans or loan guarantee to help students finance their education.

Apart from the economic benefits of education Ayot and Briggs (1992) also listed other benefits of education as intergenerational effect, regulation of women fertility, and promoting inquiring minds. In addition better education or high literacy rate among women and men have been associated with social economic benefit such as lower infant and maternal mortality, longer life expectancy and

address gender equity issues in development (Abagi 1999, Coclough, 1980 Cochrane, 1979).

2.7 The National Transfer Accounts (NTA) Concept

National Transfer Accounts is an accounting system developed to measure and analyze the age dimension of a macro-economy, which can be quite relevant in a period of demographic transition. NTA estimates the intergenerational transfers at the aggregate level in away consistent with National Income and Product Accounts, and measures how the economic resources are spent and received across age groups. In contrast to national accounts, NTA measures the economic flows across age groups arisen by the disparities between the resource needs and satisfaction (Mason et al., 2006; Lee et al., 2009). It measures intergenerational reallocation of resources across the ages at individual level. These resources may be accumulated by the government (public) or by the household (private). According to Lee, Ronald (2003), the NTA methodology distinguishes three components of public and private consumption which are; education, health, and others.

The methodology emphasizes on estimating education and health consumption separately because the two consumptions vary by age and the gender of the citizens. This study focused on education as one of the components of household and government consumption with the aim of establishing the average expenditure of the household and the government on children who are in secondary school in Tharaka South Sub County. The reason for focusing on education component is that education comprises the social pillar of vision 2030 of the government of

Kenya. Since education is given more weight in the national budget, there is need to establish the amount of money channeled in the education sector for proper planning.

The NTA concepts of calculating unit cost of education by considering the households expenditure and government expenditure was occasioned by either deliberate or coincidental move of only computing the unit cost of education from the government side only or from the household side only without combining the two components. The omission of either side underestimates the cost of education. For instance, OECD (2011) calculated the unit cost of education by dividing the total expenditure of education by educational institutions at that level by the corresponding full-time equivalent enrolment. Another study by Delmonico (2001) calculated the average cost of education per student by dividing public spending of education by the number of students expressing the number as a percentage of GNP per capita.

The same formula was applied by United Nations Educational, Scientific and Cultural Organization (UNESCO 2011) to calculate the average cost of education per student in Sub-Saharan counties including Kenya. However, the UNESCO (2011) formula was applied in calculating the average cost of education per student in primary schools and excluded other levels of education like secondary school as well as the private cost of education.

Another study by Mikiko, Takashi and Yuichi (2005), focused on calculating the private unit cost of education for children in Uganda by totaling what the household spends on education. These shows that these methods have ignored the

aspect of combining both household and government expenditures on education. This study fills the gap by calculating the unit cost of education incurred by households and governments and then disaggregating it by gender, age, category of school and by the level of class.

2.7.1 Household Expenditure on Education

Lee, Ronald (2003) asserted that the cost of education is not only borne by the government, but also by parents (or careers/guardians) whether indirectly through taxes or directly through personal expenditure to support the day-to-day schooling activities. Parents have to meet a number of costs in order to educate their children. These include school fees, school uniform, books and equipment, pocket money for meals, school trips and other charges. While many of these are quite standard as they are determined by the schools and usually with the support of Parent-Teacher's Associations and the government, there are also expenditures which may vary widely among students, such as extra reading materials and tuition. Richer parents tend to spend more on their children's tuition and other educational materials such as books and computers.

According to Lee, Ronald (2003) private education consumption includes tuition, books and fees, school supplies for all school levels including pre-school and tutoring expenses. The exact method of establishing unit cost of education using the NTA approach varies depending on data availability. In Taiwan, for example, reference materials and self-improvement classes are considered as a component of unit cost. However, the common method of establishing the unit cost of education incurred by the households involves calculating by all the cost incurred by the

household on all items in education. This is done by use of regression model as shown by the following formula;

$$CFE\,j = \Sigma a \alpha\,(a)\,E\,j\,(a) + \Sigma a\,\beta\,(a)\,NE\,j\,(a) + \varepsilon j$$

Where *CFEj* is the unit cost of education of an individual in a household, Ej is the number of enrolled members aged *a* (single age) in household *j,* and *Nej* is the number of not enrolled members aged *a* in household *j*. The number of members not enrolled captures educational spending that is not part of the formal educational system. Note that this equation is estimated in homogeneous form (without an intercept) ensuring that household consumption is fully allocated.

The regression method may yield negative coefficients for some age groups with very low or no enrollments. If so, the negative coefficients should be replaced with zero to avoid negative expenditure. The regression estimates are used to allocate the education expenditure for each household *j* to household member *i*. For example, for those who are enrolled $CFEij\,(x) = CFE\,j\alpha(x) / \Sigma a\alpha\,(a)\,E\,j\,(a)$ where *x* is the age of the *ith* household member.

Education consumption for those not enrolled is calculated in similar fashion. However, where the data is available on individual bases one can use the utilization model which involves adding directly all the cost incurred on an individual who have access to education. For this study was collected at the household level were data on the cost items such as school uniform, transport fee, development fees, examination fees, pocket money were collected per individual students. To get the unit cost for the student the study directly added all the cost

items in order to get the average amount of money spent by the student in secondary school. To get the average cost by the age of the students, the total cost for all the students in a given age was divided by the total number of the students in that age group. This gave the average unit cost per age group of the students. The data was also disaggregated by the age of the student. This was done by adding directly all the education cost items by gender and dividing it by the number of students of that particular gender.

The NTA methodology maps the survey data with the national data, hence, NTA (National Transfer Accounts). This study did not map the survey data with the national account based on the challenge that the data was collected in one Sub County hence making it not appropriate to map it with national data. The NTA methodology uses a survey data which is national representative and then mapped with the national account. However, in instances where there is no national survey, NTA methodology allows one to use regional data and then disaggregate it by age and gender of the students.

The NTA concept has been used by different researchers to establish the unit cost of education. For instance Marcel, Patrick and Qi Zhang (2015) used the NTA concept to establish the unit cost of education across all the educational levels in Canada, their results shows that private education expenditure increases largely at around age 18, reaches the maximum at 21 years old, and drops dramatically at around age 23. After age 28, per capita private education consumption is below $500 for all years covered. A study by James, Jeromy and Peter (2014) also using the NTA concept established that private consumption of education is concentrated

especially among those under the age of 25 years or the ages of student of primary, secondary and college education in Australia. Mwabu, Muriithi and Mutegi (2010) used the Kenya Integrated Household Budget Survey (KIHBS) of 2005 and household survey of 1994 to establish to construct education profiles by the age of the students. Their study established that at secondary education, there is more spending by household at age 18 than all other ages. This is as presented in figures 2.1 and 2.2

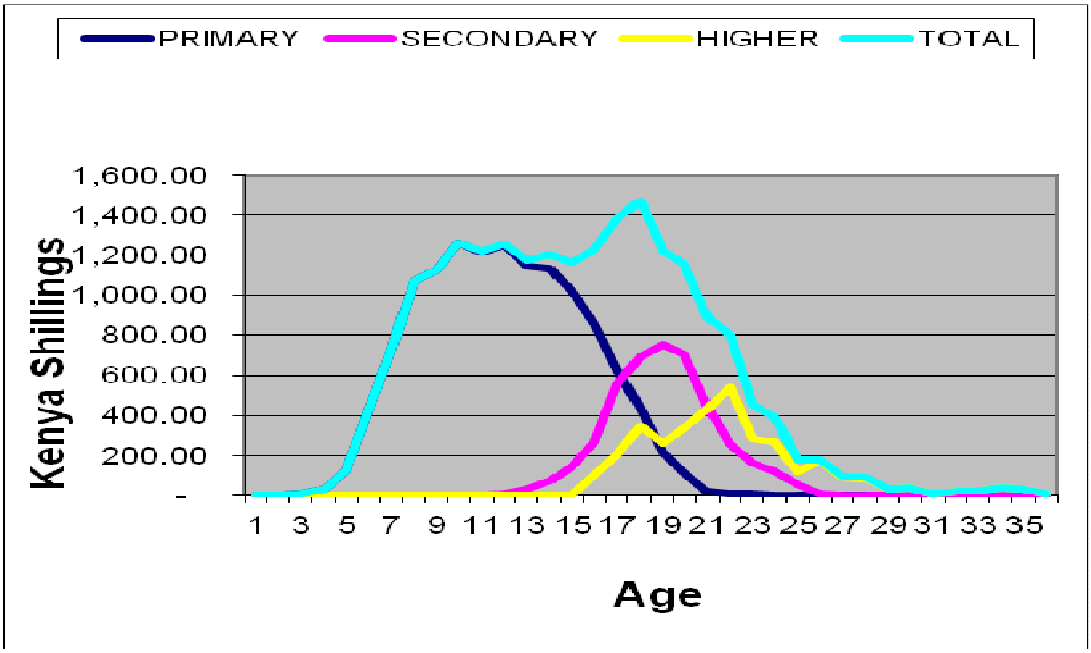

Figure 2. 1: The unit cost of education in Kenya 1994

Source; Mwabu, Muriithi and Mutegi 2010

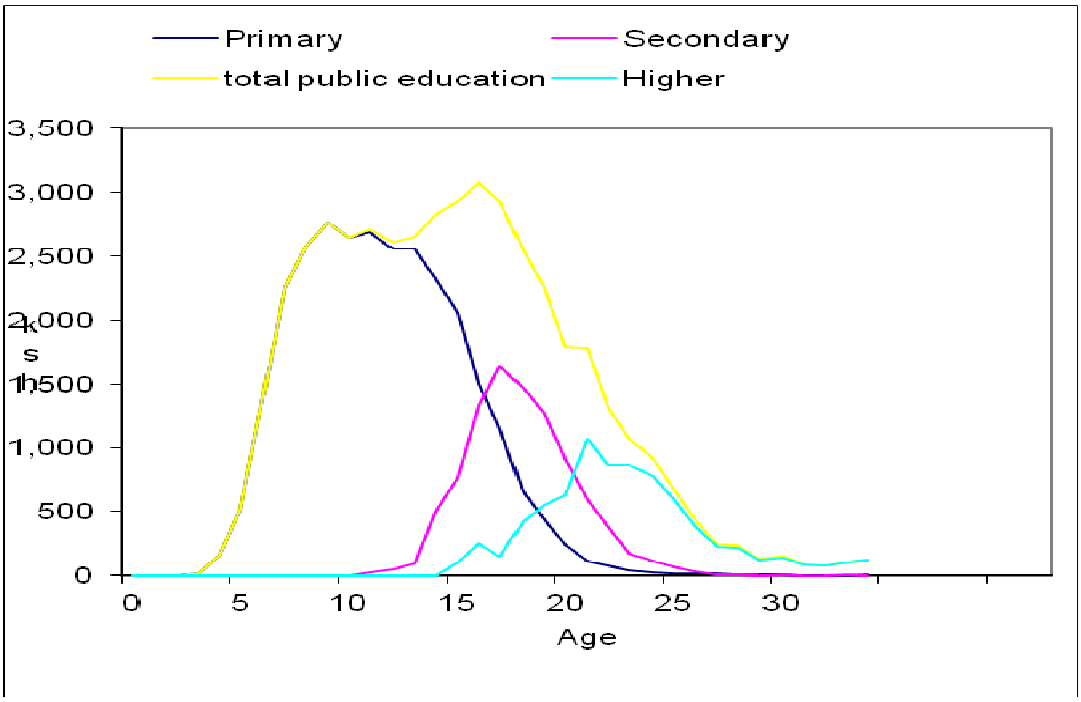

Figure 2. 2: Unit cost of Kenya 2005

Source Mwabu, Muriithi and Mutegi 2010

The study by Mwabu et al (2010) focused on establishing the unit cost of education but did not tie unit cost of education to the enrolments, this study went a notch higher and calculated the unit cost of education and tied it to enrolment. However, focusing only on secondary education.

2.7.2 Cost Variables and Influence on Enrolment

According to Schultz (1993) and Basu (1999) the direct costs associated with education includes, fees, books, and uniforms and also the opportunity cost are the main factors influencing school enrolment. In addition, Glick & Sahn (2000) found that besides the parents' income, occupation and education of the parents also collate to school enrollment. Again, parents with better education were found to have a positive impact on the number of children enrolled in school (Måns, 2006;

Smits & Gündüz, 2006; Ersado, 2005; UNESCO, 2004; Buchmann & Brakewood, 2000; Becker &Tomes, 1976).

The gender of the household head has also been found to be a relevant influence on investment in children's education. Lloyd and Blanc (1996) concluded that female heads of households spent a larger percentage of the household budget on children than do male heads. Huisman and Smit (2009) studied households and district-level determinants of primary school enrollment in 30 developing countries using multilevel analysis. In that study, parental decisions regarding children's education were found to be influenced by socioeconomic and demographic household characteristics and characteristics of the available educational facilities, like number of teachers, percentage of female teachers, and distance to school.

2.7.3 School Transport as a Component of Unit Cost

There is existence of uneven distribution of education opportunities between poor and non-poor regions both in urban and rural areas. These differences are brought about by the distance from household to school. According to Knight and Sabot (1990) children from poor families tend to have more limited access to educational opportunities than the non-poor especially in areas where the available schools are far from each other hence increasing the transport cost from home o school.

Knight and Sabot (1990), used to distance from school to household as a factor hat denied children access to school hence justification of expanding secondary school education as a mechanism of lowering the transport cost to school. In their research, it was noted that the expansion of Kenyan secondary system has given

rise to more children having access to secondary education in Kenya. They argued that family background has an effect on the type of school attended and results achieved largely due to the distance from school to home. The study shows that less privileged students were more likely to attend the poorer quality harambee schools which also received less government subsidy thereby worsening inequalities.

According to republic of Kenya (2005), outlined the government policy of working towards integrating secondary education as part of basic education. The policy in the long term was to promote the development of day schools as a means of expanding access or reducing costs to parents especially on the cost incurred by children as they commute from home to school. A study by African Population Health Research Consortium APHRC (2007) indicated that the lack of schools within a reasonable distance is serious problem in rural areas, often marginal and remote parts of the countries. This limitation is shared with urban slums that are often neglected in the provision of basic infrastructure. The rural urban poor also share other common characteristics in constituting a majority of the poor that cannot afford and programme to significantly improve transition to secondary school in the region; they must target these segments of population. Hence, the implementation of FSE policy in Kenya ensures all Kenyan children are able to access basic education in which secondary education has been integrated. Hence, the study sought to establish the cost incurred by households and government in provision of secondary education as the government seeks to increase transition rates from Primary school to secondary school.

2.7.4 School Uniform as a Component of Unit Cost of Education

In an effort to understand the magnitude of policies regarding school uniforms it is helpful to first examine the history of this policy in various countries. For instance on the United States, according to Anderson (2002) the aphorism "Dress right, act right" was heard often in schools in the 1950s and 1960s during campaigns to curb "juvenile delinquency." In the 1950s, many school dress codes forbade girls from wearing slacks (Anderson, 2002). "In the 1960s, many school administrators stipulated the length requirements of school girls' skirts. Blue jeans, motorcycle boots, and black leather jackets were considered dangerous attire on boys and linked to gangs" (Anderson, 2002)

According to Brunsma (2004), in the 1980s uniform policies progressively grew to become an area of concern for education policy makers under the Regan administration after a disturbing shooting at a Baltimore public high school. The first public school to heavily publicize its uniform policy was Cherry Hill Elementary School in Baltimore, Maryland, in the fall of 1987 (Brunsma, 2004). The initial policy was put into practice based on the original idea that uniforms would relieve economic pressures on parents by reducing clothing costs and reducing the social pressures their children would face on a daily bias in school (Brunsma, 2004). According to Mathison and Ross (2008), the first documented discussion regarding school uniforms as an option for public schools came from the Barry administration when the Washington DC mayor Marion Barry began the discussion for a mandatory uniform policy. Barry proposed that a school wide policy would foster school spirit and deter infiltration from unwanted outsiders. By

1989, five Baltimore Public schools had enacted a uniform policy. “In 1996, at the direction of President Clinton, the U.S. Department of Education published and disseminated a Manual of School Uniforms to all 16,000 schools in 1994; Long Beach, California became the first large urban school district in the United States to require all students from kindergarten to eighth grade (all together 58,500 Students) to wear uniforms.

School uniform also plays a key role of addressing crime in schools. According to Brunsma (2005) after the mandatory implementation of school uniform policies, the overall school crime in schools decreased by 36%; sex offenses fell by 74%; fights between students dropped by 51%; assault and battery offenses fell 34%; school suspensions dropped by 32%, and vandalism.

In line with school uniform and students’ academic performance Draa (2005) conducted another quasi-experimental study in Ohio to determine the impact of implemented mandatory school uniform policies on academic achievement. Employing the time-series nature of her data, she made four comparisons: same school comparison over time, an intra-district comparison between schools that had school uniforms and schools that did not over time, an intra-state comparison, and comparisons between matched schools (Yeung, 2009). Draa’s results suggest significant positive effects on attendance, with little significant effects on graduation rates, and incoherent effects on reading and mathematics achievement (Yeung, 2009,).

According to Daugherty (2001), when considering the implementation of mandatory uniforms, about 60 % of schools that adopt uniform policies make them

mandatory and the other 40% opt for voluntary wearing of uniforms. While school boards or school officials are typically the motivators to start mandatory programs, voluntary programs are often commenced by parents

According to Daugherty (2001), the students participated in the voluntary program by actually selecting the style, color, and design of their proposed uniforms. The students were allowed to choose color of their uniforms as long as it was school colors. The tops were in red or white (the school colors) and khaki-colored pants, skirts, or shorts. As with the general norm of business organizations, Fridays were reserved as "casual days," when students could dress as they chose as long as the attire was appropriate and followed board policy on acceptable school attire. When the program began the majority of the student body and about 70% of the faculty and staff wore the mandated uniforms, however, as the school year came to an end, the involvement by the student body had dropped from majority to about 50 % (Daugherty, 2001). Although the implementation of the voluntary uniform policy program only achieved some of its initially set goals of improving school safety, enhancing academics, and attendance, the school principal recommended that the school board adopt a policy of mandatory uniforms.

When the issue of implementing mandatory uniforms in public school was first reviewed, there was a lack of inclusion of the principals' opinions on the issue. Legislation was passed requiring mandatory uniforms in public schools and the voices of the nation's principals were chiefly missing from the debate overdress codes in public schools. Because of this, DE Mitchell, Fossey, and Cobb (2000) surveyed 240 principals who were selected at random from a national directory and

similarly grouped in elementary schools, middle/junior high schools, and high schools, to find what the principals input on requiring mandatory uniforms in schools would be. Just about two-thirds of the contacted principals responded and some principals even sent copies of their dress-code policies for the researchers to analyze (Lumsden & Miller, 2002).

The principals who responded to the surveys articulated strong support for school dress codes and implemented mandatory uniforms (DeMitchell et al., 2000); with 85% of those principals reporting that dress codes were needed at their schools. The majority voiced the belief to DeMitchell et al. (2000) that dress codes "improve student behavior, reduce peer sexual harassment, prepare students for the work world, and are worth the trouble that it takes to enforce (DeMitchell et al. (2000) noted that the surveyed principals' opinions fluctuated somewhat with their schools' grade levels and locations. It was also noted that though high school principals seemed to express the greatest amount of support for dress codes in general, they seemed to take a dim view of school uniforms; whereas middle school principals displayed the strongest support for mandatory school uniforms (DeMitchell et al., 2000).

The results indicated that the principals in rural areas showed greater support for dress codes than the principals in suburban areas and urban schools. According to DeMitchell et al. (2000) the reverse was true for mandatory uniforms. Urban principals showed greater support for mandatory uniforms, followed by suburban principals and then rural principals. DeMitchell et al. (2000) found that more than half the surveyed principals reported that their schools had formal dress-code

policies that usually prohibited halters, low-cut tops, tank tops, low-riding pants, wallet chains, sunglasses, headgear, and exposed undergarments. Many of the submitted school codes also repeatedly prohibited clothing with advertisements or illustrations of drugs, alcohol, and tobacco products, or exhibits of distasteful messages (DeMitchell et al., 2000). Some of the school codes contained requirements that student's hair should be clean and well-groomed, and that clothes be clean, neat, and appropriately fastened.

It was clear to DeMitchell et al. (2000) that, though the principals preferred dress codes, they acknowledged having some uncertainties about the constitutionality of limitations on student's dress and attire. In response to this concern, DeMitchellet al. explain that the nation's courts have frequently given school the authority to enforce dress codes that maintain order in their schools as the presiding principal sees fit According to DE Mitchell et al., a principal's interest in enforcing dress-code policies that teach the students values and promotes school discipline while ensuring a safe and functional learning environment takes precedence over a student's right to wear whatever clothing they desire (DeMitchellet al.).

The parents disputed the district's policy and decisions and declared that the policy violated their rights as parents to control the upbringing and education of their own children (Dowling-Sendor, 2002). The parents also declared that the implemented policy interfered with their students' freedom of expression rights and forced them to express ideas and dress codes with which they may not agree. In addition, the parents emphasized that the districts stated procedures for opting out of the policy violated their religious freedom by permitting school officials to judge the sincerity

of individuals' religious beliefs (Dowling-Sendor, 2002). Lumsden and Miller (2002) reported that the federal district court dismissed the suit instantaneously without a trial. Following the dismissal, the parents petitioned to the 5th Circuit Court, where the ruling of the lower court was upheld. In its decision, the 5th Circuit Court indicated that student's freedom of speech right to select their own clothing is" not absolute," and that this right must be balanced against a school board's stated interests in adopting a dress code or uniform policy (Dowling-Sendor, 2002). The court also ruled that a parents' right to control their children's rearing, including their education, cannot take priority over school rules that are considered "reasonable" to maintain an appropriate educational environment. In this case, the court's final decision stated that the uniform policy was reasonably related to the interests of the school board in supporting education, maintaining student safety, increasing attendance, decreasing dropout rates, and reducing socioeconomic tensions among students (Dowling-Sendor, 2002).

To address attendance issues in schools, some schools decided to implement mandatory uniforms in hope of introducing stability into the environment, and thus encouraging student attendance (Lumsden, 2001). With the enforcement of mandatory uniforms, according to Caruso (1996), school districts were first required to understand the validity of each advocate's arguments, and, more importantly, consider the question, on whether the implementation of mandatory uniforms made a difference. Furthermore, when thinking about mandatory uniforms and the proposed difference they can make, is there a significant relationship between the implemented policy and attendance.

Other studies have examined the effect of reducing the cost of schooling by providing uniforms: Kremer et al. (2002b) examines the impact of uniforms among a bundle of goods provided to schools, and Duflo et al. (2006) examines the impact of providing uniforms to older primary school students on dropout rates, teen marriage and childbearing.

Existing evidence suggests that reducing the cost of schooling by providing uniforms among other inputs increases school participation. Kremer et al. (2002b) evaluate a program in which ICS provided uniforms, textbooks and classroom construction to seven schools selected randomly from a pool of 14 poorly performing schools in Western Kenya. In the treatment schools, dropout rates fell dramatically and after five years pupils had completed 15% more schooling. They argue that provision of textbooks alone can explain the effect and that the dropout rates fell prior to the construction of new classrooms

2.7.5 Boarding Fees as a Component of Unit Cost

According to Kiage, Simatwa and Ayodo 2014 there are variation of the boarding fees by the category of the school. They further established that are the boarding fees in girls secondary school varies from one category of the school to another with least schools paying 11,200 and the highest school paying 14,200.

2.7.6. Pocket Money as a Component of Unit Cost

According to Bonke (2013), the amount of pocket money given by the parents or guardian to secondary school students does no vary by absolute age but by the age category. The study revealed that children aged 7-11 who receive pocket money

are given an average DKK 123 per month (1 EUR=7.45 DKK), while those of age 12-17 on average receive DKK 321. The amount given is a little greater for girls aged 12-17 than for boys. On the other hand, for boys and girls aged 7-11 who receive pocket money, the amounts are more or less the same. The comparison of the amount of pocket money given to young people aged 12-17 with parents' expenditure on clothes and leisure equipment. The results showed that the average pocket money given represents barely 20% of the total of such spending. Thus, it is only a small proportion of these things that children buy with their pocket money; most items are bought, or at least paid for, directly by the parents. Naturally, there are differences in the amounts of pocket money that children receive each month within the two age groups. The results of this study contradicts the Danish study because in Tharaka South sub-county there is difference in amount of pocket money given to boys and girls

2.7.7 Distance from Schools and its Influence on Enrolment

On the supply side, the most common policy measure has been to improve school access by constructing more schools and thereby reducing the distance cost well-identified studies of the impact of school construction programs have found positive effects on enrollment (Duflo 2001; Burde and Linden 2013; Kazianga et al. 2013), there is a trade-off between school access and scale. This trade-off may be particularly relevant for secondary schools because they need qualified teachers for many subjects and expensive infrastructure like laboratories, which require a minimum scale to be cost effective. Thus, while improving school access has

proven to be effective at increasing school participation, it is not obvious that improving access should always take the form of constructing new schools.

A number of studies analyze the contemporaneous correlation between school availability and school enrollment. Lavy (1996) for Ghana, Filmer (2004) for a sample of 21 developing countries, Beegle and Burke (2004) and Bommier and Lambert (2004) for Tanzania, and Handa (2002) for Mozambique study the effect of distance to schools (from the village) on enrollment. Foster and Rosenzweig (1996) examine the effect of school construction on enrollment in India. A number of additional studies examine the long term effects of variations in the supply of educational establishments on educational attainment. Card (1995) studies the effect of college proximity on college education in the US. Duflo (2001) investigates a large school infrastructure expansion for Indonesia. Moretti (2004), Currie and Moretti (2003) examine the long term effects of college opening in the USA. Almost invariably, these studies find a positive effect of school availability on enrollment and school attainment. This study also established that distance from home to school affect girls attendance to school.

2.7.8. Public Consumption/Government Expenditure on Education

Public education consumption includes two parts: formal and informal education consumption. Formal education consumption refers to the government spending on primary, secondary, and higher education levels. Informal education consumption refers to government expenditure on culture, religious studies, and other types of education. According to their characteristics, the former one is measured at the level of per student, but the latter one is measured at the per capita level. The age

profile of enrolment rate estimated from SLID to reallocate the aggregate level of public education consumption of each education level. “Expenditure by Funding Source and Transaction Type, 2004-2007 from OECD includes the government expenditure by education level. Public formal education consumption by age $CGEC^f$ (a) is estimated by summing unit cost per student per level C_l (where $_l$ is education level, $_l \in$ {primary, secondary, postsecondary school}) weighted by the number of students by age in each level $cgec^f$ (a)

The formula for computing public formal education consumption is:

$$CGEC^f(a) = \sum_l cgec^f(a).c_l$$

The unit cost of public education consumption per student at each level of education is estimated by dividing public education consumption at level $_l$ by the estimated number of students at that level. The estimated number of students by age multiplies the enrolment rate (by age) by the number of individuals in the population (by age).Unit cost of public education within each education level is constant by age. The enrolment rates multiplied by the size of the population by age to obtain the number of people enrolled in school under each age.

*Enrolment rate (a) * pop (a) =Person enrolment (a).*

The public education expenditure is allocated to each single year of age based on the population enrolled.

The Public Education Consumption or public formal education consumption by age E*fg*(a) is also estimated by summing unit cost per student per level *cl*

weighted by the number of students by age in each level *el(a)*, That is age E*f*g(a) =Σ i *ei (a) cl* , where *l* is a school level. Unit cost per student at each level of education *cl* is estimated by dividing public spending on education at that level by the reported number of students. Unit cost of education within each level is assumed not to vary by age. The number of students by age in each level *el (a)* available from administrative records or, if necessary, tabulated from a household survey.

In addition to public formal education, public informal education consumption by age E*nfg* (a) is estimated by dividing total public informal education consumption by total population by age. Public informal education consumption is not age-targeted, so it is allocated equally to everyone. Public education consumption by age is computed by summing public formal education consumption by age and public informal education consumption by age. However, where data is available by individual one get all the government expenditure on education divided by the number of students on that level of education.

2.8 Summary of literature review

The reviewed literature has demonstrated that there is need to invest on education at secondary school level. This is because secondary education prepares students for the higher education hence economic development. The literature has also demonstrated that there are various educational unit cost variables such as school uniform, transport cost, development fees, boarding fees, and pocket money that can affect students' enrolment in schools. However, these studies did not disaggregate these cost variables by age, gender, school type, school status and the

class of the students. This study therefore focused on disaggregating unit cost by gender, age, class level, and school status and school type while tying them to students' enrolment rates.

2.9 Theoretical Framework

This study heavily borrows the concepts of human capital theory which was proposed by Schultz (1961) and developed extensively by Becker (1964). According to Becker (1964), Human Capital Theory was developed in the sixties due to the realization that the growth of physical capital has only small part of growth in the growth of income. The theory asserts that education or training raises the productivity of workers by imparting useful knowledge and skills, hence raising workers 'future income by increasing their lifetime earnings (Becker, 1994). It further postulates that expenditure on training and education is costly, and should be considered as an investment since it is undertaken with a view to increasing personal incomes.

According to Becker (1975) human capital investments model deals with making a choice between current and future consumption. By sending a child to school, parents take on costs of schooling and forego benefits of the child's market and non-market labour in the expectation of future benefits to schooling. Because many benefits of education accrue over time and as social externalities, parents are predicted to under invest in schooling. Gender inequalities in the costs and benefits of education can translate to gender gaps in human capital investments by parents. Becker predicts that even small gender differences in the direct costs, opportunity costs, or returns to schooling can lead to large gender differences in investments in sons and daughters (Becker, 1981, 1985).

For developing countries with significant gender gaps in enrolment, disincentives to invest in girls come from multiple sources. In countries with a patriarchal family structure, parents' expectations of returns to a daughter's education are typically lower because these benefits transfer to a girl's future husband, while a son's labour market earnings are often the primary support for parents in old age (Boserup, 1995). Girls receive lower returns to schooling if labour market opportunities for educated girls are fewer or lower paying than opportunities for educated boys. Girls face higher opportunity costs of education when parents depend on female domestic labour and child care for younger siblings (Heward, 1999; McMahon, 1999; Smock, 1981). Parents may also have weaker preferences for daughters' schooling if cultural norms place a low value on female education or restrict female participation (Boserup, 1995; Cleland, 1985). Any combination of these gender differences can contribute to a gender cap in human capital.

These gender differences play out in parents' responses to the costs of sending boys and girls to school. Alderman and Gertler (1997) and Glick (2008) hypothesize that human capital investments in girls in developing countries will be more sensitive to price than investments in boys. An important implication for policy is that reducing the costs of school through subsidies can also reduce gender gaps by taking advantage of larger price elasticity for girls. Formally, Glick (2008) models investments in human capital in a two period, two generation model where the utility of altruistic parents depends on their own income in period one, and, in period two, income transfers from children and utility resulting directly from having more educated or wealthier children

According to Fagerlind and Saha, (1997) human capital theory also provides a basic justification for large public expenditure on education both in developing and developed nations. The human capital theory is consistent with the ideologies of democracy and liberal progression found in most Western societies. These ideologies suggests that the efforts to promote investment in human capital were seen to result in rapid economic growth for society. For individuals, such investment was seen to provide returns in the form of individual economic success and achievement.

The calculation of the unit cost was done using the NTA methodology developed by Lee, Ronald (2003). According to Lee, Ronald (2003) the average cost of education per student is calculated by establishing the cost incurred by the household and the government on all items in education.

This was done using the formula

$UC=X_i + X_{ii} + X_{iii} + X_{iv} + X_v + X_{vi}$

Where

X_i =School uniform

X_{ii} = Transport cost

X_{iii} = Pocket money

X_{iv} = Motivation fees/ remedial tuition fee

X_v = Boarding fees

X_{vi} = Development fees and other levies

The Public Education Consumption or the direct social cost of education is calculated by categorized as a recurrent social cost (RSC) and capital social cost (CSC), which are both added together to give the total social cost (TSC) of

education, TSC=RSC+ CSC. The TSC is then divided by the number of the students in that level of education to get the per capital education consumption that is TSC =RSC+ CSC ÷ Number of students.

2.10 Conceptual Framework

According to Miles and Huberman, (1994) conceptual framework is a written or visual presentation that explains either graphically, or in narrative form, the main variables to be studied and the outcome(s) expected. It presents the key factors, concepts or variables and the presumed relationship among them. It highlights the link between the independent variables, dependent variables, intervening variables as well as the moderating variables.

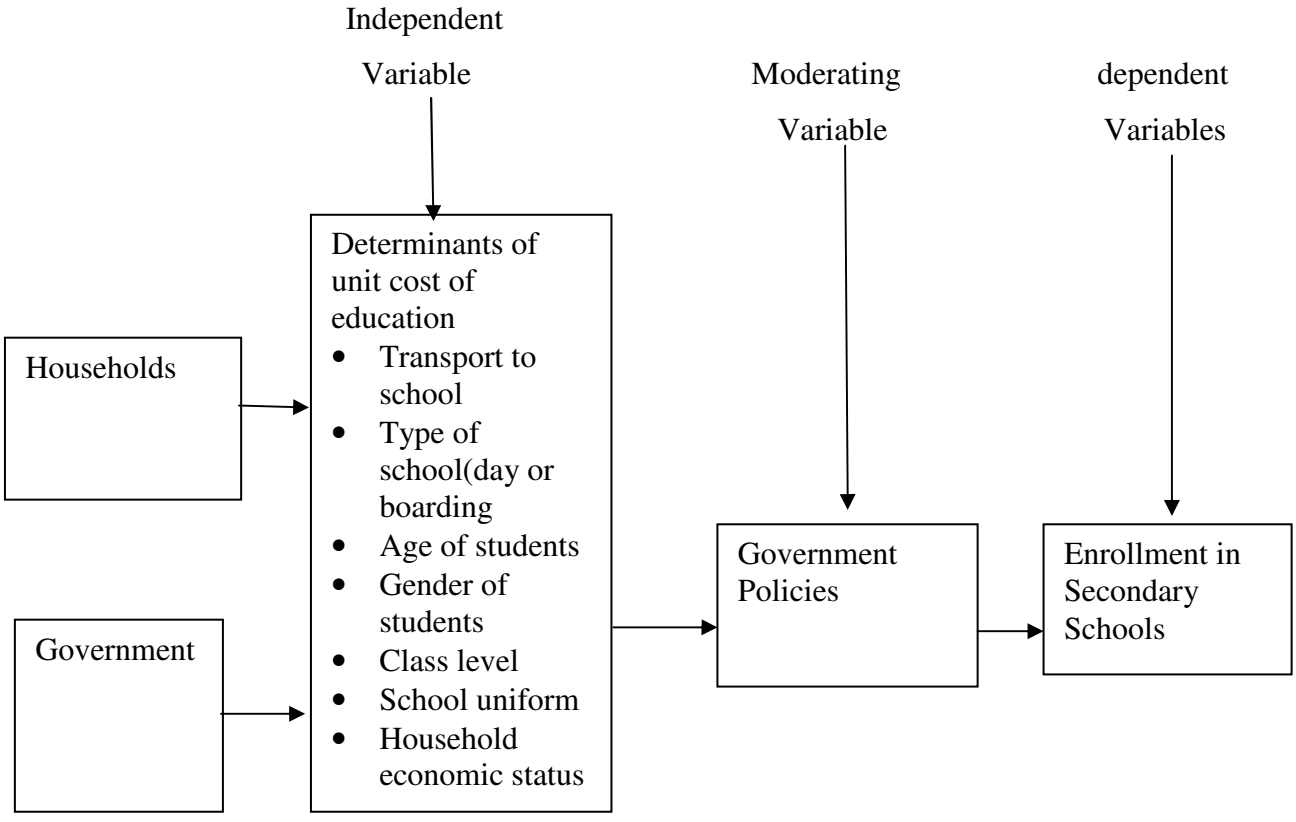

Figure 2. 3: Conceptual Framework

Figure 2.3 show that education cost of a student is met by several entities like household, government and other bodies mediating on behalf of the family. The government spends on teachers' remuneration, infrastructure, professional development, management and administration while the household meets the cost on books, uniform, transport, tuition and examination. The students total cost on education is calculated by totaling all the expenditure incurred by the household on a particular student to the total expenditure incurred by the government on education on the same students. If the household expenditure in education to a particular student is high the chances of enrolling are minimal and if the cost incurred by the household is low the chances of enrolling are very high. High enrolments of students in educations lead to production of manpower for the economic growth of the country and high incomes for an individual.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research design used in carrying out this study. The chapter contains the following sections; research design, study area, target population; sample and sampling procedures, research instruments, pilot study, validity of the instruments, reliability of the instruments, and administration of the instruments and data analysis techniques.

3.2 Research Locale

This study was conducted in Tharaka south Sub-County, in Tharaka Nithi County, Kenya. It borders other sub counties such as Meru Central, Meru south, Mwingi, Tharaka North Sub County and Mbeere. Tharaka south Sub County is mainly an arid and semi-arid area with most population relying on subsistence farming. The area is sparsely populated to the eastern part and densely populated to the northern part. Most of secondary schools are found far away from another and most of them are day schools. Tharaka Sub County has three main wards, Marimanti, Chiakariga and Nkodi wards and 31 locations.

3.3 Research Design

Research design is a process of creating an empirical test to support or refute a knowledge claim (Borg and Gall 1989). This study used correlational design. According to Orodho (2003) correlational design analyses the relationship between variables with the aim of establishing the relationship between the dependent and independent variables. In this case, this study sought to establish whether there is

any relationship between the unit cost of education and students enrolment rates in secondary schools in Tharaka South Sub County

3.4 Target Population

According to Creswell (2012), target population is a group of individuals or entities with some common characteristic that the researcher plans to study with the aim of generalizing the findings about the target population. Borg and Gall, (2007), was also of the view that target population comprise of all the members of a factual or hypothetical group of people or events to which a researcher wish to generalize the results of their study. The target population included all the 25 secondary school principals and 23,275 household heads in Tharaka south Sub county.

3.5 Sampling Techniques and Sample Size

A sample is a subset of the population to which research intends to generalize the results (Wiersma, 1986). The sample size was drawn from the target population. Attempt was made to ensure that the sampled subset of the population has similar characteristics to the target population. The sample size for this study was determined using proportions provided by Yamane (1967).

$$n = \frac{N}{1+(Ne^2)}$$

Where; n = minimum desired sample size

N = the target population (23275)

e = degree of precision (5%)

Therefore by substitution:

$n = \left[\frac{23275}{1 + (23275 * 0.05^2)} \right]$ = 393 household heads. In this case a list of households was made with the help of the area chief. The names of household heads were then folded and picked randomly. This was done to ensure that all the household heads in the sub county had equal chance of being picked to participate in the study.

For the school principals, the census technique was used where all principals of public secondary schools were involved in the study. The reasons for using the census was to enable the researcher get the number of all the students in secondary schools and also get information on the revenues generated by schools through income generation activities such as school canteen, Constituency Development Funds (CDF), bursary and other income generating activities in schools.

3.6 Research Instruments

The study used Interview schedule, questionnaire and document analysis as tools for data collection. The document analysis was used to obtain financial information from the Ministry of Education Science and Technology and school principals' office on funds allocated to the schools.

3.6.1 Document Analysis guide

Document analysis involved the analysis of financial documents found at the schools principals' offices, the enrolment documents at school principals' offices. At the national level, the documents analysis involved perusing the Systems of National Accounts materials such as statistical abstract, economic survey records and the national budgets records. This was done to establish the amount of money spent by the government and schools on children in secondary schools.

3.6.2 Questionnaires

The questionnaire was used to collect data from the school principals. According to Kombo, (2006) questionnaire measures the likelihood of straight, even and blunt answers. This can be superior to an interview because social communion operates strongly in a face of situation that may prevent the person from expressing what he feels to be socially or professionally unacceptable. The questionnaire contained two sections; section; (A) gathered demographic data from the school principals and section (B) gathered information on the cost aspect of education focusing more on the amount received by the school from the government and other sources. It also gathered data on students' enrolment as well as number of teaching staff in schools. The researcher chose to use a questionnaire on the school principals because they are literate and therefore could respond to the questions unaided. The questionnaires also enabled the researcher to collect data simultaneously therefore saving on time.

3.6.3 Interview schedule

An interview guide is a set of questions that an interviewer asks when interviewing respondents (Orodho, 2009). Interviews are justifiable in research as they can be personalized specially to the knowledge and understanding of the interviewee. Turner, (2010) also observes that interviews allow an in-depth insight into how individuals comprehend and relate various aspects.

The interview guide was used to gather information from the household heads. The reason for using interview schedule was that most of the household heads are illiterate and therefore could not be able to use a questionnaire. The interview

schedule was also used in order to give the researcher a chance to probe and get more information from the respondents. The interview guide also comprised of two sections. Section (A) captured demographic data of the parents of the household head. This aided in capturing the economic status of the household head in relation to the income levels, education levels and the number of children enrolled in schools. Section (B) gathered data the amount of money spent by the household on every item of education such as school uniform, pocket money, transport, examination fees, boarding fees and other expenditures related to schooling.

3.7 Piloting

According to Orodho (2009) Piloting is carried out to ensure that there is clarity and efficiency of instruments before the real study is carried out. Kinyua, (2001) further opined that piloting is done with the aim of establishing whether the type of data collected would be meaningfully analyzed in relation to the stated objectives and questions. For this study, piloting was carried out to ensure that instruments were clear and could be understood by the respondents. The piloting of instrument for this study was carried out in Tharaka North Sub County which is a neighboring sub county to Tharaka South Sub County. The piloting enabled the researcher to modify, restructure and exclude any unclear items. It was also done to ensure that the instruments were reliable as noted by Mugenda and Mugenda (2003).

3.7.1 Validity of the Instruments

According to Ranjit and Kumar (2005) validity is the quality of measurement procedure that provides respectability and accuracy. Mugenda and Mugenda, (1999) also defined validity as the accuracy and meaningfulness of inferences,

which are based on the research results. In other words, validity is the degree to which results obtained from the analyis of the data actually represents the phenomena under study. Borg and Gall (1989) defined validity as the degree to which a test measures what it purports to measure. Both content and face validity of the instrument were validated. The content validity was improved through expert judgment. As such, the researcher sought asistance from the supervisors, who are experts in research in order to improve content validity of the instrument as recommeded by Borg and Gall (1989). The supervisors examined the questionnaires and interview schedules and provided feedback to the researcher. Essentially validity in this context was concerned with establishing whether the questionnaire content measured what it was supposed to measure. The reason for using the expert judgement was guided by orodho (2009) who asserted that content validity is a non-statistical method used to validate the content.

In order to check whether the questionnaire and the interview schedule helped to measure the objectives of the study (face validity) the instruments were checked to establish the language used to construct the questionnaires. The questions which seemed ambiguous were removed.

3.7.2 Instrument Reliability

Mugenda and Mugenda (2003) defined reliability as a measure of the degree to which a research instrument yields conistent results or data after repeated trial. In order to test the reliability of the instrument pilot study was carried out. This involved collecting data from 30 household from three warsd in the neighouring Tharaka North sub county (See the tharaka map appedix 4). The pilot was done in

the neibouring sub county which has similar characteristics with Tharaka South sub county in terms of economic welbeing of the households and population structure. The two sub counties were hived from the former tharaka disctrict whose according to Kenya Integrated Household Budget Survey 2005/2006 was rated to have 60% of the households living below poverty line. Data was also carried from four principals from four secondary schools.

The 30 household heads were drawn from three clusters using Kenya Bureau of Stastisctic clustering system. From the three clusters 10 households were randomly selected to participate in the pilot study. For the teachers systematic sampling was done where schools were categorised accoring to sub-county school, county school and extra-county school. From the three categories, one school was selected to participate in the pilot study. After the data was collected it was fed to SPSS to test the realibility of the instrument. This was done by use of Pearson's correlation correlation coefficient by use of Cronbach Alpha model. After testing, the instruments they yielded a value of 0.89; this implies that the instruments were highly reliable as noted by Orodho, (2009) who opined that a correlation coefficient (r) of about 0.7 should be considered high enough to judge the reliability of the instrument

3.8 Data Collection Procedures

Data was collected from all the principals of secondary schools in Tharaka Sub County and household's heads from the same sub county. This was after attaining research permit from the National Council of Science and Technology. Before collecting data, the researcher sought permission from the DEO to visit the schools

within the district. The researcher reported to the principals of various schools and a brief introduction was made to the respondents before administering the questionnaires with the aim of explaining the nature and importance of the study to the respondents. The researcher took the questionnaires to the respondents during pilot and main study and later picked them immediately after they were completely filled up. The interview guide for the household head was conducted by the Research Assistants who were drawn from the sampled wards. Before data collection the Research Assistants were trained on how to conduct interview and the ethics of research. The document analysis was done by the researcher at the principal's office and in the ministry of education science and technology.

3.9 Data Analysis Techniques

According to Schwandt (2007), data analysis means to breaking down a whole into its components. Through assembly of the parts, one comes to understand the integrity of the whole. After data collection the researcher conducted data cleaning, which involved identifying incomplete or inaccurate responses, which were corrected to improve the quality of the responses. After data cleaning, the data was coded and entered in the computer for analyis using SPSS and STATA. The quantitative data was analysed using various statistics including measures of central tendency line mean and fequencies as well as measures of dispersion standard deviation.

Data analyis incorporated descriptive statistics and multi regression methods where the STATA programme was used. The NTA methodogy was used where the variable cost of education based on Age, gender, type of school, distance of school

from household was regressesed with rate of enrolment in order to establish whether the cost of education has influence on enrolment in secondary schools. Data was presented by use of frequecy tables, charts and graphs.

3.10 Ethical Issues

All ethical issues were adhered to, first before data collection an introduction letter was obtained from the University of Nairobi. The research permit was then sought from National Council for science and Technology (NACOSTI). Other players were also informed about data collection; the DEO, DQASOs and Chiefs were informed on data collection. The respondents were also assured confidentiality before information was gathered from them. This promoted confidentiality from the respondents. In response to Creswell (2008) who ascertained that in research, individuals participating need to know the purpose and aims of the study, the research Assistants explained to the respondents the importance of the study as a means of building trust.

CHAPTER FOUR

RESEARCH FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter introduces the data analysis section which comprises of the questionnaire return rate, demographic information of the respondents, data analysis and interpretation. The data analysis hinges on the objectives of the study

4.2 Instruments Return Rate

Instruments return rate is the proportion of the research instruments that have been returned after they have been administered to the respondents. In this case, questionnaires and interview guides were administered to the respondents. All the questionnaires administered to the school principals were returned. Effort was made to ensure that the school principals filled-in and returned their questionnaires. The data in all schools on students enrolment and the number of secondary schools teachers on permanent bias and contract bases was needed, therefore, there was need to make effort to get all the questionnaires. The interview schedule tool was designed to collect data from parents (household heads). Out of 393 interview guides which were distributed by the Research Assistants, only 350 of them were fully filled up. This makes the interview guide return rate to be 89 %. Out of the total 418 questionnaires and interview guide research instruments which were administered the 375 of them were returned making the instrument return rate to be 90%. According to Mugenda and Mugenda (2003), any questionnaire return rate above 80% in considered representative enough. Table 4.1 shows that instrument return rate.

Table 4. 1: Questionnaire Return Rate

Type of instrument	Number administered	Number returned	% return rate
Principals questionnaires	25	25	100%
Household heads interview guide	393	350	89%
Total	418	375	90%

Table 4.1 shows that the response rate of the respondents was very high were 90% of the administered questionnaires and interview schedule were returned

4.3 Biographic Information of parents and principals

The study sought to establish the demographic information such as age, gender, academic qualification, academic level of the students and the family income levels. As illustrated in Table 4.2

Table 4. 2 Biographic information of teachers and parents

	Parents		**Principals**	
Gender	**Frequency**	**Percentage**	**Frequency**	**percentage**
Male	203	52	16	65
Female	145	48	9	35
Total	**350**	**100**	**25**	**100**
Age				
16-24	7	2	0	0
25-35	18	5	0	0
36-45	130	37	15	62
Above 45	158	45	10	38
Total	**350**	**100**	**25**	**100**
Education level				
Primary	179	54	0	0
Secondary	102	31	0	0
Diploma	37	11	2	7
Undergraduate degree	15	5	8	31
Post graduate degree	0	0	15	62
Total	**350**	**100**	**25**	**100**

Table 4.2 shows that majority 52% of the household heads who participated in the study were males. Females constituted 48% of the respondents; this demonstrates that attempt was made to balance the number of men and women who participated in the study. The results show that there was a good representation of both genders hence, the opinions of both genders were captured by the study.

The gender of the school principals was also of interest to the study. It aimed at getting the opinion of female and male principals. This was important because the study addresses gender issues where it compares the unit cost of education by gender. It was imperative therefore to get education cost opinions from both genders.

As presented in table 4.2 there was almost equal distribution of parents by gender, the distribution of gender among the school principals was skewed towards male principals. This is as attested by 65% of the respondents who said that they are male teachers. The female teachers were represented by 35%. This result shows that the percentage of male school principals dominates the female principals in the entire sub county. The sample size for the school principals who participated in the study comprised all the principals in the sub county. This implies that in the whole district, there are only 34% of the schools headed by female principals.

On the aspect of age, table 4.2 shows that majority of the parents 56% are above 45 years of age, they are followed by those of age 36-45 at 37%, age 35 and below at 7%. This implies that there are a few household with household head of age 35 years and below who have children in secondary school.

For the principals perspective, the results shows that school principals, 62%, are of age 35-45 years while 38% are above 45 years. This advanced age of the secondary school principals is attributed to the appointment policies applied by the TSC while promoting teachers. The policy favours teachers who have been in the teaching profession for a long time. For instance, for one to be appointed as school principal, one has to serve in lower job groups such as K and L. from job group L one is subjected to interviews where one qualifies to serve as a deputy and later principal. All this takes on average 10 years in the teaching profession hence advanced age before promotion.

As presented in Table 4.2, most of the parents (54%) have primary level of education as the highest level of education. This implies that most of parents in Tharaka South Sub County have low levels of education. The rest of the parents 46% have education higher than the primary level of education. Those with secondary education comprise 31% of the respondents followed by 11% who have tertiary or middle level college education. Minority 5% have university education. This is an indication that most of the parents have low levels of education in Tharaka South Sub County.

Table 4.2 indicates that 62% of the principals have master's degree as the highest level of education and 31% have the first degree level of education. This is an indication that most of the secondary school principals have heeded to the call of having a master's degree as a qualification to head a secondary school. Even though majority has master's degree 8% of them have diploma as the highest certificate.

4.3.1 Employment Status of the Parents

Employment status of the parents also determines their level of income. The study therefore sought to establish the employment status of the parents with the aim of determining whether the employment status affects children enrolment in secondary schools. Parents were asked to indicate their employment status and the results are as presented in Figure 4.1

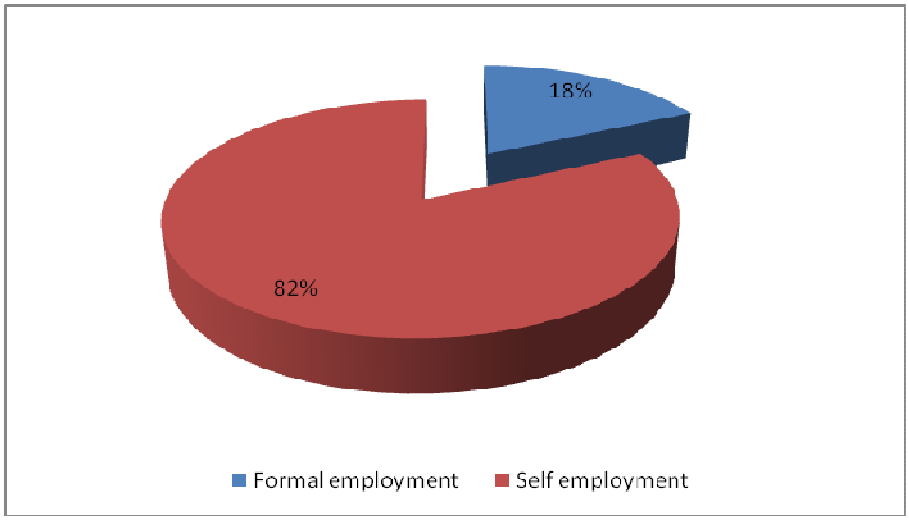

Figure 4.1: Employment Statuses of the Parents

The results in Figure 4.1 indicate that 82% of the parents are in self-employment and 18% are in formal employment. This shows that most of the household heads in Tharaka South Sub County are in informal employment sector. These results mimic the earlier results which indicated that most of them 58% have primary level of education and 32% have secondary level of education. This makes it difficult for most of the parents to be in formal employment due to low levels of education

In relation to the type of employment, the study sought to establish the type of occupation for most of the parents; this is in line with earlier studies which have demonstrated that the type of parents' occupation determines the enrolment rate of

children in schools. The relationship between the parents' occupation and children enrolment in school is discussed later in the discussion session in this chapter. The occupation of the parents is as presented in Table 4.3.

Table 4. 3: Occupation of the Parents

Parents occupation	Frequency	Percent
Medical officer	18	5.2
Teacher	23	6.6
Farmer	237	67.9
Artisan	13	3.7
Business person	36	10.3
Secretary/clerk	4	1.1
Watchman	10	2.9
Chief	1	.3
Others	7	2.0
Total	349	100.0

In relation to the occupation, Table 4.3 shows that 68% of the parents are farmers, and 10% are business persons. The results also show that 12% of the respondents were medical officers and teachers. This implies that in Tharaka South sub-county the most dominant occupation is farming. Since the area is arid and semi-arid region, most of the parents face hardships in meeting education cost especially during drought seasons.

4.3.2 Length of Service for the School Principals

As a way of validating the credibility of the information sought, the study sough to establish the length of service for schools principals. The results are as presented in Figure 4.2

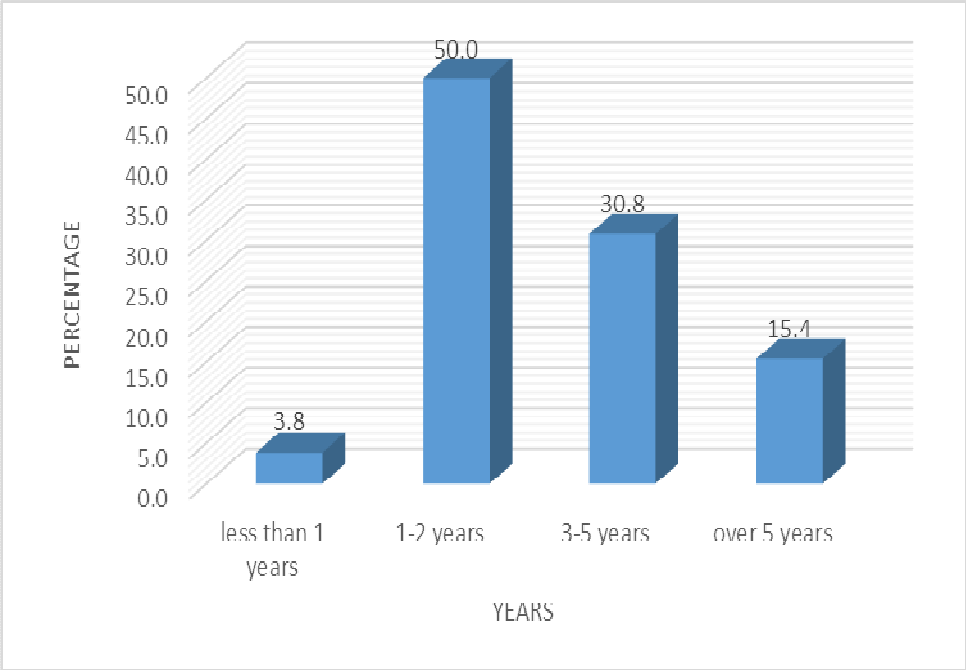

Figure 4. 2 Principals Length of service as teachers and principals of schools

Figure 4.2 shows that most of the principals, 50%, have served for a period of 1-2 years as school principals, the rest have served for 3-5 years over 5 years and less than a year at 31%, 15% and 4% respectively. This is attributed to the number of schools which is coming up through the CDF funds, a study by Mutegi (2005) indicated there were only seven secondary schools in Tharaka Central division which is currently the Tharaka South sub county. In a span of 10 Years 19 schools have been built. This shows that in a span of 1 year, 2 secondary schools are constructed. This is ascribed to high demand for secondary education triggered by high enrolments in primary schools due to Free Primary education. The results of this study show that there is a rapid expansion of secondary schools in Kenya.

The school principals were also asked to indicate the length of service they served as teacher before promotion. This aimed at establishing the experience in terms of years that one taught as a teacher. This is as presented in Figure 4.3.

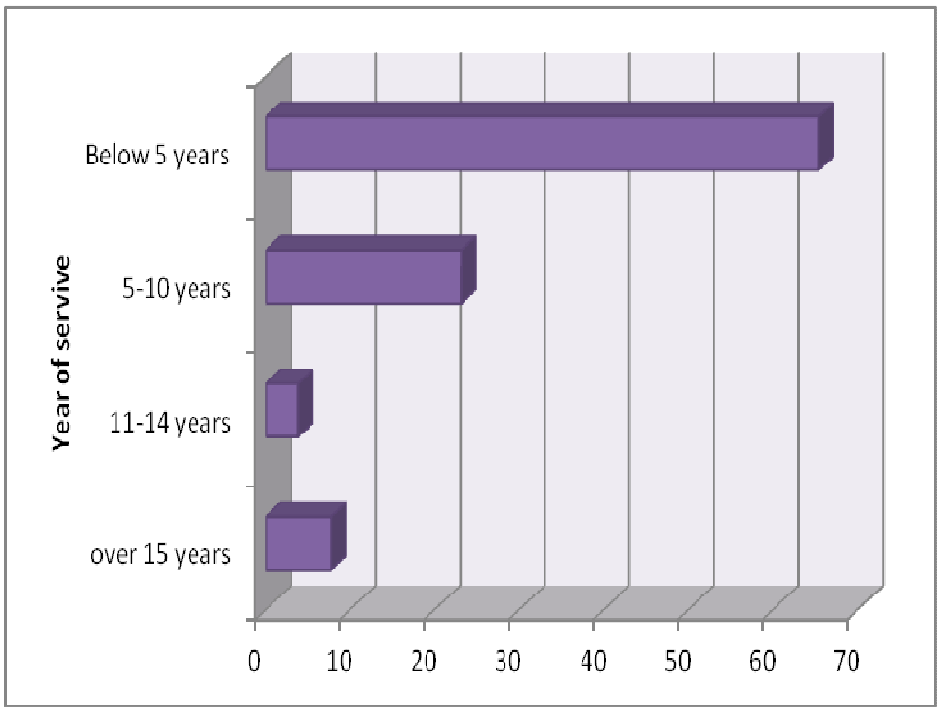

Figure 4. 3: Length of service as teachers

The results in Figure 4.3 shows that 65% of the principals served for less than 5 years before getting promoted to a position of a principal, this support the assertion that most of the schools are relatively new and therefore triggered the need to promote teachers to head the schools. However, the results also show that 35% of the principals served for more than 5 years before promotion. Ordinarily, a teacher serves for more than 6 years before getting promoted to a job group M which qualifies one to be appointed as a school principal, a process that involves a rigorous interview at TSC

4.3.3 Biographic information of students

The study also sought to establish the gender of the students. This was key because the study focused on unit cost of education per student by gender. Their distribution is as presented in Figure 4.4

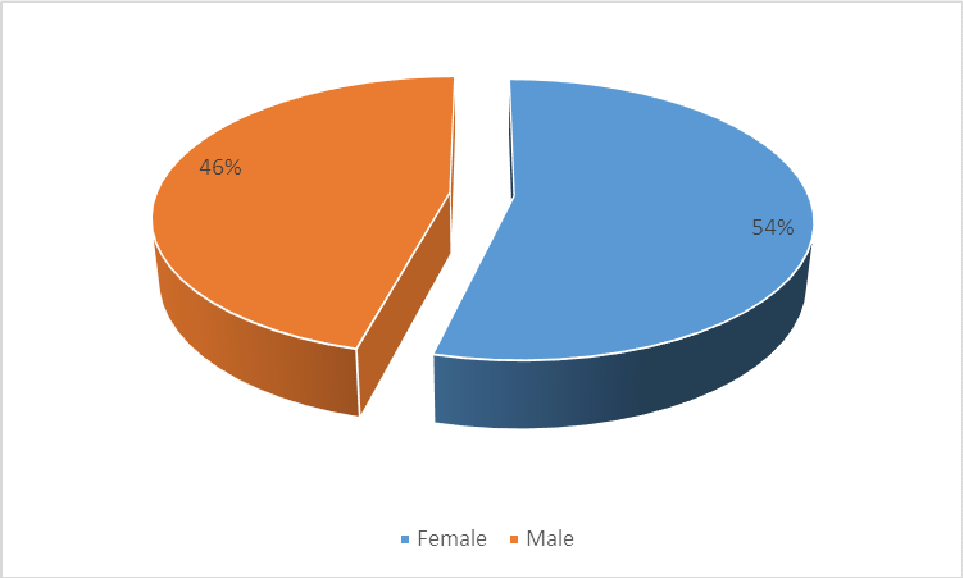

Figure 4. 4: Gender Distributions of Students

As presented in Figure 4.4, the results show that, most of the households 55% indicate that they have girls in secondary schools in Tharaka south Sub County. This implies that the male-female ratio of students in secondary schools favours female students. In the past, most of the NGOs have been championing for the girl child education, these results serve as evidence that the strategies put in place to ensure that more girls enroll in secondary schools are working.

National Transfer Accounts also underscores resource sharing by age, to this effect the study sough to establish the age distribution of students in schools with the aim of establishing the unit cost by age. The household heads were therefore asked to

indicate the age of children in their household who are enrolled in secondary schools in Tharaka South Sub County. In this case, both parents and principals were asked to indicate their ages as while as the ages of the students in respective households and in schools. This was done with the aim of establishing whether the unit cost of education vary by age of the students. The age distribution of the parents, students and principals is as presented in subsequent figures

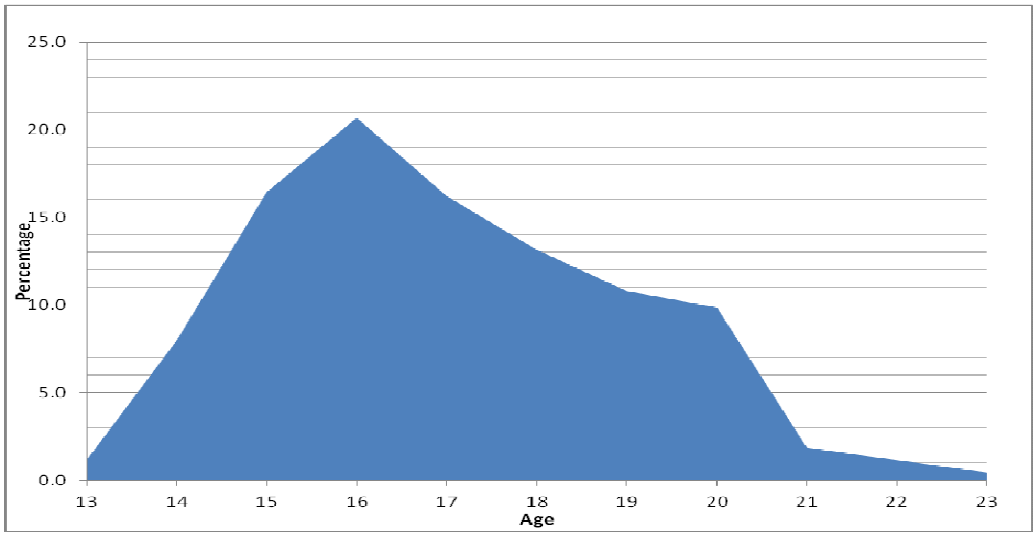

Figure 4. 5: Age of the Students

Figure 4.5 shows that majority (21%) of students in secondary schools in Tharaka South Sub County are 16 years of age. The results also show that on average students of age 15-18 were dominant among secondary school students in Tharaka South sub-county. Strangely, there were students of age 20 years and above who are still in secondary. Mostly, according to the education system in Kenya children of age 14-18 are considered as the appropriate ages for children to be in secondary schools. Under normal circumstances children of above 19 years are supposed to have been registered in tertiary level of education. The presence of children of age

above 20 years in secondary schools can be attributed to the introduction of Free Primary Education and Free Tuition Secondary Education programs which gave children a chance to re-enroll in schools after dropping out for a prolonged period of time. This implies that besides, both programs FPE and FTSE being pro-poor, they also seem to be pro-aged as evidenced by the likes of Kimani Maruge who joined primary school at the age of 84 Years. The results also indicate that there are under-age children who are enrolled in secondary schools in Tharaka south Sub County. According to the Ministry of Education guidelines Secondary school education should start at 14 years of age and runs for four years or 18 years. In line with these MOE guidelines, there are 1.2% of children in secondary school in Tharaka South sub County who are under-age.

Since the study also focuses on unit cost by gender, there was need to analyze age distribution of students who are in secondary school by gender. The results are as presented in Figure 4.6

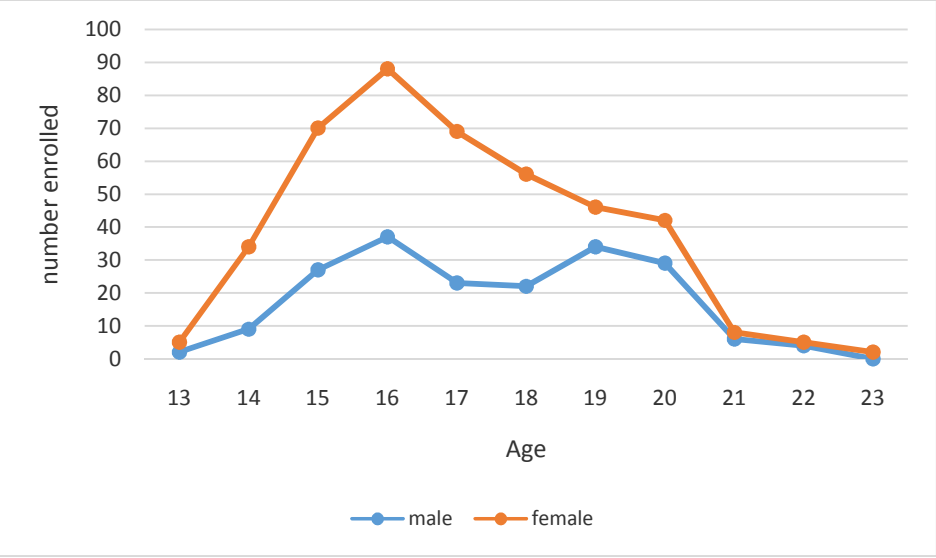

Figure 4. 6: Age Distribution of Students by Gender

Figure 4.6 indicates that, the peak of the age of the students in secondary is 16 years. This is an indication that, for both boys and girls, most of them are of age 16 years. The age distribution by gender mimics each other up to age 16 where they both sharply drop. However, for the boys they drop up to age 18 and slightly rises up to age 19 and then drop again. For the case of girls, the number drops all through from age 16 up to age 21. This results points out that, there are more elderly girls in secondary schools compared to the girls. This can be attributed to household chores and other cultural practices such as FGM and early pregnancies which mostly affects girls schooling compared to the boys.

The study also sought to establish the education level of the students by class. This was motivated by the need to establish the unit cost of education by class level. The study also sought to establish whether there are cost differentials in line with the level of education of the students. Figure 4.7 shows the level of education of the students.

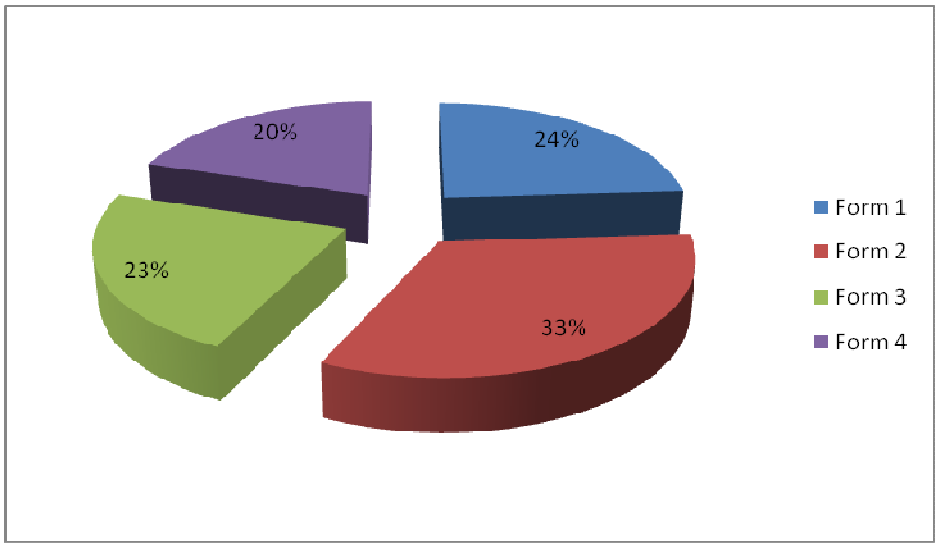

Figure 4. 7: Education Levels of the Students

In line with Figure 4.7, the results shows that majority (33%) of the household reported that their children were in form two. This group was followed by those who had children in form 1 as attested by at 24% of the household heads. The rest of the households have children in form 3 and 4 comprising 23% and 20% respectively. This is an indication that data for students in all classes was captured. This made it easy to establish the unit cost of education by class level. The information of the unit by class level is important when planning for the education of the children both by the parents and the government

Besides, establishing the distribution of the students by the class level, the study also established the distribution of the students by gender and by class. This aimed at establishing the gender which dominates every class level for the purpose of planning

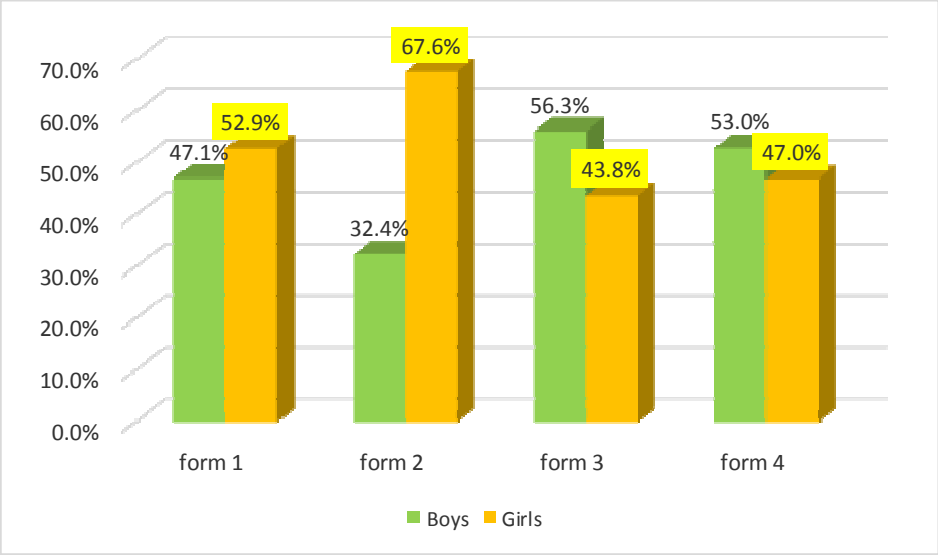

Figure 4. 8: Gender Distributions of Students by Classes

Figure 4.8 shows that at formative classes, that is form 1 and 2 the number of girls supersedes that of the boys. For instance, in form one; girls are more than boys at 53% and 47% respectively. In form 2, the number of girls is more than the number of boys at 68% and 32% respectively. However, at form three and four, the trend reverses, the number of boys surpasses the number of girls. In form three boys are more than the girls at 56% to 44% and in form four 53% and 47%. This is an indication that the dropout rate for girls is more than the drop out for the boys and the enrolment for girls in more than the enrolment for boys in lower classes.

4.4 Distance from School to students home by Gender

The distance from household to school was of interest to this study. This was motivated by the need to establish the distance from household to school and subsequently transport cost implications. The household heads were asked to indicate the distance covered by their children when attending school. Table 4.4 presents the results

Table 4. 4: Distance from school to household by gender

Item	Frequency	Min	Max	Mean	Std
Distance from school to home in Kilometers	394	1	100	24.73	26.230

The result in Table 4.4 shows that on average students covers more than 25 Km from home to school. This implies that most of the students cover long distances to access secondary education. The long distance from household to school is

attributed to the sparse nature of population distribution. In Tharaka South sub county population density is very low. This make household be found far from secondary school.

The distance from household to secondary school was sought by the category of the schools. Through cross tabulation the results on the distance from school to household is as presented in Figure 4.9.

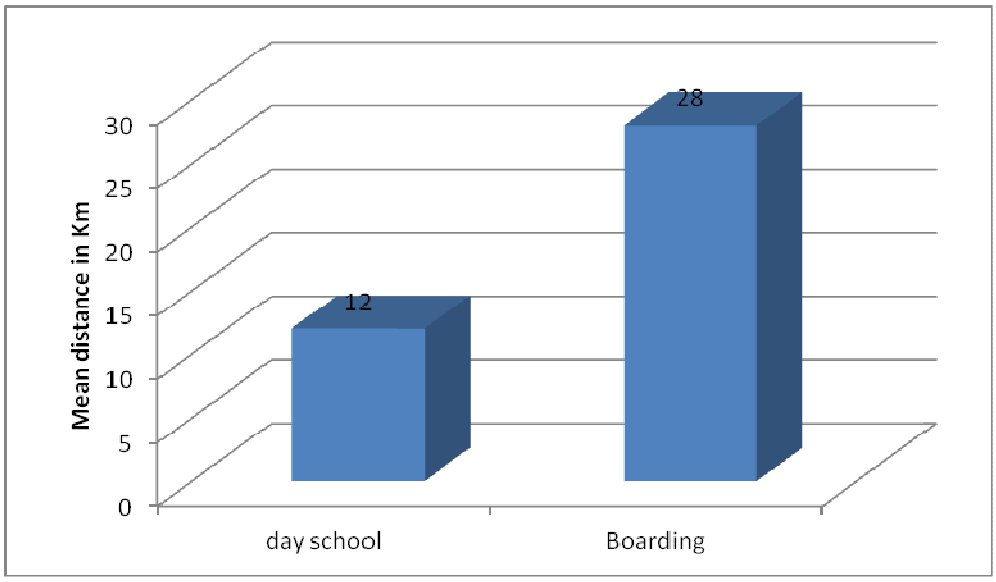

Figure 4. 9: Mean distance from school to household by school category

Figure 4.9 shows that there is a wide variation in relation to the distance covered by students who attend day and secondary schools in Tharaka south sub county. The results shows that students attending day schools covers 12 Km on average. This translate to 24 kilometers per day while those attending boarding schools covers 28 Km on average. This makes access to secondary education difficult for the children in the area.

4.5 Household Income

In relation to the amount of money spent by the household on children in secondary schools, the study sought to establish the number of children from one household who are in secondary school. The household heads were asked to list all the children who are in secondary school from one household. The results areas presented in Figure 4.10

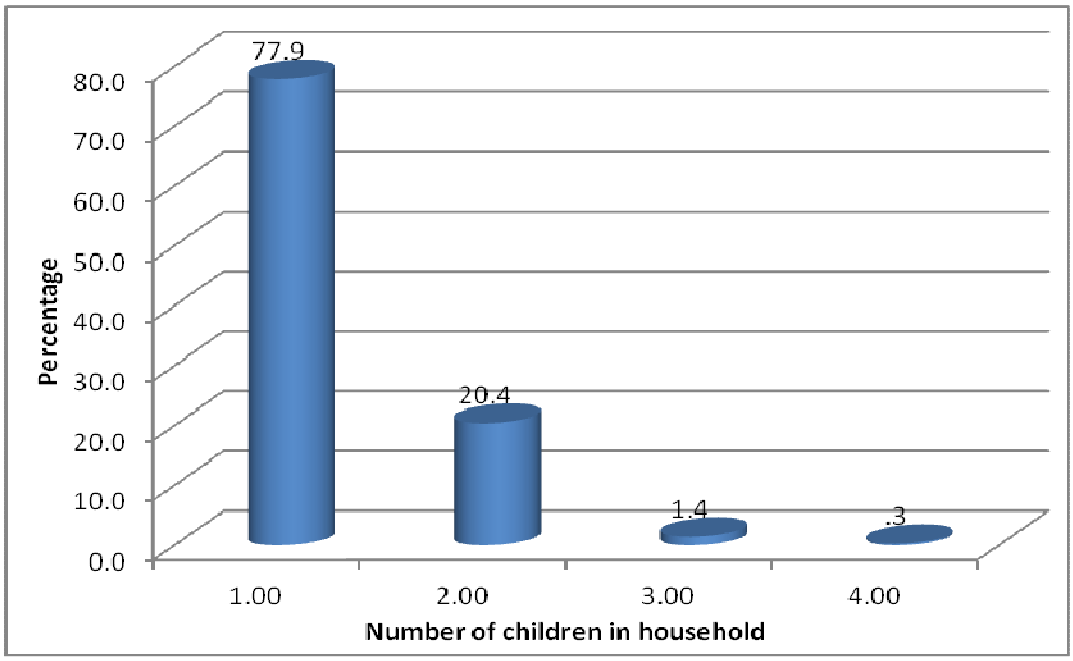

Figure 4. 10: Number of children in secondary school from a single household

Fugure 4.10 shows that most of the households 78% have one child in secondary school and 22% of the household have more than one child in secondary schools. This implies that 22% of the household have more than one child in school hence up-scalling the cost of education incured by the household.

In line with the number of children in school, there was need to establish the income levels of the parents. This was done with the aim of establishing whether

there is a relationship between family income and parents willingnes to take their children to school. To this effect the household heads werer asked to indicate their income levels. This is as presented in Figure 4.11.

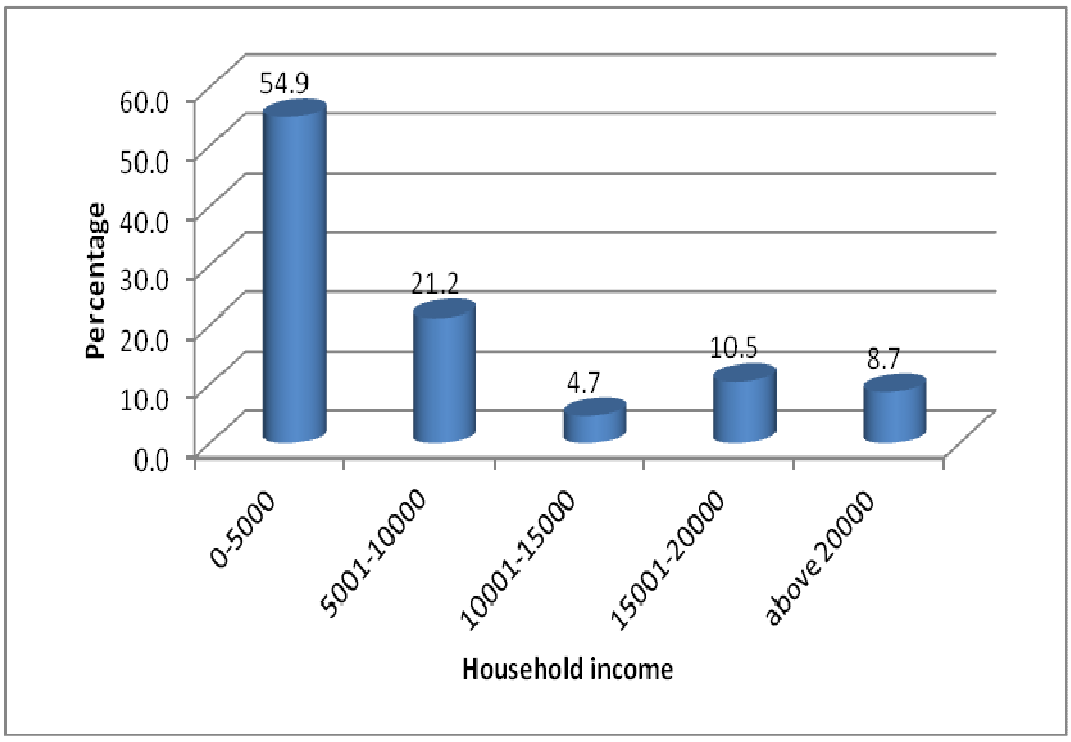

Figure 4. 11: Income levels of the household

As presented in Figure 4.11 majority of the household heads 55% indicated that they earn between Ksh 0-5000 per month. This translates to maximum of Ksh 60,000 per year. The rest of the respondents gave income levels that vary significantly from one another. For instance 21% of the respondents said that they earn between Ksh5001 to Ksh10000 while 5 % said that they earn the range of Ksh 10001 to 15,000. However, 19% of the parents earn Above Ksh 15,000 per month. The results show that most of the parents' monthly incomes are low to sustain children in schools.

Household income levels have been shown to affect enrolment in schools, this study established that most of the households in Tharaka south Sub County have low income levels, through parsons correlation analysis, this study established that there is a high positive correlation between household income and children enrolment in schools. This suggests that household wealth determines a household's ability to invest in education of the child. These results mirrors the work Rankin and Aytac, (2006), Al-Samarrai and Rose (2001), Oxaal (1997), Pal (2004), Woldehanna et al. (2006), Sibanda (2001) and Chaudhury et al. (2006), of who also established that income correlates with school enrollment and attainment. These studies demonstrated that, in developing countries household wealth significantly improve children's chance of school enrollment. Most of these studies identified direct and indirect costs of schooling as important factors for school attendance and dropout.

As to the direct cost, household poverty restrains parents from sending their children to school as they are not able to cover expenses of stationeries books, school uniform and transportation. The indirect costs of schooling include the forgoing child labor inputs for household's economic activities and domestic chores. In relation to the above studies, this study established the wealth accumulation 78% of the households in Tharaka South Sub County in very low. This implies that most of the parents strain to meet the cost of education therefore needs to establish the unit cost so as to guide parents on options they should take to enroll their children in schools.

The study also sought to establish the category of schools in the sub county. This aimed at establishing whether the unit cost of education varies by the category of the school and the cost items that escalates unit cost of education in every category of the school. The school principals and the parents were asked to indicate the category of the school where their schools were enrolled. The responses are as presented in Figure 4.12

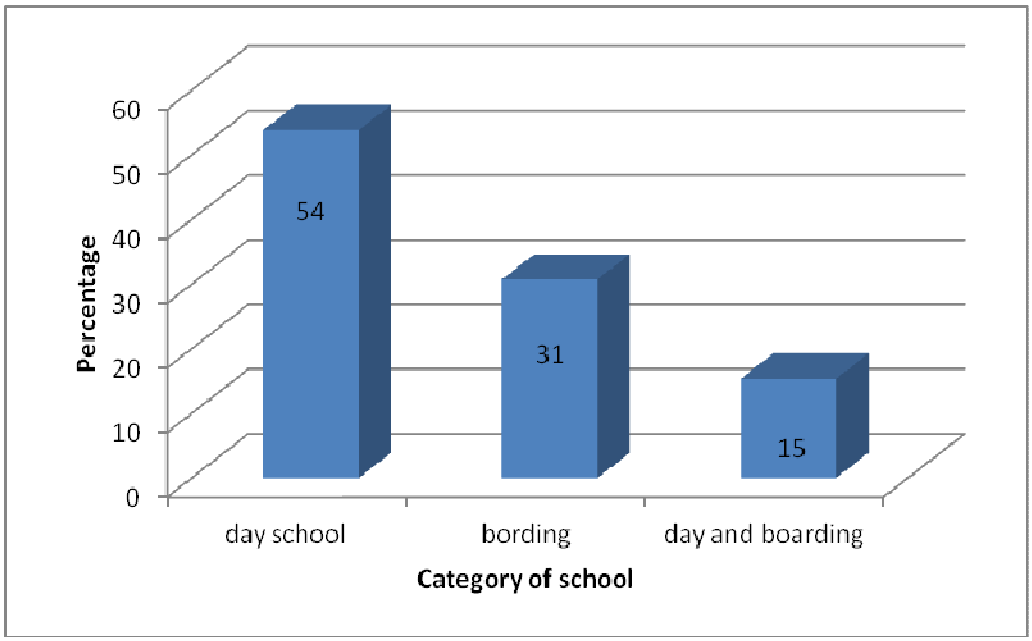

Figure 4. 12: Category of secondary schools in Tharaka South Sub County

In line with table Figure 4.12, the results shows that most of the school in Tharaka Sub county are day schools as attested by 54% of school principals who reported that they teach in day schools. The rest of the principals 31% and 15% indicated that they head Boarding and day and boarding school respectively. This implies that most of secondary schools in Tharaka South sub-county are day schools mostly established through constituency development fund kitty.

4.5 Influence of Average Household Expenditure on Students Enrolments rate in Secondary Schools

One of the objectives of this study was to establish the average household expenditure on every child in secondary school and its influence on enrolment in secondary schools. As already demonstrated in the literature review, the household unit cost is calculated by totaling all the cost incurred by a household on individual student on matters of education. This includes totaling the cost on transport, school uniform, books and other materials, pocket money, development fees and boarding fees. This study goes further to disaggregate these cost variables by age, gender, category of school and class level of the students. The household education unit cost variables are as discussed in the subsequent section.

4.5.1 The Transport Cost as a Unit Cost Component

Transport cost is considered as one of the direct cost associated to education. When parents or children travel to school or travel for activities associated to schooling; that cost is attributed to schooling and therefore considered as direct cost of schooling. In this case the household heads were asked to indicate the amount of money that they pay on transport for a particular child in secondary school for the last twelve months. The transport cost was disaggregated by gender, age, category of the school or the class level of the students. This was done to find out whether there are transport cost differentials the responses on the transport cost by gender is as presented in Table 4.5.

Table 4. 5 Transport Cost by Gender

Gender	observations	Mean	Std. Dev.	Min	Max
Male	154	3100.325	3485.115	300	18000
Female	201	3186.517	3373.768	200	19000

Table 4.5 shows that on average girls pay slightly higher transport cost than the boys in Tharaka South sub-county. The mean for the girls is Kshs 3,186 for the period of twelve months or three school terms. This translates to Kshs 1062 per school term. The boys spend Kshs 3100 in a year on school transport. The results further indicate that the minimum amount of transport cost paid by the boys is Ksh300 and girls Ksh200. The highest amount of transport cost paid by the boys is Kshs 18, 000 while for girls it is Kshs, 19,000. Transport cost was also calculated in relation to the age of the student, this is as presented in Figure 4.13

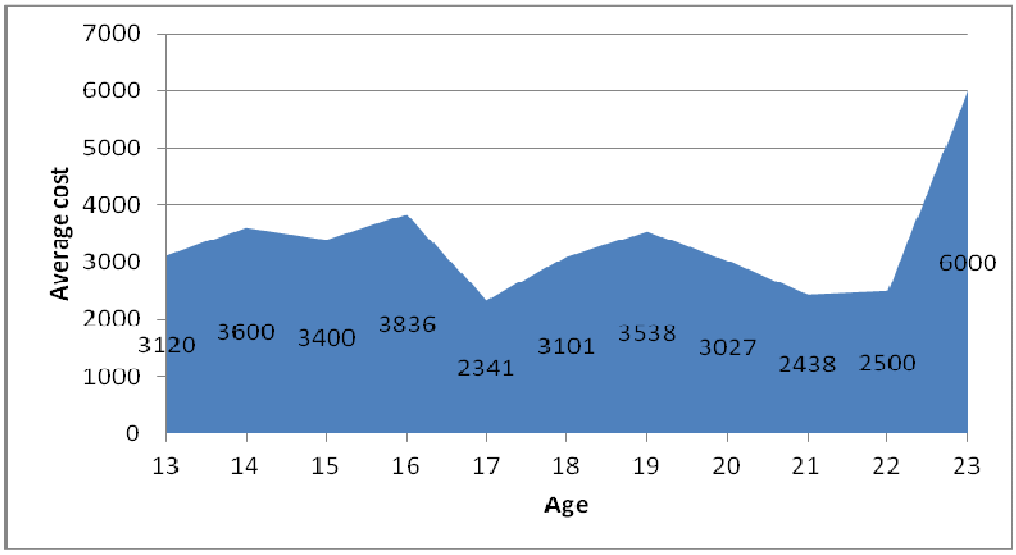

Figure 4. 13: Mean of transport by age of the students

Figure 4.13 illustrates fluactuating trend in relation to the school tranport by age, the results shows that children of age 23 pay more on transport coat compared to the younger ages like 13 years. However, apart from ages 23, 22 and 21 majority of other ages on average spends Ksh 3,000 on school transport per year.

It was of interest also to establish the transport cost differences by the category of the schools. This aimed at establishing whether students in day schools pay more on transport than those in boarding schools. Table 4.6 summarises the results

Table 4. 6: Transport cost by school category

School Type	frequency	Mean	Min	Max
Day school	167	1547	300	18000
Boarding	201	3501	200	19000

The results in Table 4.6 indicate that, the mean transport cost for the students in day schools is lower than the mean transport cost for those in boarding school. The students in day schools on average spends Ksh 1,547 and those in Boarding schools spends Ksh 3,501. This gives a variation of Ksh 1,954; this difference can be associated to the distance from home to school as already shown. Students in boarding schools cover long distances 28 kilometers while those in day schools cover 12 kilometers. This therefore implies that, children in boarding schools incur more transport cost when going to report to school and when coming from schools on closing days or when sent home to collect school fees. For those in day schools, they pay less because they walk to school. Upon probing parents with children in day schools said that their children mostly walk to school or sometimes uses bicycles. This reduces the cost of transport especially for the boys who are able to

walk or ride a bicycle to school. In the earlier results in Table 4.4 results indicated that girls pay more transport cost than the boys on average.

4.4.2 The School Uniform Cost as a Unit Cost Component

School uniform is one of the compulsory items in school systems in Kenya. In this case every student is supposed to have school uniform an expense borne by the parents. School uniform therefore escalated the cost of uniform. It was of interest for this study therefore to establish the amount of money that parents spends on uniform for their children in school by gender, age, category of the school and also by the class level of the students. The parents were asked to indicate the amount of money that they spend on school uniform for their children and the mode of acquiring school uniform. On the mode of acquiring school uniform most of the parents said that in form one they normally pay money for school uniform directly to the schools where student are given the uniform after reporting to school. This includes the school uniform and games uniform. However, other parents indicated that at other class levels students buy uniform in the market and at lower prices that the uniform offered at school. The cost of uniform is as discussed in the subsequent sections

4.4.3 Mean School Uniform Cost by Gender

The analysis of the cost of school uniform by gender was important for this study, guided by the NTA methodology. The household heads were asked to indicate the amount of money they spend to buy school uniform for their children. This was reported for a span of 12 months as presented in Table 4.7

Table 4. 7: School uniform by gender

Gender	Obs	Mean	Std. Dev.	Min	Max
Male	179	4035.75	3235.461	400	24000
Female	222	5094.73	5541.043	950	42000

As shown in Table 4.7 girls' uniform is more costly than the boys' uniform. The results show that, on average a girl spends Ksh 5,094.73 and boys spend Ksh 4,035.75 on uniform every year. This constitutes an average of 12% higher costs for the girls compared to the boys or Ksh 1059 per year. This shows that parents with girls in secondary school spend more on school uniform for their children hence up- scaling their unit cost.

Parents were asked to indicate why girls uniform is more costly than the boys uniform, their responses alluded that this is caused by girls schools management insisting that girls should have at least two pairs of every type of uniform especially. This makes their school uniform be more costly than the boys uniform

The study also sought to establish whether there are uniform cost differentials in relation to the age of the students. The NTA methodology supports analysis of every cost of education by gender as a way of introducing age in the accountant system of the household and the government. This methodology triggered the uniform cost to be analyzed by age of the student. The results are as shown in Figure 4.14

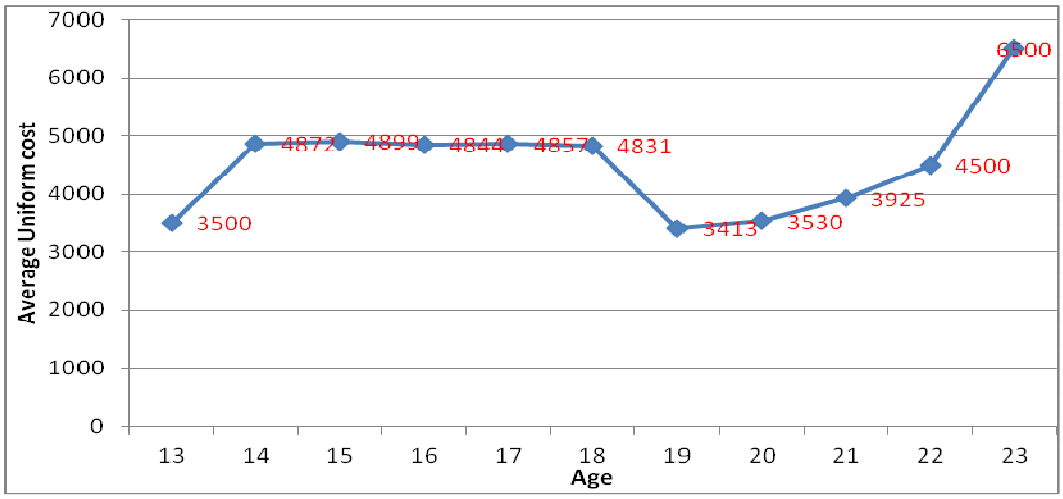

Figure 4. 14 Mean school uniform cost by age of students

Figure 4.14 shows that parents with children of age 13 spend less money on school uniform compared to other children in other age groups. However, at age 14-18 years, parents spend almost the same amount on uniform. After age 18 uniform cost sharply goes down up to age 19 and then increases to Ksh 6,500 at the age of 23 years

The results further show those ages 14-18 which is the secondary school age going in Kenya; the cost of school uniform is almost the same ranging from Ksh 4,831 to Ksh 4,872. However, the under age children, that is age 13; they spend less on uniform compared to others. The results were further disaggregated by the type of school as presented in Table 4.8

Table 4. 8 Uniform cost by type of school

Type of school	Obs	Mean	Std. Dev.	Min	Max
Day	167	4143.023	3670.183	800	14000
Boarding	201	4779.966	5044.575	400	22000

As presented on Table 4.8 students in boarding schools spend more money on uniform than those in day school. The result shows than those students in day schools on average spend Ksh 4,143 on school uniform compared to Ksh 4,779 for those in boarding schools. This implies that children in boarding schools pays on average 8% higher on school uniform compared to the children in day schools.

Parents spending on uniform may vary from one class to another, the study also sought to establish the amount of money spent by the parents on uniform by class. This is as presented in Table 4.9.

Table 4. 9 Cost of school uniform by class

Class	Obs	Mean	Std. Dev.	Min	Max
Form 1	100	5375.	4227.878	1000	42000
Form 2	138	4706	4443.215	950	40000
Form 3	95	3917	3747.417	500	35000
Form 4	68	4325	6527.333	400	40000

Table 4.9 shows that parents who have children in form one pay more on uniform compared to those in other classes. On average a student in form 1 spends Ksh 5,375 on uniform compared to parents in form two who spend Ksh 4,706 form 3 Ksh 3,917 and form four Ksh 4,325. The form one uniform cost is up-scaled by cost for school games uniform and the aspect of buying more pairs of uniform.

4.5.4 The Pocket Money as a Unit Cost Component

Pocket money is the amount of money given to children on daily, weekly or monthly bases by their parents or guardians for their private use while at school. Children are supposed to consume this amount according to their own free will. Given that it is given to students when going to school, Pocket money can be considered as one of the cost incurred by a household to keep children at school. This study sought to establish whether pocket money vary by age, gender, school type and whether there is a relationship between uniform and parents level of income.

Table 4. 10: Pocket money by gender

Gender	observations	Mean	Std. Dev.	Min	Max
Male	177	2500.565	2183.799	250	18000
Female	213	2783.333	2045.524	200	12000

Table 4.10 shows that girls receive more money from parents as pocket money compared to boys. On average the results shows that girls receive Ksh2, 783 as pocket money for the whole year compared to boys Ksh 2,500 given to the boys. However, results show boys receive as much as Ksh 18,000 and girls the high of Ksh 12,000. This translates to Ksh 6,000 per term for the boys and 4,000 for the

girls. However, the results also shows that some students get as low as Ksh200 as pocket money. This shows that there is a wide range of the amount of money given to students as pocket money by the parents

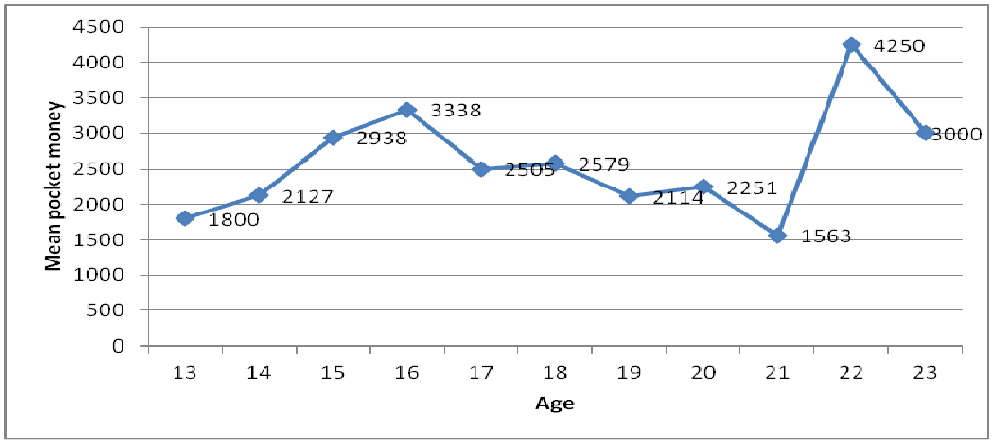

Figure 4. 15: The distribution of pocket money by age

Figure 4.15 shows that from age 13 to 16 pocket money keeps on increasing. After age 16, pocket money given to children keeps on fluctuating with the peak at age 22 where children were given Ksh 4,250 as pocket money.

In relation to type of school and pocket money, the study sought to establish whether there is a difference between amount given to children in boarding schools and day schools. This is as summarized in Table 4.11.

Table 4. 11: Pocket money and type of school

Type of school	Obs	Mean	Std. Dev.	Min	Max
Day school	157	1534.146	1176.175	250	5000
Boarding	200	3010.374	2229.855	200	18000

Table 4.11 shows that there is a wide difference between the pocket money given to students in boarding schools compared to those in day schools. The results show that students in boarding schools on average receive Ksh, 3,010 per year compared to those in boarding school Ksh 1,534.

Pocket money may also vary from one class to another, this study sought to establish the variations of the pocket money per class as presented in Figure 4.16

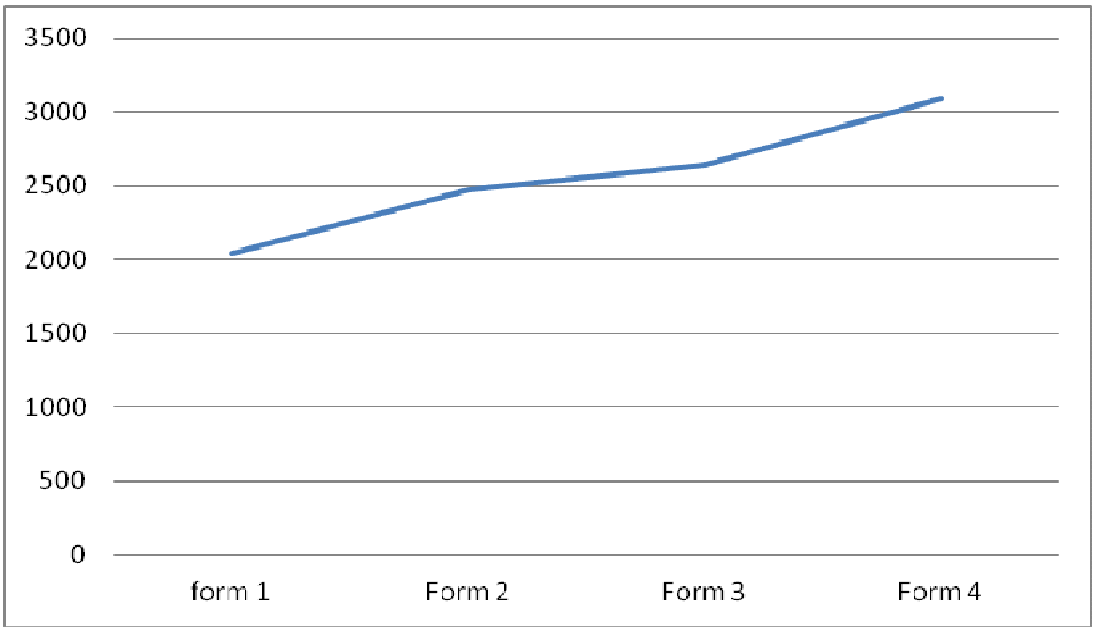

Figure 4. 16 Pocket money variations by class

Unlike school uniform which was decreasing by the level of education from form 1 to form 4. Pocket money increased by the level of education. On average students in form one are given around Ksh 2,000 pocket money and those in form 2 are given Ksh 2,500, form three Ksh 2,700 and those in form 4 are given Ksh 3,100. This implies that pocket money varies by the level of class

4.5.5 Unit Cost of Books

The cost of books also makes up the unit cost of education in secondary schools. In the Kenyan education system students buy reference books such as Dictionary, Kamusi, Bible, Atlas and Hymn books as they join form one. In other classes students buy revision books to supplement the course books purchased by the school under the Free Tuition Secondary Education Kitty. In form three also students buy set books both for Kiswahili and English. All these books are bought by the parents/guardian. In order to establish the amount of money spend buying this books, the household heads were asked to indicate the amount of money they spend on buying books in one year period of schooling. The responses are as in Table 4.12.

Table 4. 12 The average amount of money spent to buy books by student's gender

Gender	Obs	Mean	Std. Dev.	Min	Max
Boys	181	5597.514	5384.753	500	45000
Girls	216	5449.537	5652.141	500	45000

Table 4.12 shows that there is a slight difference in terms of the amount of money that parent spent to buy books for the students. Result shows that, on average parents spends Ksh 5,597 on books for the boys and Ksh 5,449 for the girls. This implies that gender issue does not come into play when it comes to the aspect of costs of books. The results show the prices of books are relatively the same across

the ages of the student. This can be attributed to the process of books which are almost uniform in books shops. This makes the cost of books spent by parents to be the same across the gender.

In relation to the type of school and the cost of books, the study sought to establish whether there is a significant difference on the amount of money spent by parents who are in day school compared to those who are in boarding schools. The results are as presented in Table 4.13

Table 4. 13 Cost of books by type of school

Type of school	Frequency	Mean	Std. Dev.	Min	Max
Day school	150	4710.843	4409.054	500	20000
Boarding school	200	5684.5	5852.782	500	45000

The results in Table 4.13 shows that parents with children in boarding schools spend more money on buying school books compared to the parents with children in day schools. The results show that the parents in boarding schools on average spend Ksh 5,684 per year on buying books while those in day schools spend Ksh 4,710 a difference of Ksh 974 on average. This may be attributed to the conditions set before reporting to schools. Parents taking children to be admitted in boarding secondary schools are requested to produce all the items before admission failure to which a parent is sent home with their children. However, in day schools admission is not very strict in relation to the presentation of the items bought.

Like other cost associated to schooling, the study sought to establish the trend of cost of books by level of class. To this effect a cross tabulation was also done to establish the cost of book by level of class. The results are as presented in Figure 4.17

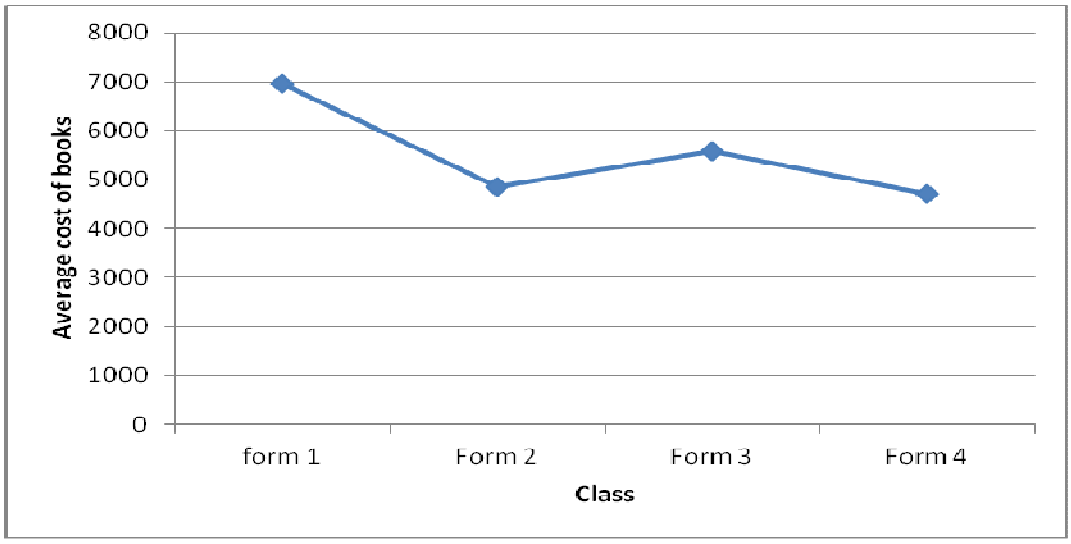

Figure 4. 17 The cost of books by class

Figure 4.17 shows that on average parents who have children in form one spends almost twice amount of money compared to those in form four when buying school books. Parents with children in form 1 spend Ksh 7,000 on books, followed by those with children in form 3 at Ksh 5,500. Form two and form four students have lower demands for books and parents pay less on books compared to those in forms 1 and 4. In form two parents spends Ksh 4,700 and in form 4 Ksh 4,600. The cost on books are high in form one because this is the level when one is required to buy reference books such as the Bible, Atlas, Kamusi and Dictionary among other books. The cost of books goes up in form 3 because one is required to buy literature books both for English and Kiswahili. This up-scales the cost of books at this level.

4.4.6 Boarding Fees as a Unit Cost Component

The other cost incurred by the parents in relation to education includes the boarding fees. Parents were asked to indicate the amount of money they pay towards boarding fees per year. Figure 4.18 shows the results

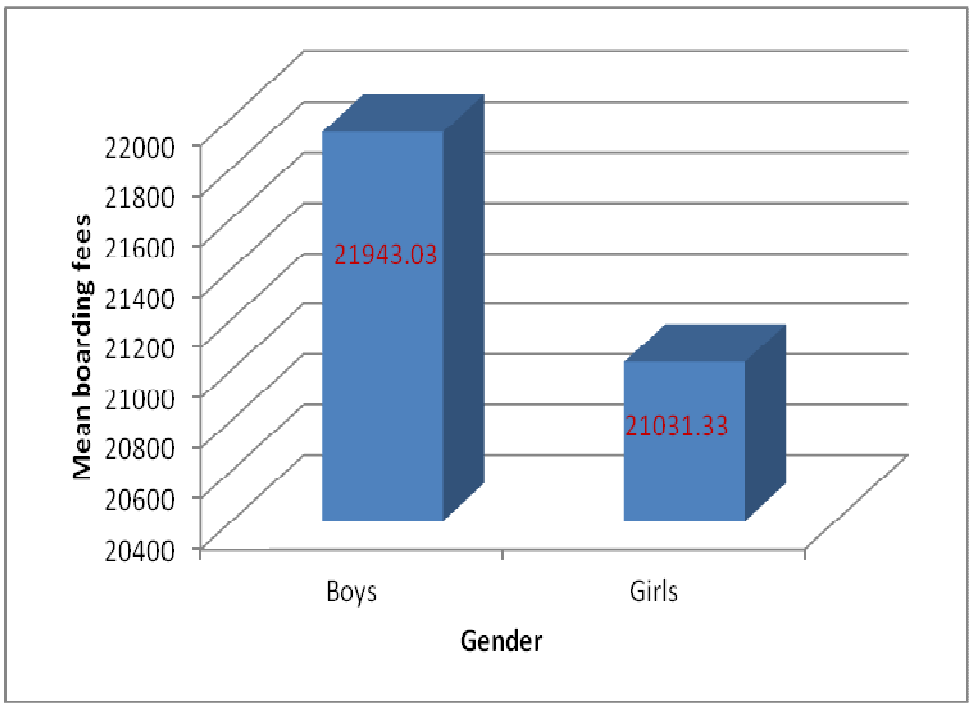

Figure 4. 18: Boarding fees as a unit cost

Figure 4.18 shows that there is a slight difference in terms of the amount paid by boys and girls in relation to boarding fees. The results show parents with boys and girls in secondary school on average pay Ksh 21,000 on boarding fees. However, the difference in relation to the type of school is quite significant. This is as demonstrated in Figure 4.19.

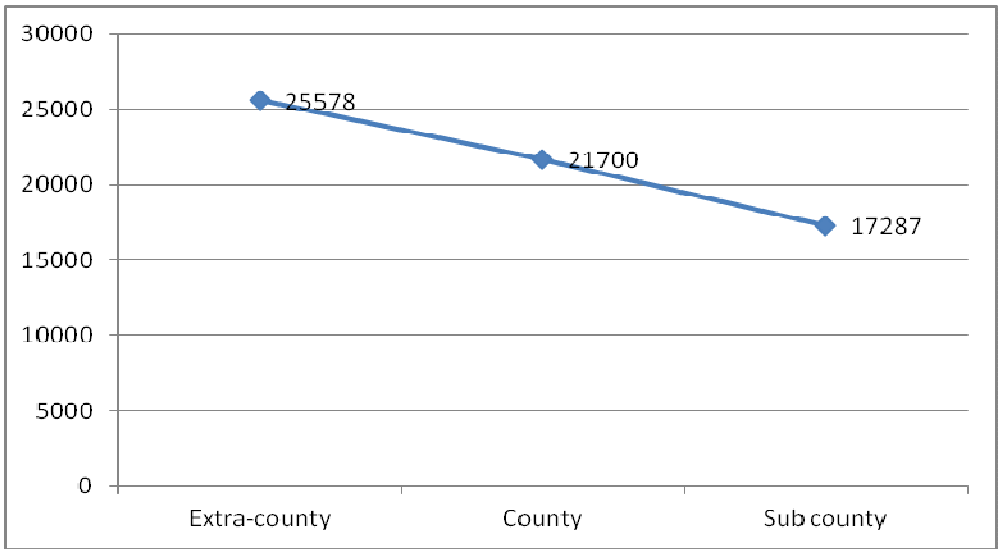

Figure 4. 19 Boarding fees distribution by type of school

Figure 4.19 shows that the boarding fees decrease by the category of the school. In this case, extra-county schools parents on average pay more boarding fees than the sub county schools. This shows that parents with children in sub county schools pay less boarding fees. The boarding fees by age differed from one age to the other as presented in Figure 4.20.

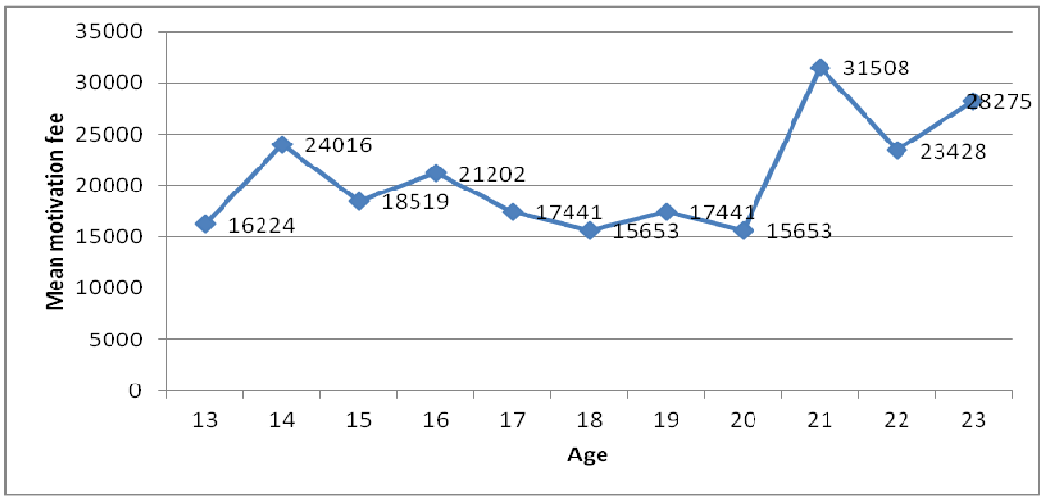

Figure 4. 20: Boarding fees variation by age of the students

Figure 4.20 shows that children of 21 years pay more boarding fees compared to those of other years. The results show that children of age 20 pay less boarding fees Ksh 15,653.

The results show that there is a variation of boarding fees by the gender of the student. These results are in line with the study by Kiage, Simatwa and Ayodo 2014 who established that the boarding fees in girls secondary school varies from one category of the school to another with least schools paying 11,200 and the highest school paying 14,200. However, in Tharaka South sub County the parents who pay least boarding fees pays Ksh 17,287 per years and the highest pays Ksh 25,578.

4.4.7 Motivation Fees as a Unit Cost

Motivation fees is the amount of money paid by the parents to take care of remedial classes in the mornings, after normal classes and also over the weekends as well as taking care of the prize giving days and taking teachers for a trip as a token of appreciations when the KCSE results are released. Parents were asked to indicate amount of money they pay as motivation fees in schools. Attempt was made to tabulate the motivation fees by gender of students, type of schools and category of school and by the class level of the students. The results are as presented in Figure 4.21

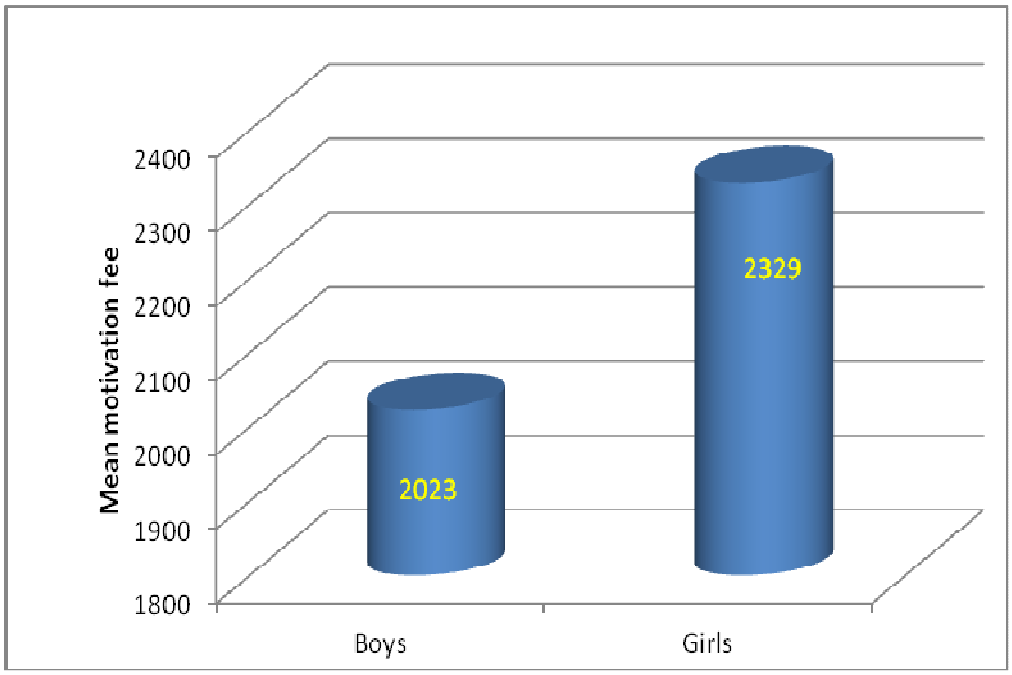

Figure 4. 21: Motivation fee by student's gender

Figure 4.21 shows that parents with girls in secondary school pay more money on motivation fees compared to parents with boys. For the boys on average parents pay Ksh 2,023 while for the girls they pay Ksh 2,329 per year. In relation to type of school the results are as in Figure 4.22.

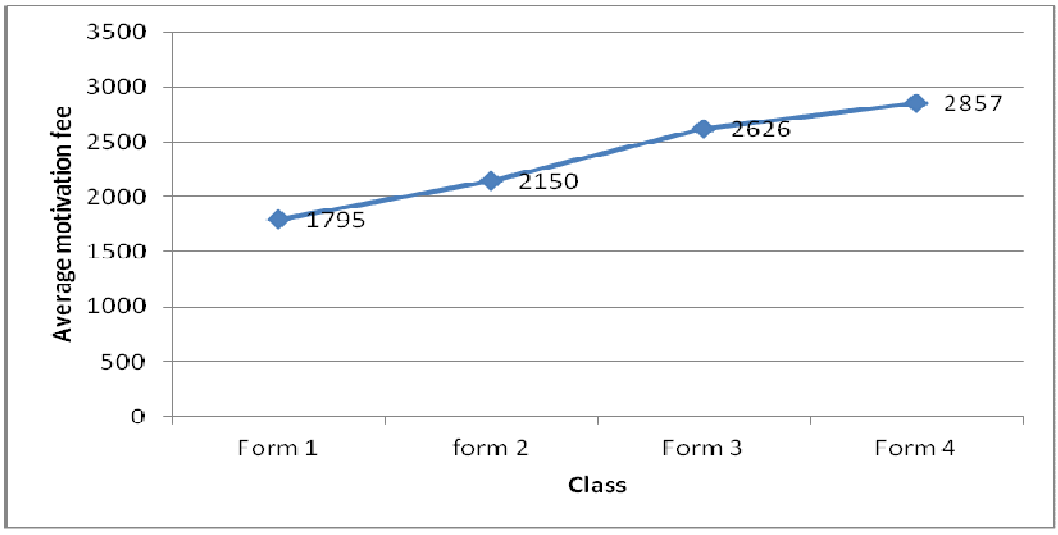

Figure 4. 22: Motivation fee by class

Figure 4.22 shows that motivation fees increases by the level of education of the students, students in lower classes pay less motivation fees compared to those in higher classes. Results shows that at form 1 on average parents pay Ksh 1,795 per years, form 2, Ksh 2,150, form 3 Ksh 2,626 and form 4 Ksh 2,857. This implies that parents pay more money for motivation at form four compared to those in form three. This can be attributed to the emphasis laid in form three and form four students who are close to KCSE. Parents are under pressure to pay the amount to enable their children receive extra tuition to enable them perform better in secondary schools In relation to the type of school the results are as in Figure 4.23

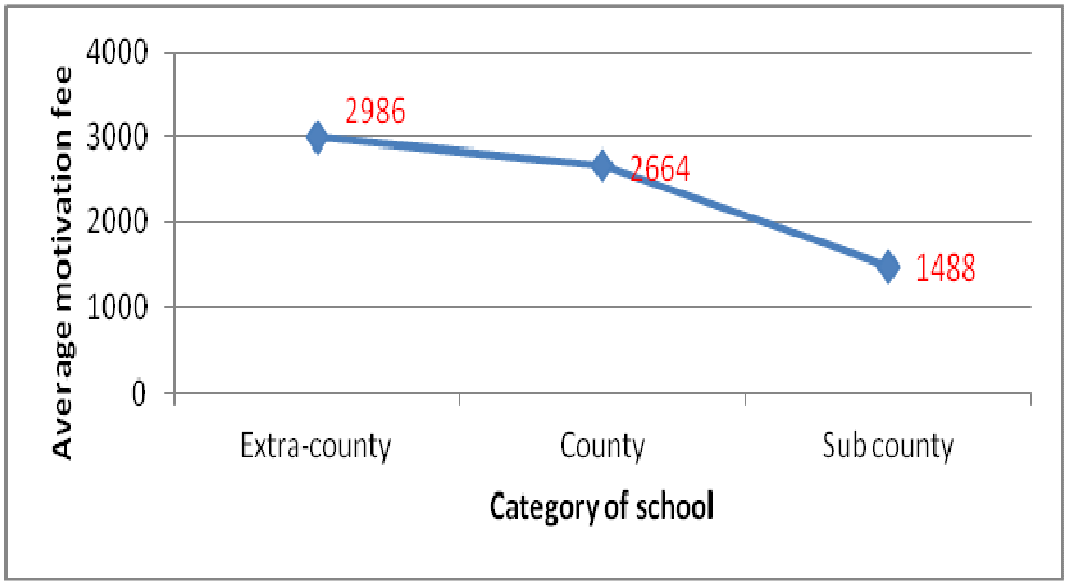

Figure 4.23: Motivation fees by type of school

Figure 4.23 shows that extra-county schools charge more motivation fees compared to the sub county schools. Parents indicated that they pay Ksh 2,986 for the children in extra-county schools compared to those in county schools where they pay 2,664 and in Sub County schools at Ksh, 1,488. The motivation fees also

vary with the age of the students. Figure 4.24 presents motivation variation by the age of the children.

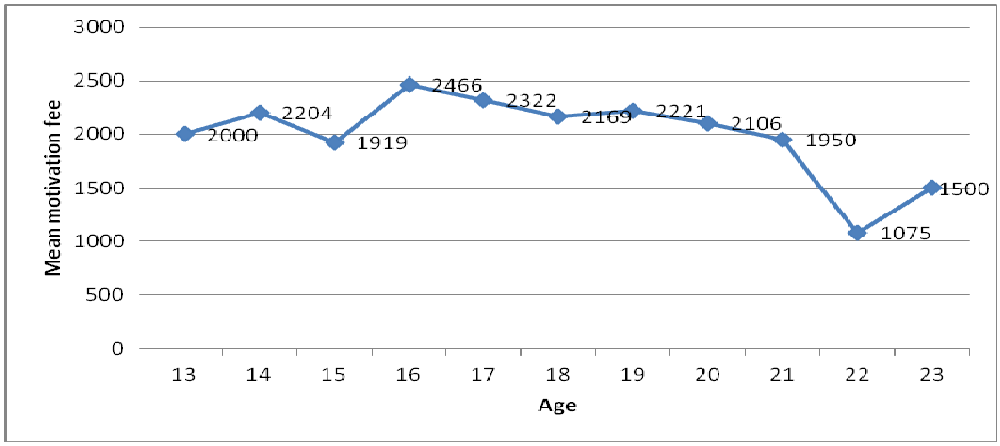

Figure 4. 24 Motivation fees by the age of the students

Figure 4.24 shows that parents with children of age 16 pay more on motivation fees on average compared to other ages, this is as attested in figure 4.24 where children of age 16 pay Ksh 2,466 and those of age 22 pay less at Ksh 1,075 per years

4.4.8. Development Fees as a Unit Cost Component

Development fees are paid to for maintenance of schools facilities like schools bus and renovation of buildings. Development fees are set by the parent and Board of Management (BOM). Parents sign agreement with BOM on the amount of development fees. The cost of education in line with the development fees is as presented in Figure 4.25.

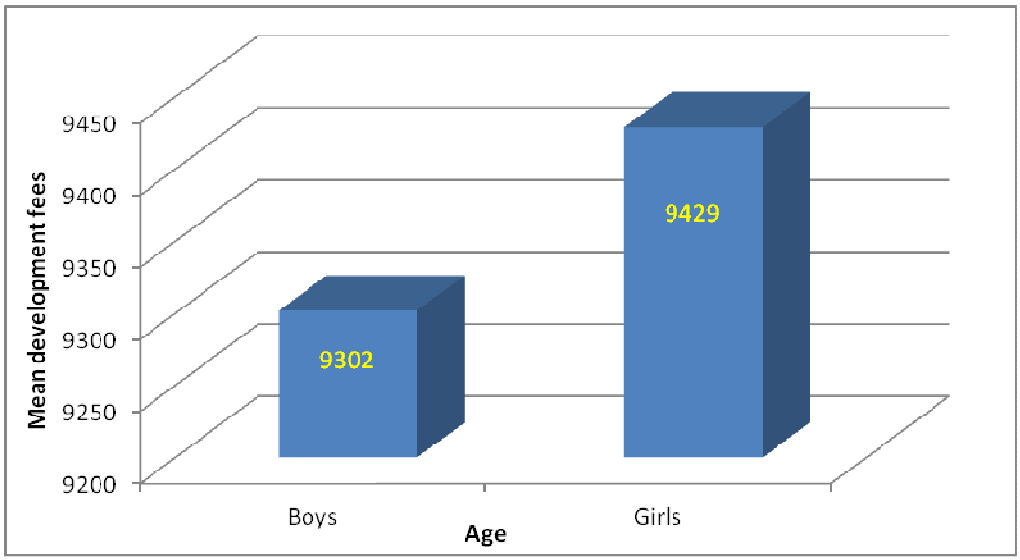

Figure 4. 25 Development fees by gender

Figure 4.25 shows that boys pay less development fees compared to the girls. The results show that girls pay Ksh 9,429 as development fees while boys pay Ksh 9,302. This implies that parents with girls in secondary schools in Tharaka South sub county pay more development fees compared to the boys. In terms of the amount of development fees paid by the parents by type of school, the results are as in Figure 4.26

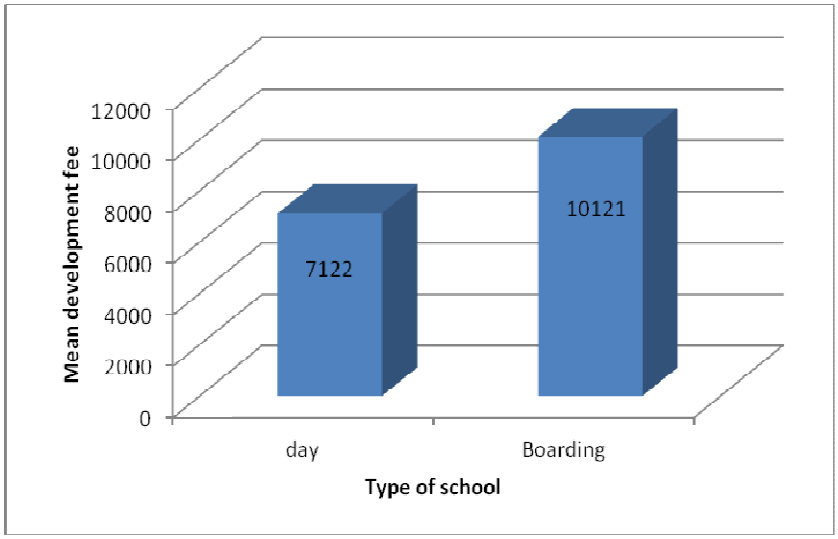

Figure 4. 26 Amount of development fees paid by the category of school

As presented in Figure 4.26 parents with children in day schools pay less than those in boarding schools. This may be attributed to the need to equip boarding schools with more facilities such as dormitories, kitchen and maintenance fees like paying for water bills and electricity. The same comparison was done in line with category of school. This is as presented in Figure 4.27.

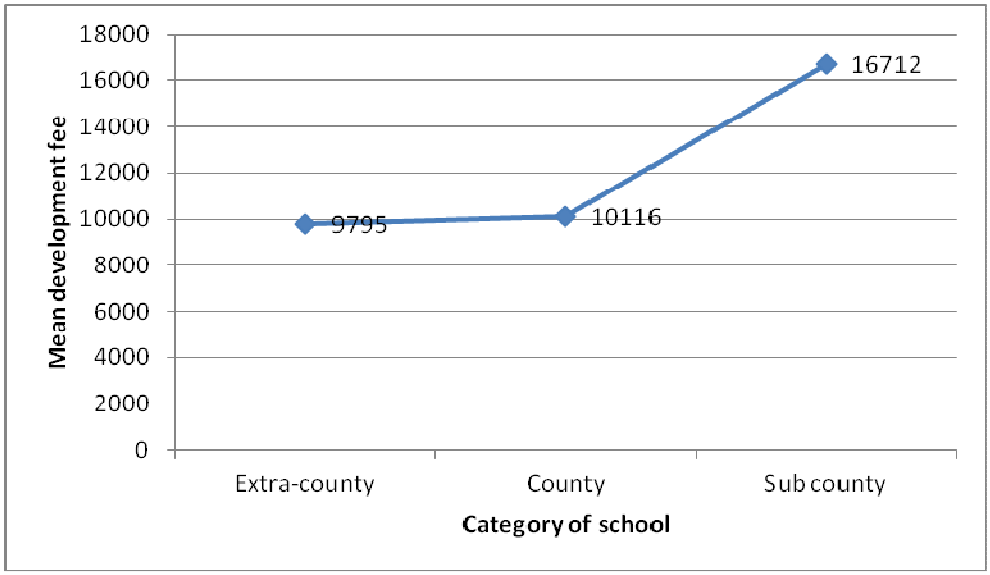

Figure 4. 27 Comparisons of development fees by school category

On development fees, to the contrary parents with children in sub county schools pay more development fees than the; parents with children in extra-county schools. This may be attributed to the level of development in line with infrastructure. Most of the sub-county schools were recently developed and therefore need more infrastructures. This requires more money hence burden to the parents with children in sub county schools.

The distribution of the development fees by the age of the students was also sought. This is as presented in Figure 4.28

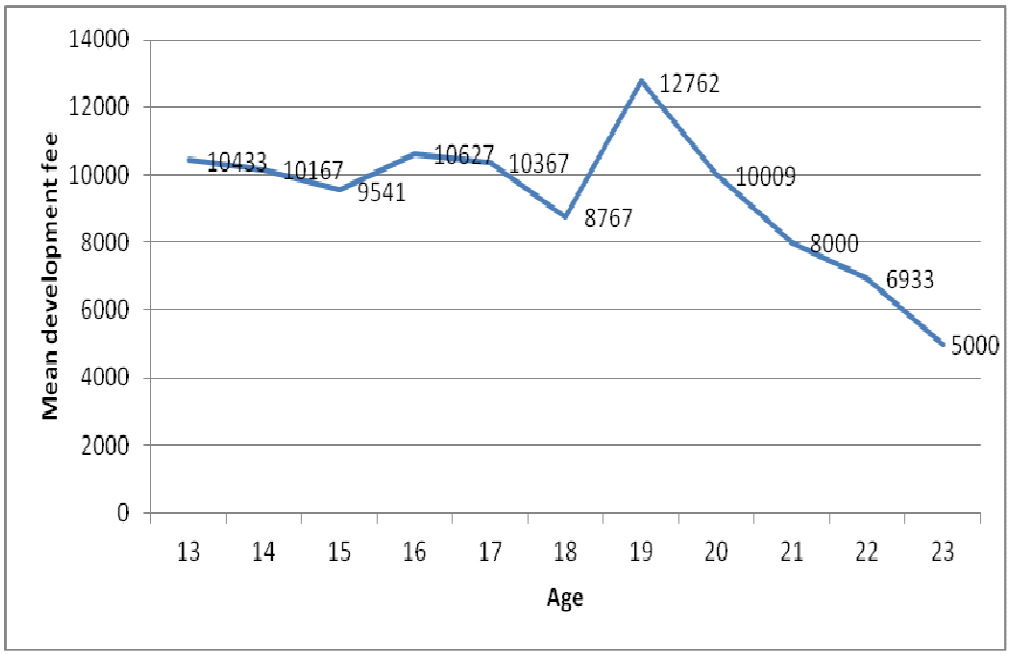

Figure 4.28 Development fees by age of the student

Figure 4.28 shows that there are variations of development fees by age of the students. The students with children at age 19 pay higher than all other parents. Those of age 20 are paying less than other children in secondary schools.

Unit cost of education incurred by the parents includes all the money paid by the parents in order to meet education cost of every child who is in schools. This cost is made up of the cost of boarding fees, books, uniform, books, examination fee, and development fees. This amount was tabulated and the results are as presented in Table 4.13

Table 4. 14: The unit cost incurred by household per child in secondary school by category of school

Unit cost	Obs	Mean	Std.	Dev.	Min	Max
Total education boarding	105		50818.38	22861.7	11550	133320
Total education cost day school	113		30638.23	15419	45550	81000

This shows that on average a child who is in secondary school in Tharaka South sub-county pays 50,818 as the total unit cost of education while those in day schools pays Ksh 30,638 on average. This is the amount paid by the parents who have children in these schools.

The study was further disaggregated by gender, age, type of school and category of school

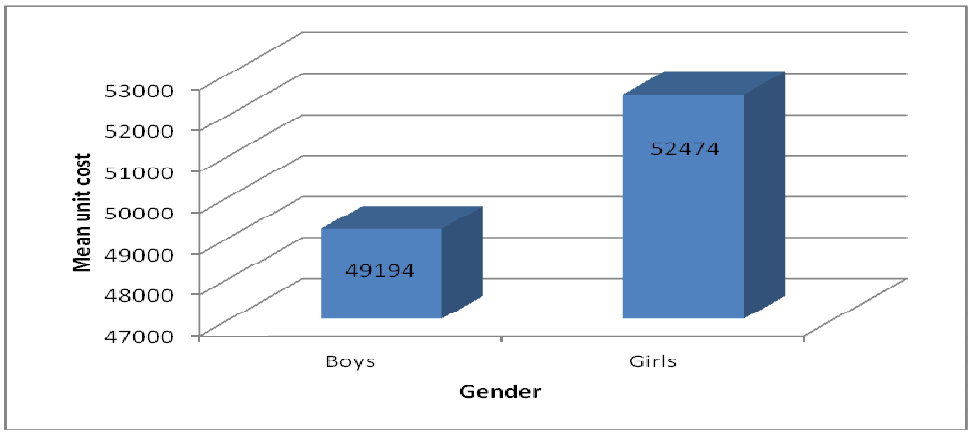

Figure 4. 29: Household total cost paid for secondary education by gender in boarding schools

As presented in Figure 4.29, parents with children in boarding schools pay more for the boys compared with fees for the girls. This implies that it is less costly to educate a boy than a girl in boarding schools.

On the other hand those in day schools the total unit cost met by the household is as presented in Figure 4.30.

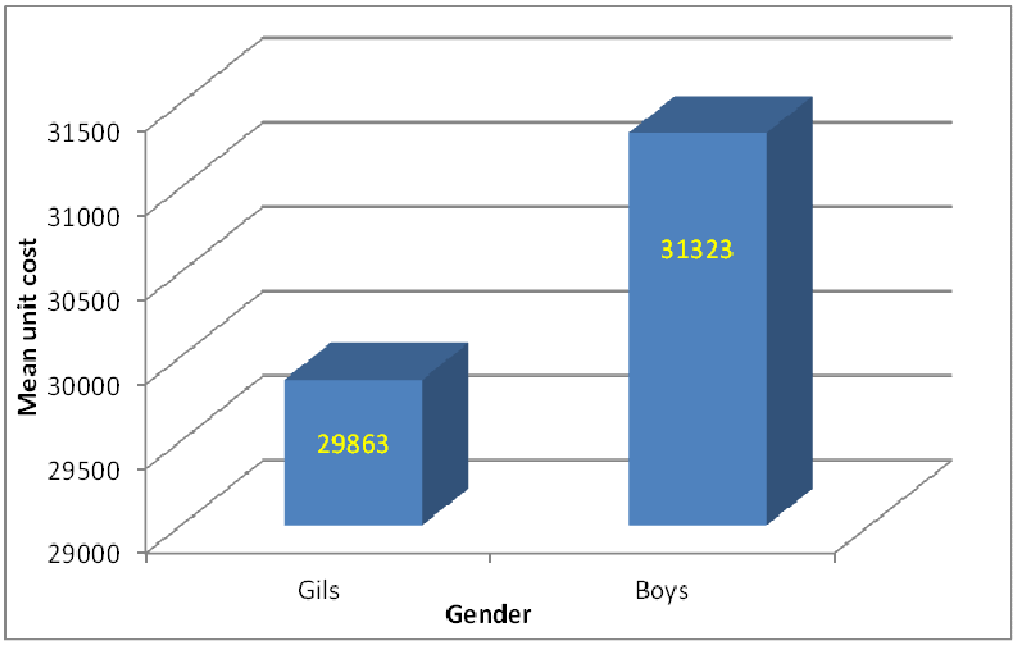

Figure 4. 30: Household total cost paid for secondary education by gender in day schools

The trend changes in day schools where parents with the boys pay more than the parents with the girls. Boys' unit cost of education in day school is Ksh 31,323 on average and for girls is Ksh 29,863.

In relation to the class, by category of school the results are as presented below.

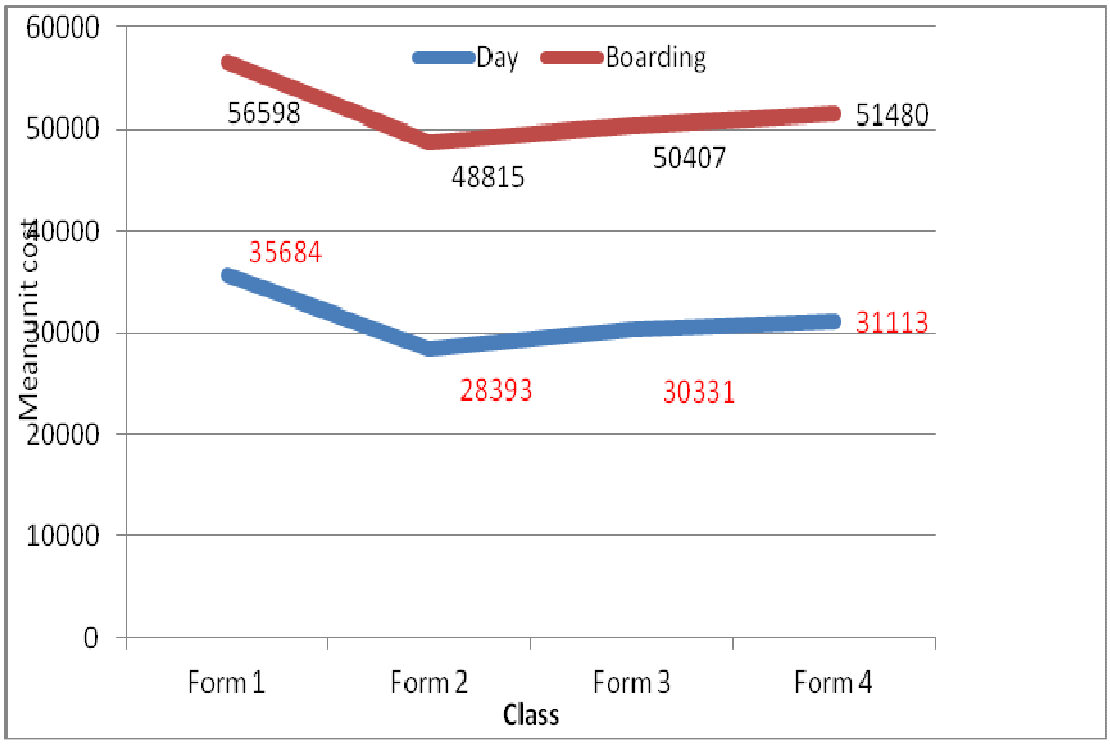

Figure 4. 31: Unit cost per child by gender and type of school

Figure 4.31 shows that it is more costly to educate a child in form one than in any other class in Tharaka South Sub County. Results shows that, for the students in form one on average parents pay Ksh 56,598 compared to other classes for the students who are in boarding schools. The cost goes down in form 2 where parents pay Ksh 48, 815 and then goes up again in form three to Ksh 50,407 and to Ksh51, 480 in form four. The cost in form one is escalated by high cost of uniform, books and development fees as earlier indicated.

The same trend is replicated in day schools where parents in form one pay more for the education of their children compared to the parents with children in upper classes. The ones in form two pay less than other classes but the cost goes up again as one proceeds to the highest level of education.

In line with age, the results are as presented in Figure 4.32.

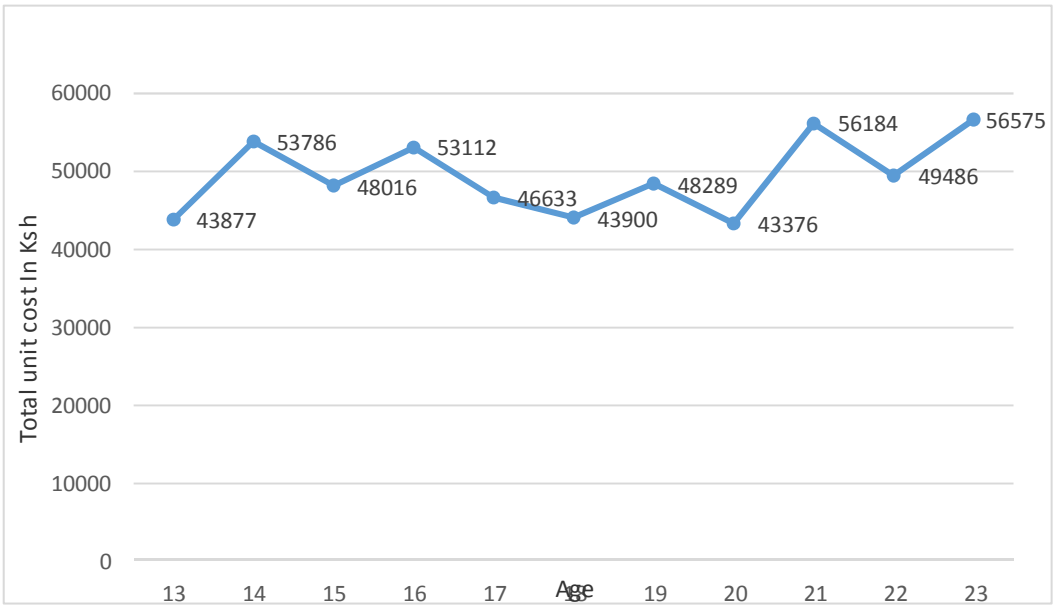

Figure 4. 32: Average total household expenditure by age

Figure 4.32 shows that the average household expenditure on education for the children fluctuates from one age to the other. However, results show that those with children in at age 23 pay more than the rest and those at age 13 pay less than the rest. This can be attributed to the cost of uniform where those at lower ages pay less, transport cost where those with less years pay less and the pocket money. The earlier results shows that students of higher ages are given more pocket money than the rest of the students and those of lower ages are given less.

4.5 Influence of Government spending on Student Enrolment rates in Secondary Schools

The data on unit cost by the government is calculated by computing both recurrent expenditure and capital expenditure by the government. The amount of money generated by schools through income generating activities is also considered as expenditure by the government. This study sought to establish the average amount

of money spent by government on every child who is in secondary school. This was done by totaling the recurrent expenditure and capital expenditure and dividing it by the number of students in schools. Using the NTA approach, all the amount of money that government spends on children who are in school is further disaggregated by age and by the gender of the students. This helps in planning and monitoring educational projects.

The computation of the unit cost of education from the government side requires data on the number of students enrolled and the recurrent and capital expenditure. In order to establish the number of students in schools, the school principals were asked to indicate the number of students in their schools and also government document such as development plans, economic year books like statistical abstract, economic survey were analyzed. The responses on the number of students in all public secondary school in Tharaka south sub county is as presented in Table 4.15.

Table 4. 15: Enrolment rates in schools

Numbers	Obs	Mean	Std. Dev.	Min	Max
Number of students	25	179.2308	89.12432	90	413

Table 4.15 shows that on average there are 179 students in every school in Tharaka South sub county. However, the minimum number of students in schools was 90 students while others have 413 students as the highest number.

After establishing the number of students, the next step involved establishing the amount of money that schools receive directly from the government and also from other sources. The school principals were asked to indicate whether they receive funds from government for FTSE. All the schools 100% indicated that they received the money for Free Day Secondary school. The results also show that on average every school received Ksh 1,833,710 translating to Ksh 10,265 per student per year. This amount covers tuition and general purpose expenses.

Other than FTSE the study sought to establish whether schools also receive other funding. The principals were asked to indicate whether they receive money from other sources. The results are as presented in Figure 4.33.

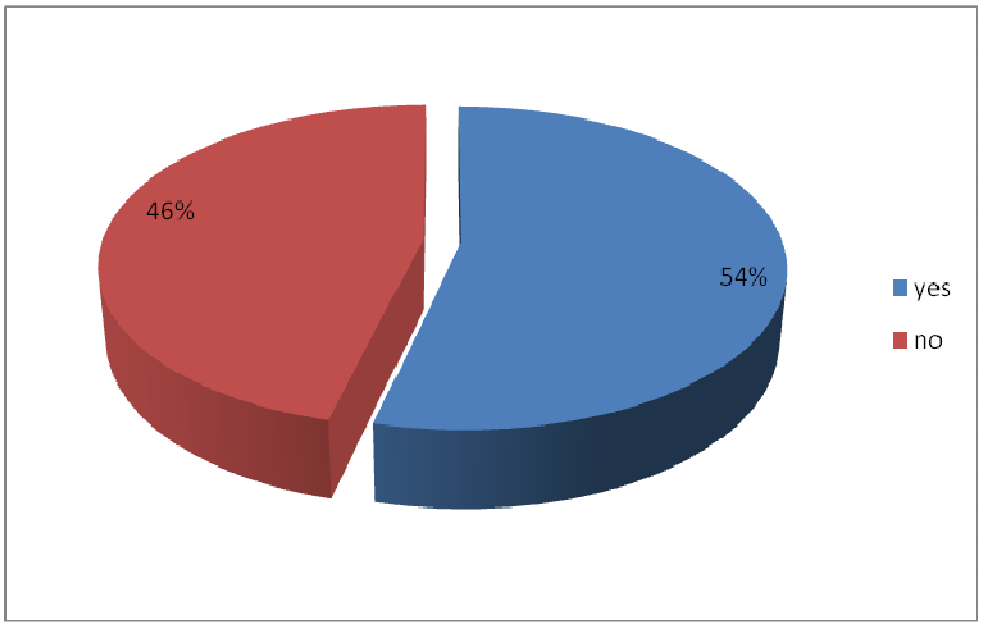

Figure 4. 33 Number of secondary school which receives other sources of income

Figure 4.33 shows that 54% of the schools received funds from other sources while 46% did not receive any funding from other sources. On other sources of funding the results are as in Figure 4.34

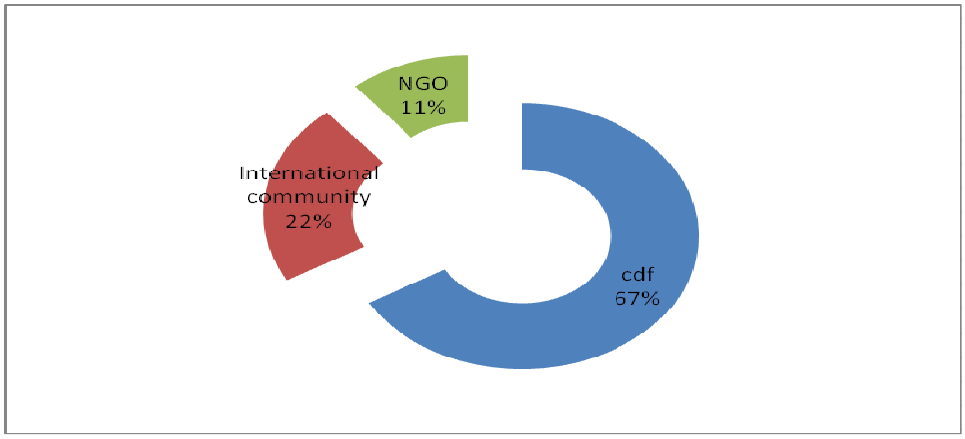

Figure 4. 34: Other sources of funds for schools

The results show that majority of schools 67% receive money from CDF kitty, 22% from international community and 11 from NGOs. This is an indication that schools finances are also supplemented from other sources.

Table 4. 16: Average unit cost per student from other sources

Variable	Obs	Mean	Std. Dev.	Min	Max
Unit cost	14	3726.998	2473.984	923.0769	8695.652

Table 4.16 shows that on average students from the schools which receives funds from other sources other than the government get 3,727 per year. However, the lowest student gets 923 Ksh while the highest gets Ksh 8696 per year.

Besides, FTSE and money from grants, the study also sought to establish whether schools have income generating activities that may boost the school budget. Out of

26 schools 52% of them responded to the question, the results show that 8 of the schools have income generating activities while 42% do not have. The principals were further prompted to indicate the type of income activities that they undertake. This is as presented in Table 4.17.

Table 4. 17: Types of income generating activities

	Responses	
	N	Percent
Kiosk	6	27.3%
Livestock/school farm	16	72.7%
	22	100.0%

From Table 4.17 it can be deduced that 27% of schools rely on selling of goods in a kiosk in order to boost school finances, while 72% rely on livestock rearing and cereal crop farming.

The school principals were also asked to indicate the amount they generate from income generating activities. The results show that, on average every school produces Ksh533, 385 with the lowest school generating 10,000 and highest school generating Ksh 2,400,000. This is an indication that schools have resulted to developing alternative ways of making money to support secondary schools.

The study also sought to establish the ways in which the money is spent in schools, the results shows that the money generated through income generating activities is spent for feeding students, carrying out maintenance and repair as well as paying non teaching staff. All this activities are geared toward supporting education. The

unit cost for the money generated through income generating activities totals to Ksh 827 per child per year.

In relation to the human resource as a cost aspect of education, the study sought to establish the number of teachers employed by TSC, BOM and also non-teaching staff. All these upscale the unit cost of education. The distribution of the human resource is as follows.

Table 4. 18: Distribution of non-teaching and teaching staff

category of employee	Obs	Mean Std. Dev.	Std. Dev.
Non teaching staff	24	8.458333	5.233497
Number of BOM teachers	24	4.5	1.560379
Number of TSC employed teachers	26	7.384615	3.430183

From Table 4.18 the results show that on average every school has 7 teachers, 8 non-teaching staff and 4 BOM teachers. This shows that the teachers' students' ratio is 1:25 meaning that every one teachers there are 25 students. This implies that the students' teachers' ratio in Tharaka Sub County is higher than the nation ration which is 1:32.

A study by Huisman and Smits (2009) established that pupil-teacher ratio is significant and negatively influences the level of school enrolment in Ghana. This means that when the pupil-teacher ratio is higher, fewer pupils are enrolled in schools and vice versa. The possible reason being that as the ratio of the pupil to

teacher is high increases, teachers tend not to have attention for the children and this means that the performance of the children will be low. The low performance of the pupil normally discourages the parents to use their resources to send children to school but rather prefer they use them in their household duties. This relationship between pupil teacher ratio and school enrolment was confirmed in the work of Huisman and Smits (2009) who studied the effects of household and district level factors on primary school enrolment in developing country. In addition, the total number of teachers available in schools in the community tends to influence school enrolment in Ghana.

In areas where schools do not to have enough teachers, parent are discouraged from sending their children to school as they consider it as waste of resources and time to send their children to school without teachers available to teach them. This positive correlation between the number of teachers and school enrolment is in conformity with the works of Edmonds (2006), Ersado (2005) and Thorbecke and Charumilind (2002). This means that as public expenditure on education increases, the number of children enrolled in school also increases. In Ghana, the government has introduced various programmes such as school feeding programmes and free uniform distribution among others. The introduction of these programmes saw government expenditure on education increasing. These programmes in effect are encouraging most parents in Ghana to enroll their children in school as revealed in the study.

Apart from the unit cost from FTSE, income generating activities and contribution from other sources such as CFD, International bodies and church organisation.

Governments spend money on education thorough currents and development expenditure, the current expenditure takes care for day to day running of the ministry and payment of teachers' salaries. The development expenditure takes care of the assets for instance buildings. Since this money is spent on education for the students it's considered as part of education cost. This expenditure is as distributed in Table 4 .19.

Table 4. 19: Recurrent and development expenditure on education 2012-2015

	Education Expenditure in Billions			
Year	**2011/12**	**2012/13**	**2013/14**	**2014/15***
Recurrent expenditure	17142.23	21261.42	22165.73	28083.24
Development expenditure	2055.9	3814.51	637.15	700
Total	19198.13	25075.93	22802.88	28783.24
Enrolment in public secondary school				
N^{o} of students	1,500,457	1,651,648	1,828,403	2,028,105
Number of schools (public)	5311	6188	6807	7680
Unit cost	**12,794.85**	**15,182.37**	**12,471.47**	**14,192.19**

- Estimation

Source Economic survey 2015

Table 4.19 shows that in 2014 the government spent Ksh 12,471 on every child who is in secondary school through recurrent and development budget

The total unit cost from the government comprises of FTSE, income generation activities, other sources like CDF and international bodies donations, recurrent and development expenditures. All this amounts to Ksh 27, 189 per child. This amount is less than what the household spends to educate a child in a secondary day school. This implies that household spend more money on education their children compared to what the government spends to educate students. The unit cost incurred by the government is as summarised in Table 4.20

Table 4. 20: Government unit cost on education in secondary school in Tharaka South Sub County

Source	Unit cost
Free Tuition Secondary education Kitty	10,265
School income generating activities	827
Other sources CFD, NGOs, Harambee and , donors	3,727
Recurrent and capital/development expenditure	12,471
Total expenditure per students	**27, 189**

Table 4.20 show that government spends more on every student on the recurrent and capital expenditure than any other sector. The current expenditure (cost) constitutes expenditures on consumable goods such as materials and personnel salaries, rent, interests and grants used up within an accounting year while development expenditure (cost) include the purchase of durable assets such as buildings or equipment, that are expected to yield benefits over a longer period.

4.6 Total Unit Cost Government and Household

The ultimate goal of the study was to establish the combined unit cost of both household and the government. The results are as presented in Figure 4.35.

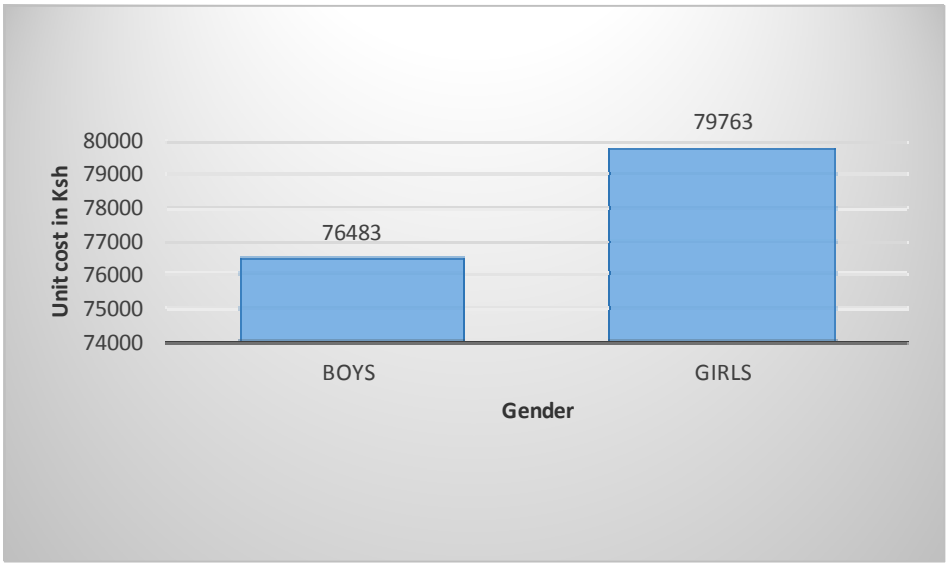

Figure 4. 35 Combined household unit cost by gender in boarding schools

Figure 4.35 shows that it is more costly to educate girls than to educate boys in secondary school in Tharaka South Sub County. The results show that the combination of the government and the household unit cost per students is Ksh 76, 483 and for the girls it amount to Ksh 79,763 per year. The cost for the girls is escalated by the uniform cost, pocket money

The cost of education for girl and boys in day school was computed and the results are as presented in Figure 4.36.

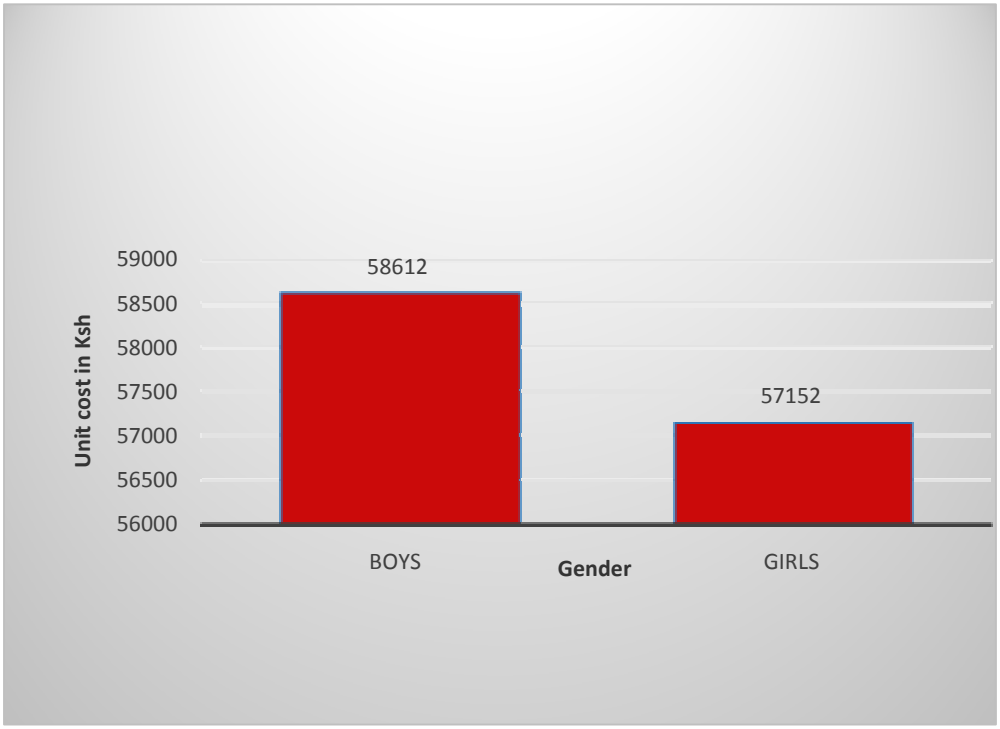

Figure 4. 36 Combined household and government unit cost by gender in day schools

Figure 4.36 shows that in day schools, it is less costly to educate girls than boys compared to boarding where the cost of educating girls was higher than that of the boys. The results show that the combined effort of the household and the government results to Ksh 58,612 to educate a boy and Ksh 57, 152 to educate a girl. This is a mean difference of Ksh 1,460 a figure attributed to the transport cost. The result indicates that in day schools boys pay more transport cost compared to the girls. This implies that parents choose to take boys to schools further than the schools where girls are taken. This escalates the transport cost for the boys.

The study also sought to establish the unit cost per the level of class. The results are as presented in Figure 4.37

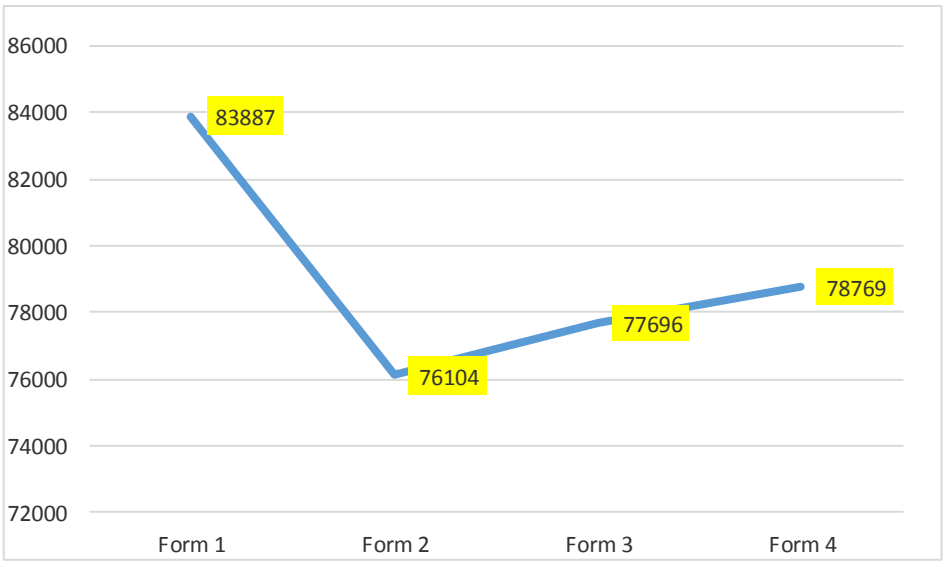

Figure 4. 37 Total household and government unit cost by students class level in Boarding school

As shown in Figure 4.37, the cost of educating students in form 1 is more than the cost of educating students in other classes. After form one the cost goes down and then increases subsequently up to form four. In form one the cost is escalated by the demand of school that student should buy books, new uniform including sports uniform and other personal effects like basins, buckets, and toiletries. These commodities are replaceable after a long period of time while in school hence minimising the cost as one progresses from 1 to form 2.

The unit cost met by the household and government combined is as presented in Figure 4.38.

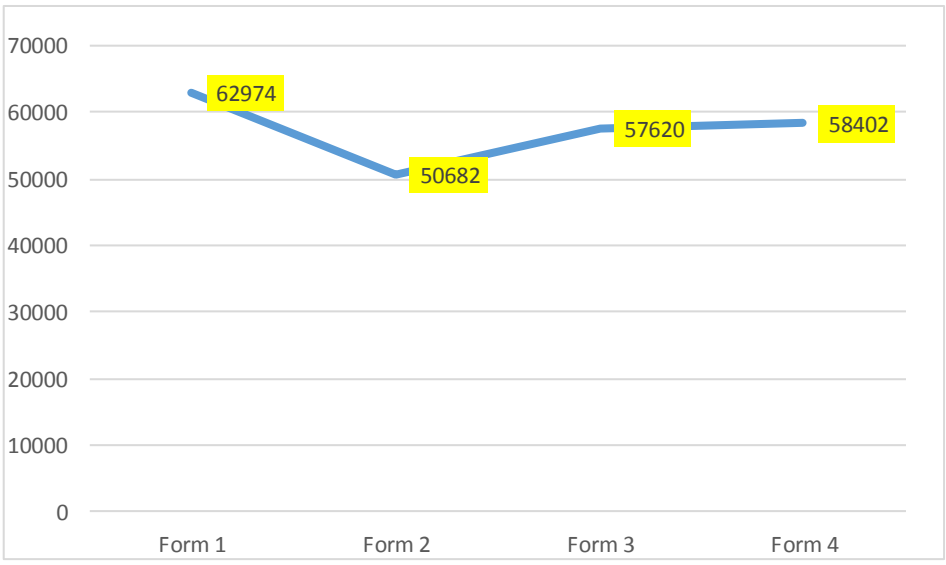

Figure 4. 38 Combined household and government unit cost by class level in day schools

Figure 4.38 indicates that the cost of education students in form one is higher than the cost of educating the rest of the students in subsequent classes. Results shows that both the government and the household spend Ksh 62,974 to educate a student in form one and Ksh 50,682 to educate a student in form two. After form two the cost goes high up to form four. This is an indication that parents are overburdened to enrol a child in form one.

In line with school category the results on household and government spending is as presented in Figure 4.39.

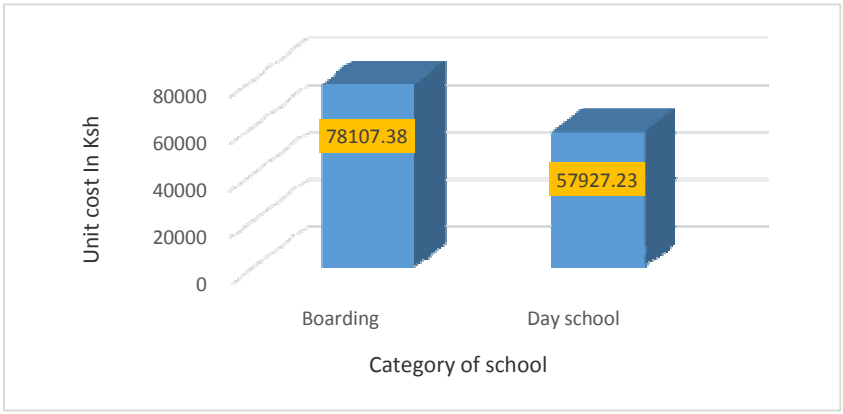

Figure 4. 39. Total unit cost by household and government by school category

Figure 4.39 indicates that parents spends Ksh 20,180 to educate their children in educating boarding school than in day school. This is the cost attributed to the boarding fees and other costs associated to boarding. The total household and government education expenditure by the age of the students.

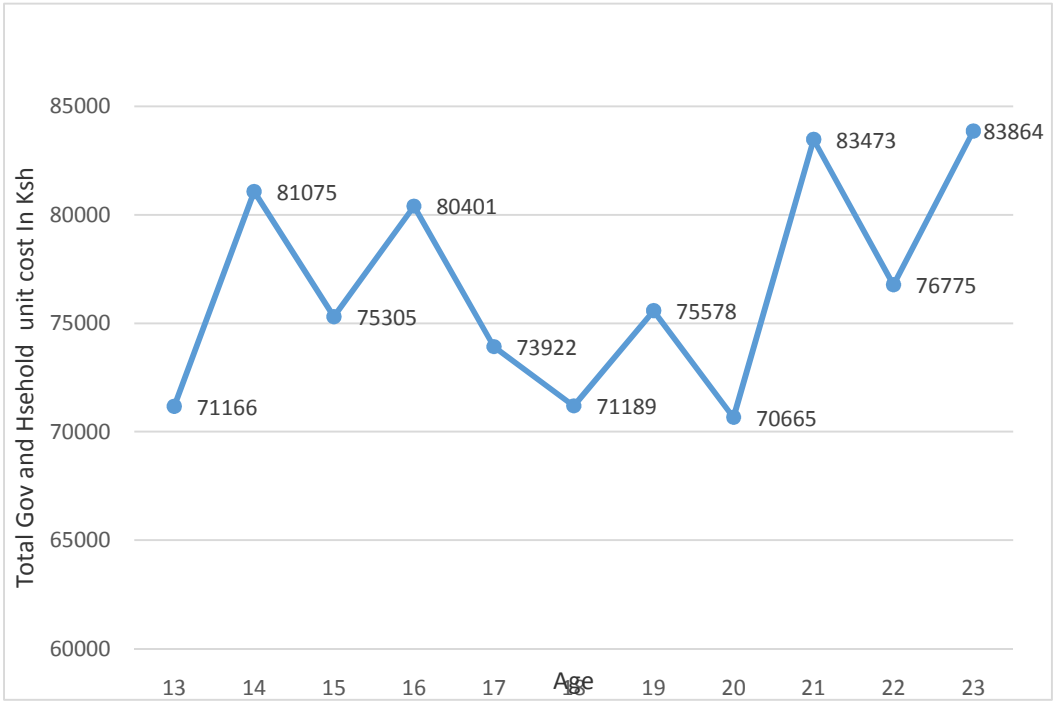

Figure 4. 40 The total education expenditure by the age of the students

Figure 4.40 shows that there is no consistent pattern on the total amount spent on every students in secondary school by age. However, the results indicate that the cost ranges from 70,665 for those who are 20 years to 83864 for those who are 23 years old.

4.7 Measures that can be taken to Increase Enrolment in Secondary Schools in Tharaka South Sub-County

The other objective of the study was to establish the measures that can be put in place to increase enrolment in secondary schools. Both parents and the schools principals were asked to indicate the measures that can be put in place.

Table 4. 21 Parent's opinion on measures that can be put in place to improve enrolment

	Responses		Percent of
	N	Percent	Cases
Regulate school fees	6	1.8%	2.2%
Government sponsor less fortunate	42	12.5%	15.2%
Pay workers well for them to be able to pay fees	5	1.5%	1.8%
Increase CDF	131	38.9%	47.3%
Reduce school fees	63	18.7%	22.7%
Employ more teachers	14	4.2%	5.1%
Build more secondary schools	18	5.3%	6.5%
Make secondary education compulsory	5	1.5%	1.8%
Punish parents who do not take their children to school	17	5.0%	6.1%
Government to pay for school uniform	36	10.7%	13.0%
Total	337	100.0%	121.7%

Table 4.21 shows that most of the parents felt that increase of the CDF could lead to more children enrolling to secondary schools as attested by 40% of the

respondents, this was followed by 19% who felt that secondary school fees should be highly subsidized. Another group 15% suggested that the government schools come up with good criteria of identifying the needy students and sponsor them. Another group 11% suggests that government should buy school uniform for the students in secondary school. Other opinion given by the parents in order of priority includes; building more secondary schools 5%, punishing parents who do not send their children to school 5%, employ more teachers 4%, government to strictly force the school principals to adhere to school fees guidelines, economically empower parents financially so that they can afford school fees and making secondary education compulsory. For the principals, their opinions were as follows,

Table 4. 22 Principals opinion on measures that can be put in place to increase enrolment

Remedies	Frequency	Percent
Free secondary	16	72.7
Increase bursary	3	13.6
Provide infrastructure	1	4.5
Employ more teachers	2	9.1
Total	22	100.0

Table 4.22 indicates that 72% of school principals felt that there is need to make secondary education free as a basic education. 14% felt that there is need to increase bursary fund in secondary education and make it open to all students with a clear procedure of indentifying the neediest students. The rest 5% and 9% were

of the opinion that there is need to provide infrastructure as a measure of relieving parents the burden of paying development fees and employing more teachers respectively.

4.8 Correlational Analysis on Unit Cost Education and its Influence on Enrolment

The study further sought to assess whether there is any relationship between unit cost and enrolment in secondary schools. To this effect, a Pearson product-moment correlation coefficient and t-test were carried out to establish whether there is association and whether the association is by chance or not. The household head characteristics were also of interest to the study. In this case the study sought to establish whether household head characteristics such as level of education, levels of income and occupation have an association with students' enrolment in secondary school. Besides, household head characteristics other variables of interest were all the unit cost components such as school uniform, transport cost to school, cost of books, motivation fee, pocket money and other expenses. In line with the household head characteristics the results are as presented in Table 4.23.

Table 4. 23: The relationship between household head characteristics and students enrolment rates

Household head characteristics	Would you enroll your child to school if fees was high
Parents highest academic qualification (1=tertiary)	.891**
Employment status (1=employed)	.113*
Occupation (1=nonfarm)	.073

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

Table 4.23 shows that there is a strong positive correlation between parents level of education and parents' willingness to enroll children in secondary schools (r=0.891, N=333 and $p<.001$) This implies that as the level of parents' level of education increases the chances of children to enroll in secondary education also increases. The findings of this study are discussed in relation to studies done elsewhere as presented in the section of literature review. On the relationship between parents' level of education and enrolment in secondary school, this study has established that the education level of the parents appears to have a significant effect on children's school enrolment. This means that as the educational level of the parent's increases they are likely to be in employment and this combined effect has a positive impact on children being sent to school.

The coefficient of the educational level variables are positive, thus indicating that parents with formal education tend to spend more on their children's education than parents with no formal education. This may be because as parents acquire more education, they tend to know the importance of education. This can be explained from the point that as parents achieve higher level of education, they tend to know the benefits associated with educating a child. In addition, educated parents consider both the implicit and explicit benefits of investing in their children's education. As parents acquire more education, they tend to realize the implicit benefit associated to psychological satisfaction compared to parents with low level of education. Kirchsteiger and Sebald (2010) found that parents' preference for spending on children's education is determined by the parents' educational level. Pasqua (2005) studied gender bias in parental investment and found that the educational level reached by parents plays an important role in their

decision on how much to spend on their children's education, especially with respect to the sex of the children. Thus, this study has confirmed that parental educational level determines the probability of students enrolling in secondary school.

The findings of this study also match, the work of Heckman and Masterov (2005) who opined that certainly there is a large correlation between the education level of parents and their children. Krueger (2004) further affirmed that besides, parental level of education corresponds to the level of income which also plays a positive role of children's education. Cameron and Heckman (1998) and Chevalier and Lanot (2002), also tried to establish the relationship between parents level of education and children schooling using US and UK data respectively. Both studies established an increase in parental education decreases the probability of a child repeating a schooling year. This implies that children have minimal chances for dropping out of school hence making them have a smooth transition from one level of education to another. Black Salvenes, (2003) also links parental level of education with children access to education by asserting that the higher the level of parents education especially the mothers the higher the probability of the children to enroll in schools.

For the past decade, there have been a lot of empirical studies on what determines school enrolment. Kirchsteiger and Sebald (2010), on the study of investment in education indicated that the education of adults in a household has a significant impact on the enrollment of children in all countries studied while the effect of female adult education was larger than that of males in some countries. Connelly

and Zhen (2003) studied the determinants of school enrollment and completion in China and found that parental education, country level income and village level income also affect enrollment level.

The study also statistically sought to establish whether there is a relationship between parents employment status and patents willingness to take children to secondary school. The results shows that there is a weak positive relationship between employment status of the parents and their willingness to take their children to secondary school (r=.113, N=349 and p=.035. This shows that, the employment status of parents influences the willingness of parents to take their children to school but at a minimal level. The results suggest that parents who are in formal employment are more likely to take their children to secondary school compared to those in self-employment. This can be attributed to reliability aspect of money flow of the parents who are in formal employment. The monthly salary received by those in formal employment enables them afford school fees for their children. Those in self-employment have no reliable source of money hence the tendency of developing a feeling that they may not be able to pay schools fees for their children.

On parents' occupation, the results indicate that there is a very weak relationship between parent's occupation and the willingness of parents to take children to school (r=.175, N=394 and $p>0.05$). The results suggest that there is a weak positive correlation between parent's nonfarm occupation and willingness to take children to secondary school. This study also established that there is a correlation between enrolment and the parents' occupation; this result mirrors the earlier work

which linked parent's occupation and children education attainment to unobserved inherited characteristics rather than a causal effect of parental occupation or income per se in household production (Björklund and Salvanes 2011).

In line with the gender, the study sought to establish whether there is any relationship between transport cost and gender of the students. The results are as presented in table 4.24.

Table 4. 24 Relationship between gender of the child and transport cost

		Childs gender (1=male)
Transport	Pearson Correlation	.049
	Sig. (2-tailed)	.362
	N	355

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

Table 4.24 shows that there is a very weak correlation between transport cost and the gender of the students (r=.05, N=355, p=36). The results show that transport has no relationship with students' gender.

As to the relationship between gender and enrolment, the study established that boys are more likely to enroll in secondary schools compared to the boys. This can be attributed to high cost of educating a girl in secondary school compared to the cost of educating a boy. These results mimic a study by Nyaga, Reche, Bururia and Mwiti (2014) who also established that there are cultural practices such as FGM; unplanned pregnancies and labour as indicated by 59%, 70% and 60% of the respondents respectively which affects girls schooling. In this case because of such cultural practices coupled by high unit cost of education to the girls, girls'

education is affected by not enrolling in secondary schools. The high dropout rate especially experienced in form 3 and 4 can be attributed to the cost of education alongside the cultural practices in Tharaka South Sub County.

The results are also in line with the study done by Hazans et al., (2005) who established that communities that practice pastoralist and FGM value early marriages of their daughters more than education. Some get unplanned pregnancies and are thus forced to marry at tender age and others are given out by their parents. Papanek, (1985) also argued that children in such communities are engaged in activities such as herding cattle, weeding in the farms, harvesting and working as house helps hence denying them a chance to access education or delay them in school However, with the currents campaigns that champions for the right of girl child. Chances are that more girls who had dropped out of school due to the foresaid factors go back to school at higher age than the boys.

A study by Mutegi (2005) in Tharaka central division, currently called Tharaka South sub county with the emergent of the new constitution indicated that girls who come from the same household with the boys are forced to repeat class eight to pave way for their brothers to join secondary education regardless of the KCPE results. This forced repetition has a trigger effect where the same girls later join secondary school more aged than the girls

On the aspect of age and transport cost, the study attempted to establish the relationship between transport cost and the age of the students. This is as presented in Table 4.25.

Table 4. 25 The relationship between age and transport cost

		Age of child
Transport	Pearson Correlation	-.105*
	Sig. (2-tailed)	.048
	N	355

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

Table 4.25 shows that unlike gender where there was no association between gender and transport; there is association between transport and the age of the students. This implies that students who are younger in age relatively pay less transport cost compared to older children. In this case, parents who have children older than others pay more transport cost than the rest.

There was need also to establish the relationship between transport cost and school category. The Pearson's correlation was run and the results are as presented in Table 4.26.

Table 4. 26 The relationship between transport costs by category of school

		Type of school (1=sub-county)
Transport	Pearson Correlation	-.246**
	Sig. (2-tailed)	.000
	N	293

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

Table 4.26 shows that there is a negative correlation between the school category and the transport cost (r=-.246, N=293 and p<0.001). This implies that those in sub-county school pay less transport than those in extra county school. The difference is also associated with distance because the sub county schools are closer to the household compared to the extra-county schools which admit students from far distances.

This study sought to establish whether there is relationship between the distances from home to school on enrolment. The results indicated that there is a positive correlation between distance and enrolment in schools. These results are in line with the findings by Fentiman et al, (1999) who established that distance to school being important determinant of educational access. For example, in cases in which there are more primary schools than junior highs schools in the locality, and in which the only available secondary school is further away. The distance to the latter may be considered too far for younger children, especially girls (Juneja, 2001). This is also true in the cases of older girls and those children regarded by parents as vulnerable to sexual harassment (Colclough et al., 2000; Nekatibeb, 2002; PROBE, 1999). Parents are afraid of the safety of their children when they have to travel longer distances to school. Thus, according to Ainsworth et al. (2005), the likelihood of children attending primary school decreases the greater the distance to the nearest secondary school.

In Tharaka south sub county the population density is very sparse hence the schools are also sparsely located. This makes the distance from home to school to be long; a study by Mutegi (2005) indicated that there were only 4 secondary

schools in the then Tharaka central division which is currently covering larger parts of the sub county. Currently there are 25 secondary schools 20 of them being day schools and yet the distance from household to school on average is 25 kilometers. The results are in line with the work of Nyaga et.al (2014) who established that 61% of children in Tharaka south sub-county live very far from the school. The shortcoming of his finding is that their study did not establish the actual distance in kilometers and instead uses very far which is a relative assertion. This study went a notch higher to establish the actual distance in kilometers.

Hazans et al., (2005) also argued that long distance to from household to school affects enrolment especially in areas prone to insecurity. However, besides insecurity, long distance up scaled the cost of transport from home to schools hence affecting children from poor households.

Other studies in African countries such as Egypt by Herz (1995) have shown that the proximity of the schools to household greatly affect girls more than the boys. In his study Herz (1995) enrolment and the persistence of boys and girls in schools were a function of distance to the available schools, for instance, the location of a school within 1 km of a community resulted in an enrolment rate of 94 percent for boys and 74 percent for girls; when the distance was increased to 2 km., boys enrolment fell only slightly to 90 percent, but girls enrolment plummeted to 64 percent. According to Odaga and Heneveld (1995) these disparity is attributed to length of distance and energy, which the children have to expend to cover the distance, often on an empty stomach and the apprehension that parents have for the sexual safety of their daughters (Odaga 1995). The above argument clearly

indicates that the problem of distance to schools affects both boys and girls but girls are, however, more likely to be affected than boys.

The study also sought to establish the correlation between age of the students and the cost of school uniform. In line with age, the correlation between ages of the students was also sought. The results are as in Table 4.27.

Table 4. 27 The relationship between school uniform cost and student's age

		Age of child
Uniform	Pearson Correlation	.858**
	Sig. (2-tailed)	.000
	N	401

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

Table 4.27 indicates that there is a positive correlation between the age of the students and cost of school uniform ($r=858$, $N=401$, $p<0.001$). This suggests that younger students spend less money to buy school uniform compared to children of high ages. This may be attributed to body size; children outgrow their school uniform at advanced levels of education increasing the chances of replacing school uniform faster than at early ages.

The study further sought to establish the relationship between uniform and gender. The results are as presented in Table 4.28

Table 4. 28 The relationship between cost of school uniform and students gender

		Child's gender (1=female)
Uniform	Pearson Correlation	.824*
	Sig. (2-tailed)	.000
	N	401

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

As presented in Table 4.28, the results shows that there is a very strong correlation between gender and school uniform (r=824, N=401, P<0.001). The results suggests that parents who have girls in secondary schools in Tharaka South sub county spend more money on uniform compared to the parents with the boys in the same locality.

A t-test was done to establish whether the differences in the amount of money spent by the parents on uniform by school category is by chance or whether the mead difference is significant. This is as presented in Table 4.30.

T-test was carried out to establish whether the differences in means for the school uniform among different types of school by chance. The results are as presented in Table 4.29.

Table 4. 29 T-test on the cost of school uniform by category of school

		Category of school			
Variable		Day school (n=150)	Boarding (n=200)	*t*-value	sig
School uniform	M	4143.02	5196.76	14.67	0.000
	SD	(3670)	(7281)		

Table 4.29 shows that school type has a highly significant effect on school uniform as reflected in the mean value for the school uniform (t=14, 67 p<.0005). This means that there is statistically significant difference in the cost of uniform for the students in day schools and in boarding schools. This difference is not by chance, an indication that those parents with children in boarding schools always spend more on uniform compared to the parents with children in day schools.

The study also sought to establish the relationship between pocket money and age of the students. Table 4.30 presents the results.

Table 4. 30 Relationship between pocket money and age

		age of child
Pocket money	Pearson Correlation	-.070
	Sig. (2-tailed)	.167
	N	390

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

Table 4.30 shows that there is a negative correlation between age and pocket money that parent give to their children. The results show that even though there is difference in the amount given by parents to their children, the difference is not significant.

A t-test was done to establish whether the means of pocket money by the school category vary. This is as summarized in Table 4.31

Table 4. 31. T-test for pocket money and type of school

		Category of school			
Variable		Day school (n=153)	Boarding (n=210)	*t*-value	sig
Pocket money	M	1354.02	3020.16	-5.9	0.000
	SD	(1176)	(2234)		

Table 4.31 shows that the mean difference for pocket money given to children in boarding schools is significantly different from the one given to students in day schools; this is as reflected by t=-.57, p<.005. This shows that there is a relationship between the type of school and the pocket money given to students.

On the aspect of pocket money as a unit cost variable. This study established that there is a relationship between pocket money and gender of the students. These results contradicts a study by Bonke (2013), who established that nearly two thirds of all Danish children in the age groups 7-11 and 12-17 receive pocket money each

month but there is no difference on the amount received by boys and girls. This implies that both boys and girls are given the same amount of pocket money a scenario different in Tharaka South Sub County where girls are given more pocket money than the boys.

On the aspect of pocket money and the age of the student, this study established that there is no relationship between age and pocket money. This corresponds to the study by Bonke (2013), who also established that the amount of pocket money given by the parents or guardian to secondary school students does no vary by absolute age but by the age category. The study revealed that children aged 7-11 who receive pocket money are given an average DKK 123 per month (1 EUR=7.45 DKK), while those of age 12-17 on average receive DKK 321. The amount given is a little greater for girls aged 12-17 than for boys. On the other hand, for boys and girls aged 7-11 who receive pocket money, the amounts are more or less the same. The comparison of the amount of pocket money given to young people aged 12-17 with parents' expenditure on clothes, leisure equipment, etc. for them; the results showed that the average pocket money given represents barely 20% of the total of such spending. Thus, it is only a small proportion of these things that children buy with their pocket money; most items are bought, or at least paid for, directly by the parents. Naturally, there are differences in the amounts of pocket money that children receive each month within the two age groups. The results of this study contradicts the Danish study because in Tharaka South sub-county there is difference in amount of pocket money given to boys and girls

Finally the ultimate goal of this study was to establish the relationship between average costs incurred by the household on education for their children and its relationship with enrolment. The results are as summarized in Table 4.32.

Table 4. 32: Relationship between unit cost of education and students enrolment rates in schools

	Enrolled? (1=Yes)
Total Unit cost of education by household per child	-.834**
Average government expenditure on education per child	.744**

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

Table 4.32 shows that there is a strong correlation between unit cost of education met by the household and enrolment ($r = -0.834$, $N=333$, $p<0.001$). This suggests that the amount of money that parents spend to take children to secondary school correlates with enrolment, this implies that if the parent will spend more money in schooling there is a likelihood of not sending children to school.

On relationship between the average cost of education incurred by the government to educate each child in secondary school, the results shows that there is a positive correlation between the unit cost and enrolment. As presented in Table 4.32 there is a positive correlation between average government expenditure on each child in school and enrolment ($r=0.744$, $N=327$ and $p<0.001$). This implies that as the government spends more on education the number of students keeps on increasing. The result from the study also reveals that public spending on education is significant and directly related to school enrolment.

4.9 Regression analysis on the unit cost and its influence on enrolment

From the foregoing results on the relationship between enrollment and the unit cost, it is clear that cost is a major factor that influences students' enrollment rates. For the purpose of policy direction it is important to provide a clear picture of what affects the unit cost of secondary education. The following section uses regression analysis to detect the strength and direction of the relationship between unit's costs and the factors that were hypothesis to affect. The factors identified and analyzed include distance from the home to school, gender of the student, age of the learner, type of school, and status of the school in terms of whether it is a sub county, county or a national school. The regression results are shown in the Table 4.33.

Table 4. 33 Relationship between unit cost, school and students characteristics

Unit cost	**Coef.**	**Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Distance	142.9823	64.36303	2.22	0.027	16.34345	269.6212
Gender	852.3834	3321.178	0.26	0.798	-5682.273	7387.039
Age	595.3782	1050.862	0.57	0.571	-1472.268	2663.025
Class	-5204.271	1936.451	-2.69	0.008	-9014.378	-1394.16
school status	672.3995	3877.856	0.17	0.862	-6957.562	8302.361
school type	-9140.847	1818.82	-5.03	0.000	-12719.51	-5562.19
_cons	77789.72	18494.07	4.21	0.000	41401.3	114178.1

Observations 320 R-squared=0.1605 F-stat … (p<.001)

Table 4.33 shows that the distance from home to school, the students' class level, and type of school highly influence unit cost of education. The results show that as distance to school increases the unit cost also increases. This can be explained by the fact that parents household are sometimes forced to part with travel cost of their kids who are attending secondary education. The significance of the variable is supported by a low value of less than 0.05. There is negative relationship between the class level and the unit cost. The result indicates that as one moves from form one to form four, the per unit cost falls. This is supported by a high t-value and a p-value that is less than 0.01. This is expected from the fact that parents pay higher fees for their children when they join form one than when they are finishing form four due to the fact that the cost of uniforms and other entry fees increases the unit cost paid by the parents. Being in a day school and not in a boarding school lowers the unit cost of schooling among households with children in secondary schools. The explanation for the negative relationship is that being in day school compared to being in boarding school, reduces the likelihood of increasing the unit cost payable by the parents for their children in secondary schools. The result is supported by the high negative t-value as well by a very low p-value (<0.01) surprisingly, gender of the pupil is not a significant factor in the variations in the cost of secondary education.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary of the entire document highlighting the main findings, conclusions, recommendations and suggestion for further studies

5.2 Summary

The purpose of this study was to determine the average cost of education per student in public secondary schools in Tharaka South Sub County and its influence on enrolment. The study was guided by three objectives which focused on household average expenditure on education, government average expenditure on education and their influence on enrolment. The other objective was to establish the measures that are put in place to increase enrolment in secondary schools and the measures. The literature review focused on the economic and social benefits of secondary education, the concept of unit cost of education, expenditure on education in Kenya, the concept of subsidized secondary education in Kenya, the rationale for Investing in education by governments and families, the National Transfer Accounts (NTA) Concept, private education consumption/household expenditure, public education consumption/Government expenditure, theoretical framework and conceptual framework.

This study heavily relied on human capital theory which was initially proposed by Schultz and developed extensively by Becker. This theory postulates that, education or training raises the productivity of workers by imparting useful knowledge and skills, hence raising workers' future income by increasing their

lifetime earnings (Becker, 1994). It further postulates that for one to invest in education there is need to establish the cost or the value of the investment

This study used correlational design because it extensively focused on establishing the relationship between unit coast of education and its influence on enrollment in secondary schools. The target population included all the household heads in Tharaka South Sub County and all public secondary school principals. The sample size was arrived at by use of Yamane formula (1967) where 393 household heads were sampled and for the secondary school principals, census design was used meaning that all 25 secondary schools participated in the study.

Interview schedule, questionnaire and document analysis were used as the main tools for data collection. The document analysis was used to obtain financial information from the Ministry of Education Science and Technology and head teachers' office on funds allocated to public schools. After data collection the data was cleaned by identifying incomplete or inaccurate responses, which were corrected to improve the quality of the responses. After data cleaning, the data was coded and entered in the computer for analyis using the STATA. The quantitative data was analysed using various statistics including measures of central tendency and dispersion.

Through data analyis, the study established that there are more girls in secondary schools than boys in Tharaka South sub county. An indication that gender parity has been achieved in Tharaka South sub-county.

The study also established that most of students in secondary schools are 16 years of age as attested by 21% of the parents who reported that their children were 16 years old. However, there are children of age 20 and above who are supposed to be in colleges and yet they are in secondary schools. This may be attributed to the Free Day Secondary (FSE) schools that may have enabled children above secondary age going to be in secondary schools. The results also indicate that there are under age children in secondary schools. The secondary age going in Kenya is 14 years; this indicates that 1.2% of children are in secondary school when they are supposed to be in primary schools.

On education level of the parents, the study revealed that most of the parents 54% have primary level of education as the highest level of education. This implies that most parents in Tharaka South Sub County have low levels of education. However, despite their low levels of education still enroll their children in secondary schools however, not as the same as with those with high level of education. Through regression the study established that here is a strong relationship between education level of Parents and children's ability to enroll in secondary schools.

The study also revealed that in most households, most children 33% are in form two, followed by those with children in form 1 at 24% and eventually those in form 3 and 4 comprised 23% and 20% respectively. However, results show that data for students in all classes were captured hence making it possible to establish unit cost of education by children level of education.

The gender of the students varies from one level of education to another, in form one girls there were more girls than boys at 53% and 47% respectively. In form 2

the number of girls was more than the number of boys at 68% and 32% but the trend changed in form 3 and form 4 where the number of boys surpasses the number of girls. In form three the boys are more than the girls at 56% to 44% and in form four 53% and 47%. This indicates that the dropout rate for girls is more than the drop out for the boys.

Parental employment status was also of interest, the study established that there is a weak positive relationship between parent's type of employment and willingness of the parents to take children in secondary school. This implies that the parents who are in formal employment are more likely to take their children to secondary school compared to those in self-employment. This can be attributed to the regular flow of money through salary that creates assurance that they can afford to pay school fees. Parents in self-employment have no regular flows of money hence eroding their confidence that have continuous flow of money to enable then pay school fees for their children

In relation to the occupation, the study established that 68% of the parents are farmers, followed by 10% business persons, 12% medical officers and teachers. This implies that in Tharaka South Sub County the dominant occupation is farming. This is in line with the parent levels of income which indicated that majority of parents 55% earn between Ksh 0-5000. This meager earning constrains the parents on fees payment hence discouraging them from taking children to secondary school.

The distance from household to school as earlier established as one of the constraints to access to secondary education. This study established that the mean

distance from households to schools was 25km, this make it difficult for children to walk to schools hence up-scaling the transport cost. This implies that most of the students cover long distances to access secondary education. The study established that there is s relationship between distance and transport cost $P<0.05$ and coefficient of .39 an indication that an increase in kilometer leads to an increase of transport cost by Ksh 39.

In line with gender, the study established that girls on average are given slightly higher money for transport than the boys in Tharaka south Sub County. The mean for the girls is Kh3, 100 and Ksh 3,186 for the boys for the whole year. The minimum amount of transport cost given to a student by parents is Ksh 300 boys and girls Ksh200. The highest amount of money given as transport was Ksh 18, 000 for the boys while for girls it is Khs, 19,000.

Unlike gender, the result shows that there is a relationship between the age of the students and transport cost. This implies that students who are younger in age pay less transport cost compared to those who have more age. This means that parents who have children older than the rest pay more transport cost.

The study also established that students in day schools spend less money on transport than their counterparts in boarding schools. For those in day school and boarding schools on average they spend Ksh 1,547 and Ksh 3,501 respectively. The differences on spending on transport can be associated to the distance from home to school. Those in boarding schools cover long distance and therefore spend more money of transport from and to school on opening days, closing days and also when sent home to collect school fees.

In relation to transport cost and the category of school, the study establishes that there is a relationship between the school category and the transport cost. This implies that those in sub county schools pay less transport than those in extra county school. This is also attributed to the distance because the sub county schools are closer to the household compared to the extra-county schools which admit students from far distance

The number of children in household and in school most upscales the cost of education of the household, the study established that most of household 78% have one child in secondary school 22% of the household have more than one child in secondary school. Closely related to the number of children in a household who nare in school is the cost of uniform.the study established that girls' uniform is more costly than the boys' uniform at Ksh 5,094.73 and 4035.75 respectively. Through regression, the study established that there is a very strong relationship between gender and school uniform. The relationship is very significant at level of $p<0.05$ implying that gender and school uniform are highly correlated. The study also established that there is a positive strong relationship between the age of the students and school uniform. This indicates that younger students spend less money to buy school uniform compared to older ages.

On uniform and category of school, the study revealed that students in boarding schools spend more money on uniform than those in day school. The results show that those students in day schools on average spend Ksh 4,143 on school uniform compared to Ksh 4,779 for those in boarding schools. This implies that children in day schools have an advantage compared to those in boarding schools in relation to

school uniform. The results indicates that unit cost is highly correlated to school uniform at ($p<.0005$).

The uniform cost varies with class level implying that parents who have children in form one pays more on uniform compared to those in other classes. On average a student in form 1 spends Ksh 5,375 on uniform compared to parents in form two who spends Ksh 4,706 form 3 Ksh 3,917 and form four 4,325. The form one uniform cost is up scaled by other related cost of uniform such as games uniform

The study also established that Pocket money also contribute to unit cost of education, the results shows that girls receive Khs2,783 as pocket money for the whole year compared to boys at Ksh2,500 for the boys. However, results show boys receive as much as ksh18, 000 and girls the high of Ksh 12,000. This translates to Ksh 6000 per term for the boys and 4,000 for the girls. This shows that there is a wide range of the amount of money given to students as pocket money by the parents. The results also show that there is a weak negative relationship between age and pocket money that parent give to their children. The results on pocket money given to students in boarding schools compared to those in day schools show that students in boarding schools on average receive Ksh, 3,010 per year compared to those in day school Ksh 1,534

On books, the results show that on average parents spends Ksh 5,597 to buy books for the boys and Ksh 5,449 for the girls. This implies that on the issues of books, gender issue do not come into play because the prices of books in bookshop are the same and the demand for books by schools are the same This makes the cost of books spent by parents to be almost the same across the gender. However, parents

with children in boarding schools spend more money on buying school books compared to the parents with children in day schools. The results show that the parents in boarding schools on average spend Ksh5, 684 per year on buying books while those in day schools spend Ksh 4,710. This may be attributed to the conditions set before reporting to schools. Parents taking children to be admitted in secondary schools are requested to produce all the items before admission failure to which a parent is sent home with their children.

The cost of books also varies by class, the results revealed that on average parents who have children in form one spends almost twice amount of money compared to those in form four when buying school books. Parents with children in form 1 on average spend Ksh 7,000 on books, followed by those with children in form 3 at Ksh 5, 500. Form two and form four have lower demands of books and parents pay less on books compared to those in form 1 and 4. In form two parents spends Ksh 4,700 and in form 4 Ksh 4,600. the cost on books are high in form one because this is the level when one is required to buy reference books such as the bible, Atlas, Kamusi and Dictionary among other books.

On boarding fees, the results shows that the boarding fees decrease with the level of education, the parents who have students in extra-county schools on average pay more boarding fees than the sub county schools. This shows that parents with children in sub county schools pay less boarding fees. Parents with boys in secondary school pay more money on motivation fees compared to parents with boys. For the boys on average parents pay Ksh 2,023 while for the girls Ksh 2,329 per year.

On motivation fees the study the study established that students in lower classes pay less motivation fees compared to those in higher classes. Results shows that at form 1 on average parents pay Ksh 1,795 per years, form 2, Ksh 2,150, form 3 Ksh 2,626 and form 4 Ksh 2,857. This implies that parents pay more money for motivation at form four compared to those in form three. This can be attributed to the emphasis laid in form three and form four students who are close to KCSE. The motivation fees also vary with the age of the students.

The development fees also vary by gender, the results indicates that boys pay less development fees compared to the girls. Results shows that girls pay Ksh 9,429 as development fees while boys pay Ksh 9,302, implying that parents with girls in secondary schools in Tharaka South sub County pay more development fees compared to the boys.

The study also established that the development fee varies by the school category. The results revealed that parents with children in sub county schools pay more development fees than the parents with children in extra-county schools. This may be attributed to the level of development in line with infrastructure. Most of the sub-county schools were recently developed and therefore need more infrastructural development hence more money is needed for development compared to extra-county schools which are already developed.

On the unit cost by the household, the study found that it is more costly to educate in a boarding school than in a day school. The study revealed that for a household to educate a child in a boarding school, one needs Ksh 50,818 and Ksh 30,638 for day schools. When disaggregated by gender, one needs Ksh 31,323 on average to

educate a boy in day school and Ksh 29,863 for the girls. Based on the class level, parents with children in form one pays Ksh 56,598 compared to form 2 who pay Ksh 48815 and then goes up again in form three to Ksh 50,407 and to 51,480 in form four. The cost in form one is escalated by high cost of uniform, books and development fees as earlier indicated.

On the relationship between the unit cost of education and parents ability to enroll children in secondary school, the study established that there is a correlation between unit cost and students enrolment in secondary school as reflected by $P<0.05$ an indication that there is a significant relationship between unit cost and enrolment. On the cost incurred by the government to educate a single child in secondary school, the study established that there are 54% day schools, 31% boarding and 15% day and boarding school. This implies that most secondary schools in Tharaka South sub-county are day schools. The results also show that there are schools in Tharaka South Sub County with a total enrolment of 90 students. However, the mean number of students in schools is 179.

In line with FTSE, the study established that all schools 100% indicated that they receive FTSE money. The results show that on average every school Ksh 1,833,710 translating to Ksh 10,265 per student per years. This amount takes care of covering tuition and general purpose expenses. Besides, FTSE, the study revealed that schools also receive funds from other sources such as, CDF, NGOs and international community. This amount translated to Ksh 3,727 per years per student. However, the lowest student gets Ksh 923 Ksh and the highest gets Ksh 8,696 per years.

The other source for school funding is the income generating activities; the study found that 58% of the school has income generating activities while 42% do not have. These income generating activities comprises of 72% livestock rearing and cereal crop farming and 48% kiosk business. On the actual amount generated, the study established that on average every school produces Ksh533, 385 with the lowest school generating 10,000 and highest school generating Ksh 2,400,000. This is an indication that schools have resulted to developing alternative ways of making money to support secondary schools.

On human resources in school as a variable cost of education, the study established that there are on average 7 TSC teachers, 8 non-teaching staff and 4 BOM teachers. This shows that the teachers' students' ratio is 1:25 implying that that each teacher takes care of 25 students. This ratio is higher than the Nation student-teacher ratio which is 1:32.

On the regression results that show the strength of relationship between unit cost and some key independent variables, it was observed that distance, type of schools and class level are significant factors affecting household unit cost of education in Tharaka County. Hence, policy wise, it is important to consider these factors in the recommendation that would be sought to address cost of education in Tharaka County.

5.3 Conclusions

This study established that indeed the Ksh 10,265 given to each student in secondary school is too little to sustain a child in school. Using the NTA concept of establishing the unit cost of education by computing the direct cost incurred by

the parents and the government, the study established that parents spend at least Ksh 50,818 to take a child through a boarding school and Ksh 30,638 for the day schools. The results indicate that there are variations in terms of the items that contribute to the cost of education. Through computation of the unit cost of education, the results indicated that parents with girls in secondary school spend more money on uniform, pocket money and transport. However, the regression results indicate that there is no relationship between unit cost and gender.

The study also established that there is a negative relationship between the average amount of money spent by household to educate a child in secondary school and student's enrolment rate in secondary schools. This implies that as the household expenditure in education increases the enrolment decreases. On the government expenditure on every students, the study established that as the government expenditure increases, the students' enrolment in secondary school increases

5.4 Recommendations

- The study established that household spend on average Ksh 5,375 on uniform at form one. This study therefore recommends that government or other educational stake holders should support parents who have children in form one to buy school uniform as a strategy of increasing students enrolment rate

- It was established that day schools are less costly than boarding schools. Through regression analysis the study established that there is a strong relationship between the category of the school and the unit cost of education. This study recommends that more day schools should be constructed reduce the

distance from household to school; this would drastically reduce transport cost to school.

- The study established that parents incur higher cost on form one education than in other classes, and that this is elevated by school uniforms and school other entry fees. The regression analysis indicates that there is a strong relationship between the students' class level and unit cost. In order to give chance to many children to enroll in secondary school. There is need for the Government to subsidize form one fees more than other Classes. Through direct calculation of the unit cost by gender in boarding schools, the study established that girls pay more than the boys in boarding schools. This study therefore recommends that girls education cost ought to be more subsidized than that of the boys.

- The study also established that secondary schools charge more fees than the recommended fee guidelines by the government. The government recommends that day schools should charge a maximum of Ksh 12,000. However, this study established that parents spend as high as Ksh 30,638 in day schools. It is therefore recommended that government should be strict in making the school principals adhere to the set guidelines of fees payments.

- The study also established that the amount of money generated by schools through income generating activities supplements school expenditures on provision of food and payment of teachers not under TSC pay roll. In order to minimize the burden of government supporting all activities in schools, schools should have more income generating activities. This will lead to generation of funds to cushion government educational subsidies.

- The study established that there is a negative relationship between average household expenditure on education and students' enrolment, this study therefore recommend that secondary school cost should highly be subsidized in order to make parents pay less money. This would increase students enrolment in secondary school

5.5 Suggestions for Further Research

- The NTA methodology recommends that, there is need to have a national wide survey to enable one fully apply NTA methodology in computation of unit cost of education. The researcher therefore suggests that there is need to carry out a national survey after every five years in line with development plan. This would allow easy computation of the unit cost and also have cross-sectional comparisons of units cost of education. The results from such studies can be used for policy formulation to address cost issues in education sector.

- The researcher also suggests that, there is a need to carry out a study of this nature in primary schools in Tharaka south sub county. The results of the two studies may complement each other by establishing the extent to which the unit cost of education deny children a chance to access education in Tharaka south sub county. This would ensure that there is a smooth transition from primary to secondary in Tharaka south sub county

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APPENDICES

APPENDIX A: LETTER TO THE RESPONDENTS

Reuben Mutegi

University of Nairobi

P.O. Box 30197

Nairobi

The Principals

Dear Sir/Madam,

REF: REQUEST TO COLLECT DATA IN YOUR INSTITUTION

I am a postgraduate student, College of Education and external studies University of Nairobi. I am currently carrying out a research on "influence of unit cost of education on students' enrolment in public secondary schools in Tharaka South Sub County. Your school has been sampled to participate in this study. Kindly allow me to carry out the study in your school.

Thank you for your cooperation in the study.

Yours sincerely,

Reuben Mutegi

APPENDIX B

INTERVIEW SCHEDULE FOR HOUSEHOLDS

Section A: Demographic Information

1. Indicate your gender Male [ ] Female [ ]
2. What is your appropriate age group?

   16-24 ( ) 25-35 [ ] 36-45 [ ] 45 and above
3. What is your highest academic qualification?

   a. Primary [ ] secondary [ ]

   b. Tertiary college [ ] university [ ]

   c. Any other (Specify)…….
4. Indicate your employment status

   a. Employed b Not employed
5. Please indicate your occupation
6. Indicate your family monthly income

   a) 0-5000 b) 5001-10,000 c) 10001-15,000 d) 15001- 20,000,

   e) 20,001 and above
7. Number of children in your home who are in secondary school……

8. Please respond to all items. Please tick (√) where appropriate:

Id code/ household member	Gender of the name	Age of the named	Has the name ever attended school	What is the grade of the name a) Form one b) Form two c) Form three d) Form four	Did the name attend school for the last one year a) Yes b) No	Who manages the school name attends a) Government b) private	Is the name a day scholar or boarder
1							
2							
3							
4							
5							
6							
7							
8							

Id code / household member	Name of school	Type of school 1) national 2) extra county 3) county 4) sub-county	Names distance from home to school (Estimate)	Has the nave ever dropped out of school at one time 1 Yes 2 no	If yes give reasons	
1						
2						
3						
4						
5						
6						
7						
8						

8. Indicate the amount of money spent by your child in the last 12 months

Id code	How much was used by the name in the last 12 months on										
	tuition	Books and other materials	Uniform Ksh	Boarding fee Ksh	Transport	Contribution for school building	Extra tuition fee	Examination fee Ksh	PTA contribution	Pocket money Ksh	Other expenditures Ksh
1											
2											
3											
4											
5											
6											
7											
8											

9. Other family sources of financing secondary education

ID code	Did anyone outside your household contribute to child education a)yes No	Did anyone receive scholarship to help you pay fees	Given that there is insufficient money would you take the name to school a) yes b) No
1			
2			
3			
4			
5			
6			
7			
8			

10. i) If the cost of education is high, would you still take your child to school?

a) Yes

b) No

ii) If yes to the above, give reasons……

…….

…….

iii) If no to the above, give reasons……

……

…….

11) In your own opinion, what should government do to ensure that children enroll in secondary schools……

……

APPENDIX C

QUESTIONNAIRE FOR THE PRINCIPALS

Section A: Demographic Information

1. What is your gender Male [ ] Female [ ]
2. What is your appropriate age group?

   25-35 [ ] 36-45 [ ] 45 and above [ ]
3. What is your highest academic qualification?

   Diploma [ ] University graduate [ ]

   Master if Education [ ]

   Any other (Specify)……..
4. How long have you served as head teacher?

   Below 5 years [ ] 5 – 10 years [ ] 11 – 15 years [ ]

   Over 15 year's [ ]
5. How long have you been a principal in the school?

   a) Less than a year [ ]

   b) 1-2 years [ ]

   c) 3-5 years [ ]

   d) Over five years [ ]

6) Indicate the category of your school

   a) Day school [ ]

   b) Boarding [ ]

   c) Day and boarding [ ]

ii) Indicate the total number of students in your school…

iii) Indicate the number of students in various classes by gender in this year

Class	Male	Female
Form 1		
Form 2		
Form 3		
Form 4		

7. Does your school receive any monetary support from the government?

a) Yes [ ]

b) No [ ]

8. If yes how much did you receive in the last 12 months……..

9. Please indicate the purpose of the money……

10. Does your school get support from any other source apart from government and parents?

a) Yes [ ]

b) No [ ]

11. If yes indicate the source……..

12. If yes in question 10 indicate the total amount received from other sources

13. Does the school have any income generating activities?

a) Yes [ ] b) No [ ]

14. It No, give reasons…….

15. If yes indicate the type of income generating activity

a) Operating a kiosk [ ]

b) Keeping livestock [ ]

c) Hire out school land to farmers [ ]

d) Hire out school bus [ ]

16. On average indicate the amount generated in the last 12months…….

…….

……

17. Please indicate how the money generated in spent at school

a) Buy food for students [ ]

b) Pay non-teaching staff [ ]

c) Maintenance [ ]

d) Any other specify [ ]

18. Indicate the number of non-teaching staff and the teachers under the BOM…

……..

19. Indicate the source of money you use to pay non-teaching staff and teachers under BOM in the last 12 months

20. On average, how much do you spend to pay non-teaching staff in the last 12 months? .....

21. Please indicate the amount of money charged for individual students on the same items in the last 12 months

Item	**Amount**
Tuition fee	
Books and other materials	
Uniform	
Boarding fee	
Transport	
School development for instance building projects	
Extra-tuition fee	
Examination fee	
PTA contribution	
Other expenses	

22. In your own opinion, what should government do to ensure that children enroll in secondary schools……

APPENDIX D

LIST OF SCHOOLS IN THARAKA SOUTH SUB-COUNTY

1. MUGWI DAY SECONDARY SCHOOL
2. KAROCHO DAY SECONDARY SCHOOL
3. KAANYAGA DAY SECONDARY SCHOOL
4. KAARANI DAY SECONDARY SCHOOL
5. TUNYAI DAY SECONDARY SCHOOL
6. NKARINI DAY SECONDARY SCHOOL
7. MATIRI BOYS SECONDARY SCHOOL
8. GACHERAKA DAY SECONDARY SCHOOL
9. NDARUNI DAY SECONDARY SCHOOL
10. MUIRU MUTHIITWA DAY SECONDARY SCHOOL
11. CHIAKARIGA GIRLS SECONDARY SCHOOL
12. CHIAKARIGA DAY SECONDARY SCHOOL
13. KAMARANDI DAY SECONDARY SCHOOL
14. GAKUURU DAY SECONDARY SCHOOL
15. THARAKA BOYS SECONDARY SCHOOL
16. MWANYANI DAY SECONDARY SCHOOL
17. NKONDI GIRLS SECONDARY SCHOOL
18. TURIMA DAY SECONDARY SCHOOL
19. MATAKIRI DAY SECONDARY SCHOOL
20. GATUNGA BOYS SECONDARY SCHOOL
21. PRINCE ALEX DAY SECONDARY SCHOOL

22. MARIMANTI GIRLS SECONDARY SCHOOL

23. NGONYA DAY SECONDARY SCHOOL

24. TURIMA TWERU DAY SECONDARY SCHOOL

25. TURIMA HILLS DAY SECONDARY SCHOOL

APPENDIX E

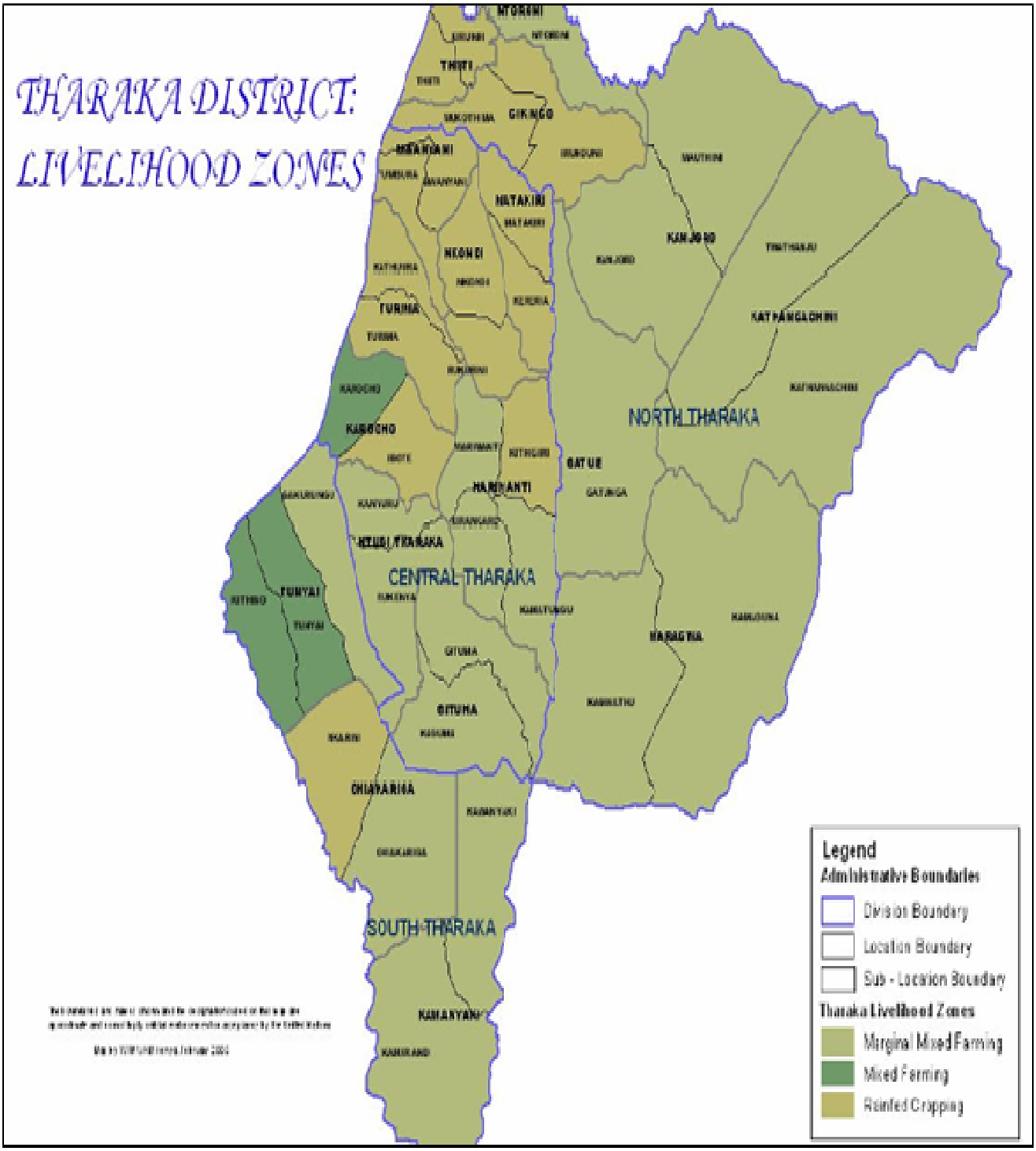
ADMINISTRATIVE AND POLITICAL UNITS

Sub County	**Constituency**	**Area (km^2)**	**No. of Wards**	**No. of Locations**	**No. of Sub-Locations**
Tharaka North	Tharaka	803.4	2	7	18
Tharaka South	Tharaka	766.1	3	31	70
Meru South	Chuka /Igambang'ombe	624.4	5	17	45
Maara	Maara	468.2	5	8	31
Total		**2,662.1**	**15**	**63**	**164**

Source: Ministry of Interior and Coordination 2013

APPENDIX F

THE MAP OF THARAKA SOUTH SUB COUNTY



APPENDIX G

RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
MR. REUBEN GITONGA MUTEGI
of UNIVERSITY OF NAIROBI, 11923-100
Nairobi,has been permitted to conduct
research in *Tharaka-Nithi County*

on the topic: *UNIT COST OF EDUCATION AND ITS INFLUENCE ON ENROLLMENT IN SECONDARY SCHOOLS IN THARAKA SOUTH SUB COUNTY*

for the period ending:
2nd September,2016

.....
Applicant's Signature

Permit No : NACOSTI/P/15/5895/7417
Date Of Issue : 17th August,2015
Fee Recieved :Ksh 2000

.....
Director General
National Commission for Science, Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 6193

CONDITIONS: see back page

APPENDIX H

RESEARCH AUTHORIZATION

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471, 2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. NACOSTI/P/15/5895/7417

Date: 17th August, 2015

Reuben Gitonga Mutegi
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Unit cost of education and its influence on enrollment in secondary schools in Tharaka South Sub County,"*** I am pleased to inform you that you have been authorized to undertake research in **Tharaka Nithi County** for a period ending **2nd September, 2016.**

You are advised to report to **the County Commissioner and the County Director of Education, Tharaka Nithi County** before embarking on the research project.

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

DR. S. K. LANGAT, OGW
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Tharaka Nithi County.

The County Director of Education
Tharaka Nithi County.