HOUSEHOLD EDUCATIONAL COSTS AND THEIR EFFECTS ON STUDENTS' PARTICIPATION IN PUBLIC BOARDING SECONDARY SCHOOLS IN UASIN GISHU COUNTY, KENYA

BY

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DECLARATION

I confirm that this thesis is my original work and has not been presented in any other university/institution for certification. The thesis has been complemented by referenced works duly acknowledged. Where text, data (including spoken words), graphics, pictures, or tables have been borrowed from other works, including the internet, the sources are specifically accredited through referencing following anti-plagiarism regulations.

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DEDICATION

To God the most high for His guidance, fine health and abundant life throughout the thesis writing period. Mrs. Emily Barg'etuny, my mother for the unceasing support and prayers. My husband, Mr. Yego Wilson and our sons, Kemboi Victor together with Kemboi Timon for their support and understanding over the entire academic journey.

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ABBREVIATIONS AND ACRONYMS

APHRC	:	African Population and Health Research Centre
BoM	:	Board of Management
ECDE	:	Early Childhood Development Education
EFA	:	Education for All
FCUBE	:	Free Compulsory Universal Basic Education
FDSE	:	Free Day Secondary Education
FPE	:	Free Primary Education
GDP	:	Gross Domestic Product
GER	:	Gross Enrolment Rate(s)
IIEP	:	International Institute for Educational Planning
IPAR	:	Institute of Policy Analysis and Research
KIPPRA	:	Kenya Institute for Public Policy Research and Analysis
MDGs	:	Millennium Development Goals
MoE	:	Ministry of Education
MoEST	:	Ministry of Education Science and Technology
NARC	:	National Rainbow Coalition
NACOSTI	:	National Commission for Science, Technology and Innovation
NER	:	Net Enrolment Rate(s)
OECD	:	Organization for Economic Co-operation and Development
PTA	:	Parents Teachers Association
SPSS	:	Statistical Package for Social Science
SSA	:	Sub-Saharan Africa
UIS	:	UNESCO Institute of Statistics
UGCIDP	:	Uasin Gishu County Integrated Development Plan
UNESCO	:	United Nations Educational, Scientific and Cultural Organization
UNICEF	:	United Nations Children's Fund

ABSTRACT

Investment in education at all tiers involves incurring educational costs which are mainly met by the government and households. Kenyan Government has invested massively in education in order to enhance access and participation. Further, some policies guide the provision of education. However, even with these efforts, students enroll for secondary education at form one in large numbers and then the numbers decline as they progress to form four. This means that some of them fail to complete the four-year course. This research designed to establish whether or not household educational costs affect students participation in public boarding schools in Uasin Gishu County, Kenya. The study's objectives were to: establish the effect of direct educational costs on the transition rate of students, determine the effect of direct educational costs on the retention rate of students, assess the effect of hidden educational costs on the transition rate of students and examine the effect of hidden educational costs on the retention rate of students all in Uasin Gishu County. The Education Production Function model served as the theoretical foundation for this study. This study used a Convergent Mixed Methods Approach. 34 school heads with 3,917 parents made up the target audience. All the 34 purposively selected principals and 362 parents obtained with the help of Yamane's Simplified formulae were included in the sample. Data was congregated through interview schedules, questionnaires, and content analysis of archival materials. Thematic analysis aided to decipher the qualitative data as inferential and descriptive statistics worked for the quantitative data. These were the results of the study; In public boarding secondary institutions, the rate of student transition was significantly correlated with direct educational costs. Their effect accounts for 81.8% of the variance. The cost of Repairs, Maintenance and Improvement accounts for the highest variance (34.7%) while the cost of school meals accounts for 0.1%. Direct costs of education were important predictors of student retention in public boarding secondary schools. They account for 94.1% of the variance. Costs of accommodation, meals, activity fees, cost of repairs, maintenance and improvement and parents association fund all contributed to the variance. However, the cost of repairs, maintenance and improvement contributed the highest proportion of the variance (90 %) as the cost of activity fee contributed (0.01%). Hidden costs of education are important predictors of student transition rates in public boarding schools. They account for 36.5% of the variance. The cost of uniforms contributes the highest proportion (10.0%) while the cost of motivation fee had the lowest effect (0.1%). Hidden costs of education were significant predictors of student retention rate. They all account for 39.3% of the variance with the highest contribution from the school uniforms (7.6 %) as the Board of Management teachers' salaries and motivation fees both registered a negligible proportion of less than 2% of the variance. This research shows that both the direct and hidden educational expenditures affect students' participation in public boarding schools. The study recommends the government to review and further increase capitation per student to make up for boarding expenses, diversify the sources of funding in a bid to cushion the students and exclusively fund school projects and programs to alleviate guardians/parents from the cost distress and enhance students' participation rate in public boarding secondary schools.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter entails the background to the study, statement of the problem, purpose of the study, objectives, research hypotheses, significance of the study, limitation and delimitation, assumptions, theoretical and conceptual framework and finally operational definition of terms.

1.2 Background to the Study

Education stands out as a critical pillar of social, economic and political development. It aids the reduction of poverty through an improved productive capacity of individuals and societies. This provides the answer as to why donor agencies, governments and non-governmental organizations acknowledged Education For All and embraced the idea of offering basic education for all. (UNESCO, 2005). The Sustainable Development Goals were created by the international community after the MDGs and EFA Goals were officially retired. Again, ensuring entry to high-quality education is crucial to achieving the other Sustainable Development Goals and bettering people's lives in the long run (UNWomen, 2022). The goal is provided through different levels which include; primary, secondary and tertiary.

According to Wachiye and Nasongo (2010), in any education system, secondary education is a critical level due to the vital role it exercises in spurring and enhancing national development. Based on this, countries have embraced various policy frameworks to guarantee quality basic education, enhance productivity and lower poverty levels (UNICEF, 2007).

Globally, countries have adopted policy frameworks that work towards enhancing access, participation and quality education. South Korea and Singapore adopted policies to increase quality, access and transition to secondary education while Japan increased transition through huge public investment thus reducing the cost burden on parents (UNESCO (2015) cited by (Nderitu, Magoma & Mugiraneza, 2020 & OECD, 2015). Unfortunately, Latin American countries still record negative rates despite these efforts. For instance, as much as 90% of students move on to secondary school. Unfortunately, while 80% of students proceed to the next level of learning after finishing lower secondary, only 59% progress to the subsequent level after finishing higher secondary (UNESCO, 2017).

New Zealand offers Free Education to students aged 5 to 19 years to enhance the participation of students in school. However, households are held responsible for the provision of stationery, examinations and school uniforms. Schools as well require parents to pay for activities that students are engaged in. The costs incurred may deny students maximum participation in education thus violating their wish to attain their goals in life (Gasson, Pratt, Smith & Calder (2016).

African nations have embraced education policy frameworks that provide financial support to education. For instance, in South Sudan communities pay for their children's education. Ghana adopted a Fees Abolition policy while Rwanda on the other hand began a Fee-Free education policy. In East Africa, Uganda, Tanzania and Kenya adopted a capitation policy to enhance student participation. (Nderitu *et al.*, 2020). These strategies are meant to enhance students transition and retention rates. Nonetheless, UNESCO reports that in 2019, dropout and graduation rates from secondary schools are still dismally low.

GEMR (2021) reports that despite legislative reforms, 20% of potentially eligible students are not enrolled in high school. Bennell, Bulwani & Musikanga (2016) notes that in Zambia,30 percent of secondary school –aged could not transit nor remain in school due to high dropout rates. This could be due to the high costs of secondary school education.

School levies remain a significant barrier for secondary school students in Uganda, according to research by Barungi & Mwesigye (2019). This is true despite the existence of the Universal Secondary Education Programme and Capitation grants. The brief also notes that payment in government boarding schools is much higher compared to that of non-government schools. This disparity is attributed to the costs of meals and accommodation. In addition, low enrolment is experienced in Ugandan secondary schools due to high costs which are unaffordable to most parents/guardians.

Kenya instituted the policy of Free Secondary Education in January 2008 to make secondary schooling in the country more easily accessible and affordable. The fundamental reason for establishing FDSE, as stated by Muganda, Simiyu, and Riech (2016), was to deal with low levels of student participation, which is shown in low transition, low completion, and low retention rates in the secondary education tier. Similarly, Abuya and Mutisya (2018) notes that the main objective of FDSE was to enable more children from low-income households to transit to secondary schools.

Abuya *et a*l (2018) notes that the program has not achieved its objective. Even with the increased subsidy, costs including lunch, uniforms, the PTA, and accommodation

fees must be paid (Abuya *et a*l., 2018). This agrees with Muganda *et al* (2016) who notes that, in spite of the developed strategies and policies to boost transition and retention in schools, some students still withdraw prematurely from secondary schools. Likewise, Williams, Abbott & Mupenzi (2015) reiterates that schools still demand extra money from parents despite the Free Education. These payments are referred to as hidden costs of education. They are paid outside the fee guidelines. As indicated by several studies, these costs are known to constraint student transition and retention in secondary schools. Ogawa (2021) claims that high school and university dropout rates are largely attributable to financial constraints. In such a case the study maintains that parents/guardians opt to withdraw and enroll their sons and daughters in low-paying private secondary schools that charge lower in comparison to public secondary schools.

Kenya Vision 2030's social pillar emphasizes the importance of training and education as a means of achieving the goal of an average-income wealth by 2030. Additionally, the rights of all children in Kenya are recognized through the amendments made to the Kenyan constitution in 2010 that specifically addressed the education sector. Every child in Kenya has the constitutional right to a free, publicly-funded primary school education, and the Kenyan government has made this a priority. Consequently, the Kenya National Bureau of Statistics (2019) indicates that the government of Kenya has been investing heavily by consistently increasing budgetary allocation to the education sector as shown in Table 1:1.

Table 1.1: Budgetary allocations to education (2015/2016 - 2019/2020)

Financial Year	Allocation (Ksh.)
2015/2016	335.75 billion
2016/2017	339.3 billion
2017/2018	415.3 billion
2018/2019	439.2 billion
2019/2020	473.4 billion

Source: Kenya National Bureau of Statistics (2019)

From Table 1.1, it is evident that there is an increase of 137.65 billion Kenya shillings (41%) over the five years. Increased resources are available because of universal free secondary education (Kenya National Bureau of Statistics, 2019).

Regardless of the heavy investment, low transition and low retention of secondary education remains an agenda of concern to policymakers and practitioners in the world (Gray & Mark, 2010). Bridge, Dilulio, and Monson (2011) found that students' inability to successfully transit from secondary to post-secondary education is a major contributor to the global education crisis. Around the globe, over 71 million youngsters are out of high school; leading to a lack of skills acquisition and subsequently lack of employment in the future (UNESCO, 2012).

World Bank (2019) notes that people invest in education because of anticipated future returns which increase by 10 percent as an individual adds one more year in school. Likewise, education has numerous and unique individual and societal benefits which include improved health. These are the push factors towards enhancing access to education which in turn enhance development. However, this report indicates that school fees stand out as a barrier preventing poor households from educating their children.

Globally, cost remains a barrier to societies dominated by low-income households. Even though quite a range of costs is paid by either the government or other financing agents, very poor households still suffer the effect of educational costs. Poverty has been cited as a major obstacle to education. Despite the government subsidy, costs for teachers' salaries, school maintenance and improvement and school uniforms build barriers to student participation. Studies have shown that, in countries that offer Free Education policies, poor households still cry out that both direct and hidden costs prevent them from taking their children to school. An immense increase in student enrollment has been seen in nations that have instituted laws to do away with school levies on parents or that have instituted cash disbursement programmes for low-earning families to overcome the fees barrier. For instance, when tuition was eliminated in Timor Uganda and Kenya, enrollment increased by 10-20%. This elucidates the significance of financial constraints as a barrier to education, especially for less financially secure families (Educate a Child, 2021).

In America, 12 percent of the students in secondary schools do not graduate as expected (Bridge, Dilulio & Morison, 2011). Rumberger (2011) claims that in the United States of America, most school-aged youngsters were prohibited from attending or continuing their education due to financial difficulties. Meryl (2011) posits that poor American households had difficulties paying for hidden costs of education which included the cost of textbooks, academic trips and sports materials and equipment. In New Delhi, a minute number of children attain secondary school education. Notably, their retention in the same tier is 65.96 percent (Chugh, 2011).

According to UNICEF (2011), 49 percent and 40 percent of girls aged 19 years and below in West and Central Africa respectively withdraw from school to get married contrary to 20 percent in Northern and Southern Africa and 27 percent in East Africa. Due to expenses like uniforms, school fees, and low earning potential, Croft (2011) reports that in Nigeria, a family's finances is the primary factor in determining whether or not their child attends school. This study then provided the situation in Kenya.

The transition rate between grade one to the fourth form in Kenya is lower than 20 percent for those who transit from the first grade to the university at 1.69 percent (KIPPRA, 2013). According to the Government of Kenya (2000), completion rates among students in Kenya provoke attention because the rate is far below one hundred percent. According to Tuwei (2013), despite the generosity of Kenya's government in allocating resources for Free Day Secondary Education, parents are still expected to pay for PTA levies, school uniforms, fare to school and lunches among other levies. While Cheruiyot (2011) acknowledges that tuition waiver has helped ease the financial strain of secondary school, he also notes that parents and guardians are still responsible for paying a number of hidden costs. Together with the direct costs, they have termed household educational costs.

Household educational costs are the costs households incur while their children are in school. This study categorizes them into hidden costs and direct costs of education. Hidden costs refer to costs or expenditures on education that are not reflected in the gazette fees structure but are incurred by families sending offspring to school. They include; the costs of admission requirements, school uniforms,

personal effects, motivation fees and board of management teachers' salaries. Alternatively, when parents invest in their offspring's education, they incur direct costs, which are the money they actually spend on their kids' education at the school. They include; the costs of accommodation, meals, activity fees, repairs, maintenance and improvement cost,

Ohba (2009) argues that, despite the Free Day Secondary Education, schools still collect money for things like lunches, remedial classes, motivational programmes, sports equipment, and boarding. Free Day Secondary Education was adopted in the Republic of Kenya to improve both access to and the quality of education, as stated in Sessional Paper No. 14 of 2012 (FDSE). Njuguna & Muchanje (2019) similarly noted that, even with Free Secondary Education in place, students in secondary schools post low transition and retention rates. The study revealed that factors such as high costs of education caused the drop. The updated fee structure for secondary schools is presented in Table 1.2 as approved by Kilemi Mwiria's (2014) taskforce report.

Table 1.2: Fee Structure for Public Secondary Schools

Vote Heads	Boarding Schools of all Categories (KES)			Day Schools (KES)		
	Government	Parent	Total	Government	Parent	Total
Teaching Learning Materials	4,792.00	0.00	4,792.00	4,792.00	0.00	4,792.00
BES and Meals	0.00	32,385.00	32,385.00	0.00	0.00	0.00
Repairs, Maintenance and Improvement	800.00	2,392.00	3192.00	800.00	1,086.00	1,886.00
Local Travel and Transport	800.00	1,621.00	2421.00	800.00	1,033.00	1,833.00
Administration costs	800.00	2,516.00	3316.00	800.00	772.00	1,572.00
EWC	1500.00	6,302.00	7802.00	1,500.00	1,651.00	3,151.00
Medical	278.00	508.00	786.00	278.00	411.00	689.00
Activity fees	600.00	798.00	1398.00	600.00	656.00	1,256.00
Personal Emolument	2,700.00	5,972.00	8672.00	2,700.00	3,055.00	5,755.00
Approved PTA Development projects	0.00	0.00	0.00	0.00	0.00	0.00
Insurance (Medical & Property)	600.00	1,060.00	1660.00	600.00	710.00	1,310.00
Top Up	0.00	0.00	0.00	0.00	0.00	0.00
Total School Fees	2,870.00	53,554.00	66,424.00	12,870.00	9,374.00	22,244.00

Source: Ministry of Education, 2020

Key
BES – Boarding Equipment & Stores

EWC – Electricity Water & Conservancy

PTA- Parents Teachers Association

Table 1.2 shows the costs borne by the government and those borne by parents/households in public secondary schools. The costs borne by parents in table 1.2 are direct costs. They are paid directly for the provision of education services. However, parents also incur hidden costs such as PTA project funds, cost of uniform, and motivation fees among others that are not reflected on the table. Furthermore, the figures indicate that costs borne by parents are higher than the costs borne by the government in every vote head charged in schools. There is therefore a concern as to whether this affects student participation in terms of their transition and retention rates.

This means that this study has the potential to answer this question. Globally, 85% of children who complete elementary school continue in to secondary school, per data from the UNESCO Institute for Statistics (2015). At any rate, developed countries registered the highest transition rates of 98.2% while Africa was at 77.2%. Southern and Eastern African and Central and West Africa registered 67.1% and 52.4% respectively. Nationally, the completion rate of pupils and their transition from primary to secondary is as shown in Figure 1:2.for the years 2014 to 2018.

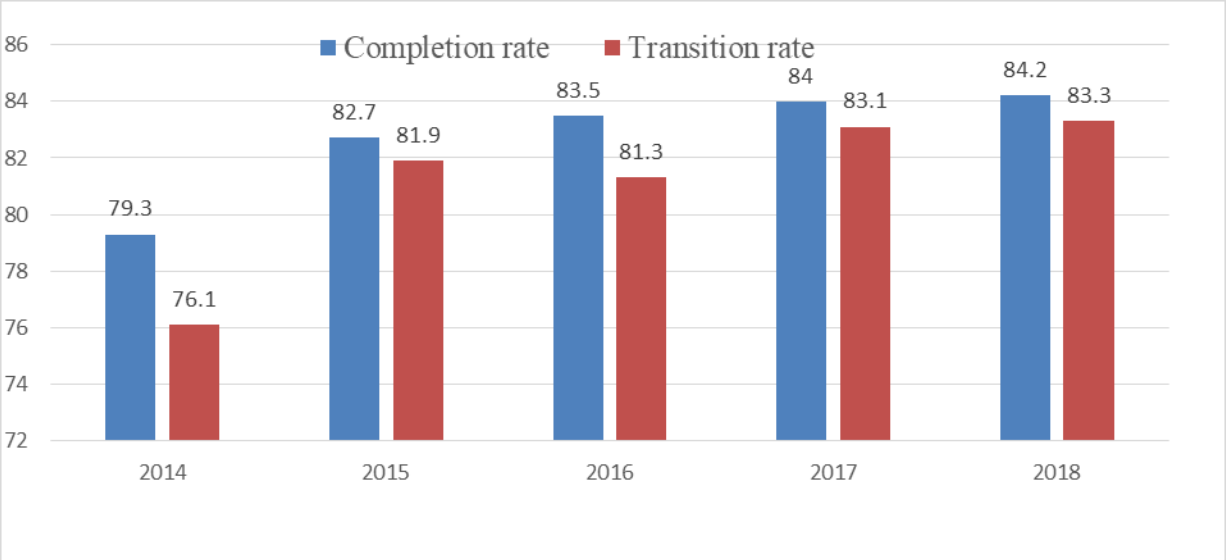

Figure 1.1: Pupil completion rates and students transition rates from 2014-2018 in Kenya

Source: Kenya National Bureau of Statistics (2019)

As can be seen in Figure 1.1, the pupil completion rate has improved from 79.3% in 2014 to 84.2% in 2018. Similarly, the rate at which students move from primary to secondary school grew from 76.1% in 2014 to 83.3% in 2018. This is an increase of 4.9% and 7.2% respectively. Despite the improvement, the rates are not yet at 100%. An estimated 86.4% of Kenyan secondary school pupils completed form four in 2018 reported by the (Kenya National Bureau of Statistics, 2019). The Kenya

Bureau of Statistics (2020) indicates that in 2019, secondary school enrolment rose by 4.3 percent. In that same year, students in the fourth and year of the level registered a completion rate of 86.4 percent up from 84.2 percent in 2018. In the Sessional Paper No. 1 of 2019, the Ministry of Education was given the duty of making sure that each student of school-going age enjoy secondary school education, which may explain the uptick (GoK, 2020).

Evidence shows that, in Uasin Gishu County, student participation in secondary schools is under question because of the worrying trends of students as they transit all through to the fourth form (UGCIDP, 2018). Enrollment trends can shed light on the state of secondary school transition and retention in Uasin Gishu County as a whole. Table 1.3 show student enrolment in Uasin Gishu County for 2014-2019.

Table 1.3: Student enrolment in public secondary schools in Uasin Gishu County (2014 - 2019)

S/NO	YEAR	Form 1			Form 2			Form 3			Form 4			
		B	G	T	B	G	T	B	G	T	B	G	T	GRAND TOTAL
1)	**2019**	9555	10457	**20012**	8805	9597	**18402**	7607	7986	**15593**	7020	7627	**14647**	**68654**
2)	**2018**	7871	8834	**16414**	6953	7477	**14287**	6337	7006	**13217**	5752	6060	**11674**	**55612**
3)	**2017**	6936	6854	**13790**	6482	6628	**13110**	5963	6298	**12261**	5195	5193	**10388**	**49549**
4)	**2016**	6334	6935	**13269**	6053	6560	**12613**	5397	5992	**11389**	4907	5253	**10160**	**47431**
5)	**2015**	6156	6826	**12982**	5875	6307	**12182**	5219	5814	**11033**	4729	5075	**9804**	**46001**
6)	**2014**	6401	6223	**12624**	5526	5980	**11506**	4843	5120	**9963**	4497	4551	**9048**	**43141**

Source: Uasin Gishu County Education office (2019)

Table 1.3 shows student enrolment per class by gender. The figures illustrate how enrolment of a cohort of students drop as students progress from one form to another. For clarity, the enrolment trend is presented in figure 1.2 which gives a summary of the dropping pattern (2014 -2017).

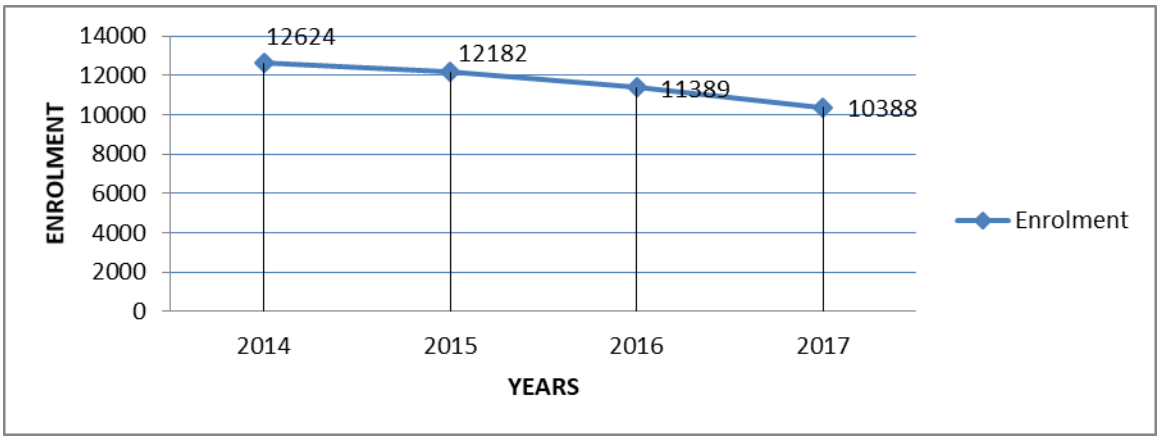

Figure 1.2: Enrolment Trend in Uasin Gishu County (2014 - 2017)

Source: County Education statistics office, Uasin Gishu (2018)/MoE (2018)

Figure 1.2 shows the student enrolment trend in Uasin Gishu County for 2014 - 2017. The trend serves as an eye opener on the possible threat to transition and retention of students in secondary school tier of education. An increasing proportion of students enroll in form one each year, however this proportion declines by the time students reach form four, as shown by the data. This implies that several students who enter the level cannot be accounted for and yet Free secondary education is meant to enhance student participation in secondary schools. Indicators such as transition and retention rates are used by UNESCO (2010) to gauge student engagement. Secondary schools keep track of the percentage of students who graduate from each grade and move on to the next grade in the next school year by measuring the transition rate. Conversely, the percentage of students who remain enrolled through graduation is known as the retention rate. The IIEP (International Institute for Educational Planning), 2010).

In 2018, the government introduced the universal transition program which took effect in January 2019. The aim was to enable all learners to transit and achieve a

basic education. Despite the effort, Uasin Gishu County posted a completion rate of 82.3% in public secondary schools and a transition rate of 59.9% which is far below the national rate of 83.3% (Uasin Gishu County Education Office, 2021).

1.3 Statement of the Problem

Evidence suggests that, despite the government's massive investment and subsequent enforcement of policies, there is a decline in student transition and retention. Students enrolment in form one is high but then their numbers drops off significantly as they progress towards form four. This shows that some students drop out prematurely before they complete the four-year secondary school level. This trend if not checked may jeopardize student participation. Studies as well have shown that, despite the policies, parents still meet some costs for taking their children to secondary school. Based on this concern, the question is, do household education costs affect student participation? If so, to what extent?

1.4 Purpose of the Study

The study purposed to establish how much financial constraints on households in Uasin Gishu County, Kenya, affect their children's participation in public boarding high schools with an aim of making proposals which may inform policy makers and all other stakeholders on ways to improve student participation in schools.

1.5 Objectives of the Study

This study intended to achieve the following objectives:

i. To establish the effect of direct costs of education on students transition rate in public boarding secondary schools in Uasin Gishu County, Kenya.

ii. To determine the effect of direct costs of education on students retention rate in

public boarding secondary schools in Uasin Gishu County, Kenya.

iii. To assess the effect of hidden costs of education on students transition rate in public boarding secondary schools in Uasin Gishu County, Kenya.

iv. To examine the effect of hidden costs of education on students' retention rate in public boarding secondary schools in Uasin Gishu County, Kenya.

1.6 Research Hypotheses

The following null hypotheses guided the study:

Ho1: There is no statistically significant effect of direct costs of education on student transition rate in public boarding secondary schools in Uasin Gishu County, Kenya?

Ho2: There is no statistically significant effect of direct costs of education on student retention rate in public boarding secondary schools in Uasin Gishu County, Kenya?

Ho3: There is no statistically significant effect of hidden costs of education on student transition rate in public boarding secondary education in Uasin Gishu County, Kenya?

Ho4: There is no statistically significant effect of hidden costs of education on student retention rate in public boarding secondary schools in Uasin Gishu County, Kenya?

1.7 Significance of the Study

This study is anticipated to have the following significance:

i. The results of this research could inform the State Department of Education, policymakers, and educational planners as they work to implement programmes to lower families' out-of-pocket costs for secondary education in order to boost retention and transition rates.

ii. The study findings may enlighten and guide the state Department of Education policymakers and other education stakeholders on how much families are contributing towards secondary education and the challenges they face in meeting these costs. This will enable them to diversify sources of funding for secondary education to ease the burden.

iii. This research may add to what is already well known about how much it costs families to send their children to secondary school in Kenya.

iv. The research findings may be significant to all the parents in that, possible measures and solutions to cushion households from the effects of education costs may be found. Furthermore, the government will be more alert to the implementation of fee payment policies.

v. The study may add new knowledge on the extent household costs affect students participation (retention and transition).

vi. The study findings provides vital information which the Government may use to evaluate the effectiveness of the existing policies such as Free Secondary Education and the Universal Transition Programme in enhancing the transition and retention of students.

1.8 Assumptions

This study had the following assumptions:

i. Cost of meals, Parents Association project fund, expenditure on school uniform, motivation fee, personal belongings, entry requirements and boarding fee are key household costs.

ii. The cost of education remains the same and household education costs are a burden to parents.

iii. All the study respondents exercised honesty and responded to the study items truthfully and faithfully.

1.9 Limitation of the Study

Below were the limitations of the research:

i. This study was restricted to Uasin Gishu County. Its findings as such can be generalized specifically to areas possessing the same characteristics. This implies that generalization should be approached cautiously.

ii. The use of document analysis to acquire secondary data related to student participation was a challenge to the researcher depending on the availability of records at the school level. This was reduced by evaluating various documents at the school and county levels for triangulation purposes.

iii. Data was from parents in public boarding secondary schools who were vastly spread across the country. This limitation was minimized by seeking help from the principals and utilizing technology where possible.

1.10 Delimitation of the Study

The following formed the delimitation of this study:

i. The study covered a few households' education costs of education such as the cost of school meals, boarding fee, PTA project funds, motivation fee and the cost of school uniform because of time and money constraints. This should not mean that other household costs are not significant.

ii. Current research was conducted exclusively at secondary public boarding schools. There was no participation from either public nor private day schools.

iii. The study focused on direct and hidden household costs of education only. It

did not focus on indirect (foregone earnings) due to the complexity of computing them.

1.11 Theoretical Framework

Coleman's (1966) explanation of the Education Production Function Model served as the foundation for this investigation. The model is predicated on the idea that a school functions similarly to a business in that it takes in resources (or "inputs") and processes them in order to generate results (or "outputs"). For this study, the inputs are household education costs represented by boarding fee, cost of meals taken at school, cost of repairs, maintenance and improvement, Parents Teachers Association fund, activity fees, cost of school uniform, cost of personal effects motivation fee, BoM salaries and the cost of admission requirements. Output on the other hand is student participation determined by retention and transition rates.

The production function model of education was defined using the formula below;

$$X = f(a, b, c \ldots \varepsilon)$$

Where;

X- is the output or result such as student participation (transition and retention rates).

f - stands for function in this case, it explains how the independent variables/inputs (household educational costs) affect the (x) dependent variable (students participation).

a,b,c….d- are the inputs, the households education costs in the form of boarding fee (cost of school meals and accommodation), PTA project fund, motivation fee, cost of school uniform, cost of repairs, maintenance and improvement, cost of personal effects, cost activity fees and BoM teachers' salaries

ε– is the error term.

This model explains how student participation (output) in secondary education depends on household education costs (inputs). Coleman (1966) insists on the fact that the inputs (students, resources) must transform the teaching/learning process to yield high outputs (results). However, it is notable that lack of inputs such as resources in the form of household costs may present a barrier to the process (Teaching/learning process) hence it may lead to a negative result or output such as low student participation (low retention and low transition rates) in schools and vice versa.

The purpose of this research was to establish if and how much students' participation was affected by their families' educational spending. Household educational costs (direct and hidden costs) are the inputs that could affect students' participation (students' transition and retention rates) as the output in the model. The formula therefore can be expressed as follows;

$$P = f(D_1 \ldots\ldots D_u, H_v \ldots\ldots\ldots H_z + \varepsilon)$$

Where;

P – stands for the measures of student participation (the dependent variable/output) which is assessed in form of transition and retention rates of students.

f- stands for the function of the model or the parameters to be measured. In this case, it explains how household educational costs affect students' transition and retention rates.

$D_1 \ldots D_u$ – The Direct Costs of Education consist of the following inputs/independent variables: They are represented by the costs of accommodation and meals. Activity fee. Repairs, maintenance and improvement .and PTA project fund.

$H_v....H_z$ – Stands for the measures of the inputs/independent variables (category 2) known as the hidden costs of education. They are represented by the costs of admission requirements, school uniforms, personal effects, motivation fees and BoM teachers' salaries.

ε -is the error term or the precision error which explains any change which may occur in the process of analysis.

Further, the formula can be translated to mean;

P (Students' participation) is a function or measure of the effects of D (Direct costs of education) as well as H (Education's hidden costs) if all other variables remained the same.

This model was significant to this study. It provided a summarized explanation of how household education costs affect students' participation in public boarding secondary schools. Again, the model provided equations that were useful during regression analysis. In this analysis, we determined how various inputs (or expenses) affected the final product's quality (student participation). Thus; Students' participation is a function of the costs of accommodation and meals, activity fees, repairs, maintenance and improvement, PTA project fund, cost of admission requirements, uniform, cost of personal effects, motivation fee and Board of Management teachers' salary.

1.12 Conceptual Framework

The Conceptual Framework demonstrates the correlation between the Independent and the Dependent variables.

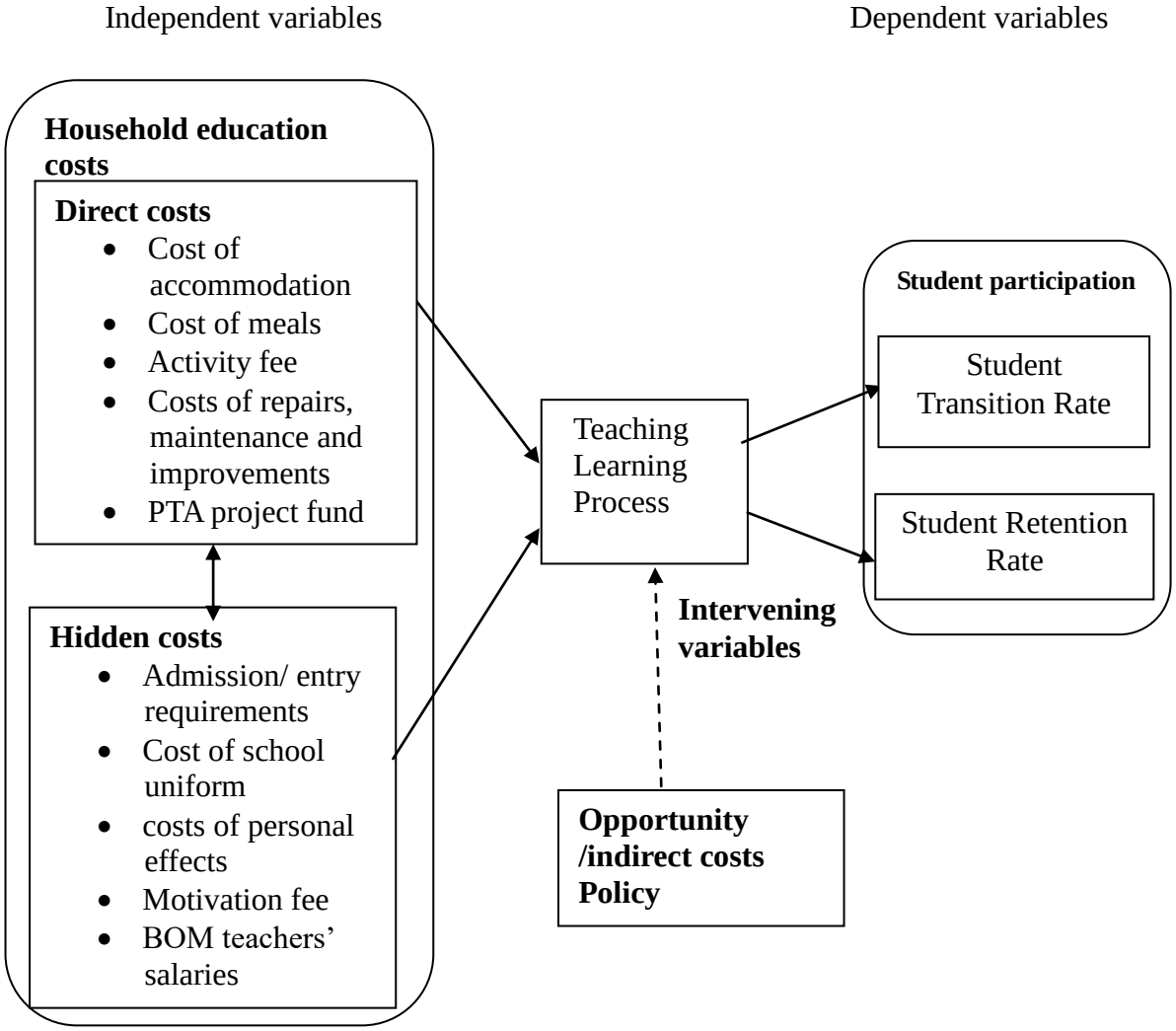

Figure 1.3: Conceptual framework on household education costs and student participation.

Source: Author's conceptualization (2021).

Investment in education at any level involves both direct costs and hidden costs that are obtained from different sources which include contributions from the households. Direct costs include; the cost of Repairs, Maintenance and Improvement (RMI), Boarding Equipment and Store, Activity fee and PTA fund. All necessary

maintenance on school buildings are included in RMI's price. Building new classrooms and other educational facilities is also covered. Boarding Equipment and Stores (BES) encompasses the cost of accommodation and meals. The cost of accommodation includes but is not limited to bedding and all the expenditure required for boarding. The cost of school meals covers all the meals taken by students while in school, Activity fee covers all the activities that students are involved in while in school. They include games and sports, tours, drama, and music, among others.

On the other hand, there are a number of expenses that may not be immediately obvious, like the costs of uniforms, personal effects, motivation fees, the salaries of BOM teachers, and the cost of mandatory entry/admission. Costs of a student's personal effects include; towels, soaps, toothpaste and toothbrush, bucket, comb, shoe polish and shoe brushes. The cost of school uniforms covers all the sets of official school uniforms worn by the students. They include shirts and long trousers for the boys, blouses and skirts for the girls, pullovers/blazers, socks, shoes and ties. Part of the school uniform also includes; games kits (track suit-shirt and shorts) and sports shoes. Cost of entry/admission requirements include; the cost of Geometrical/Mathematical sets, rulers, umbrella, Advance Learners Dictionary, Kamusi ya Kiswahili, Bible, files, photocopy papers, Atlases, Kiswahili and English story books, Revision books, scientific calculators, set books and pens among others.

PTA project fund is the amount allocated to approved school projects like the purchase of a school bus or construction of a dormitory. This cost is incorporated in

the cost of Repairs, Maintenance and Improvement. The motivation fee is the amount set aside for encouragement and or appreciation of teachers and sometimes students. BOM teachers' salaries are the amount allocated for the payment of the Board of management employed teachers. These are the teachers employed by the school under BOM terms to curb staffing shortages or reinforce the teaching capacity. In this study, these costs are referred to as household education costs. These elements are aimed to supplement and enhance classroom instruction. However, the ability or inability to provide or meet these costs may directly affect the process either positively or negatively. Subsequently, it may indirectly lower or enhance students' participation.

Figure 1.3, therefore, shows a representation of the inter play between household educational costs and participation of students. It demonstrates how both direct and hidden costs may indirectly affect student retention and transition rates. With suitable strategies to reduce these costs, attendance, retention, progression and completion rates of students may improve. This translates to enhanced student participation in secondary schools. Other factors may influence student participation either negatively or positively. They are the intervening variables (opportunity/indirect costs and policy) that this study did not consider.

1.13 Operational Definition of Terms

Household educational costs: These are the costs that families incur as they take their children to school. They are either direct, indirect, or hidden costs.

Participation: It refers to the active engagement of students in education in terms of their retention and progression in the secondary school tier of education.

Transition rate: Proportion of learners who advance from a grade in a previous academic year, to a subsequent grade in a subsequent year in a secondary school education level as a proportion of the total number of students who complete the grade in the previous year.

Direct costs: These are the costs that individuals and/or families pay while investing in education. They include costs of school fees, boarding fees (accommodation and meals), activity fees, Parents Association fund and the cost of repairs, maintenance and improvement.

Indirect costs: These are the foregone earnings also called opportunity costs incurred by taking children to school.

Hidden costs; These are costs or expenditures on education that are not reflected in the gazette fees structure but are incurred by families sending children to school. They include the cost of admission requirements, motivation fee, cost of uniforms, cost of personal effects and Board of management teachers' salaries.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains reviewed literature from similar studies. The review covered the rationale for investing in secondary education, household education costs (Direct and hidden costs), strategies to minimize the effect of household education costs and improve student participation and a summary of the identified gaps.

2.2 Rationale For Investing In Secondary Education

Quality Secondary education is an essential ingredient for unlocking great opportunities for socio-economic advancement (World Bank, 2011). This is why the government and individuals invest in education. World Bank (2010) while investigating economic returns to investment in education reported that individuals are ready to spend extra period of schooling to get better jobs and earn more money with more education. For many, schooling can enhance their social mobility. The report further indicates that regions and nations raise the standards of schooling among their people because they believe this may enhance productivity, and quality of jobs and increase economic growth (GoK, 2010).

Investment in secondary education, according to World Bank (2001), as cited by Nderitu (2011), yields respectable social and private rates of return. As an example, in Sub-Saharan Africa, there are three compelling incentives for governments to fund secondary education. For starters, secondary education matters for economic growth because it provides individuals and societies with the foundational values, skill and knowledge necessary for progress. Second, attending a secondary school

can encourage young people to exhibit admirable civic and social values. Third, it gives reasonable private returns allowing youths to acquire attitudes and skills that are not likely to be developed in primary grades. This according to Nderitu (2011) enables the youth to participate fully in society, develop job-oriented skills; continue learning and take control of their own lives.

Kenya Institute of Public Policy Research and Analysis (2011) recognizes secondary school education as a very crucial bridge connecting basic education, the world of work and training. The significance of secondary school education, therefore, determines that all necessary resources must be provided to ensure access and successful completion by the level. This explains why countries are heavily investing in education. The Kenya government, for example, established the secondary school education bursary fund through an Act of parliament (GoK, 2003) to enhance access to secondary school education, completion, retention and reduction of inequalities and disparities in the provision of secondary education (GoK, 2012).

2.3 Household Education Costs

2.3.1 Direct Costs of Education

Investment in education involves incurring both indirect and direct costs. The direct costs refer to the actual expenditures of learning such as school fees, cost of meals and accommodation, and textbooks among others. They are the costs incurred by individuals and families while investing in education. According to Akaguri (2011), they are called household educational costs. Households incur when their child/ children enroll in school. They are reflected in the fee structure. While indirect costs

are the foregone earnings also known as opportunity costs (Akaguri, 2011). Globally, the cost impedes societies with households possessing low economic power. Even in societies where faith-affiliated donors absorb the direct costs, some levies still act as an obstacle to very poor households (https: //googleweblight.com).

i. Boarding fee (Accommodation and meals)

Ogola, Nyerere & Njihia (2021) while studying the effect of private education costs on retention in public schools in Homa Bay notes that boarding cost is utilized in the purchase and maintenance of boarding facilities like beds and the purchase of disinfectants. The study discovered that boarding cost and the cost of lunch affect the retention of students. The study concludes that private costs of education affect the retention of students. The study considered the costs of boarding and lunch using a descriptive survey design thus paved way for this study to establish the quantity of more costs and elaborate in detail on their effects on student transition and retention using the convergent parallel mixed approach.

In a study on the effectiveness of private-public collaboration Amjad & Macleon (2014) sought to establish if the number of school fees correlates with student achievement. The study found out that even though boarding schools are expensive, they outperform day schools. The underlying reason is that students in boarding schools enjoy extra hours of tuition over those in day secondary schools. Also, students in boarding schools tend to excel especially in English because their mode of communication is controlled and limited to mostly English as their mother tongue is not allowed. The study concludes that there are concerns about the performance gaps in different categories of schools. It recommends to the government seek ways

to enhance efficacy and efficiency in schools other than financial support. The study did not look at costs incurred in boarding schools and hence neglected their possible effects on students' participation. The present research fills this gap.

Ahmed (2011) in a review on access to education in Bangladesh focussed on the effects of the school meals program on enrolment rates in pre-schools. The study noted that a year after the government of Bangladesh started a school meals program in food insecure communities, student enrolment rose by 14.2 percent and their attendance rose by 1.34 percent within a month. Conversely, dropouts were reduced by 7.5 percent in schools with the feeding programme. It was then concluded that there is a high correlation between school meals and enrolment rates. The study recommended the government to re-direct more resources to the food program to guarantee the retention of learners in school. It is also recommended for a study determine dropout patterns in primary and secondary schools. The study was in preschools paving way for replication in secondary schools. The said study only focussed on school meals versus enrolment rates. It did not establish whether school meals had any effect on the transition and retention rate of students. Again, the study did not consider the costs involved. This allowed the current study to fill the gap.

Alderma, Behrman, Lary and Menon (2010) while analysing the influence of the food programme for learners in refugee settlements in Northern Uganda had the main objective to assess the impact of the World Food Programme's School feeding on attendance. The study discovered that the programme generated an 8.9 percent increase in enrolment. They also found that the programme positively impacted attendance and minimized class repetition. At any rate, the study noted that the

programme never affected progression and transition to secondary schools because meals induced hungry children to delay completing primary school. The study looked at free food programmes in primary schooling and did not mention whether the programme increased retention rates thus creating a possible gap for the current study to deal with school meals paid by parents /guardians in boarding schools and assess the effect of their cost on student retention and transition.

The Kenyan government started providing free secondary education to all students in the country in January 2008 by waiving tuition costs totaling Kshs. 10,265 per year, as reported by Mutegi's (2015) research on the unit price of education and its impact on student enrollment rates in high schools in the Tharaka South sub-county. Parents on the other hand were to pay for requirements such as uniforms, lunch, boarding fees, transport, and construction of dormitories, classrooms and purchase of school buses. The key objective was to examine the effects of the average household expenditure on student enrolment. The study demonstrated that a child is unlikely to enroll if the expenditure exceeds the government expenditure. The study used the census to access study samples while the current study utilized proportionate random sampling and purposive sampling procedures.

Ohba (2009) in a study to find out whether free education support poor students to get entry, a study done in rural Kenya concurs with Mutegi (2015) by noting that despite the struggle by the government, the cost of schooling even now is enormous since schools charge levies for boarding equipment, school buildings, lunch, school uniform, sports uniform, textbooks, stationery and pocket money which households have to shoulder. Furthermore, in households where parents cannot afford these

costs children are unlikely to access secondary education. The two studies did not quantify how much parents/guardians pay for the mentioned requirements. Likewise, the studies were done in rural Kenya paving way for this study to be done in both rural and urban settings.

ii. Activity Fee

Activity fees in this study refer to the cost allocated for involvement in non-academic activities. They include and not limited to ball games, athletics, drama, music festivals and contests. Literature indicates that active participation in co-curricular activities among students has a positive effect on their health and participation in education in terms of transition and retention in school. Nora (2016) in a study on discrimination against minority students found out that co-curricular activities engage learners in health interactions which boost their retention in school and improve school completion. Similarly, Yilzid (2016) while looking at the role of co-curricular activities in promoting the academic achievement of English in Iraq universities established that, co-curricular activities execute an outstanding role in the total well-being of an individual being. The study notes that co-curricular activities not only help students to develop physically but also socially and mentally. That students acquire and develop competence in communication and interaction. Thus it concludes that co-curricular activities are key in laying the foundation for language acquisition and development. The study recommends thorough engagement of students in co-curricular activities to enhance their intellectual, academic, moral and social development. The two studies did not consider the activity fee involved and whether it affects students' participation. This was done by this study.

Gasson, Pratt, Smith & Calder (2016) carried out a study on the cost impact on children's involvement in school-based experiences in New Zealand. The main objective was to establish how costs influence students' participation in school-based activities. The study showed that although the students were not sent home for activity fees, parents felt that lack of payment would prevent their children from enjoying the ultimate gains while in school. It could also expose their children to intimidation and bullying. Activity fees cover participation in co-curricular activities such as music, drama and trips in addition to sports and athletics which are offered in school.

Using exploratory research design, the study involved parents as the respondents and found out that children from low economic status families were disadvantaged by the incapability of their parents to pay school levies. It also found out that parents struggled to pay for school fees because they feel that their inability or failure to pay affected their relationship with the school administration and management which may as well make it difficult for them to air their views in other crucial areas. The study concluded that costs excluded students from full participation in educational experiences and socialization. It recommended another research to investigate the influence of the costs of scholastic activities on academic achievements. The study explored how costs affect students' participation in school-based activities. This study probed the impact of educational prices on the transition and retention rates of students. This study involved principals and parents, unlike Gasson who contacted parents only. Parallel Mixed methods, which allow for the simultaneous gathering and analysis of qualitative and quantitative data, were also used in the present investigation (Gasson *et a*l, 2016).

Ouma (2016) while studying boy-child education in Kenya had the key objective to advance the challenges affecting the retention of boys in school. The findings showed that poor engagement of learners in co-curricular activities pushes them into indiscipline acts in school. The study added that idleness after school lessons drive learners into unbecoming behavior which may push them out of school. The study recommended schools give much attention to co-curricular activities to tame good discipline among students and thus enhance their participation. The study elaborated on the importance and usefulness of co-curricular activities at school. However, it did not consider the costs attached to these activities. Neither did the study establish whether activity fees affect the retention and transition of students who may not afford to pay the fees.

The factors that prevent boys in Mathioya County, Kenya, from continuing their education past the fourth grade were uncovered by the research of Njuguna and Muchanje (2019). The study applied a descriptive approach and found that male students are still being lost to the educational system despite the availability of Free Day Secondary Education. In accordance with the results, school dropout is still a problem, especially among males. It suggests that the government and education stakeholders work together to educate communities about the importance of ensuring gender equality in educational opportunities. The research centered on the idea that, providing secondary school boys with free school lunches would increase their likelihood of staying in school. Because of this, researchers were able to investigate how tuition and other school-related expenses affect students' ability to make a smooth transition and stay enrolled.

iii. Parents Teacher's Association fund (PTA fund)

A PTA is an official group of parents and educators working together to increase parental involvement in the classroom. Donations to the PTA kitty are discussed and approved at the yearly meeting of parents and teachers. It's currently called the Parents Association Fund (PA fund). School construction and maintenance are supported by these levies, which cover the cost of RM&I (Repairs, Maintenance, and Improvements). The fund also factor in the costs of remedial classes, motivation fees and Parents Association/Board of Management teachers' salaries (Kingori, 2015).

The United States Parents Teachers Association's purpose statement and mission seek to uplift the well-being of the child in the community, at school and at home. Nigeria identifies the association as a crucial partner in making sure that the society backs the state government to make sure that every child in Nigeria attains quality education through prompt payment of levies (Maryam, 2011).

Laboke (2011) noted that there exist countless sources of financing education in Ghana where parents are encouraged to provide support to schools by paying levies to run specific costs of education. The author did not specify the kind of costs paid by the parents. Similarly, the author did not correlate the levies to student participation thus it paved the way for the current study to do so. Verspoor (2011) posits that Parents Teachers Association levies are influential in the supply of facilities in schools to facilitate teaching and learning to occur. Mbugua (2011) concurs with this study holding that PTA funds were used in developing school physical facilities. The two studies remained silent on the effect of PTA levies on student participation hence paving the way for the current study to do so.

When considering the factors that influence the educational opportunities for boys and girls, Dean (2016) emphasised the importance of accessible and adequate school infrastructure with sufficient instructional materials. The study as well found that good and well-maintained infrastructure such as classrooms attract students to remain in school thus enhancing their retention and transition. The study also noted that teachers' gender matters in education. That both boys and girls need role models as they pursue their education. The study concludes that both human resources and the physical infrastructure have a role in the provision of education. The research provides suggestions for improving the quality and accessibility of educational materials. While the study emphasised the significance of school infrastructure, it did not account for the costs of repairs, maintenance, and improvements or how those costs might affect student enrolment. The current study, therefore, filled the gap.

A study by Zyngier (2012) on the relationship between the teaching/learning process and school environment posits that the teaching and learning process relies on the entire school learning environment. It reiterates that a conducive learning environment arouses a positive attitude and interest in schooling among students. The study found that a conducive school learning environment enhances students' retention in school. It is recommended schools maintain good, supportive and conducive learning environments. In addition, it advocates for regular inspection, repairs, maintenance and improvement of school facilities and by extension the flower gardens. The study dwelled on the connection between the school learning environment and how it affects student retention. This study extended further to assess the effect of the cost of repairs, maintenance and improvement on students' retention and transition rates.

Nkinyangi (2014) argues in line with the earlier authors and indicates that, apart from the teaching/learning resources like textbooks, the status of the school's physical infrastructure/facilities affects student participation. To examine the effect of school physical resources on students' retention, the study found that, congested and poorly maintained classrooms and a shortage of teachers and textbooks significantly contribute to low student retention. The study recommended to schools and education stakeholders a regular review of the status of school facilities and resources. This implies that financial allocation for repairs, maintenance and improvement is inevitable. It also means that in case the government allocation is inadequate, the cost may be borne by the parents. This study, therefore, advanced knowledge by establishing whether this cost affects students' retention and transition in public boarding secondary schools.

Learner retention in secondary schools in Kitui county, Kenya was analysed by Mutemi (2015) to determine the impact of PTA levies. Most parents could not afford to pay the levies thus the study found that they have an effect on students' schooling. In addition, the study noted that parents who attempted to meet the costs were inconsistent in making the payments. The study concluded that costs under PTA affects retention in secondary schools as students were forced to break for home in search of fees. The study, therefore, made recommendations to the government and the school boards of management to regulate the costs charged by schools for parents to afford and in turn boost the retention of students. This study opted for a convergent parallel mixed method design, which allowed the investigator to seek convergence on the two types of data mined.

Ngina (2009) on the effects of hidden educational costs in public primary schools in Marafa Division, Malindi had the key objective to evaluate the effects of hidden education costs in public primary schools. The study discovered that despite the government's dedication to Free Primary Education, there were levies attached to school going which all parents could not cope with. She noted that the costs curtailed the participation of learners in public primary schools. The study concluded that hidden costs affect student participation in primary schools. It proposed that the government and school administration find funds to subsidise the hidden costs. The study was conducted in elementary schools, necessitating a similar study in high schools. In addition, the study did not examine the direct expenses.

2.3.2 Hidden Costs of education

Hidden costs of education in this study refer to costs not reflected in the gazetted fees structure but are paid by households taking children through education. They are; the costs of admission/entry requirements, school uniforms costs, the cost of personal effects, motivation fees, and the cost of BOM teachers' salaries among others.

i. Admission/ Entry requirements

Compulsory admission/entry requirements refer to all the items that a learning institution demands during the entry of students to school. They are availed by new students during admission /entry and re-entry to the school. Continuing students must always have them because they are fundamental for a smooth teaching and learning procedure. They are regularly checked by respective teachers at the beginning of the year, term and sometimes during class lessons. They include

mathematical/geometrical sets, log tables, spring files, Oxford advance dictionaries, kamusi, a ream of photocopy papers, secondary school atlases, hymn books, English and Kiswahili story books, scientific calculators, rulers, pens, Bibles, set books among others (Abuya *et al,* 2018).

According to Etyang (2021) in the Star Newspaper, parents in some schools spent up to Ksh. 100,000 during form one admission The newspaper notes that apart from fee payment, parents are supposed to pay an extra Ksh. 20,000 for bedding and uniforms which are issued in school. Stationery, set books, story books, supplementary books. Pens, mathematical tables, Geometrical sets and Personal effects, The Star also noted that some schools do not accept the use of metallic boxes. Each student is required to carry his or her items in a lockable suitcase. This overburdens the parents with costs thus knocking out students from poor families. This paper sheds light on the requirements during admission of students in secondary schools without discussing whether they have any effect on students' participation. This study then established how much parents paid for activities. It also sought to establish their effect on students' transition and retention rates (Etyang, 2021).

In Tanzania, Chimombo (2010) in a study on Education and Poverty had the objective to establish the contributing factors for student dropouts using a descriptive method. The research findings indicates that unbearable costs and high poverty levels were the key factors contributing to student dropouts. The findings concur with Ouma (2010) that schools demanded students to report to school on admission with a list of items such as Scientific calculators, spring files, textbooks

and supplementary readers. These items increased the cost burden on parents. The study revealed that additional costs were a challenge to the majority of poor households. The parents/guardians were left with the option to choose whom to remain at school and whom to drop off and source funds for the family. The study concluded that high costs derail schooling among students from low-income households. Since this is the case, the research suggested education policies that would work to eliminate these shady expenses. Descriptive research methods were used for this investigation. The current investigation combined quantitative and qualitative methods in a convergent parallel mixed methodology.

According to Ouma (2016), studying boys' education in Kenya aimed at establishing the role of parents in ensuring boy-child retention in school. The study shows that the parents'/guardians role goes beyond just taking children to school. It includes paying school fees and providing for all the requirements listed by the school. The study also disclosed that parents taking their young ones to boarding schools are required to provide for students' personal effects which include, toothbrushes and toothpaste, bathing towels, soaps, shoe polish and shoe brushes among other items. The study concluded that student retention in school is determined by learner engagement at school as well as parental engagement in supporting the learner. The study recommended to schools diversify their sources of funding to cushion students whose parents are poor and risk dropping out of school. However, it did not correlate the cost of providing personal effects with student retention in school which this study explored.

ii. School uniform

School uniforms are standardised attire worn in an educational institution. This is common mostly at primary and secondary levels. Uniforms make a school's dress code. The government of Kenya (2004) notes that uniform puts all students in one level. Nevertheless, those who do not have feel discriminated and inferior hence affecting their participation. In spite of this, the policy of school uniforms causes some families, primarily from low-income backgrounds, to pull out their children from school because of the absence of school uniforms (World Bank,2014).

Research conducted by Gentile and Imberman (2015) found that wearing school uniforms had no significant impact on students' grades in American high schools. The study utilized a correlational study and found that school uniforms contributed to high test scores and high student retention. The study concludes that school uniforms motivate and encourage students to stay in school thus improving their academic excellence. This implies that lack of school uniform may negatively affect student retention and subsequently lower their transition to the subsequent grades. Therefore, the purpose of this mixed-methods research was to ascertain whether or not the expense of purchasing school uniforms has an impact on students' likelihood of dropping out of or transferring to a public boarding secondary school.

World Bank (2011) argues that even if several nations in Sub-Saharan Africa have removed school levies, major costs remained. They encompass the cost of purchasing uniforms. The study posits that students are unlikely to be sent home for failing to put on the school uniforms. Instead, the students are stigmatised by the failure to put on the school attire. While explaining the high price of school

uniforms, Hanna, Flora, Max, and Beth (2012) noted that the United Kingdom's Fair Trade Office had notified school administrators to re-evaluate their uniform procurement policies. The office advised that in the decree to dissolve cases of abject poverty and the effect it has on education, payments for uniforms and meals should be lowered. However, they did not elaborate on the extent the costs affect student participation. The current study established the effects and provided estimated costs charged.

World Bank Report (2011) as quoted by Tuwei (2013) posits that countries within Sub-Saharan Africa have initiated steps with regard to achieving Universal Primary Education through the elimination of school fees. However, he noted that significant levies such as the cost of school uniforms remained. Further, he posits that governments and non-governmental organizations had strived to overcome the cost barrier through subsidized or free uniforms for students. The report showed that the initiative led to increased enrolment, but it failed to comment on transition and retention rates. The study used a descriptive design to engaged teachers and students using questionnaires while the current study used a Mixed Method Design. It involved principals and parents.

A study in Ghana by UNESCO (2013) on household costs for education focused on how much families contribute to education, how education costs influence the family decision regarding schooling and the measures that are taken to reduce expenditure. The main aim of the study was to examine how much of the effect the rising tuition rates have on families. The study findings showed that there were still school-aged children not going to school or leaving school prematurely. Likewise,

most children out of school are from poor households and ethnic minorities (UNESCO, 2013). The study looked at the burden of educational costs for parents and evaluated the impact on the decision regarding primary schooling in Ghana. However, it failed to consider how household education costs affect student participation, particularly in secondary schooling. This study looked at specific household costs and established their effect on student participation in Kenya.

In Uganda and Ethiopia, research by World Bank (2005) shows that parents who were unable to purchase uniforms could not take their children to school thus affecting participation. Researchers Kremer and Ngatha (2008) discovered that free uniform lottery in Busia Sub-county, Kenya, improved school attendance by removing financial barriers to participation for low-income pupils. Tuwei (2013), who studied hidden expenses and student mobility in Kenya's Nandi County's secondary institutions, noted this finding. The study assessed the impact of the cost of uniform on the transition rate of students. The study found that the student transition rate was low due to repetition and payment of extra levies. The study recommended that the fee guidelines should be regularly reviewed to accommodate inflation and dynamic economic trends. Since the two studies were done before the 2014 and 2018 fees guideline review, the current study provided results for comparison. The two studies were done in Nandi and Busia counties paving way for this study to be replicated in Uasin Gishu county for comparison.

The objective of Mutegi's (2015) study on the unit cost and its effect on enrollment rates in public secondary schools in Tharaka South, Kenya, was to find out the effect of mean household spending on student enrollment. The study found that girls'

uniforms cost higher than boys' uniforms, and a student is unlikely to enroll in school if the family spending is higher than the government budget. It was also pointed out that boarding students have to pay more for their uniform than day students do. The study suggested that costs for girls' school uniforms ought to be subsidized. The study concentrated on unit costs versus student enrolment rates hence paving way for this study to pursue how household education costs affect student transition and retention rates.

A research study by Ayodo & Too (2010) on the costs of education in Kenya, rising beyond reach had the objective to determine the costs of education in Kenya based on fee charges in some selected national and extra county schools. The study found that students in these schools have not benefited from subsidized education because most schools in these categories charge as high as 50,000 Kenya shillings and miss to account for the expenditure of the allocated amount of 10,265 shillings. In addition, they found that many day schools as well have ignored the government directive that students in public days schools learn for free. The report suggested that the price structure for public secondary schools should be consistently examined to offset the effects of fluctuating inflation rates and economic changes. The said study used questionnaires only for data collection and employed a descriptive research design. In addition to questionnaires, the researcher conducted scheduled interviews, analysed supporting documents, and used a mixed-methods design for this particular study.

The focus of Misheck's (2013) research on low transition to secondary level and, more crucially, why children drop out of school was on the determinants of students'

access to and participation in secondary education in Meru, Kenya. Questions were asked and interviews were administered with the help of a guide. The study used a descriptive survey approach, and its findings pointed to the extravagant cost of secondary education as the primary rationale for low rates of enrolment and graduation. The author advocated for government funding of post-secondary education. While the study did consider the overall costs of education, it did not separate out the costs for individual households.

iii. Students' Personal Effects

Students' personal effects are those items that a student requires for his/her personal use. They are; towels, soaps, oils, toothbrushes, toothpaste, washing/ bathing buckets, tissues, shoe polish, combs, shoe brushes and sanitary pads/ towels for the girls. Literature indicates that these items are very crucial and hence play a key role as far as the transition and retention of students are concerned.

Chege (2009) while studying on empowerment and education of girls against gender-based violence indicates that sanitary towels for girls determine their comfort in school. The study revealed that a lack of sanitary towels affects students' participation in school because girls tend to feel embarrassed when they stain their clothes. Thus, they opt to stay away from school until the period is over. Towels are provided for students as part of the affirmative action programme, according to the study, which was funded by the federal government, county governments, and the Ministry of Education. The study cites slow and erratic supply to schools as the problem. A greater proportion of students from low-income families were impacted, the study found. Personal effects such as sanitary towels were the focus of the study.

Furthermore, it did not quantify the cost of purchasing sanitary towels. This study considered other personal effects, and their attached costs and established their effects on both students' rates of transition and retention. The study used a descriptive approach while the current study will utilize a mixed methods design. The study recommended to the government collaborate with financial partners and donors to ensure adequate and regular supplies to schools. This will save the girl-child from dropping out of school and hence improve students' participation.

Ouma (2016) while examining the boy-child education in Kenya over the last fifty years indicates that the parents' role goes beyond sending children to school. It encompasses paying school fees and providing for all the requirements listed by the school. The study also showed that parents taking their children to boarding schools are required to provide for personal effects which include; toothbrush and toothpaste, oils, and soap. Towels, shoe polish and brush among others. The study recommended to schools diversify their sources of funding to cushion students whose parents are poor and hence may drop out of school.

Ngwacho (2015) looked at how free secondary school at public boarding schools in Kisii county affected students' chances of finishing school and getting a job. The primary objective was to find out what the hidden costs are and how much they affect the rates of students switching schools and finishing high school. The type of research used was correlational. Principals of boarding secondary schools, class teachers and Parents Association representatives were involved as study respondents. The study established that apart from motivation fees and remedial fees, parents also incur costs on students' personal effects and pocket money. The

study indicated that these costs were necessary for a smooth transition of students. In conclusion, the study holds that Free Secondary Education program only reduced the cost burden. Otherwise, guardians/parents still pay for the hidden cost. The study recommends schools reduce the hidden costs of education they charge. Convergent parallel mixed methods were used in the present investigation to account for both overt and covert financial investments in higher education that affect student retention and progression.

iv. Motivation fee

According to Mutegi (2015), a motivation fee is money that parents pay towards prize-giving days, teachers' trips and remedial classes. He noted that schools utilize the same fee to appreciate teachers and students whenever national exam results are out. The study termed motivation as an engine that strives to stimulate an individual to bring out their best. This is the reason why schools push for payments through the parents. However, the study found out that the motivation fee is only useful when it is paid on time and in full according to laid budgets and schedules. Again, the study alludes that, the amount the government allocates to each student is too small to run all school programs and sustain the student in school. The study, thus, recommends the national government to increase capitations channeled to schools. The study failed to establish if the cost of motivation in secondary schools affects students' participation hence the current study did.

Mutegi, Muriithi & Wanjala (2017) in another study on Education policies in Kenya sought to find out whether education promotes equity in public secondary schools. The research study discovered that parents with girls in secondary schools incur

higher motivational fees than those with boys. Again, the study noted that the fee rise with the class level. This implies that those in form four pay more than those in form one. The study found that a disparity exists between government subsidies and school needs. That the needs are higher than the government provisions. It, therefore, concluded that the government allocations are insufficient. The report proposed to the government to re-evaluate their funding in order to improve its effectiveness. The study does not mention how these costs might affect student participation, though. This research addressed a previous knowledge gap.

Tuwei's (2013) study of high schools in Nandi County aimed to determine how much of an influence school uniform and PTA levy charges have on students' ability to proceed on to the next grade. The study used a descriptive survey method and found that students' payment of a motivation fee contributed to the total cost of attendance. Furthermore, despite the fact that the government paid for their education through Free Day Secondary Education, students who could not afford the additional levies were sent home by schools. The study did not engage parents and the principals of the sampled schools. It also concentrated on transition as an indicator of participation. Therefore, a mixed methods approach was taken in this study to determine whether or not student transition and retention rates were affected by the financial burden placed on families. It involved parents and principals who were the key respondents to verify and triangulate the findings.

v. Board of Management teachers' salary

Board of Management teachers' salary according to Nyamwembe (2020) refer to the remuneration given to the teachers employed under the Board of Management

terms. Board of Management teachers therefore, are the teaching staff employed and paid by the school management so as to curb staffing shortages or to solve subject specialization imbalances in secondary schools. Nyamwembe (2020) notes that the Ministry of Education regulations have been provided to guide on the payment of teachers employed by the school boards. The paper looked into the specified qualifications required during the recruitment and the amount of salary to be paid every month. The findings showed that the Board of Management employ both the teaching and the support staff. Again, it emerged that BoM employees earn a uniform pay of Ksh 10,000. The author recommends the Ministry to review the guidelines and hence the salaries proposed. The author was too general and remained silent on whether parents contributed part of the salaries and whether it has any effect on the participation of students in public boarding schools. The current study filled the gap by establishing the effect of the costs involved on students participation.

Mbii, Magoma & Waweru (2020) while reviewing on the constitution and the role of the Boards of Management of schools in Kenya noted that, the member are nominated based on the guidelines provided by the Basic Education Act of 2013. The study found out that schools violate the guidelines during the appointments of the Board of Management members thus leading to inefficiency in discharging their roles. The findings also showed that the appointed board members are hardly trained as required by the policy. In conclusion, the study opines that, not all the schools management boards adhere to the guidelines and at the same time, men are favored by the gender rule in most of the secondary schools. The study made recommendations to schools to ensure that the board composition matches the

specification spelled out in the policy. Likewise, it recommends that boards of schools should be trained to enable them interpret the policy well. The study failed to bring out the cost of paying the BoM teachers, the source of funds and whether the cost affect students' participation or not. The current study utilized the opportunity and found out that costs met by households which include the cost of BoM teacher's salary negatively affect participation of learners in public boarding secondary schools

Munyasia (2017) undertook a study on the Board of management teachers' wages and education quality purported to evaluate the BoM teachers' wages and their impact on the attributes of education in Gem Sub –County. The overall objectives were to find out the amount payable to teachers, their influence on the quality of education offered and the relationship b that exist between academic performance and BoM teachers' salaries. Using the descriptive research methods, the study found out that schools in Gem sub-county spent enormous amounts of money on board of management teachers, that a surge in the wages led to a surge in fees charged by schools. Again, the study discovered that high teachers' pay enhanced students performance in academics. It was deduced that the wages of BoM teachers distort the allocation of funds to various vote heads and subsequently affect the instruction processes. The study advanced to the government to wholly meet the wages for the Board of Management teachers. However, the study did not establish whether the wages had any effect on students' participation hence this study bridged the gap.

2.4 Strategies to Enhance Student Participation in Public Secondary School Education

According to UNESCO (2014), many countries have engaged themselves in not only the attainment of Universal Primary Education but also many years of secondary education in their targets (UNESCO,2014) Worldwide, Eighty- two percent of school-going children are either in primary or secondary schools dropping to seventy percent in strained income countries. The UNESCO's (2014) study on household costs for education noted that secondary education schooling is always very expensive and therefore unaffordable for families. Further, they noted that challenges to school attendance at the second tier are enormous. Based on this note, the current study examined these barriers.

World Bank (2004) while analysing the correlation between the distance to secondary and primary schools in low-income countries maintains that in Ghana, shortening the distance to a school by at least a mile increases the chance of sending children to school by 104 percentage points. The study is silent about secondary schools. This study looked at the distance to school as a factor affecting school enrolment but did not look at other factors like household costs. The current study targeted public secondary schools and established the extent to which household education costs affect student participation.

A study by Akaguri (2011) on determining how the various factors affect demand for schooling found that reduced private demand for education resulted from religious, ideological and cultural beliefs which impact negatively the schooling of girls and certain particular groups. The study recommended the government intervene through

feeding programmes, bursaries and vouchers. This study dwelled mostly on primary education and less on secondary. In addition, it centred solely on the need for schooling, whereas the present investigation was concerned with the financial burden placed on families and the number of students who attended public boarding schools.

A study on education financing and its challenges by Njeru and Orodho (2003) posit that a bursary fund was initiated to support and cushion the vulnerable and the poor against the impact of the ever-rising costs of secondary education. Insufficient guidelines on the amount to be allocated, skewed selection criteria for those truly in need, lack of awareness of the existence of the scheme, limited funds, poor co-ordination, and inefficient monitoring by the Ministry of Education, Science, and Technology all contributed to the scheme's inefficiency and ineffectiveness, the study found. The authors also identified critical problems that must be fixed, such as giving financial aid to people who don't need it. Lack of honesty and transparency are among the management problems highlighted by this report. This research seeks to identify interventions that can change this trend and boost students' engagement in their secondary education.

The Ministry of Education, Science and Technology (2012) maintains that, despite the efforts, expanding the provision of education for all is a major obstacle due to inadequate infrastructure, imposition of levies, opportunity costs, the perceived irrelevance of curriculum and the disparity between acquired skills and the requirements of the world of work. According to MoEST, this scenario discourages parents from taking their children to school. This study was reluctant in determining

the expenditures incurred by virtue of the imposition of levies by schools. It also covered Kenya at large. This study established the costs incurred by households. Unlike the previous study, it narrowed down to Uasin Gishu County only.

2.5 Summary of the Literature Reviewed

Literature indicated that investment in education involves incurring both the social and private costs which could either be direct, indirect, or hidden costs. Educational costs are incurred both by the public and households or individuals. Studies looked at the burden of educational costs for parents and evaluated the impact on the decisions for schooling hence paving the way for the current study to investigate the effects of these costs on the participation of students.

Some examined studies indicated that secondary schooling costs were expensive and unaffordable for families. Further, they noted that barriers to school attendance, retention, completion and transition are enormous thus paving way for the current study to explore household education costs and determine the extent to which they affect student participation in terms of transition and retention rates. Most studies looked at the costs of education in general and acknowledged the fact that they influence student participation. However, they have failed to give the proportion of effect of household education costs on participation.

Most reviewed studies like those of Mutemi (2015), Tuwei (2013), Misheck (2013) and Mutegi (2015) were done in public day secondary schools, consequently, this study created an opportunity for comparison. None of the studies mentioned above were done in boarding secondary schools. In day secondary schools, students learn and return home later in the day. This implies that they will not be required to pay

for boarding fees which form the bulk of fees in boarding schools. The fee caters to accommodation and meals. However, students in day secondary schools pay for meals but it will be lower than the payment in boarding schools, This is because students in day schools may take meals once a day. In boarding schools, meals are taken up to four times a day. This is because the meals include breakfast, lunch, supper and snacks in between the meals.

Similar studies such as those of Alderma, *et al* (2010) and Ngina (2009) were done in primary schools hence the need for replication in secondary schools. Furthermore, similar studies are limited in Uasin Gishu county because most of the studies have been done in other regions hence the need for more studies. Studies by Laboke (2011) and Mwikya, Cheloti and Mulwa (2019) notes that there are levies paid by parents to support school programs but did not specify nor quantify these levies. Furthermore, they did not correlate them with students' participation to establish their effects which the current study did. Educators, policymakers, and planners will all benefit greatly from the study findings.

The current study was able to take place in both rural and urban Kenya because of the extensive prior research conducted in the former. The availability of healthy, affordable food in rural schools is a major advantage. This implies that the cost of meals may be cheaper in contrast to the costs paid by schools in the urban setting. The cost of transporting foodstuff may differ in the two settings because of the distance traveled to the source. The Source of fuel in rural areas may be cheaper than in urban places because of the availability of firewood or biogas. Labour in rural areas may be cheap and available as well. This clearly illustrates that carrying

out a study involving costs may yield diverse results in the two settings. This implies that the study findings from one setting may not be generalized to the other setting. This study therefore incorporated schools from both the rural and urban settings for précised conclusions.

Most studies like Ogola et al (2021), Njuguna & Muchanje (2019), Ayodo & Too (2010), Chimombo (2010) and Mutegi (2017) used descriptive survey designs. Ngwacho (2015), and Gentile & Imberman (2015) adopted a correlational design while this study utilized a convergent mixed methods design. Studies that use mixed methods designs and especially the Convergent Parallel Mixed Methods designs have more advantages over the studies that utilize descriptive survey designs. This is because the researcher can collect both the qualitative and quantitative data, analyzes and triangulates them using the convergent parallel mixed methods design. This layout eliminates any potential for bias in the research process as well. As such, future researchers can use this study as a reference point.

This study established the effect of educational costs on students' participation, building on previous research by Ahmed (2011) and Mutegi (2015) that examined the impact of tuition on students' grades and enrollment (both transition and retention rates). In addition, there was inconsistency between studies' results. As a result, academics are at a fork in the road. The current study filled the void by conducting an extensive investigation into the impact of student participation on household educational costs through the use of qualitative and quantitative data assembled through interviews and questionnaires. The Educational Production Function model's inclusion helped clarify the interplay of study variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology of the study. It includes research design, locale, the target population, sample size and sampling techniques, research instruments, piloting, data collection procedure, data analysis, and ethical and logistical consideration.

3.2 Research Design

A research design according to Podsakoff, MacKenzie & Padsackoff (2012), refers to a set of procedures and methods utilized during the collection and analysis of variables spelled out by the problem under research. This study utilized a Mixed Methods Design. To be precise, it used the Convergent Parallel Mixed Methods Approach which is one of the types of Mixed Methods Designs. Creswell (2014) posits that the Convergent Parallel Mixed Methods Approach is suitable for studies which collect w both qualitative and quantitative data. Creswell describes this design as one which minimizes weaknesses and bias within data through the collection of both types of data. In addition, he maintains that the design allows the experimenter to merge the two kinds of data, probe further and give a detailed analysis of the problem under research. This he said leads to an insightful understanding of the problem under research (Creswell, 2014).

Specifically, a three-step method was used to process data in this investigation; First, both quantitative and qualitative data were simultaneously collected and analyzed separately. Step two involved merging and comparing the two sets of results to

establish their convergence and divergence. In step three, interpretation of the findings was done and explained. A summary of the steps is shown in Figure 3.1.

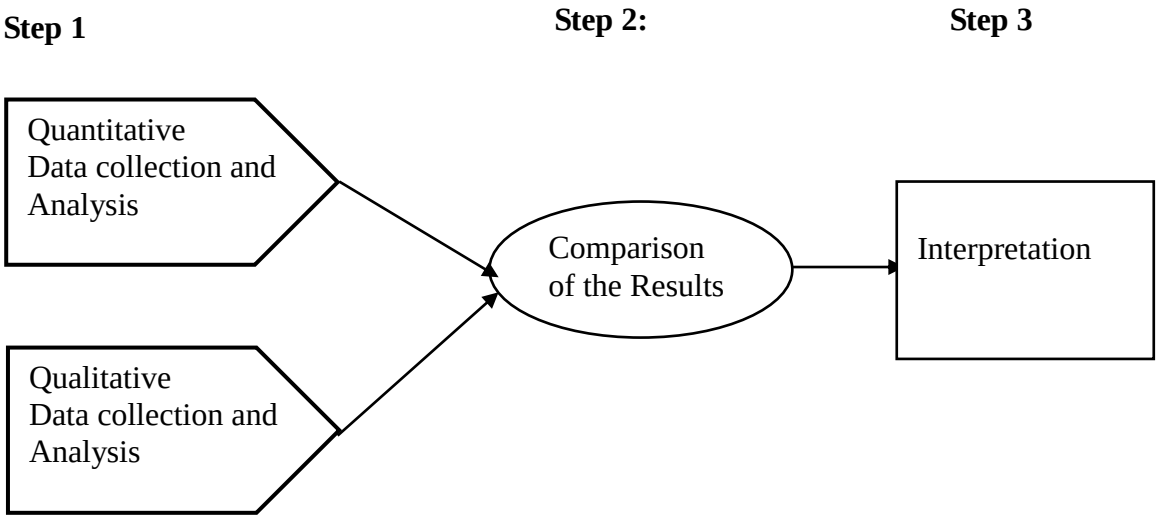

Figure 3.1: Steps of the Convergent Parallel Mixed Methods Design

The researcher was able to integrate, triangulate and merge both the quantitative and qualitative data to elaborate on the effects of household educational costs on students' engagement, making this study a good fit for a Convergent Parallel Mixed Methods design. It also warranted the researcher to use one type of data to validate the other. Finally, in this design, the two sets of data were treated equally.

3.3 Variables

The study handled both the independent and the dependent variables. The independent variables were the household education costs while the dependent variable was student participation. The independent variables covered both the direct and hidden costs. They included the boarding fee, cost of meals, cost of school uniform, activity fee, motivation fee, expenses on personal effects, admission requirements, salaries for BoM teachers and PTA fund. The dependent variable

(student participation) was represented by the indicators, transition and retention rates. The intervening variables (indirect/opportunity costs and policy) which may as well affect students participation were not included in the study due to time factor and the complexity involved.

3.4 Location of the Study

This study was done in Uasin Gishu County, Kenya. Uasin Gishu is among the forty-seven (47) Counties in Kenya. It comprises six Sub-Counties; Kapseret, Ainobkoi, Kesses, Moiben, Turbo and Soy.. It is situated between longitudes 34 degrees 50'east and 35 degrees 37' west and latitudes 0’ degrees 03’ south and 0 degrees 55’ north. The county borders the following counties; Elgeiyo Marakwet to the east, Baringo to the southeast, Nandi to the southwest, Trans-Nzoia to the North, Kakamega to the North West and lastly Kericho in the south. It has a coverage of 3,345. 2 Sq Km. (UGCIDP 2019 -2021).

Uasin Gishu County is a plateau that ranges from 2700 meters to 1500 meters above sea level. It receives high and reliable well-distributed rainfall throughout the year. The soils comprise brown loam soils and brown clay soils. Temperatures fall between 7 and 29 degrees Celsius. This state is ideal for livestock keeping, fish and crop farming. The Census of 2009 indicates that Uasin Gishu County holds a population of 894,179 with a 3.8% growth rate (Uasin Gishu County Integrated Development Plan 2019-2021). In terms of education, the county has 761 primary schools, 181 secondary schools (Public-144, private 37), 2 tertiary institutions (1 National polytechnic and 1 technical Institute and four (4) universities (2 Public, 2 private). However, there are several other private middle-level colleges and university colleges operating within the county (UGCIDP 2019-2021).

Uasin Gishu County is among Kenya's forty-seven counties receiving a government subsidy of Ksh 22,244 per student per year. This amount is not sufficient as indicated by literature and may affect student participation. The study took place in Uasin Gishu county because records indicate that the county has issues with student participation. The transition rate stands at 59.9%. While completion rate is at 82.3% compared to national rates of 83.3% and 84.2% respectively. Furthermore, evidence shows that students enroll in form one in large numbers from time to time and then the numbers reduce as they progress from one class to another towards completion at form four. This indicates that some students drop out of the school system and cannot be accounted for. Again, Uasin Gishu county possesses both rural and urban settings. This provides a good ground for research. (UGCIDP, 2019-2021).

3.5 Target Population

The study focused on the thirty-four (34) public boarding secondary schools in Uasin Gishu County. Parents and the principals were the respondents. The population comprised 34 principals of public boarding secondary schools and 3,917 parents of form 4 students in public boarding secondary schools. Principals were contacted to undertake the study due to their role in managing school fees and other levies. They are also the accounting officers in the school. Together with the Board of Management and the Parents' Association, they are involved in budgeting and allocation of vote heads at school level. They have the knowledge and experience student participation in secondary schools and the challenges surrounding fee payments. Principals are also secretaries to the school Boards of Management and Parents Associations which make decisions on household costs hence, their involvement in the study was inevitable.

The study also targeted parents in Uasin Gishu County. Parents were considered as respondents in the study because they are liable for the payment of fees and other levies charged by schools. They provided useful information concerning household costs for secondary education.

3.6 Sampling Techniques and Sample Size

3.6.1 Sampling Techniques

Creswell (2014) posits that sampling denotes a process of choosing a subset of respondents to make inferences about the entire set. Kothari and Garg (2014) maintains that sampling gives every individual component in the group an equivalent standing of becomig a participant in the study. Sampling was carried out because it is less expensive than the census, Again a sample produces information faster than a census and saves time. The County was stratified according to Sub-Counties as follows: Moiben, Turbo, Ainobkoi, Kapseret, Soy and Kesses to warrant the representativeness of the sample

Proportionate sampling was adopted to sample schools within each Sub-County. Kombo and Tromp (2009) interprets proportionate sampling to mean a method of acquiring respondents for a study when the entire population is made up of subgroups that vary in numbers. The number of participants selected for the study from each sub-group is therefore determined by the total number of the entire population. Stratified sampling was further utilized to sample schools within each sub-county in terms of gender and category thus; mixed boarding, girls boarding and boys boarding. The study used purposive sampling to include all the principals. To get a representative sample from parents, the researcher used the Yamane Simplified

formula below.

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

Where n was the sample size, N was the population size and the precision level was taken as 0.05 (Israel 2003). The parents' sample was therefore arrived at as follows:

$$n = \frac{3917}{1 + 3917(0.05)^2}$$

n = 362 Respondents

The researcher sampled parents through records of parents in each school. The researcher used form four parents to get a sample who were engaged to respond to the questionnaire items. Stratified and proportionate random sampling was employed to make sure that each sex is represented. Parents were selected by amalgamating purposive and stratified sampling based on the type of schools their children attend. Purposive sampling allowed the researcher to cautiously aim at a category of people who could be credible for the study (Kombo & Tromp, 2009).

3.6.2 Sample Size

The 34 public boarding secondary schools were utilized for the study. All 34 principals from the sample schools were constituted in the research. Out of the 3,917 form four parents, 362 of them were involved in the study. They were proportionately distributed among the six Sub-Counties by category and gender. This means that every number picked was proportionate to the overall percentage of parents in each sub-county as exhibited in Table 3.1 and Table 3;2 respectively.

Table 3.1: Sample Grid for Public Boarding Secondary Schools in Uasin Gishu County

Sub County	Boys	Girls	Mixed	Total
Kapseret	1	2	2	5
Kesses	3	3	1	7
Soy	1	3	2	6
Turbo	2	3	1	6
Ainabkoi	3	3	-	6
Moiben	3	1	-	4
Total	**13**	**15**	**6**	**34**

Source: Uasin Gishu County Education Office, 2020

Table 3.2 gives a summary of the Principals and the parents who took part in the study.

Table 3.2: Summary of Principals and Parents' Sample in Uasin Gishu County

	Principals		Parents				Total	
Sub-County	**Male**	**Female**	**Male (N)**	**Mn**	**Female(N)**	**Fn**	**N**	**N**
Kapseret	3	2	171	16	340	32	511	48
Kesses	4	3	262	24	479	44	741	68
Soy	2	4	255	24	451	42	706	66
Turbo	3	3	353	33	411	38	764	71
Ainabkoi	3	3	357	33	400	37	757	70
Moiben	3	1	337	31	101	9	438	40
Total	18	16	1735	161	2182	202	3917	362

Source: Uasin Gishu County Education Office, 2020

Key:

N – Total number of parents

n – Sample size

Mn – Male parents sample

Fn – Female parents sample

3.7 Research Instruments

For data collection, the study employed Interview schedules, Questionnaires and Document Analysis.

3.7.1 Questionnaires

The questionnaire was used to accumulate data from parents. Borg and Gall (2010) posit that a questionnaire possesses the capacity to gather enormous information within a short time. This study, therefore, utilized questionnaires for data collection in that they helped to gather elaborate information within a short time as the study covered the whole county (Creswell, 2014). McMillan & Schumacher (2006) on the other hand notes that, the use of questionnaires have greater anonymity in their responses. In addition, they maintain that a questionnaire is bias-free because the answers are in the respondents' own words.

This study used a parents' questionnaire on household education costs. The questionnaire was administered to the parents because they are directly involved in the payment of all levies charged by secondary schools. They should, therefore, be in a position to give information concerning the costs they incur for secondary education. The questionnaire was in three segments. Part A captured the background information of parents. Part B gathered data on direct costs of education and Part C contained items on hidden costs of education incurred by parents.

3.7.2 Interview Schedule

An interview guide called, Interview schedule for principals on household education costs and student participation was used to obtain data from the principals. Fraenkel, Wallen & Hyun (2012) posit that interview schedules are very useful in extensive inquiries and can lead to fairly reliable results. Data collected through an interview schedule saves time because the respondents answers exactly what is asked of them (Guthrie, 2010). Further, this method was appropriate for the study as Kothari (2004) posits that interview schedules aid in collecting standardized data from a sample. It probes into a given situation that occurs at a particular time hence it helps the researcher probe further.

The researcher administered an interview schedule to the principals because they are the key managers of schools. They take full charge of fee payment and other school levies. They are also involved in budgeting and allocation of vote heads at the school level.

3.7.3 Document Analysis Guide on Student Participation

The Guide helped to acquire secondary data on student participation in public boarding schools. The document provided data related to student retention and transition. They include the attendance registers, student progress records/reports, and admission registers. The analysis of these documents provided data for the comparison between household education costs and student participation in public boarding secondary schools.

3.8 Pre-testing/Piloting

Lancaster, Dodd and Williamson (2004) observed that pre-testing is a small experiment set to collect information ahead of a large study to improve its efficiency and quality and to test logistics. Pre-testing the questionnaire for this study was important because deficiencies, inadequate space to write the responses, ambiguities, wrong expressions and clustered questions could be detected in advance.

Before data collection, piloting was done to try out the study instruments/tools. The tools were pre-tested in a total of three (3) schools, three (3) principals from the three sampled schools, and six (6) parents. The three principals were picked using the purposive sampling technique to represent principals in all the categories of schools. The six parents on the other hand were randomly sampled from the three schools The samples selected during piloting were excluded in the real study. This is because re-involving respondents could encourage prejudice and hence skewed results. The pilot study findings indicated that some questionnaire items on the background information of the respondents were ambiguous and hence lacked clarity. Grammatical errors were also noted. The findings also showed that some probing questions in the interview guide were replicated in different versions for the same study variables.

The investigator used the findings to refine the study instruments by rephrasing the questions, correcting the grammatical errors and deleting the replications. Piloting was significant for this study because of two reasons. First, the instruments were shaped and fine-tuned for the actual study. Second, the researcher ascertained the duration required by the participants to respond to all the questionnaire items and also for the interviews.

3.8.1 Validity of the instruments

Spata (2003) maintains that validity is the magnitude to which a measuring tool assesses what it was intended to asses. Boudah (2011) states that validity is a word associated with a study that does what it claims to do. It is the scope to which explanations of the test outcomes are defensible depending on the purpose the test intends to serve. This study zeroed in on the three major forms of validity; face, construct and content validity, as espoused by Spata (2003).

i. Face Validity

Face validity refers to if the measure looks at face value, to gauge what it is set to measure (Cohen, Manion & Morrison., 2007). It is the extent that a study instrument is seen to measure the intended variables (Hall, 2005). Face validity encompasses the discernment of whether, given the theoretical clarity of the variable, the estimate truly appears in reality to measure such a variable. In this study, face validity was ascertained by the two supervisors from Kenyatta University and the researcher. They looked at items in the questionnaire and were satisfied that they were meaningful, appropriate and relevant, for the participants. This supports the assertion by Burns (2000) and Merten (2005) that face validity of an instrument is attained with the help of experts. The researcher consulted with the supervisors who helped determine the accuracy of the content used in the instrument by removing ambiguities and ensuring that items used in the instrument match the study objectives. They also provided comments, opinions, suggestions and recommendations which the researcher used to improve the instrument and enhance face validity.

ii. Construct Validity

Construct validity refers to the level to which a tool measures the characteristic or the theoretical construct that is supposed to measure (Gravetter & Forzano, 2012). It pertains to the degree to which assumptions can meaningfully be made from the application in a study to the hypothetical constructs on which that operationalization was founded. It refers to the extent to which the measure that is employed accurately measures the theoretical notion it is supposed to measure. It has to do with the operationalization of variables in terms of their reflection of the actual theoretical expression. (Cohen *et al*, 2007). In this study, to achieve construct validity clear definition of variables under the study was done. Hypotheses were formulated in tandem with the study objectives and tested by exemplifying the principle of triangulation.

iii. Content Validity

Creswell (2014) postulates that content validity involves determining whether the content of the instrument is sufficient to investigate the research objectives. To ascertain content validity the supervisors determined the accuracy of the content used in the questionnaire. They went through the items to ascertain their relevance to measuring what they intended to measure. Their comments and recommendations were input into the final data collection tool to improve the instruments. Two principals were contacted independently to review the validity of the content in the questionnaire as well as in the interview guide. They were better placed to do so because as the heads of the institution, they are in charge of all the payments made in public boarding secondary schools. They know how much is paid per vote head and are aware of the effects these costs may have on student participation. The

contacted principals, therefore, confirmed the costs incurred in public boarding secondary schools and ascertained whether the data collection instruments could assess or measure the intended variables.

The principals provided their judgments, feedback and recommendations which were well incorporated to shape the instruments. Further, to check the content validity of the interview guides, the researcher confirmed that the interview questions/items were borrowed from the reviewed literature and the feedback from the pre-testing study. The interview items concentrated on the study objectives and had prompts that permitted the respondents to interpret their responses. Finally. The respondents were given enough time to exhaust their views.

Content Validity Index (CVI) was adopted to assess the degree to which the items in the instrument were measuring concepts of costs of education and students' participation in education. Six experts from the department were asked to scale concerning its importance to the basic constructs using a 2-point ordinal scale 1=not relevant; 2= relevant. For each scale, the CVI was computed as the number of experts who rated either 1 or 2 (hence categorizing the scale as either relevant or not relevant), divided by the total number of specialists /experts. The relevance of the instrument was rated highly by five of the six judges who gave a CVI of .83, as proposed by George & Mallery (2003).

3.8.2 Reliability of the Instruments

Reliability is the ability of the measuring tool to give similar outcomes when repeated measures are taken under similar testing conditions (Spata, 2003). Boudah (2011) posits that reliability is the degree to which a study can be repeated with

similar results. The test-retest method was adopted to try out the reliability of the questionnaire to estimate the intensity to which identical results could be generated. This method was then used to repeat the measure of accuracy. The questionnaire was administered to the selected sample and scored. Two weeks later, a similar questionnaire was given to the same group of respondents.

The responses were scored again for the second time. The results for the two scores were compared. Pearson product-moment correlation coefficient formula was used to compute the two pairs of scores as indicated below:

$$r = \frac{N\sum xy - \left(\sum x\right)\left(\sum y\right)}{\sqrt{\left(N\sum x^2 - \left(\sum x\right)\right)\left(N\sum y^2 - \left(N\sum y\right)^2\right)}}$$

Where;

X is the first test,

y is the second test

N - Total number of respondents in both tests i.e., x and y (Spata, 2003).

A correlation coefficient of between 0.70 to 1 is appropriate to ascertain the reliability of the instrument for the study. Table 3.3 below show the Test-retest correlation coefficient results.

Table 3.3: Test-retest Correlation Results

Subscale	Correlation	
	R	**p-value**
Accommodation	.723	.003
School Meals	.833	.001
Activity Fee	.712	.012
Repair Maintenance and Improvement	.698	.048
School Uniforms	.785	.039
Students' Personal Effect	.707	.041
Teachers' Motivation	.817	.019
BoM Teachers' Salary	.716	.011
Admission Requirement	.812	.003
Overall Mean Correlation	.683	

Source: Survey data (2021), SPSS Analysis

Table 3.3 reveals that all the sub-scales met the desired reliability level. All the scales had significant correlation coefficients reflected when the two tests were correlated with each other. The correlation coefficient values ranged from a low of 0.698 (Repairs maintenance and improvement questionnaire) to a high of 0.833 (school meals questionnaire). These results demonstrate that the study's research instruments were credible. This is backed up by Oso and Onen (2013), who said that an instrument is reliable if it has a coefficient of at least 0.70. This means that the instrument meets an acceptable reliability standard. This indicates that the questionnaires were appropriate for data collection because they provided precise measurements of the relevant variables and allowed for repeated use with consistent results.

For the interview schedule, the researcher ensured reliability by involving the supervisors in the construction and review of the document, using simple instructions which could be understood easily by the respondents, scrutinizing the interview guide for ambiguities and errors to ensure clarity and consistency.

3.9 Data Collection Techniques

Data collection kicked off after the researcher was cleared by the Department, Graduate school and the research permit was acquired. The researcher visited the County Director of Education's office for clearance and authority to visit the sampled schools for data collection. The researcher visited the County Commissioner's office for authorization as well.

The researcher visited schools that were sampled, booked appointments with the principals and deliberated on the expectations and provisions for the study. Thereafter, the researcher visited every sampled school to individually interview the principals. On appointment and with the help of the principals, the researcher organized to distribute the questionnaires to the sampled parents who filled and returned them to the principal's office for the researcher to collect. Prior to data analysis, the secondary data was organized and utilized to augment the primary data. This helped to ascertain credible study findings.

3.10 Data Analysis and Presentation

Both the quantitative and qualitative data were collected. Quantitative data which was generated from the parent's questionnaire was recorded, cleaned, coded and analyzed using descriptive and inferential statistics. The Statistical Package for Social Sciences (SPSS) aided the whole process. Inferential statistics used were Pearson's product-moment correlation coefficient, regression coefficient and F-values. Pearson's product-moment correlation coefficient was utilized to assess the relation between variables while multiple regression helped to interpret whether the independent variable predict the dependent variable. A correlation between variables

was established to conclude. The study hypotheses were as well tested using multiple regressions at an alpha of 0.05.

Descriptive statistics, on the other hand, included the means, standard deviations and percentages which helped the researcher to make meaningful explanations of the distribution of measurements (Mugenda & Mugenda, (2003). The findings were then displayed in graphs, frequency distribution tables, and correlation matrix. Qualitative data from principal's interview guide were cleaned, analyzed thematically and presented in narrative form

3.10.1 Quantitative Data Analysis

Each objective was analyzed as follows;

Objective one

To establish the effect of direct costs of education on students transition rates in public boarding secondary schools in Uasin Gishu County, Kenya. Parents' questionnaires and principals' interview schedules provided quantitative and qualitative data for this objective. Quantitative data were analyzed by employing Pearson product moment correlation coefficient and multiple regressions and presented in the frequency distribution table.

Objective two

To determine the effects of direct education costs on student retention in public boarding secondary schools in Uasin Gishu county, Kenya. This objective generated both quantitative and qualitative data. Quantitative data were analyzed making use of the Pearson product-moment correlation coefficient and multiple regressions and presented in a correlation matrix.

Objective three

To assess the effect of hidden costs of education on the transition rate in public boarding secondary schools in Uasin Gishu County, Kenya. This objective generated quantitative data from the closed-ended questions in the questionnaire and qualitative data from open-ended questions in the interview schedule. Quantitative data were analyzed using multiple regression and Pearson's product-moment correlation coefficient and spread in frequency tables and graphs.

Objective four

To examine the effect of hidden costs of education on student retention rate in public boarding secondary schools in Uasin Gishu County, Kenya. Both quantitative and qualitative data derived from closed and open-ended items were generated. Quantitative data from the parent's questionnaire were recorded, cleaned and examined using Pearson's product-moment correlations and multiple regression with the help of the SPSS programme which generated standard deviations and means which were presented in frequency tables.

3.10.2 Qualitative Data Analysis

Qualitative data collected through interviews with the principals were thematically analyzed following the Braun & Clarke's steps (2006) as shown Figure 3.2.

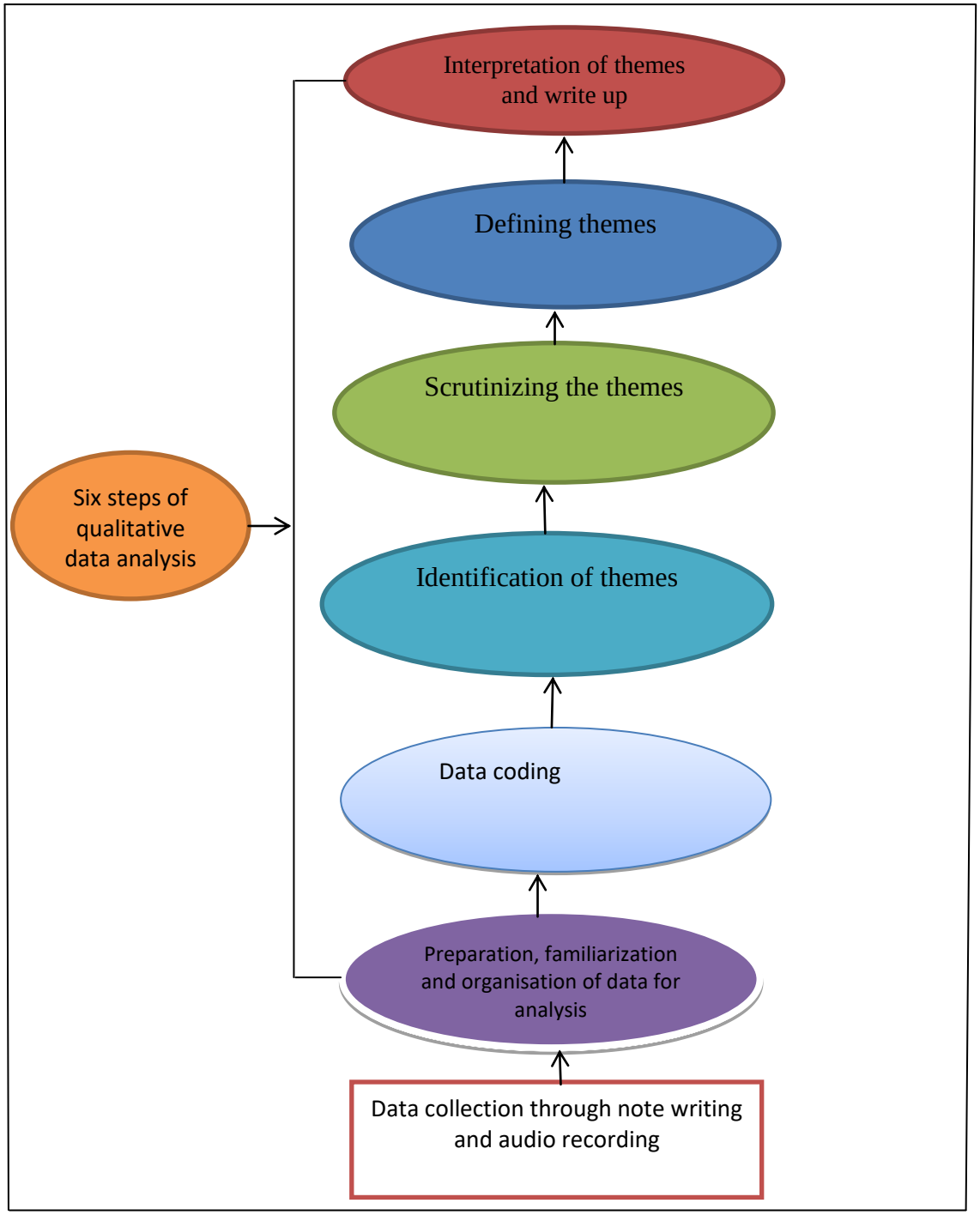

Figure 3.2: The Six steps of Qualitative data analysis.

Source: Braun & Clarke (2006)

Step 1: Preparation, familiarization and organization of data

Once data were collected, the researcher familiarized herself with it by repeatedly reading through notes and listening to the recorded audio. The interview responses were transcribed. The data were then sorted out and written down following the study objectives. This enabled the researcher to familiarize herself with the collected data.

Step 2: Data coding

Braun & Clarke (2006) notes that data coding entails systematic grouping and categorization of data. For this study, qualitative data were organized according to the respondents' phrases to maintain the initial context of the data. During coding, the following steps were followed;

i. Careful reading and noting of the key points.
ii. Listing of all the topics related to the study objectives.
iii. Categorizing topics according to their level of importance.
iv. Summarizing coding and fixing of themes in the appropriate paragraphs.
v. Looking for appropriate words for the topics and categorizing them according to the research objectives.
vi. Grouping topics to the study objectives.
vii. Finding out the relationship that exists between topics.
viii. Abbreviating and arranging each category of topics in alphabetical order.
ix. Assembling data according to the categories and scrutinizing once again.
x. In alphabetical sequence code, the categories in readiness for analysis.

Step 3: Identification of themes.

Identification of themes as indicated by Braun and Clarke (2006) involves searching for logical, meaningful and consistent patterns in the data that are relevant and related to the study objectives and hypotheses. For this study, the researcher searched and identified themes, collated them with the codes and sorted out data according to the respective themes.

Step 4: Scrutinizing themes.

This step involves checking if the identified themes match the study objectives. For this study, the researcher re-examined/scrutinized the themes to ascertain the appropriateness of presenting the study findings according to the stated objectives.

Step 5: Defining themes.

This is the step where the researcher wrote a detailed analysis of how every theme concurs with the research objectives this is when a researcher establishes and noted the appropriateness of each theme against the research hypothesis and objectives

Step 6: Interpretation and write-up.

This marks the last stride in the process of analyzing data of qualitative nature. This is the step where research findings were interpreted in connection with the research objectives. All the verbal ideas and responses were contextualized and intertwined to produce a scholarly/standard report.

Analysis of both types of data is summarized and presented in Table 3.4.

Table 3.4: Summary of Data Analysis

Objective	Independent variable	Dependent variable	Type of data	Statistical Analysis Procedure	Test Statistic
To establish the effect of direct costs of education on students transition rate in public boarding secondary schools in Uasin Gishu County, Kenya.	Direct costs	Student Transition	Quantitative Qualitative	Multiple regression and Pearson correlation coefficient Thematic analysis	F ratios Means, standard deviations and percentages
To determine the effect of direct costs of education on students retention rate in public boarding secondary schools in Uasin Gishu County, Kenya.	Direct costs	Student retention	Quantitative Qualitative	Multiple regression, Pearson correlation coefficient Thematic analysis	F ratios Means, standard deviations and percentages
To assess the effect of hidden costs of education on the student transition rate in public boarding secondary schools in Uasin Gishu County, Kenya.	Hidden costs	Student Transition	Quantitative Qualitative	Multiple regression, Pearson correlation coefficient Thematic analysis	Frequencies, Standard deviations percentages and means
To examine the effect of hidden costs of education on students retention rate in public boarding secondary schools in Uasin Gishu County, Kenya.	Hidden costs	Student retention	Quantitative Qualitative	Multiple regression, Pearson correlation coefficient Thematic analysis	F ratios Means Standard deviations and percentages

3.11 Diagnostic Tests

The study used school fees structures and student enrollment records for inferential statistics. Therefore, a diagnosis was performed on the data to determine if it was suitable for multiple regression analysis. As can be understood in the following subsections, this goal was attained by conducting tests of normalcy, multi-collinearity, and independence.

3.11.1 Test of Normality of Data

The normality assumption, which must be met before the parametric test is conducted, is that the residuals have to be distributed normally to predict the scores of the dependent variables. Skewness, kurtosis, and Shapiro-test Wilk's (S-W) were employed to interpret the normality assumptions of all the variables, as suggested by (Gravetter & Wallnau, 2000). Shapiro-test Wilk's was suitable for samples with a maximum of n = 2000 (Razali and Wah, 2011). Shapiro-Wilk's test is the same as the association between data and its corresponding scores, when S-W = 1, the correlation is perfectly normal (Shapiro & Wilk, 1965, as cited by Field (2005). This points out that a significantly (p <.05) smaller S-W than 1 implies that the normality is not met and the normality condition is met when S-W is greater than .05. Table 3.5 is SPSS output indicating Skewness, Kurtosis and Shapiro-Wilk tests results.

Table 3.5:Tests of Normality of the Data Set

Variable	Skewness		Kurtosis		Shapiro-Wilk's		
	Value	SE	Value	SE	Statistic	Df	Sig.
Accommodation	.312	.403	-1.494	.788	.866	34	.001
School Meals	.127	.403	-1.420	.788	.914	34	.102
Activity Fee	.433	.403	-1.442	.788	.866	34	.001
Admission Requirement	-.503	.403	-1.421	.788	.872	34	.003
Repair Maintenance and Improvement	-.035	.403	-1.524	.788	.909	34	.106
School Uniforms	.225	.403	.-.030	.788	.968	34	.400
Students' Personal Effect	-.196	.403	-1.502	.788	.893	34	.057
Teachers' Motivation	.179	.403	-1.610	.788	.899	34	.061
BoM Teachers' Salary	-.509	.403	-1.426	.788	.842	34	.000
Students' Retention Rate	-.189	.403	-1.367	.788	.919	34	.108
Students Transition Rates	-.227	.403	-.980	.788	.898	34	.066

Source: Survey data (2021), SPSS Analysis

A Shapiro-Wilk's test values ($p>.05$) indicate that the variables were normally distributed, except in accommodation, activity fee and BoM teachers' salary data. While the original data showed some skewness in these three variables, the data was transformed using Logarithmic functions to eliminate the skewness before it was utilized in the inferential statistics, as suggested by Howell (2007) and Tabachnick and Fidell (2007). All the rest of the variables were normally distributed. This was shown by the lack of differences in significance (sig. < 0.05). The uploaded scores were found to have significance levels above the previously established threshold of .05. Further, when Skewness and Kurtosis were each divided by their respective standard errors, values within the range of -1.96 and 1.96 were established, suggesting normality of the data, as held by Tabachnick and Fidell (2007).

3.11.2 Assumptions of Multi-Collinearity and Singularity

Multi-collinearity and singularity indicate the relationship between the independent variables. Multi-Collinearity is inferred in a situation where the independent variables correlate highly, such that a predictor variable is available in the multiple regression model that could be linearly identified from the other variables with a considerable degree of precision. Gravetter and Wallnau (2000) observes that multi-collinearity is violated when r ≥.9. This suggests that a high level of inter-dependence exists among the independent variables in a model so that the effects of the independent variables on the dependent variable could be inseparable.

On the other hand, singularity exists when an independent variable is a real merger of another independent variable. Both singularity and multi-collinearity do not contribute to a good regression model. The study pursued the multi-collinearity assumption by determining tolerance and the Variance Inflation Factor (VIF). Table 3.6 shows SPSS output showing the tolerance and Variance Inflation Factors.

Table 3.6: Tolerance and Variance Inflation Factor (VIF) Statistics

	Collinearity Statistics	
Model	Tolerance	VIF
Accommodation	.523	1.911
BoM Teachers ‘ Salary	.893	1.120
Admission requirement	.983	1.120
School Meals	.533	1.878
Activity Fee	.512	1.951
Repair Maintenance and Improvement	.523	1.911
School Uniforms	.485	2.396
Personal Effect	.385	2.218
Teachers' Motivation	.517	1.933

a. Dependent Variable: Course Satisfaction

Source: Primary data (2021), SPSS Analysis

Tolerance shows the quantity to which the disparity of the stated independent

variable is not illustrated by the corresponding independent variables in the model. It is computed using the formula $1–R^2$ for each variable, while VIF is it's reciprocal. A minute tolerance value shows that the variable being investigated is approaching a perfect linear reflection of other independent variables present in the equation. As such, it should be removed from the regression equation because its contribution to the model is insignificant (Cohen & Cohen, 1983). Tabachnick and Fidell (2001) note that a variable with a tolerance value of lower than 0.10 and a VIF value higher than 10 may require an investigation. However, Table 3.6 illustrates that neither multi-collinearity nor singularity was a concern in all the measures (Accommodation *Tolerance*=.523, *VIF*=1.911; BoM teachers' salaries Tolerance = .893, *VIF* = 1.120; Admission requirements *Tolerance* = .983, *VIF*= 1.120; Motivation fee *Tolerance*=.517, *VIF*=1.933; School Meals *Tolerance*=.533, *VIF*=1.878; Activity Fee, *Tolerance*=.512, *VIF*=1.951; Repair Maintenance and Improvement *Tolerance*=.523, *VIF*=1.911; School Uniforms *Tolerance*.=485, *VIF*=2.396; and Personal Effects, *Tolerance*=.385, *VIF*=2.218), verifying that the need for multiple regression analysis, the assumption of multi-collinearity, was not violated.

3.11.3 Test for Independence of Observations

The assumption here is that observations made on a sample are purely unique for that particular sample. This implies that the measurements for every sample subject are in no way affected by or to the quantifications of other subjects. As suggested by Tukey (1977), the Durban-Watson test was utilized to verify whether the assumptions were met. Because of the size of the sample, it was necessary to conduct an independence test to certify that the results of the study are representative of what would be found across the entire population of parents of

students in form four concerning the effect of educational costs on their children's school attendance and engagement. To see if the residual terms are auto-correlated, the Model Summary Table 3.7 show the Durban-Watson value.

Table 3.7: Test of Independence: Model Summary

Model	R	R Square	Adjusted R Square	Std. The error in the Estimate	Durbin-Watson
1	.773[a]	.597	.594	.31624	1.812

a. Predictors: (Constant), Accommodation, School Meals, School Uniforms, Activity Fee, RMI, BoM Teacher' Salary, Teachers Motivation, Admission

b. Dependent Variable: Students' Participation in Education.

Source: Primary data (2021), SPSS Analysis

As a rule of thumb, Tabachnick & Fidell (2007) assert that if the Durban-Watson value is either more than 1 or less than 3, then it is considered as being significantly different from 2, thus not meeting the assumption. In this regard, the data qualified to meet the assumption of independent errors (*Durban-Watson value* = 1.812), as it is greater than 1 and lower than 3. This signifies that data was not manipulated and therefore the assumption of independence was not infringed.

3.12 Logistical and Ethical Considerations

i. Logistical Considerations

Before the actual research, the researcher acquired approval and authorization letters from Kenyatta University to facilitate the application for a research License from the Principal Secretary, State Department of Basic Education and Early Learning. After the permit was granted through the National Commission for Science Technology and Innovation (NACOSTI), authority and consent from the County Director of Education's office, Uasin Gishu County and the County Commissioner's office were

sought. This enabled the researcher to visit and access public secondary schools within the county. Data collection tools were shaped in readiness for the fieldwork.

ii. Ethical Considerations

During the real data collection process, the researcher solicited for consent from the respondents to participate in the study. The researcher cultivated and maintained a good rapport and harmony with the respondents. The information and all the responses provided by the respondents were handled with a lot of privacy and confidentiality. Anonymity was embraced, meaning that neither names of the respondents nor any form of identification was indicated on the instruments.

Again, the data/information gathered was entirely used for purposes of research only. In addition to the considerations above, mien and decorum were the order of the day throughout the research period. Plagiarism was tested through Turnitin to ensure compliance to the Kenyatta University policy requirement of having a similarity index of below 16% across the entire work. Finally, all the citations were acknowledged.

CHAPTER FOUR

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter discusses the findings and interprets them. It's broken into sections and subsections. The study examined the effect of household educational costs on student participation in Uasin Gishu County public boarding schools. Four objectives guided the study, namely;

i. To establish the effect of direct costs of education on students transition rate in public boarding secondary schools.
ii. To determine the effect of direct costs of education on students retention rate in public boarding secondary schools.
iii. To assess the effect of hidden costs of education on students transition rate in public boarding secondary schools.
iv. To examine the effect of hidden costs of education on student retention rate in public boarding secondary schools.

Descriptive together with inferential statistics were utilized to examine the information. The responses of the respondents were described using descriptive statistics, while inferences and conclusions were drawn using inferential statistics. Pearson Product-Moment Statistical methods like regression and correlations were employed to probe the link connecting the parameters. The level of significance used in all analyses was = 0.05. Analysis of data was done using SPSS, a Statistical Program for the Social Sciences, version 26.

4.2 Questionnaire Return Rate and Demographic Information

This section characterizes two types of findings: the questionnaire return rate and the demographic information. Rates at which completed questionnaires are returned from respondents are reported in a field called "Questionnaire Return Rates.". Demographic information concentrated on the characteristics of the participants which included; age, gender, their highest qualification, source of income and Average income per year.

4.2.1 Questionnaire Return Rate

This study involved two groups of participants namely; parents and principals of public boarding secondary schools in Uasin Gishu County. The study targeted a population of 3,917 parents of form 4 students and 34 principals. From the total population, 362 parents were sampled for the study to provide quantitative data through questionnaires.

For the principals, the entire target population was the same as the size of the sample of schools and therefore all the principals of public boarding secondary schools in Uasin Gishu County were contacted to take part in the study. In this regard, the researcher distributed the questionnaires to 362 sampled parents and interviewed 34 principals. Table 4.1, shows the summary of the questionnaire return rate.

Table 4.1: Respondents' Questionnaire Return Rate

Respondents	Questionnaires administered	Questionnaires returned	Return rate (%)
Parents	362	328	90.6
Total	362	328	90.6

Source: Primary data (2021)

Table 4.1 confirms that the study engaged parents who were targeted for the study. However, the instruments return rate was 328 (90.6%). The number of parents who missed to handover the questionnaires was 34 which is 9.4% of the sampled parents. The missing parents' questionnaires were associated with the fact that some parents were unreachable due to difficulty in transport as a result of COVID-19 restrictions. Generally, the questionnaire return rate of 328 (90.6%) was considered quite sufficient. This was reasoned excellent based on a recommendation by Oso & Onen (2009) and Creswell (2014) that a 60% response rate is enough; 70% is regarded as good as 80% and above is excellent for analysis and report writing. It was, therefore, considered sufficient to represent the entire population. The super response reported was associated with the fact that the researcher administered the questionnaires to the respondents in person and subsequent follow-ups were made via phone calls. In addition, the questionnaire items were developed in a way that they were easy to understand and respond to by the parents.

4.2.2 Demographic Information of Parents

The study investigated the background data of the parents who parttook in the study. The actual number of parents who took part in this study was 328. They represented the parents of form four students in public boarding secondary schools. This information was very necessary for establishing whether parents were adequately representative of their demographic traits to facilitate generalization of the research findings. The information considered was: Respondents' Age, Gender, the highest level of education, source of income and average income per year.

i. Gender of the Parents

The study explored the parents' gender which was considered the basic genetic difference among the respondents. Information on gender was considered important to this research because it is anticipated that the responses of the parents may vary given their gender. Figure 4.1 provides a summarized distribution of gender among the parents who were sampled.

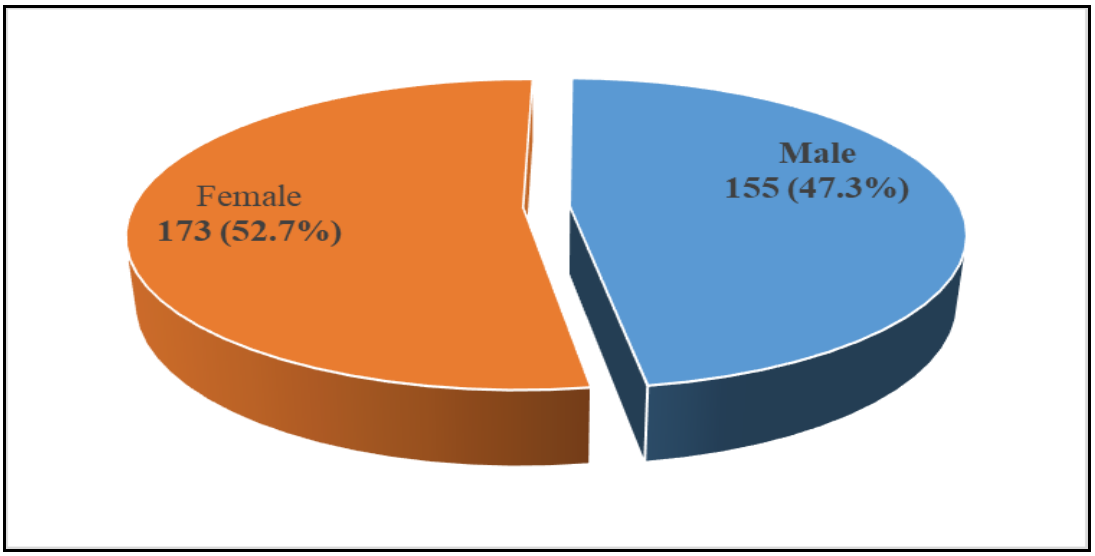

Figure 4.1: Gender Distribution of the Parents Respondents

Source: Parents' Questionnaire (2021)

The exploratory analysis of the background information of the parent's responses indicates that slightly a large number 173 (52.7%) of the actual number of respondents were female contrary to the male 155 (47.3%), reflecting a disparity in gender among the parents who participate in matters of secondary education. Since the sampling procedures used provided equal opportunities for both genders to participate, it can be concluded that parents' involvement in public boarding secondary schools in Uasin Gishu County is generally dominated by a female. All the same, both genders were constituted in the study meaning that the results of the

study may be extrapolated to a wider population because it captured the views of both genders. This is because each gender can possess a special contribution to research study that cannot be substituted by the opposite sex in totality.

ii. **Age of the Parents**

Age was conceptualized to mean the rate at which a respondent is advancing in terms of years and maturity. Given the variations in life experiences among different age groups, as well as people's dynamic tastes and behavior as they get older, it was important to include an age survey question. The study explored the age of the parents because information on the respondents age was envisaged as an essential variable to the study. After all, it strengthens the level of validity of respondents' responses. Table 4.2 presents the age distribution of parents.

Table 4.2: Parents' Age (n=328)

Age group	Frequency	Percent
Below 30 Years	22	6.7
30– 39Years	86	26.2
40-49 Years	161	49.1
50Years and above	59	18.0
Total	**328**	**100.0**

Source: Parents' Questionnaire (2021)

The study discovered that the majority 161 (49.1%) of parents fell in the age range of 40 to 49 years. The age bracket of 30-39 years was at 86 (26.2%),while 59 (18.0%) of them were 50 years & above. Only 22 (6.7%) of parents were under 30 years of age. From the findings, about three out of every four (75.3%) parents were within an outstretched age range of 30 and 49 years. This is justified because it is at

this age that most parents are old enough to have secondary children in school. Nonetheless, since the respondents of this study represented varied ages, the results can be generalized across all ages of form four parents with very minimal precautions.

iii. Parents' Highest Education Level

The highest level of Education in this study is operationalized as the number of years spent by a guardian/parent in a formal school system. The highest level of education is the highest qualification held by an individual person in any area of study or the highest year of school reached. https://meteor.aihw.gov.au.itemid. Information on the level of education was necessary because it can inform the level of understanding of household educational costs and their effect on student participation in public boarding secondary schools. In addition, the education level of parents was sought because studies have shown that the education attained by a parents/ guardians matters a lot in the academic progress of their children. Table 4.3 presents a summary of parents' highest educational levels.

Table 4.3: Parents' Highest Educational Level (n=328)

Level of education	Frequency	Percent
No formal education	16	4.9
Primary	85	25.9
Secondary	122	37.2
Middle-level college	77	23.5
University	28	8.5
Total	**328**	**100.0**

Source: Parents' Questionnaire (2021)

Table 4.3 indicates that the most 122 (37.2%) parents who took part in the study held secondary as the highest education level, 77 (23.5%) of them had a middle-level

college education and those with primary education represented 85 (25.9%) of the sampled parents. However, those with a university education were 28 (8.5%) while 16 (4.9%) of the parents had no formal education. This result alludes that the majority of parents had acquired on the minimum a secondary level of education. Further, they had acquired basic numeracy and literacy skills. It is therefore important to suggest that majority of the parents who took part in the study had enough understanding and exposure to provide reliable information related to household educational costs and their effects on students' engagement in public boarding secondary schools. Nonetheless, the use of parents with diverse educational levels means that the study findings can easily be associated to the whole target population.

Mutegi (2015) notes that a very high tie exists between the parents' education level and children's retention in secondary schools. Kailembo (2011) posits that a parents or guardians' level of education is likely to affect his/her child's school retention and transition because an educated parent or guardian tends to inspire his or her child to remain in school by providing both moral and material support. This concurs with Odaga & Heneveld ((2010) and UNICEF (2010) who discovered that children of educated parents can remain in school up to completion unlike those of illiterate parents who are likely to drop out due to lack of proper support and guidance through their academic journey. The responses provided by parents indeed were different as per their education level. The variable of highest educational level, therefore, determined how people understood different social phenomena.

Dey (2016) indicates that the academic level of parents is directly associated with the retention rate of children at school. This is because educated parents encourage their children to press on until they complete and attain their goals. Further, the study maintains that the majority of learners who fail to stay in school until completion belongs to either a semi-illiterate or illiterate parent/parents. This explains why it was necessary to have information on parents' highest level of education. Memusi's (2017) study findings also show that low literacy levels of parents lead to low students' participation as students lack proper guidance from their parents.

iv. Parents' Source of Income

The study established the parents' main source of income. Source of income was operationalizd as a way of making money through salary, wages, business, donation, or farming. The income of a parent is instrumental in the provision of education to a child concerning meeting the cost of education. Therefore, the parents' source of income plays a key role in student participation in public boarding secondary schools Chimombo (2010) confirms that parents' source of income is critical to students' schooling because students from families with an unstable source of income risk dropping out of school due to irregular or delayed payment of school levies.

Table 4.4 presents information on parents' main source of income.

Table 4.4: Parents' Main Source of Income (n=328)

Source of income	Frequency	Percent
Salary	146	44.5
Wages	19	5.8
Business	54	16.5
Donations	6	1.8
Farming	103	31.4
Total	**328**	**100.0**

Source: Parents' Questionnaire (2021*)*

Table 4.4 shows that many 146 (44.5%) of the parents were in salaried employment, 103 (31.4%)) of them engage in farming, while parents in business represented 54 (16.5%) of the parents who actively participated in the study. Those with wages and donations as their main source of income formed 19 (5.8%) and 6 (1.8%) of the parents respectively. These findings support the findings on education level given that the majority of the parents had at least secondary education, suggesting that they had a formal employable educational level. However, since the study used parents whose source of income varied, the findings of this study can be hypothesized with very minimal precautions.

v. Parents' Average Annual Income

This sub- section desired to find out the average annual income of parents who took part in the study. Parents' average annual income was operationalized as the total income in Kenya shillings that a parent receives in a year. In the view of Awour (2012), annual total income is one of the factors determining the provision of education to a child concerning meeting the cost of education. Therefore, respondents' average annual income has a guise on their view on different issues in educational costs and subsequent effects on participation in education. Figure 4.2.summarizes the findings:

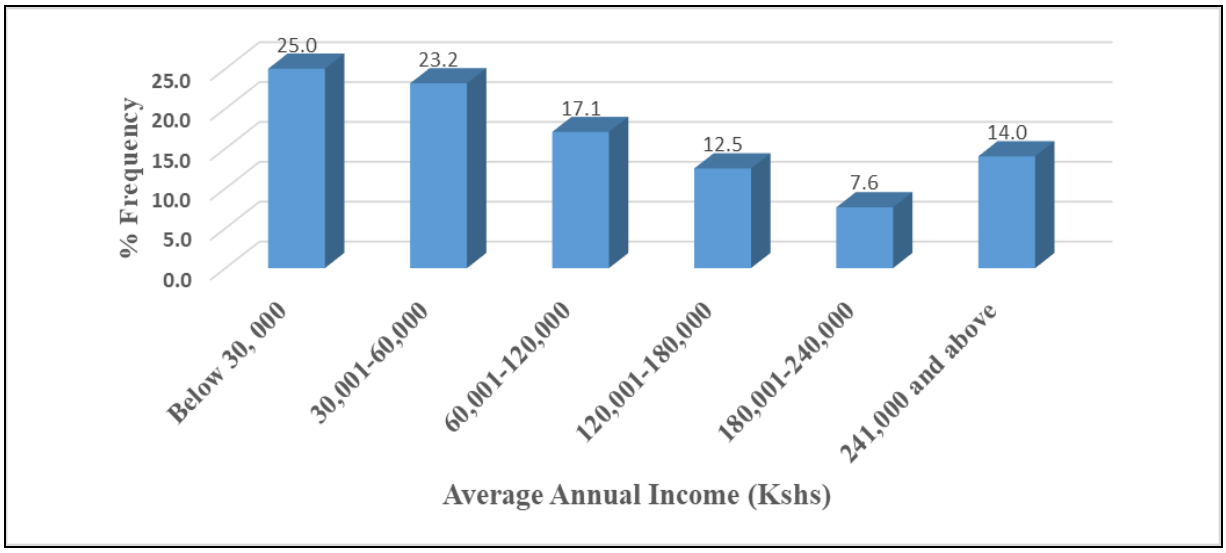

Figure 4.2: Parents' Average Annual Income (n=328)

Source: Parents' Questionnaire (2021)

The findings of the study showed that most parents earn an annual income of less than Kshs 120,000 per year. This was proved by the fact that 25.0% of them have an income of below Kshs 30,000, some 23.2% of them have an income in the bracket of Kshs 30,001 to 60,000 and 17.1% of others earn between Kshs 60,001 and 120,000. However, 14.0% of them earn an annual income of Kshs 241,000 and above. This finding suggests that the majority of the parents in Uasin Gishu are generally of low income and may be straining in meeting the household education costs.

UNESCO (2010) posits that income is termed as a crucial element in establishing the retention and transition of students in secondary schooling because schooling involves enormous costs which encompass the costs of school uniforms, fees, and fare to school which must be met by households sending children to school. Dey (2016) supplements this information by reiterating that income plays a key role in students" participation. Low household income may lead to low student retention

and transition and vice versa. Miako (2009) concurs with earlier authors by stating that household income is a critical element in determining students' participation in education because taking a child to school requires an income to offset the levies charged.

This was supported by the response of one principal who said this during the interview;

> *Student retention and transition depend on family income. In this school, for example, students from low-income families drop out of school due to financial constraints while those from high-income families may drop out due to other factors such as indiscipline, poor performance and truancy.* ***P4***

Another principal from a girls' boarding school said;

> *Some students from poor economic backgrounds fail to transit from one class to the next class. Instead, they drop out of school or transfer to day schools where the parent can fairly afford to pay fees. In fact, in my school, most of the girls whose parents could not afford to pay fees dropped out to get married while others joined day schools.* ***P7***

This indicates that the cost of education is a real obstacle to student participation in secondary education, especially among families with low economic capacities. It is also clear that girls from humble backgrounds are in danger of early marriages. It, therefore, implies that the average annual income of a household determines whether a student has to remain to learn in school or she/he has to discontinue her/his education. Gasson *et al* (2016) in a study on costs and their impact on experiences at school, found out that students whose parents are in the category of the poor and are unable to pay fees are the most disadvantaged because they are regularly disturbed

during their learning. The study concurs with the findings of the current study as it notes that education costs hinder students from full participation in education.

4.3 Direct Costs of Education and Students' Transition Rate in Public Boarding Secondary Schools

The first objective of the study sought to establish the effect of direct costs of education on students' transition rates in public boarding secondary schools in Uasin Gishu County. The study operationalized direct costs as the costs borne by parents which are paid directly to the learning institution. Direct costs considered by the study included the cost of accommodation, school meals, activity fees, and Repairs Maintenance and Improvement (RMI). Students' transition rate was considered as new admissions to the next class of secondary school education in a particular year, expressed as the total number of students enrolled in the preceding class in the previous year. Transition rate was taken to mean the average number of a cohort of students transiting from one class to the subsequent class in a subsequent year from the year 2017 to 2020. The concept of students' transition rate was valuable for this study because it is among the attributes of students' participation in education.

4.3.1 Students' Transition Rate

The study sought to explore students' transition rates in boarding secondary schools, which is an indicator of student participation in education. This element was significant for this study as it is one of the pointers to students' participation. The parents' views on their children's participation in education about the transition were sought using a Likert scaled questionnaire and corroborated by documentary analysis provided by the principals on students' enrollment. The views of the parents on their children's transition to the next classes are displayed in Table 4.5.

Table 4.5: Parents' Views on their Children's Transition (n=328)

ITEM	Never	Rarely	Sometimes	Mostly	Always	MEAN	SD
My child regularly moved from one class to the other.	2 (0.6%)	5 (1.5%)	12 (3.7%)	64 (19.5%)	245 (74.7%)	4.66	0.68
My child is in the same class as the ones they were admitted with.	3 (0.9%)	3 (0.9%)	39 (11.9%)	95 (29.0%)	188 (57.3%)	4.41	0.80
My child is always in school throughout the school term and is not delayed because of irregular attendance	3 (0.9%)	10 (3.01%)	28 (8.5%)	100 (30.5%)	187 (57.0%)	4.40	0.84
My child is expected to complete school on time	2 (0.6%)	2 (0.6%)	20 (6.1%)	83 (25.3%)	221 (67.4%)	4.58	0.69
My child is never denied promotion to the next class because of school fee	8 (2.4%)	20 (6.1%)	84 (25.6%)	64 (19.5%)	152 (46.3%)	4.01	1.09
Mean average students' transition						4.41	0.65

Key:1- Never, 2- Rarely, 3- Sometimes, 4- Always

Source: Parents' Questionnaire (2021)

Table 4.5 illustrates that, although secondary schools in Uasin Gishu recorded fairly high transition rates (M=4.41; SD=0.65), there are instances where some parents agreed that their children do not transit to the next class because of failure to pay the fee on time. For instance, while close to three-quarters of 245 (74.7%) of the parents who were engaged in the research showed that their children always 4.66 (SD=0.68) move from one class to the other at the right time, 17 (5.2%) others said that their children sometimes or rarely move from one class to the next as expected. One of

the principals during interviews said;

> *The inability of parents to pay fees is a big challenge, especially for those students from low economic backgrounds. Like in this school, some students have given up because of being sent home severally for fees. Some join day schools while others drop to join the boda boda operation business. Sometimes as the school administrator I watch helplessly when students have to go home and never come back because they have nothing to pay for school fees. Even if I have to intervene, it is impossible to cover up every learner because money is needed for the smooth running of school programs.**P8***

Another principal said;

> *Some students fail to transit from one class to the next class due to high poverty levels among parents. You find that a child is admitted to the school but the inability of the parent or guardian to pay the fees charged and provide for boarding requirements affects their participation. This automatically translates to low retention and low transition. This challenge has been here for some time now. My headache is how to break this trend, especially in the current society where every other person is crying about a wanting economy.**P11***

The concerns of the principals who got involved in the study indicate that the problem of low student participation in public boarding schools is not something to ignore. It calls for a concerted effort by all the education stakeholders in all spheres of life.

Equally, regarding children being in the same class as the ones they were admitted with, 188 (57.3%) of the respondents strongly claimed that their children are in the same class as the ones they got admitted with (M=4.41; SD=0.80) indicating that they have transited to the next class with others, but 39 (11.9%) of the parents agreed that their children are sometimes in the same class with the ones they were admitted with, while 6 (1.8%) others insisted that their children have repeated the same class because of not paying fees on time. This result was supported by one principal during the interviews who said;

> *Repetition of students is not acceptable according to the government policy but this happens after the re-entry of students who had initially dropped out of school to give birth as a result of teenage pregnancy and are back to school. Those re-entries repeat their previous classes. In other instances, a parent or a student may request to repeat a class especially form three or form four to better his or her grades. However, in this school, we have a few, actually, three students who dropped out due to financial challenges but came back to repeat and continue learning after getting sponsors to assist.* ***P10***

A second principal had this to say;

> *The high cost of boarding secondary education and hence the inability of some parents to pay is the major reason for the lack of grade-to-grade transition among students. In this school, we have cases of students who have been left behind by their classmates because they have been in and out of school due to the challenge of fee payment. I have two cases that were determined to resume their studies after they found help from well-wishers. They had to repeat their previous classes to pick up from there.* ***P2***

This implies that educational costs in boarding secondary schools inhibit students from moving forward as a cohort. These findings concur with the response of a principal from an extra county school who said;

> *The major reason for low grade-to-grade transition among students is the accumulation of huge fee balances which makes it difficult for parents to clear. For example in this school, accommodation and meals account for up to Ksh. 40,555. This amount for a low-income parent/guardian is almost like impossible to pay*. ***P5***

The responses of the principals imply that educational costs and especially costs associated with boarding in secondary schools affect students' transition. Some parents pay in bits as per their financial capabilities. In turn fee balances accumulate to a point where schools will no longer have any other option than to send students home for the same. This trend tremendously affects students' participation in secondary education. Barungi & Mwesigye (2019) concurs with the findings and notes that payments in boarding schools are high and unaffordable for poor students forcing them to stagnate in classes instead of moving forward to the next class.

Tuwei (2013) observed that pupil repetition caused low grade-to-grade transition rates in Nandi. Teachers said the low transition rate was due to academic performance-based class repetition. Ayodo & Too (2010) as they advanced a study on the costs of education in Kenya as well reported that, students' repetition led to the low grade-to-grade transition of students. This implies that low grade-to-grade transition is determined by several issues which include repetition and educational costs which this study established among other factors.

Similarly, while 187 (57.0%) of the sampled parents said their children are always (M=4.40; SD=0.84) in school throughout the school term, some 38 (11.5%) of the parents insisted that their children are hardly in school throughout the school term. This suggests that although the majority of students are in school throughout the term, some of them are not always in school as expected and therefore they are forced to repeat the class. This concurs with the response of a principal who participated in the interview and said this;

> *Students have to be sent home for fees if money has to be paid. Students especially those from the poor or low economic background cannot be in school throughout a school term. We can only allow them to be in school until the half-term holiday. However, those who fail to clear fee balances after half-term are sent home. This interrupts their smooth stay and learning in school*. ***P27***

Another principal concurs by giving the following responses;

> *Sending students home for fees is inevitable. Students in my school are sent home for fees once or twice a term. This is because most parents strain to clear school levies. They cannot afford to pay fees charged at once hence the need to remind them through their children*. ***P21***

This means that costs in boarding schools constrain poor households who struggle financially to meet their daily needs. The ultimate effect it has on education is low

student participation. The findings concur with Ayodo & Too (2010) who maintains that students from low-income households are frequently sent home for fees because of the inability of their parents to pay on time. It means that such students are not always in school as expected.

Likewise, on whether the students were to complete school on time, while 221 (67.4%) of the participants strongly agreed (*M*=4.58: S*D*=0.69) that their children will complete school at the right time, some 22 (6.7%) of them agreed that their children will hardly complete their secondary school within the right time. One principal agrees with the findings and had this to say;

> *The majority of students complete their four-year education on time. However, those who drop out or repeat classes on their way delay completing or never complete them at all. In my school, those who drop completely are few because we have a kitty to cushion them, especially the total orphans*. ***P27***

The results indicate that the cost burden on students from low economic backgrounds makes them take a longer period in secondary education other than the specified four-year course.

On the same note, whereas 152 (46.3%) of the parents indicated that their children are never denied promotion to the next class because of school fees, 84 (25.6%) of them reported that their children are occasionally denied promotion to the next class due to none payment of school fee and a further 28 (8.5%) of them agreed that their children are frequently denied promotion because of lack of school fee. These sentiments were validated by principals' responses. One of them said;

> *Due to the pronouncement of 100 percent transition, all students are allowed to move through to completion by paying fees in bits. However, some of them do not transition from class to class because their parents live in abject poverty and hence have difficulties in meeting the costs of education. The options they take are; they go to day schools near their*

homes to cut down costs. Some request for official transfers while others wait to be sent home for fees then they stay away. ***P16***

These findings suggest that payment of school levies is a problem for a significant proportion of the parents and it affects students' participation in education in terms of transition to the next class. It is also evident that there is a possibility that those students who transit through and stay on until they complete the four-year secondary education course in boarding schools are either from economically empowered households or are financially aided. Misheck (2013) while examining the factors that affect learner participation notes that high schooling costs pushes students to withdraw from school. Thus, affecting their participation in secondary education.

4.3.2 Direct Costs of Education in Boarding Secondary Schools

Direct costs specifically included boarding equipment and store fees, activity fee, and repairs maintenance & improvement. Direct costs of education incurred by parents were established from the document analysis obtained from the school principals. For triangulation purposes, the researcher asked parents to indicate how much they paid for every vote head in a term and their responses are indicated in Table 4.6.

Table 4.6: Ratings on Direct Costs of Education

Term/Item	Accommodation		School Meals		Activity Fees		Repairs Maintenance & Improvement Cost	
	Mean	***SD***	***Mean***	***SD***	***Mean***	***SD***	***Mean***	***SD***
Term 1	3.3	0.9	3.5	0.8	2.7	1.0	2.8	1.0
Term 2	2.9	1.2	3.3	1.0	2.5	1.0	2.5	1.1
Term 3	2.9	1.2	3.3	1.0	2.5	1.1	2.5	1.1
Average	3.0	0.7	3.4	0.8	2.6	0.7	2.6	0.9

Ratings: 1.0-1.8 (< Kshs 1000/-); 1.81-2.60 (Kshs 1001-2000/=); 2.61-3.60 (Kshs 2001-3000); 3.61-4.20 (3001-4000/-); 4.21-5.00 (> Kshs 4000/-)
Source**:** Primary data (2021)

Table 4.6 indicates the direct costs incurred by parents in providing education in boarding secondary schools. They include the cost of accommodation, meals, activity fees and repairs maintenance and improvement. In boarding secondary schools, accommodation and school meals fall under the vote head of Boarding Equipment and Stores. The results of the survey show that the average (*M*=3.0; *SD*=0.7) cost of school accommodation is between Kshs 1001 and Kshs 2000 per term in boarding secondary schools in Uasin Gishu County. However, school meals cost more by Kshs 1000 per term, as shown by an average of 3.4 ***(***Kshs 2001-3000***)*** with a standard deviation of 0.8. This suggests that the cost of meals in boarding secondary schools is generally higher compared to the cost of accommodation. Equally, the costs of accommodation and meals were both higher in term one than in terms two and three. This is very true because meals are taken daily and paid for accordingly. Cost of accommodation on the other hand encompasses the cost of students bedding (mattress, blanket, bed sheets) which are bought once at school entry and replaced only when necessary.

The findings on parents paying more in term one match the reality in that most schools charge fees at a reducing rate, the highest in term one and lowest in three.

Apart from paying fees at a reduced rate, some schools demand that fees be paid in two installments, term one and term two only as indicated in the fee structures provided by the principals. Equally, it was established that the average (*M*=2.6; *SD*=0.7) cost of activity fees is between Kshs 1001 to Kshs 2000 per term in boarding secondary schools in Uasin Gishu County. However, the findings of the study revealed that activity fees generally cost higher in terms one than in terms two and three. Equally, for the cost of Repairs, Maintenance and Improvement that a

parent meets in educating a child in boarding secondary school, it was established that on average (*M*=2.6; *SD*=0.9), parents have to pay between Kshs 1001 and Kshs 2000 per term. However, like in other cases, parents generally pay more for Repairs, Maintenance and Improvement in the first term compared to what they pay in terms two and three. This agrees with the response of one principal who said;

> *The cost of Repairs, Maintenance and Improvement (RMI) is meant to cater to repairs, maintenance and improvement of school facilities which also includes the construction of new infrastructure. You find that the government allocation of Ksh 800 is insufficient. Therefore, additional money to top up the vote head is passed during parents' annual general meetings which come at the end of the year. Commencement of the planned works begins at the beginning of the year. At this time parents are required to pay seventy percent of the amount and complete the rest in the second term of the year.**P9***

This implies that the cost of repairs, maintenance and improvement adds to the total fees payable in secondary schools. As such it becomes a burden to households characterized by low economic status. The findings are supported by Dean (2016) as it shows that the cost of RMI is used to repair, maintain and improve school facilities. Zyngier (2012) while addressing boys' underachievement also indicated that parents supplement the allocation given by the government because it is insufficient. The study confirms that the cost of Repair Maintenance and Improvement adds to the cost burden on parents. This is because repairs, maintenance and improvement of infrastructure require a lot of funds due to the rising prices of the building materials. It is therefore clear that the poor students experience challenges in making the payments. As such this compromises their participation in secondary education.

4.3.3 Effects of Direct Costs of Education on Students' Transition Rate

The first objective of this study was to establish whether or not direct educational

expenses have an effect on student transition rates in secondary public boarding schools. First, a correlation between direct costs of education and students' transition rate was computed to confirm the direction and magnitude of the linear relationship between variables. The transition rate of students was considered as the mean average percentage of students moving from one class to the next class. Second, a multiple linear regression analysis was utilized to investigate if there is an effect of direct educational costs on students' rate of transition. This particular rate was the response variable and the direct costs of education was the predictor variable. Table 4.7 shows correlation analysis results of direct costs of education and the transition rate of students.

Table 4.7: Correlations between Direct Costs of Education on Students' Transition Rate

		Accommodation	School meals	Activity fees	RMI
Students Transition Rate	Pearson Correlation	-.639	-.618	-.278	-.882
	Sig. (2-tailed)	.000	.004	.056	.000
	N	34	34	34	34

Pearson product-moment correlation analysis utilized to assess the relationship between variables reveals that there is an inverse relationship between direct costs of education and students' transition rate. The correlation between accommodation and students' transition rate was deemed to be negative and statistically significant, r (34) = -639, $p < .001$. Likewise, school meals (r = -.618, n=34, p<.001), activity fee (r = -.278, n=34, p =.001) and RMI (r = -.882, n=34, $p < .001$) all had statistically significant negative relationship with students' transition rate. However, although activity fee had a negative relationship (r= -.056, n= 34, p=-.056) with student

transition rate, it was statistically insignificant. The study concludes that generally there is an indirect relationship between direct costs of undertaking education and students' transition rate. Higher direct costs of education are associated with lower student transition rates.

Further, the regression equation and the model summary were brought forth with the predictor variable being the individual aspects of direct costs of education and the response variable being the students' transition rate. Table 4.8 provides a summary of regression analysis results.

Table 4.8: Regression of Direct Costs of Education on Students' Transition Rate

	B	**Std.**	**Beta**	**T**	**Sig.**	**Part corr.**
(Constant)	2.628	.486		5.403	.000	
RMI	-.547	.069	-.772	-7.934	.000	-.589
Accommodation	-.093	.045	-.130	-2.067	.039	-.092
Activity fees	-.123	.055	-.177	-2.238	.033	-.166
School meals	-.033	.079	-.044	-.422	.676	-.031
Adjusted R^2	.818					
F-ratio	38.09***	df1=4 df2=29				

Key: * p < .05 ** p < .01 ***p<.001

From Table 4.8 the **B** column contains the unstandardized beta coefficients that indicate the magnitude and direction of the effect of the various aspects of direct costs of education on the students' transition rate. The **Standard Error** has the error values related to the unstandardized coefficients.

The **Beta** column presents unstandardized coefficients for every aspect of the direct costs of education. They indicate that the individual aspects of direct education costs

differ in their level of effect on students' transition rates in boarding secondary schools. For instance, of these four variables, the cost of Repair Maintenance and Improvement makes the largest unique contribution (Beta = –.772). This signifies that when the cost of RMI is reduced in boarding secondary schools by one standard deviation, the students' transition rates would improve by .772 standard deviations and vice versa. Equally, reducing costs of accommodation and activity fees each by one standard deviation would lead to an improvement of students' rate of transition by .130 (Beta = -.130) and .177 (Beta = -.177) standard deviations, respectively. However, reducing the cost of school meals by one standard deviation would translate into an increase in the student transition rate by 0.044 units only.

Part correlation coefficients, which show how much weight certain elements of direct costs of schooling have on the overall R squared, were also investigated in the study. The data indicate that RMI cost has a partial correlation coefficient of -0.589, accommodation has a coefficient of -0.094, activity fees have a coefficient of -1.66, and school meals have a coefficient of -0.31. The fact that the cost of RMI explains 34.7% (part correlation squared = - 0.589) of the variance in students' transition rate suggests that it makes the largest contribution to the model. This finding is in line with that of Biwott (2013), who found that unstated costs for things like funds for facility upkeep and repairs push up the cost of education and make it more difficult for students to move from grade to grade.

One principal during interviews said;

> *RMI adds to the bulk of fees paid by parents in boarding schools. This is because funds from the government through CDF are not enough to cover all the school projects. At the same time, there is*

always a delay in approvals. As a school through the Parents Association, a fee is negotiated to bridge the gap. These additional charges disadvantage students from poor families who struggle to pay fees. The outcome is always low student participation which in most cases manifests itself through a low transition of students. ***P 10***

Tuwei (2013) agrees with the findings that Parents Association levies which include the cost of repairs, maintenance and improvement (RMI) greatly affect students' transition rates. Nkinyangi (2014) maintains that RMI costs are necessary because of the need to balance between adequacy and maintenance of the teaching/learning resources and infrastructure. This implies that RMI levies are undoubtedly charged in secondary schools. This, therefore, implies that students' participation is under threat.

These findings also indicated that the Activity fee explains 2.8% of the variation in transition rate, as calculated from a part correlation of - 0.166 shown in Table 4.8. This agrees with Nderitu *et al* (2020) who hold that the cost of participating in extra-curricular activities moderately influenced the student transition rate at all levels of education. The study explains that because activity fee collection was student-driven hence could not affect their transition rates. Accommodation cost explains 0.8% (Part corr. = -.092) of the variance in student transition rate. However, the cost of school meals only accounted for a negligible amount (0.1%, part corr. = 0.031) of variance in students' transition rate.

4.3.4 Regression Model for Direct Costs and Students' Transition

In addition, the regression equations from Table 4.8 were taken to foretell how much the direct cost of education affect students' rate of transition. The research was based on the following generalized regression prediction model:

Students' Transition Rate = $\beta 0+\beta_1 X_1+\beta_2 X_2 + \beta_3 X_3+ \beta_4 X_4 + \varepsilon$

Where; X_1 = Repair, Maintenance and Improvement (RMI), X_2= Accommodation, X_3=Activity fees, X_4 = School meals and ε being error term.

Thus, the predicated maximum level of students' transition rate among public boarding secondary schools were represented by:

$Y=2.628 \text{ units} - 0.547 X_1^{units} - 0.093X_2^{units} - 0.123 X_3^{units} - 0.033X_4 \text{ units} + \varepsilon$

From the model, for each unit increase in the cost of accommodation, there is a resultant drop in the level students' transition rate by 0.093 units. Likewise, for each unit increase in the cost of Repairs Maintenance and Improvement, there is an ensuing drop in the level of students' transition rate by 0.547 units among the public boarding secondary schools in Uasin Gishu County. Likewise, the decrease in the cost of activity fees and school meals would equally raise students' transition, which is an indirect relationship. However, a change in the cost of school meals would not cause a statistically significant (p =.676) change in students' transition rate.

Table 4.8 shows that direct educational costs explain 81.8% (Adjusted *R* Square = .818) of the variance in students' transition rates. 18.2% of the variation in students'

transition rate could be occasioned by other factors apart from the predictors incorporated in this model. This result is justified by the fact that education costs are not the only cause for low student transition rates. This was confirmed by secondary school principals during the study. One of them said;

> *Failure of students to transit from one class to the other is caused by several factors, fees are the major one. As well, we have other push factors which include; indiscipline among students which in most cases is fueled by drug and substance abuse. Truancy, domestic issues, poor performance coupled with academic pressure on students to perform, and loss of a family breadwinner just to mention a few. Remember also that, the lack of parental discipline in terms of fee payment also stands out. Parents are to be blamed as well for the uncontrolled freedom they give to their children. This makes it difficult for teachers to control students.* ***P14***

This lengthy deliberation may explain the 18.2 % of the variance not covered by the direct costs Tuwei's (2013) study on the effect of costs on students' grade-to-grade transition noted that low student transition was a result of class repetition which made students stagnate in one class instead of moving to the next class. The study however coincides with the findings of this study that school levies contributed to the low transition rate among students. This implies that students do not transit to the next class because of the incapacity of parents/guardians to offset the levies charged. Njuguna & Muchanje (2018) concurs with the principals who said that there are other factors that accelerate the low student transition. The study pointed out that poverty, child labour, family instability and low parental involvement negatively affect student transition rates.

4.3.5 Goodness of Fit for the Regression Model

According to Tabachnick & Fidell (2007), the F-ratio in the Analysis of Variance

(ANOVA) whose findings are also displayed in Table 4.8 determines if the entire regression model is a favorable match for the information. The population's multiple R was predicted by an ANOVA to be equal to 0. So, F (4, 29) = 38.09, p .001, it illustrates that the independent factors statistically and significantly anticipate the dependent variable. These outcomes demonstrate the regression model's suitability as a data fitter. According to this, student transition rates may be significantly predicted by direct educational expenditures. As a result, the model can accurately forecast the rate of student transition between public boarding secondary schools.

Hypothesis 1 Testing

The study hypothesized that direct costs of education have no effect on students' transition rates in public boarding secondary schools in Uasin Gishu. The null hypothesis was that direct education costs don't affect students' transition rates. This was done using multiple regression analysis, with the examined null hypothesis as H_0: $\beta_1=\beta_2=\beta_3=\beta_4=0$ and the corresponding alternative hypothesis being H_1: at least one $\beta_{i \neq} 0$. If the null hypothesis is correct, then from $E(Y) = \beta_0 + \beta_{i=1-4} X_{i=1-4}$ the mean of Y is βi for each X value, which implies that X (direct costs of education) represented by the cost of accommodation, cost of meals, activity fee, cost of repairs, maintenance and improvement and the cost of PTA project fund have no effect on Y (students' transition rate) and the alternative being that direct costs of education have a statistically significant effect on the transition rate of students.

Based on the findings that the aspects of direct educational costs (Accommodation, school meals, Activity fees and Repairs, Maintenance and Improvement) have statistically significant ($p < 0.05$) unstandardized coefficients, meaning that they

are not equal to 0 (zero) in the population, there was satisfactory evidence to reject the null hypothesis that there is no significant effect of direct costs of education on students transition rate and the alternative hypothesis which states that direct costs of education have a significant effect on students transition rates among public boarding secondary schools in Uasin Gishu County was adopted. Consequently, it was concluded that direct costs of education have a significant negative effect on students' transition rates in boarding secondary schools.

Alderma, Gilligah, and Lehrer (2012) found that school meals increased enrollment, attendance, and grade repetition in Northern Uganda. This was also supported by qualitative findings. One of the principals who took part in the interview had to say this;

> *School meals program affects students' participation to a great deal because if a parent fails to meet the cost involved, the affected student shies off from taking meals that the parent has not paid for. It is a reality that students from families living in abject poverty feel rejected, they rarely cope with the rest from well-to-do families hence they opt to drop out or change school*. ***P 20***

On the contrary, the findings partly differ with Nderitu *et al* (2020) who found out in their study on hidden costs and students' participation in Rwanda that, school meals have minute impact on student transition rate at all tiers of education because households were not incurring additional expenses. One principal who was interviewed noted that;

> *The cost of school meals is not a big issue because parents just hand over foodstuff to be used by their children at school. Like in this school, we allow parents to pay fees in kind. They bring maize and beans to school instead of money". However, the issue is with the poor parents who may not even have what to eat in the first place. As such they do not have foodstuff to hand over to the school and this is where the problem lies. Students from such backgrounds are affected because their parents struggle*

excessively. ***P 4***

These results show that the direct education costs have a big effect on student rates of dropping out school, but the cost of food may not have a big impact on students' participation in school. Parents simply transfer meals from home to school. Except in cases where the parents live in abject poverty. The diversity in the results also indicates that each school handles the issue of meals differently. Kingori (2015) while studying the influence of unit cost of education on students enrolment rates in the Tharaka South sub-county shows that, the cost of meals at school significantly affects grade to grade transition of students especially those from poor families. He noted that students fail to transit to the next class in the subsequent year because they are frequently sent home for the required levies and hence are forced to repeat their previous classes instead of moving forward.

4.4 Direct Costs of Education and Students' Retention Rate

The second objective of the study was to determine the effect of direct costs of education on students' retention rate in public boarding secondary schools in Uasin Gishu County. To attain this objective, the data obtained was analyzed using multiple linear regressions to establish if there is an effect of direct costs of education on student retention rates. Students' retention rate was operationalized as the percentage of initially enrolled students who complete the four-year course at form four. First, the study aimed at investigating the degree of students' retention rates using enrollment data from the school principals.

4.4.1 Students' Retention Rate

Students' retention rate is the opposite of the dropout rate. It is a pointer that strives to assess the capability of an educational system to keep students in a given grade in

the subsequent class in a subsequent year (IIEP, 2010). It is considered as the percentage of students who joined form one in comparison to the number that stayed on until the fourth year minus the repeaters. Table 4.9 summarizes the retention rate calculated from the mean average class enrollment per year in the period from 2015 to 2020.

Table 4.9: Retention Rate per Cohort

Class/Year	2015	2016	2017	2018	2019	2020
Form 1	120	123	129	132	140	164
Form 2	114	114	120	126	130	132
Form 3	106	112	110	120	124	128
Form 4	102	103	100	112	115	119

Source: Primary data (2021)

The trend illustrated in Figure 4.2 reveals that the number of students who were retained through to form four was lower in comparison to those who were initially in form one. For example, cohort 1 joined secondary school in the year 2015. The enrolment was 120 then completed in the year 2018 with an enrolment of 112. Cohort 2 joined secondary school in 2016 with an enrolment of 123. The group completed the four-year course in the year 2019. The enrolment then was 115. Cohort 3 joined the secondary school at form one in the year 2017. The enrolment was 129 but at completion, it was 119 in the year 2020. All three cohorts registered a declining trend as they moved from the entry to the exit point. This indicates that student retention in public boarding secondary schools is an issue of concern. Figure 4.3 provides a clear illustration of the trend.

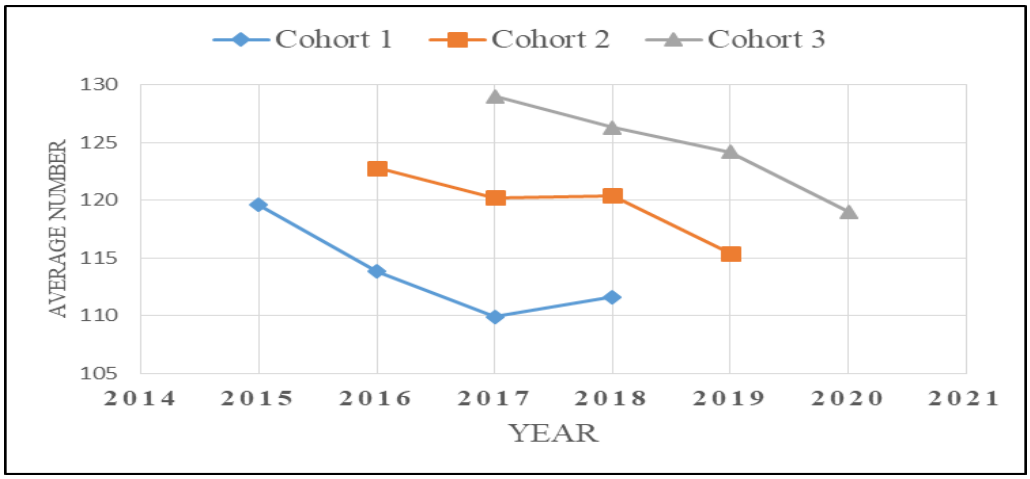

Figure 4.3: Average Number of Students per Class per Cohort

Source: Survey data (2021)

The trend shown in Figure 4.3 reveals that there were relatively fewer students who reached form four compared to the number who were admitted in form one in the three cohorts. Generally, the average enrolment of students per class kept on rising as a new year began but the number at the end of each cohort of students seemed to be always lower than the number at the start of a cohort. However, the average enrolment of students in the last cohort is greater than in the other two, implying that there is an improvement in the general student population in boarding secondary schools in Uasin Gishu County. The increase can be associated with the Government's rigor in pushing for the implementation of education policies such as the Free Day Secondary Education (FDSE) that enhances students' participation in secondary schools.

Although the retention rate has been reflected at over 90%, this is not good enough because some students still drop out of the school system before the completion of their secondary education. This generally suggests that students' completion rate

was not 100%. Thus it explains that the student retention rate in the county is under threat. Nonetheless, the results reveal that an improvement in student retention rates has occurred in Kenyan secondary schools over the years. For example, a study carried out by The Kenya National Population Census, Central Bureau of Statistics (2002) showed that the retention of students in secondary schools was 71%. Equally, Yambo (2012) reports that a small percentage of 77% of the students who are admitted for secondary education complete the tier. Further, the study noted that failure to accomplish secondary school education amounts to huge resource wastage and loss of opportunities for both the government and families as well. These findings are confirmed by (GoK, 2020) which indicates that the government spends Ksh 22,444 per learner in secondary school. Households are required to cater for other expenses like uniforms, boarding, and meals. These results were supported by the principals' views as one of them said;

> *Student enrolment has been on the rise in the recent past because of the policy of a hundred percent transition which recommends that all students who have sat for the Kenya Certificate of Primary education (KCPE) should all transit to secondary school. So, you find that we enroll many students at form one but then some drop out on the way leaving behind a smaller number who will sit for the Kenya Certificate of Secondary Education*. ***P11***

This implies that even if students join secondary schools in high numbers due to policy implementation, low retention rates of students persist.

Another principal concurred by saying this,

> *We admit quite a good number of students every year but we lose them as they progress from class to class. For example, among our current form four candidates, we have lost thirty-two of them since they began their four-year academic journey at form one, Majority of those who dropped out were due to the inability of their parents to pay fees, and a few were due to indiscipline cases. However, in some instances, the school receives students from well-to-do households who were initially*

*admitted to day schools due to form one placement. This is the reason for the increase in the enrolment of students in subsequent classes.**P12***

This implies that despite high enrolment in secondary schools, the amount of education wastage caused by low retention levels remains one of the most worrying aspects of Kenya's education system. However, low student retention is not isolated to Kenyan secondary schools alone. For instance, a study advanced in Northern Tororo in Uganda on the retention of learners in secondary schools purported that a relatively low number of students progress up the academic ladder and hence register a low retention rate (Taban, 2010). The study outlined bottlenecks that impede students' retention. Top on the list was the high cost of education coupled with poor economic background and low family income. Thus, most families place priority on the provision of basic needs of life in total disregard for their children's educational needs.

Chomombo (2010) in a study on education and poverty occurs with the findings of Taban (2010) that the unbearable educational costs and increased poverty contribute to low retention rates in boarding secondary schools.

4.4.2 Effects of Direct Costs of Education on Students' Retention Rate

The study sought to demonstrate the effects of direct costs of education on students' retention rates. First, a correlation between direct costs of education on students' retention rate was computed to confirm the direction and magnitude of the linear relationship among the variables. Direct costs of education being the independent variable included the costs of accommodation, school meals, activity fees, Repairs Maintenance and Improvement. Students' retention rate, which was the response variable is the cohort of students who remained in the same school until their fourth

year. Table 4.10 shows the correlation between the direct costs of education and students' retention rate.

Table 4.10: Correlations between Direct Costs of Education on Students Retention Rate

Direct costs of education		Accommodation	School Meals	Activity fees	RMI
Student Retention Rate	Pearson Correlation	-.172	-.210	-.123	-.864
	Sig. (2-tailed)	.005	.001	.013	.000
	N	34	34	34	34

Key: RMI- Repairs, Maintenance and Improvement

Table 4.10 displays the results of a Pearson product-moment correlation coefficient analysis of the relationship between the variables, showing a positive and statistically significant correlation between the direct costs of education and the retention rates of students in secondary boarding schools. For instance, the correlation between accommodation and students' retention rate was negative and statistically significant, r (34) = -.172, p = .001, two-tailed. Equally, activity fee (r = -.123, n=34, p=.013) and RMI (r = -.864, n=34, p <.001) and the cost of school meals (r = -210, n =34, p =.001) all had statistically significant negative effect on student retention rate in boarding secondary schools. Overall, there seemed to be a connection between the direct costs of education and the sum of students who stayed in school. Higher direct costs of education are associated to lower student retention rates in boarding secondary schools and vice versa.

Additionally, a summary of the model and the regression equation was produced, with the predictor variables being the various components of the directed cost of

education and the dependent variable being the retention rate of students, which was calculated as the proportion of students who continued to attend the same class and school from form one to form four. Regression findings are outlined in Table 4.11.

Table 4.11: Regression of Direct Costs of Education on Students' Retention Rate

	B	Std. Error	Beta	T	Sig.	Part corr.
(Constant)	.876	.162		5.403	.000	
RMI	-.516	.023	1.244	-22.435	.000	-.949
Accommodation	-.136	.025	.322	-5.385	.000	-.228
Activity fees	-.041	.018	-.101	-2.238	.033	-.095
School meals	-.156	.026	.349	-5.883	.000	-.249
Adjusted R^2	.941					
F-ratio	132.46**	df1=4 df2=29				

Key: * p < .05 ** p < .01 ***p<.001

Exploration of Beta values from Table 4.11 illustrates that the individual aspects of direct costs of education vary in their level of effect on students' retention rate in boarding secondary schools. For instance, of these four variables, the cost of Repair Maintenance and Improvement contributes the biggest unique value (beta= -1.244). This indicates that when the cost of RMI is reduced in boarding secondary schools by one standard deviation, the students' retention rate would increase by 1.244 standard deviations and vice versa. Equally, reducing costs of accommodation and school meals each by one standard deviation would aggregate in an improvement of students' rate of retention by .322 (beta=-.322) and .349 (beta = -.349) standard deviations, respectively. However, when activity fees is reduced in boarding secondary schools by one standard deviation, the students' retention rate would

improve only by .101 standard deviations and vice versa.

In addition, the study calculated the part correlation coefficients, which illustrate the contribution of each of the elements of direct costs of education to the total R squared. The results show that RMI cost has a part correlation coefficient of -.949, accommodation of -.228, activity fees of -.095 and school meal of -.249. The square of these values illustrates what percentage of the overall variance in the student retention rate can be differently explained by the variable, as well as what percentage the R squared value would reduce by if the variable were removed from the model. Given that the cost of RMI uniquely explains nearly 90% (part correlation squared = - 0.949) of the variance in students' transition rate, this indicates that it has the highest contribution to the model. Activity fee had the least contribution to the total R-Squared as reflected by part correlation of -.095, suggesting that it only contributes 0.9% of the total R-squared.

4.4.3 Regression Model for Direct Costs and Students' Retention

Further, a regression equation was extracted from Table 4.11 to help predict the effect of direct costs of education on students' retention rate in boarding secondary schools in Uasin Gishu County. A general regression prediction model was used to guide the study as follows:

Students' Retention Rate = $\beta 0+\beta_1 X_1+\beta_2 X_2 + \beta_3 X_3+ \beta_4 X_4 + \varepsilon$

Where; X_1=Repairs, Maintenance and Improvement, X_2=Accommodation, X_3=Activity fees, X_4 = School meals and ε is the error term.

Therefore, the predicated optimum measure of students' retention rate in public boarding secondary schools is represented by:

$$Y=.876 \text{ units} - 0.516X_1 units - 0.136X_2 units - 0.041X_3 units - 0.156X_4 \text{ units} + \varepsilon$$

When all other factors remain the same, the coefficients from the model show by how much a change in some component of direct expenses affects the retention rate of students. For example, for a unit increase in the cost of accommodation, there is a subsequent drop in the level of students' retention rate by 0.136 units. Likewise, for each unit increase in the cost of Repair Maintenance and Improvement, there is an ensuing drop in the level of students' retention rate by 0.516 units among the public boarding secondary schools in Uasin Gishu County. Equally, when there is an increase in school meals by one unit, there would be a drop in the students' retention rate by 0.156. Further, it emerged that the decrease in activity fee would result in the least but statistically significant change in students' retention rate (B = -.041; p =.033). This suggests that the costs of school meals and activity fee have a negligible effect on the rate of student retention.

The findings are in line with Nora (2016) who carried out a study on prejudices, discrimination and their role among minority students. The study found that co-curricular activities boost the retention of students. Gasson *et al* (2016) in a study on the cost impact on student participation in activities note that students are not sent home because of activity fees because sports activities are not compulsory. However, the study revealed that activities such as sports and athletics motivate students and promote good health and development. Nonpayment, therefore, disadvantage them from enjoying the experiences in totality. This may render the learning environment unfriendly. This implies that activity fee indirectly affects students retention in school.

The study findings indicate that an increase in the cost of school meals had an

insignificant effect on students' rate of retention. This may be because parents still need to meet the cost of feeding even at home when their children drop out of school. This can also be accredited to the notion that when students are fed in school, it is just like parents transferring their children's meals from home to school. The students have to whether they are at home or school. It means that the cost of meals would still be incurred either way. Rotich (2015) in his study on school feeding programme and their influence on student retention as quoted by Koskei (2021) had a contrary opinion that, even with school meals program in schools, students still dropped out of school to participate in income-generating activities in which earns them money for basic requirements.

Ogola *et al* (2021) in their study on private costs of education and student retention maintain that the cost of meals (lunches) significantly affects the retention of students. The study indicated that the expenditure on school meals was responsible for up to 86.2% of non-retention of students in secondary schools. Alderma *et al* (2012) reaffirm that free meals increase student retention as opposed to charged meals This implies that, school meals have a positive effect on student participation (retention) but the issue is with the cost charged for the meals taken in by students in school.

4.4.4 Goodness of Fit for the Regression Model

According to Tabachnick & Fidell (2007), the F-ratio in the Analysis of Variance (ANOVA) whose findings are also displayed in Table 4.11 determines if the overall regression model is an exceptional match for the data. The multiple R in the population equals 0, according to the ANOVA hypothesis. F (4, 29) = 132.46, p .001

shows that the independent variables statistically and significantly foretell the dependent variable. These outcomes demonstrate the regression model's suitability as a data fitter. This shows that a substantial predictor of student retention rates is the direct cost of schooling. As a result, the model is capable of forecasting the level of students' retention rate in public boarding secondary schools.

Hypothesis 2 Testing

The second hypothesis of the study was, that 'direct costs of education do not affect students' retention rates'. The study hypothesized that direct costs of education do not affect the retention rates of students in public boarding secondary schools. The null hypothesis tested was that direct costs of education have no statistically significant effect on students' retention rates. Multiple regression analysis was used to do this, with H0 acting as the scrutinized null hypothesis: $\beta_1=\beta_2=\beta_3=\beta_4=0$ and the corresponding alternative hypothesis being H_1: at least one $\beta_i \neq 0$. If the null hypothesis is true, then from $E(Y) = \beta_0 + \beta_{i=1-4} X_{i=1-4}$ the mean of Y is βi for each X value, which shows that X (direct costs of education) has no effect on Y (students' retention rate) and the alternative was that direct costs of education statistically and significantly effect on students' retention rate. Using the regression equation findings in Table 4.11, the null hypothesis that there is no significant effect of the direct cost of education on students 'retention rates was rejected. Hence, the alternative hypothesis which holds that direct costs of education have a significant effect on students 'retention rates in public boarding secondary schools was adopted. It was concluded that direct costs of education have a significant negative effect on students' retention rates in boarding secondary schools.

The model summary reveals an adjusted R-Square of .941 (Table 4.11). This implies that direct costs of education, as a whole, explain 94.1 % of the variability in student retention rates in boarding public secondary schools. And only 5.9% of the variation is caused by factors other than direct costs of education, those are the factors not included in this model.

4.5 Effects of Hidden Costs of Education on Students' Transition Rate

Objective three of the study investigated the effect of household educational costs on students' transition rates in public boarding secondary schools in Uasin Gishu County. As earlier indicated, the hidden costs investigated included admission requirements cost, cost of school uniforms, cost of students' personal effects, motivational fee and the cost of BoM teachers' salary. Equally, students transition rate was computed as an average percentage of the students transiting from one class to the other in the cohort of students from 2017 to 2020. A multiple linear regression analysis was utilized to establish the effect of household costs of education on students' transition rates, with the students' transition rate being the response variable and hidden costs of education being the explanatory variable. Table 4.12 reveals the results of a correlation analysis to determine the linear association between variables.

Table 4.12: Correlations between Hidden Costs of Education on Students Transition Rate

		Personal Effects	Teachers' Motivation	BoM Teachers'	School Uniforms	Admission Requirements
Students Transition Rate	Pearson Correlation	-.389	-.443	-.508	-.640	-.456
	Sig. (2-tailed)	.012	.004	.000	.000	.003
	N	34	34	34	34	34

Table 4.12 reveals an inverse association between hidden educational expenditures and secondary school student transition rates. All statistically significant relationships were negative. The correlation between personal effects and students' transition rate was found to be negative and statistically significant, r (34) = -.389, p = .012. On the same note, the cost of teachers' motivation, r (34) = -.443, p =.004, cost of BoM salary, r (34)= -.508, p<.001, and school uniforms, r (34)= -.640, p <.001, all had statistically significant negative relationship with students' transition rate in boarding secondary schools.

This implies that hidden costs of education affect students' transition rates in public boarding schools. The results confirm that costs not reflected in the fee structure but paid by parents to supplement allocations on school projects and programs adversely affect students' participation in terms of their transition across classes.

A multiple regression model was employed to determine the effect of hidden educational costs on boarding school students' transition rates. The predictor variables were the individual aspects of hidden household costs of education and the students' retention rate was the dependent variable. Table 4.13 shows a summary of the results.

Table 4.13: Regression of Hidden Costs of Education on Students' Transition Rate

Model	B	Std.	Beta	T	Sig.	Part
Constant	5.266	.316		16.644	.000	
Admission Requirement	-.094	.045	-.137	-2.089	.041	-.108
Student Personal Effect	-.144	.072	-.197	-1.999	.045	-.124
School Uniforms	-.351	.153	-.616	-2.284	.030	-.317
Teachers' Motivation Fee	-.027	.013	-.047	-2.077	.047	-.030
BoM Teachers' Salary	-.111	.053	-.200	-2.084	.035	-.150
Adjusted R^2	.365					
F-ratio	4.733**	df1=5 df2=28				

Key: * p < .05 ** p < .01 ***p<.001

From Table 4.13, the study shows that the individual aspects of household hidden costs of education vary in their level of effect on students' transition rate in boarding secondary schools. For instance, it was established that school uniforms made the highest unique contribution (beta= -.616). This means that, when the cost of the uniform is increased by one standard deviation, there would be an ensuing reciprocal change in students' transition rate by .616 standard deviations. On the same note, students' transition rate would improve by .197 standard deviations when the cost of personal effects is reduced by one standard deviation. Similarly, reducing the costs of teachers' motivation, cost of BoM teachers' salaries and costs of admission requirements each by a single standard deviation, would attract an improvement of students' rate of transition by .047, .200 and .137 standard deviations, respectively.

The five components of the hidden household cost of education contribute differentially to the overall Adjusted R squared, which is further supported by looking at the part correlation coefficients. The results demonstrate that the cost on

students' personal effects has a part correlation coefficient of –.124, teachers' motivation of -.030, BoM teachers' salary of -.150, cost of school uniform of -.317 and cost of admission requirement of -.108. Thus, the variable with the highest effect on the model is the cost of school uniform, which contributes 10.0% (part corr. squared) to the model. This concurs with the results of Kiruru *et al* (2020) which indicated that school uniform cost had the highest effect on student transition rate. The study found that it accounted for the highest value of 82% of the variance. This study further elaborated that the effect was associated with the high cost of uniforms such as sports shoes and school sweaters. Additionally, the study maintains that the soaring cost is a challenge to low-income households. Principals who participated in the interviews concur with this finding. For example, one principal in a boy's school said;

> *Hidden costs of education are too much in boarding schools pushing students out of school thus affecting their participation in terms of transition and retention. Although they are not spelled out in the fee structure, these costs are necessary for learners to remain in boarding schools until completion. The inability of parents to meet these costs drive students into criminal offenses like theft which may lead to suspension. This is common in boys' schools. This in itself affects students' grade-to-grade transition*. ***P 5***

Another principal indicated that:

> *School uniforms play a key role in shaping the discipline of students. This is because students rarely mess up while in uniform unlike when they are dressed in the civilian. It also displays the identity of the school. This is the reason why all students must wear school uniforms while in school. However, the lack of school uniforms makes students leave for home due to the discomfort they experience. This affects their class attendance and subsequently their transition to the next class.* ***P 17***

Reidy (2021) concurs with this finding that school uniform is instrumental in ensuring good discipline and security in learning institutions, In addition, it helps school administrators to identify and account for their students.

Another principal of an extra county mixed school said;

> *Girls are mostly affected by hidden costs such as the cost of school uniforms. The lack of at least two pairs of uniforms makes girls feel out of place. Boys don't mind so long as they have at least one pair of uniforms. The main issue is that school uniforms are more expensive than home clothes, therefore poor parents may not afford to buy them. This contributes greatly to low student participation.* ***P2***

This implies that guardians/parents with girls in boarding schools are required to expend more on uniforms than those with boys. Mutegi's (2015) study concurs by saying that the school uniform cost affects girls more than boys. The study indicates that girls' uniform is more expensive than boys because girls require more than one pair of uniform. Mutegi *et a*l (2017) also confirms that the cost on school uniform in boarding schools is higher by 8 percent compared to day schools. Again, girls' uniforms are mostly made in special designs, hence are charged more expensively than the boys. This implies that students from the low-income household may be disadvantaged.

Another principal concurs by saying this;

> *Girls are very sensitive to dressing hence uniform is crucial. Those parents who cannot afford to buy a new uniform for their children risk losing them. One such girl in this school resorted to early marriage at the beginning of this term.* ***P13***

Further, Mutegi (2015) notes that girls are always concerned with the status of the clothing they wear, including school uniforms. This implies that parents have to spend more in ensuring that the uniforms are in good condition. This negatively affects poor students. Again, the study alludes that the cost of Board of Management teachers' salaries had the least contribution to the model because it accounts for only 0.1% of the variance in students' transition rate. These results concur with the

response from a principal who said this during the interviews;

> *Board of Management teachers' salaries is among the hidden costs that parents pay. However, in this school, it may not affect students' transition from one grade to another because the amount payable by parents is small compared to other vote heads and again no student can be sent away for nonpayment of this vote head. Again, the total figure is shared among all the students thus further reducing the amount to be paid by each student*. ***P5***

Another principal said;

> *Motivation fee is critical because a motivated teacher/student will remain in school, attend all school programs and perform better. In this school as such, costs such as motivation fees and BoM teachers' salaries are supplemented by the school farm proceeds. This implies that they will just slightly affect students' participation*. ***P19***

The findings concur with Tuwei (2013) who notes that the Board of Management teachers' salaries and motivation fees are gladly paid by parents because they are directly linked to the students' performance. Again, the study notes that both levies are only paid when it is necessary. This implies that their effect is slightly lower.

4.5.1 Regression Model on Effect of Hidden Costs on Students' Transition

The multiple regression model was used to predict the effect of household educational costs on students' transition rates in public boarding schools in Uasin Gishu. The regression prediction model used was of the following form:

$$\textbf{Students' Transition Rate} = \beta 0+\beta_1 X_1+\beta_2 X_2 + \beta_3 X_3+ \beta_4 X_4 +\beta_5 X_{5\,+}\, \varepsilon$$

Where; X_1=Admission Requirement, X_2=Student Personal Effect, X_3=School Uniforms, X4 is the Teachers' Motivation Fee, X5 is the Salary of BoM Teachers, and ε is the error term.

Thus, the predicted optimum level of students' transition rate given the hidden cost of education among public boarding secondary schools was represented by:

Y=5.266 units - 0.094 $X_1 units$ - 0.144 $X_2 units$ - 0.351 $X_3 units$ - 0.027 X_4 units - 0.111 X_5 units+ ε

From the model, it is shown that for each unit increase in the cost of students' personal effects, there is a subsequent drop in students' transition rate by 0.144 units and for each single unit increase in the cost of teachers' motivation, there is an ensuing drop in the level of students' transition rate by 0.027 units among the public boarding secondary schools. Equally, when there is an increase in the cost of BoM teachers' salaries by one unit, there would be a drop in the students' transition rate by 0.111 and vice versa. When the cost of school uniforms is increased by one unit there would be an ensuing drop in students' transition rate by 0.351 units and increasing the cost of compulsory admission requirements will have a reciprocal effect of .094 units on students' transition rate. This suggests that a rise in household hidden costs cause a significant drop in students' transition rates in boarding secondary schools. Hence, the study has found out that hidden costs of education are predictors of the level of students' rate of transition among public boarding secondary schools.

4.5.2 Goodness of Fit for the Regression Model

The F-ratio in the Analysis of Variance (ANOVA) whose outcome is also shown in Table 4.13, as explained by Tabachnick & Fidell (2007), tests whether the overall regression model is a good fit for the data. ANOVA hypothesized that the multiple R in the population equals 0 reveals. It indicates that the hidden costs of education

statistically and significantly predict the dependent variable, F (5, 28) = 4.793, p < .01. This result shows that the regression model is a perfect fit for the data. This suggests that hidden costs of education is a significant predictor of students' retention rates. Hence, the model is appropriate to predict the level of students' rate of transition among the public boarding secondary schools.

Hypothesis Testing 3

The null hypothesis that hidden household costs of education was tested to establish whether there is no statistically significant effect on students' transition rates in boarding secondary schools. It was tested using the results of the multiple regression analysis, with the investigated null hypothesis formulated as H_0: $\beta_1=\beta_2=\beta_3=\beta_4==\beta_5=0$ and the corresponding alternative hypothesis being H_1: at least one $\beta_{i \neq} 0$. If the null hypothesis is true, then from $E(Y) = \beta_0 + \beta_{i=1-5} X_{i=1-5}$ the population mean of Y is βi for every X value, which indicates that X (hidden household costs of education) has no effect on Y (students' transition rate) and the alternative being that hidden household costs of education has a statistically significant effect on students' transition rate. Based on the findings of the regression model, the null hypothesis that there is no significant effect of hidden household costs of education on students transition rates was rejected. Therefore, the alternative hypothesis was adopted and the conclusion was reached that hidden household costs of education have a significant effect on students' retention rates in boarding secondary schools.

The model summary reveals an adjusted R-Square of .365 (Table 4.13). This implies that direct costs of education, as a whole, explain 36.5 % of the variability in student retention rates in boarding public secondary schools. This means that about 64% of the deviation in the rate of student transition among public boarding

secondary schools is caused by factors not included in this model. However, the sum of all the squared part correlation values of various aspects of the hidden cost of education is less than the total Adjusted *R S*quared value for the model. This was attributed to overlaps or shared variance deleted in each case.

4.6 Effects of Hidden Costs of Education on Students' Retention Rate

The fourth objective sought to investigate the effect of hidden household costs of education on students' retention rate in boarding secondary schools in Uasin Gishu County. Hidden household costs of education were taken as the costs met by households in taking their children to school but are not directly part of the official school fees. The study classified these costs as expenditures on education which are not reflected in the gazette fees structure but are incurred by households having children in boarding secondary schools. The hidden costs investigated were; the cost of admission requirements, cost of school uniforms, cost of students' personal effects, teacher motivational fee and BoM teachers' salary.

Students' retention rate was taken as a proportion in percentage of a cohort of students who remained enrolled at the same school until their fourth year. To achieve this objective, a multiple linear regression analysis was used to establish the effect of the household hidden cost of education on student retention rates. The student retention rate was the response variable while the hidden cost of education was the explanatory variable. As a prelude, correlation analysis was conducted to identify the direction and magnitude of the linear relationship that occurs between the variables as expressed in Table 4.14.

Table 4.14: Correlations between Hidden Costs of Education on Students Retention Rate

		Personal Effects	Teachers' Motivation	BoM Teachers' Salary	School Uniforms	Admission Requirement
Student Retention Rate	Pearson Correlation	-.365	-.503	-.513	-.633	.492
	Sig. (2-tailed)	.017	.000	.000	.000	.002
	N	34	34	34	34	34

As shown in Table 4.14, a Pearson product-moment correlation analysis indicates that there exists a reciprocal relationship between hidden education costs and student retention rates in boarding secondary schools. All the correlations were negative and statistically significant. For instance, cost of school uniform was found to have strongest negative and statistically significant correlation to students' retention in boarding secondary schools [r (34) = -.633, p <.001], while students' personal effect had the weakest correlation [r (34)= -.365, p =.017] to students' retention in boarding secondary schools. Similarly, cost of teachers' motivation, r (34) = -.503, p = .001, cost of BoM teachers' salary r (34) = -.513, p=.001, and admission requirement, r (34) = -.492, p =.002, all had statistically significant negative relationship with student retention rate in boarding secondary schools. Overall, there was a negative correlation between the hidden costs of education and students' retention rate. It is conceived that higher hidden costs of education are likely to result in lower student retention rates in boarding secondary schools and vice versa.

Moreover, a multiple regression model was developed, with students' retention rate serving as the dependent variable and the various hidden household expenditures of education serving as predictor variables. Table 4.15 summarizes the regression analysis results.

Table 4.15: Regression of Hidden Costs of Education on Students' Retention Rate

Model	B	Std. Error	Beta	t	Sig.	Part
(Constant)	5.478	.342		16.008	.000	
Admission Requirement	-.162	.075	-.214	-2.160	.033	-.168
Student Personal Effect	-.240	.174	-.297	-2.308	.029	-.187
School Uniform	-.336	.106	-.535	-3.170	.012	-.275
Teachers' Motivation Fee	-.081	.139	-.125	-.587	.562	-.080
BoM Teachers' Salary	-.103	.047	-.169	-2.191	.038	-.127
Adjusted R^2	.393					
F-ratio	5.268**	df1=5 df2=28				

Key: * p < .05 ** p < .01 ***p<.001

The investigation of Beta values reveals that the extent of impact of each hidden cost of education factor on student retention rate in boarding secondary schools varies. For example, of the five hidden costs of education for families, the cost of school uniforms has the biggest effect (beta = -.535). This means that if the cost of school uniforms were cut by one standard deviation in boarding secondary schools, the rate of students staying in school would go up by.535 standard deviations and vice versa. However, reducing the costs of teachers' motivation and cost of BoM teacher's salary each by one standard deviation would equal to an improvement of students' rate of retention by only .125 (beta = -.125) and .169 (beta = -.169) standard deviations, respectively. Effect of the cost of teachers' motivation fee on student retention rate in public boarding secondary schools did not reach statistical significance, *Beta*=.081, *p*=.562 (ns).

Part correlation coefficients revealed additional variation in the contributions to the overall Adjusted R squared among the five components of the hidden household cost

of education. As such, the results show that cost of school uniforms has a part correlation coefficient of –.275, students' effect of -.187, admission requirements of -.168, cost of BoM teachers' salary of -.127 and cost of teachers' motivation fee of -.080. Calculating the square of these values reveals the proportion of the overall variance in the student retention rate that can be attributed to the variable in question, as well as the reduction in R squared that would result from removing the variable from the model. For example, the cost of school uniform uniquely contributes 7.6% to the model, students' effect uniquely explains 3.5%, costs of admission requirements uniquely explains 2.8% and cost of BoM teachers' salary and cost of teachers' motivation fee collectively explains a negligible proportion (< 2%) of the variance in retention rate among students in public boarding secondary schools. Overall, hidden costs account for 39.3% of the variation in retention rate among students in public boarding secondary schools, as reflected by Adjusted R Square of .393. The sum of all the squared part correlation values is far lower than the total Adjusted *R S*quared value for the model (0.393 or 39.3% explained variance). This means that 60.7 percent of the variance in students' retention rate is caused by other factors other than the hidden costs of education. This is supported by studies by Rumberger (2016), Memusi (2017), Koskei (2020), and Njuguna & Muchanje (2019) who purported that, low /high student retention is a function of several intertwined factors which comprise and not limited to economic, social, and cultural factors. The principals of public boarding secondary schools affirmed that, hidden costs of education are critical in education because they are basic.

However, just like the direct costs of education, they affect students' participation if not adequately provided for. One of the principals said;

> *Hidden costs such as the cost of personal effects destabilize students making them prone to dropping out and absenteeism. In most cases, students are not sent home for personal effects which include towels, soaps, toothbrushes, toothpaste, bathing buckets, oils and sanitary pads for the girls. However, lacking them threatens their stay in school*. ***P 23***

Another principal from a girl's school said this;

> *Personal effects are essential for girls' retention in school, Lack of sanitary towels, oil, and soap just to mention a few embarrassed girls pushing them to miss classes as they get out of school to look for these items. This is a serious concern because I have witnessed girls who have cleared fees but they forge sickness to go home for personal effects.* ***P20***

Yet another principal had this to say;

> *Lack of personal effects such as sanitary towels affects girls' participation badly. That even if students are not sent home for personal effects, they will be uncomfortable continuing learning without the missing items hence they break out of school until they get them. This affects students' retention and attendance as some may drop out completely while others return after a long stay at home*. ***P25***

The findings illustrate that hidden educational costs automatically and negatively affect students participation even if the students are not sent out of school for the items. Abuya *et al* (2015) and Chege (2009) attest with the findings of this study. They posit that, as much as the presence of sanitary towels enhances students' retention, their absence negatively affects them. They conclude that lack of personal effects and more so the sanitary towels/pads negatively affect the girl child's retention because the fear to stain their clothes keeps them away from school. This implies that female students who can afford sanitary materials are likely to remain in school as opposed to their counterparts who come from poor households.

4.6.1 Regression Model on Effects of Hidden costs on Students' Retention

Regression equations were derived from Table 4.5 to help predict the effect of hidden educational costs on students' retention rate in boarding secondary schools in Uasin Gishu County. The research was guided by a universal model for predicting regression, which was described as:

Students' Retention Rate = $\beta 0+\beta_1 X_1+\beta_2 X_2 + \beta_3 X_3+ \beta_4 X_4 +\beta_5 X_{5\,+}\, \varepsilon$

Where; X_1= Admission Requirement, X_2= Student Personal Effect, X_3= School Uniform, X_4 = Teachers' Motivation Fee, X_5 = BoM Teachers' Salary and ε being error term.

As a result, the predicted optimal level of retention of students in public boarding secondary schools, taking into account the real expenses of an education, was:

Y=5.478 units - 0.162 $X_1 units$ - 0.240 $X_2 units$ - 0.336 $X_3 units$ - 0.081 X_4 units - 0.103 X_5 units + error

From the model, it is shown that for each individual unit increase in the cost of school uniforms there is a successive drop in the level of students' retention rate by 0.336 units and for each individual item increase in the cost of student personal effect, there is an ensuing drop in the level of students' retention rate by 0.240 units among the public boarding secondary schools.

Equally, when there is an hike in the cost of admission requirements by one unit, there would be a drop in the students' retention rate by 0.162 and vice versa. However, when the costs of teachers' motivation is reduced by one unit there would be an ensuing rise in students' retention rate by a non-significant value of 0.081 units (p =.562, ns). This suggests that changes in the cost of teachers' motivation fees

have no significant effect on students' retention rates. Nonetheless, the study maintains that hidden household costs of education are a predictor of retention rate among public boarding secondary schools.

4.6.2 Goodness of Fit for the Regression Model

The F-ratio in the Analysis of Variance (ANOVA) whose results are also appear in Table 4.13, as explained by Tabachnick & Fidell (2007), assess whether the overall regression model is suitable for the data. ANOVA hypothesized that the multiple R in the population equals 0 reveals. It indicates that the hidden costs of education statistically significantly predict students' retention rate, F (5, 28) = 5.268, p < .01. These results show that the regression model is well suited for the data. This suggests that hidden costs of education is a significant predictor of students' retention rates. Hence, the model is adequate to predict the level of students' rate of retention among the public boarding secondary schools.

Hypothesis 4 Testing

The hypothesis tested was that hidden household costs of education have no statistically significant effect on students' retention rates. This was done using multiple regression analysis, with the stated null hypothesis formulated as H_0: $\beta_1=\beta_2=\beta_3=\beta_4==\beta_5=0$ and the corresponding alternative hypothesis being H_1: at least one $\beta_i \neq 0$. If the null hypothesis is true, then from $E(Y) = \beta_0 + \beta_{i=1-5} X_{i=1-5}$ the population mean of Y is βi for each X value, which shows that X (hidden household costs of education) have no effect on Y (students' retention rate) and the alternative being that hidden household costs have a statistically significant effect on students' rate of retention. Founded on the findings of the regression model, the null

hypothesis that there is no significant effect of hidden household costs of education on students ‘retention rates was rejected. Consequently, the alternative hypothesis which holds that direct costs of education have a significant effect on students’ retention rates in public boarding secondary schools was adopted. Accordingly, it was concluded that household costs of education possess a significant negative effect on students’ retention rates in boarding secondary schools.

4.7 Strategies to enhance student participation in public boarding secondary schools

This study through interviews with the principals of public boarding secondary sought to establish the policies and strategies that the government and schools could set up to ensure 100% student participation in public boarding secondary schools.

A good number of principals commended the government on its effort to intervene in enhancing students' participation in education through policy formulations. However, some of them highlighted the areas of weakness with the policies on free secondary education and bursary disbursement program and gave their views and recommendations as stated below:

> *The increase in capitation has enabled schools to run well than before. Likewise, it has to some extent cushioned parents from the cost burdens associated with schooling. However, the tuition fee is hardly enough. For example, the government wants schools to utilize Ksh 5000 per student which is unrealistic. I recommend that the government should increase the capitation onboarding secondary schools. The Government should fully fund boarding secondary schools by taking up all charges, they should be as free as the day schools. In addition, the government too should increase the number of day schools and fully equip them to accommodate more students from low-income families.* ***P 11***

Another principal concurred by saying :

> *Grants are still insufficient despite the increase. Hence, the Government should come out clearly and urge parents to supplement the educational costs, especially for capable parents. The Government as well should avoid issuing conflicting statements such as "all students must be allowed to attend secondary schools, no student should be sent home for fees' because these make parents even the financially able ones relax hence derailing the smooth running of boarding schools.* ***P 10***

Another principal had a similar feeling:

> *Statements from government officials and politicians, discourage parents from paying fees thus affecting school programs. The principal recommends that Government officials visit schools to ascertain the actual needs of individual schools. Again, the principal reported that heads of institutions charge extra levies because of the high demand for funds in school.* ***P 18***

Another principal who identified the delay in funding as another important reason that makes principals ask parents to pay some hidden fee, which subsequently increases the costs of education, recommends that:

> *The government should always submit capitation grants before the start of a new term for effective planning. Again, the principal recommends that the government should align funding to the needs of the schools to save parents from the burden of additional charges. Notably, the principal continued to say that the government is fast in funding infrastructure (classrooms) instead it should equip the available classrooms by purchasing lookers*. ***P 23***

According to the interviewed principals, there are several challenges surrounding government grants to students' participation. This calls on the attention of the government to streamline and implement the suggested strategies and recommendations.

One principal noted that;

> *Apart from the insufficiency of grants, there has been a delay in disbursements which causes a lot of inconveniences. This calls for innovations from heads of institutions. The sure option is to involve parents in sourcing funds and you can be certain that not all parents can be comfortable with additional charges due to economic constraints.* ***P 16***

Another principal who also participated in the interview reported that:

> *The cost of boarding equipment and stores (accommodation and meals) forms the bulk of fees payable to public boarding secondary schools. These costs are entirely met by the parents. However, parents from low-income groups are unable to pay for these expenses. This forces their children to drop out of school or join day school. This in turn affects student's transition and retention* ***P 15***

The principals identified the creation of additional sources of income in schools as a strategy to relieve parents from the burden of funding education, especially for students from needy families. For example, during the interview one of the principal cited the case of her school. She reported that;

> *They have the "Imarisha Mtoto wa Kike Kitty" in their school where contributions are made during mothers' day. The amount contributed is given to the teacher concerned who in turn will identify and purchase basic items for the needy students. This she said has minimized movement in and out of school as students look for basic items*. ***P16***

Another principal also from a girls' school shared a similar strategy which enables them to keep girls in school. She said that;

> *In their school, they have a kitty for the needy students where teachers, support staff and students from well-to-do families contribute as little as they can to support their needy fellow students This has improved students' retention and transition the principal said as she recommends other schools to emulate the same*. ***P17***

This means that some schools are cognizant of the need to support the learners from needy families within the school without fully relying on the parents and government to provide solutions.

During interviews with the principals, further probing yielded the following recommendations to the Government and schools;

4.7.1 Recommendations to Government from the Principals

From these excerpts, it is clear that the participation of students in secondary education is hindered by the costs of education and several recommendations have

been put forward to enhance students' participation. First, it came out that the government should fully fund boarding secondary schools by taking up all charges, this should be done through diversification of the sources of funding to further increase the capitation grants. However, in a bid to circumvent the inadequacy of funds the government, should embrace cost sharing with parents and they should align funding to the identified needs of schools. Thus, the government should equip the available classrooms by purchasing lockers, tables, desks and chairs instead of funding infrastructure (building classrooms) when the school already has enough classrooms. This will save parents from the burden of additional charges like the cost of buying lockers, which are always loaded onto the parents/guardians. The national government should work with the Constituency Development Fund committees to allocate more bursaries to students in boarding schools. This is because they currently receive Ksh 5000 per student which is too little to meet the needs in boarding secondary schools. On the same note, bursary allocation should be decided by the principals to award the actual and the truly needy students.

In addition, to keep more students in schools, the government should encourage the expansion of more day schools which should be appropriately equipped to counter the need for students to rush to boarding secondary schools. Increasing the number of day schools that are fully equipped to accommodate more students from low-income families, would reduce the cost burden of education and subsequently improve students' participation in secondary education.

Another principal proposed to the government to disburse funds promptly. The principal opined that late remittance leads to a lack of major supplies. In turn, this

causes tension, strikes and absenteeism because students have to be sent home. This affects students' participation. Again, the government should always submit capitation grants before the start of a new term for effective planning by the school principals.

4.7.2 Recommendations to schools from Principals

From the interviews with the principals, the following key recommendation to schools as strategies to enhance students' participation in public boarding schools came out. First, schools should allow parents to buy school uniforms from cheap, local tailors/shops so long as they stick to the right colour and material to save them from the high cost of uniforms.

Secondly, schools should not fully rely on the government and parents to fund education. Principals and BoM should solicit funds from well-wishers, and sponsors to support the needy students and set aside a needy student kitty One principal from a girls' extra county school noted that her bright students from low-income backgrounds were dropping out at a high rate.

In addition. schools should invest in income-generating activities such as bakery, beekeeping, poultry keeping, dairy farming, gardening, and tree nurseries among others to reduce the cost of school meals. The parents have a responsibility to fulfil in students' participation in secondary education. Hence, the need to sensitize/educate them on their role in enhancing student participation. Besides, they can be sensitized to available sources of funding so that they can be cushioned financially.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the key findings based on the four objectives, conclusions and recommendations which encompass policy, recommendations for practice and recommendations for further research.

5.2 Summary

This section provides a summary of the findings based on each objective of the study.

5.2.1 Direct Costs of Education and students transition rate

Objective one of the study sought to establish the effect of direct costs of education on students' transition rate in public boarding schools in Uasin Gishu county Kenya. The findings of the study revealed that public boarding secondary schools in Uasin Gishu county recorded a fairly high transition rate (Mean 4.41, SD = 0.65) on a scale of 1 to 5. However, the study established that some students do not transition to the next class because of the inability of their parents to make payments of levies on time. Hence, some students are left behind and do not finish with their cohorts. This is because when they are sent away for fees. They miss some school hours forcing them to repeat a class, as those who are regular in school attendance move forward to the next class. The study found out that school levies are a problem for a significant proportion of parents as it affects students' smooth transition from one class to the next class.

Correlation analysis revealed that there is an inverse correlation between direct costs of education and students transition rates. Multiple regression was run to predict students' transition rate from the direct cost of education epitomized by the cost of accommodation, school meals, activity fees and cost of Repair Maintenance and Improvement. The model statistically and significantly predicted students' transition rate $F(4, 29) = 38.09$, $p < .001$, Adjusted $R^2 = 0.818$. Out of four aspects of the direct educational costs, the cost of school meals did not show any statistically significant effect on students' transition rate. This signifies that a variation in the cost of school meals would not cause a statistically significant change in students' transition rates. However, accommodation costs, activity fees and costs of Repair Maintenance and Improvement all have a statistically significant unique contribution to the prediction. The largest contributing predictor is Repair Maintenance and Improvement (Beta=-.772) followed by activity fee (Beta=-.177) to explain students' transition rate. Multicollinearity problem does not exist in the model as VIF for all variables is < 10 (or Tolerance > 0.1). The model was adequate to predict the level of students' rate of transition among the public boarding secondary schools, hence it was appropriate for the data. This proves that the combination of the various aspects of the direct cost was quite good. Generally, direct costs of education negatively affect students' transition rates in public boarding secondary schools.

5.2.2 Direct costs of education and students retention rate

The second objective of the study intended to determine the effect of direct costs of education on students' retention rate in public boarding secondary schools. The results revealed that the retention rate in public boarding secondary schools in Uasin Gishu County for the three-consecutive cohorts varied from 93.3% in the first cohort

(2015 – 2018) to 92.2% in the last cohort (2017 – 2020). Correlation analysis indicated that there was generally a negative relationship between direct costs of education and students' retention rate in public boarding secondary schools.

Multiple regression was run to predict students' retention rate from the direct cost of education represented by the cost of accommodation, school meals, activity fees and cost of Repair Maintenance and Improvement. The model statistically and significantly predicted students' retention rate $F(4, 29) = 132.46$, $p < .001$, Adjusted $R^2 = 0.941$. This indicates that the direct cost of education accounts for 94.1% of the variance in students' retention rate in boarding secondary school education. Out of the four aspects of the direct cost of education, all had a statistically significant effect on students' transition rate. This means that cost of accommodation, school meals, activity fees and Repair Maintenance and Improvement all have a statistically significant unique contribution to the prediction of students' retention rate in boarding secondary schools. The highest contributing predictor is Repair Maintenance and Improvement (Beta= 1.244) and the next is the cost of school meals (Beta =.322) to explain students' retention rate. Multicollinearity problem does not appear in the model as VIF for all variables is < 10 (or Tolerance > 0.1). The model was to commendable to predict the level of students' rate of retention among the public boarding secondary schools, hence it was a good fit for the data. This proves that the combination of the various aspects of the direct cost was quite good. Largely, direct costs of education was established to contain a reciprocal effect on students' retention rate in public boarding secondary schools.

5.2.3 Hidden costs of education and their effects on students transition rate.

The third objective of this study sought to assess the effect of hidden costs of education on students' transition rates in public boarding schools in Uasin Gishu County. The hidden costs of education investigated included costs of admission requirements, cost of school uniforms, cost of students' personal effects, cost of teachers' motivation fee and cost of Board of Management (BOM) teacher's salary. The findings of the study indicates a statistically significant inverse relationship between hidden costs of education and students transition rate in public boarding secondary schools. From the five aspects of the hidden cost of education, the cost of school uniforms had the strongest relationship with students' transition rate, while the cost of personal effects had the weakest relationship with students' transition rate, but all were statistically significant.

Multiple regression was utilized to predict students' transition rate from hidden cost of education represented by costs of admission requirements, cost of school uniforms, cost of students' personal effects, teachers' motivation fee and Board of Management (BOM) teacher's salary. The model statistically significantly predicted students' transition rate, F (5, 28) = 4.735, $p < .001$, Adjusted R^2 = 0.365. This showed that the hidden cost of education accounts for 36.5% of the variance in students' transition rate in boarding secondary school education. However, all five aspects of hidden costs of education showed a statistically significant effect on students' transition rates. This means that costs of admission requirements, cost of school uniforms, cost of students' personal effects, teachers' motivation fees and Board of Management (BOM) teacher's salary all have a statistically significant unique contribution to the prediction of students' transition rate in boarding

secondary schools. The highest contributing predictor is the expense on school uniforms (*Beta*= -0.616) and the least is the cost of teachers' motivation fee (*Beta* = -0.047) to explain students' transition rate. The study established that there was no multicollinearity problem in the model since VIF for all variables was < 10 (or Tolerance > 0.1). Hence, the model was adequate to predict the level of students' rate of transition among the public boarding secondary schools, thus the regression model was excellent for the data. This proves that the combination of the various aspects of the hidden cost of education was plausible. Essentially, the hidden cost of education was established to have a reciprocal effect on students' transition rate in public boarding secondary schools.

5.2.4 Hidden Costs of Education and Student Retention Rate.

The fourth objective of the study sought to examine the effect of hidden costs of education on the student retention rate in public boarding secondary schools in Uasin Gishu County. Hidden costs of education such as the cost of student's personal effects, motivation fees, cost of BoM teachers' salaries, school uniform cost and the cost of admission requirements were explored in the study. Correlation analysis indicated that there existed an indirect relationship between hidden costs of education and student retention rates. A multiple regression run to predict students' retention rate from hidden cost of education established that the model was statistically significant predictor of students' retention rate $F(5, 28) = 5.268$, $p < .001$, Adjusted $R^2 = 0.393$. This implied that the hidden cost of education accounts for 39.3% of the variance in students' retention rate in boarding secondary school education. Out of the five aspects of hidden costs of education, all indicated a statistically direct effect on students' transition rate. This means that hidden costs of

education all have a statistically significant unique contribution to the prediction of students' retention rate in boarding secondary schools. The highest contributing predictor is school uniform (Beta= .535) and the next is the cost on personal effect (Beta =.297) to explain students' retention rate. The hidden cost of education that contributed the least effect on the retention rate of students in public boarding secondary schools was the teachers' motivation fee. The cost of school uniform uniquely contributes 7.6% to the model, students' effect uniquely explains 3.5%, costs of admission requirements uniquely explains 2.8% and cost of BoM teachers' salary and cost of teachers' motivation fee collectively explains a negligible proportion (< 2%) of the variance in retention rate among students in public boarding secondary schools. Multicollinearity problem does not exist in the model as VIF for all variables was < 10 (or Tolerance > 0.1). The model was adequate to predict the level of students' rate of retention among the public boarding secondary schools, hence it was a good fit for the data. This proves that the combination of the various aspects of the hidden cost of education was plausible.

5.3 Conclusions

Based on the findings from the four objectives and the hypotheses, the study conclusions are illustrated below;

Direct costs of education encompass the cost of accommodation, cost of school meals, activity fees and the cost of repairs, maintenance and improvement. The literature reviewed associated these costs with students' transition rates in public boarding secondary schools. The study maintains that households taking students to public boarding schools incur these costs. Principals confirmed that these costs are crucial for a steady and progressive teaching/learning process. The study as well

indicated that direct costs of education are a significant predictor of students' transition rate. Further, the study showed that each aspect of direct costs of education differs in their level of influence and their contribution to the changes in students transition rate in boarding schools. For instance, the cost of Repairs, Maintenance and Improvement (RMI) had the largest contribution to the changes in students' rate of transition. The cost of school meals on the other hand contributed a negligible amount of change in students' transition rate. The results illustrated that there was an inverse correlation between direct costs of education and students transition rate. In general, an increase in any aspect of the direct costs of education results in a drop in students' transition rates. This study, therefore, concludes that, despite tuition waivers and other policies put in place by the government, households still incur direct costs of education which affect the student transition rate in public boarding schools in Kenya.

The study posits that direct costs of education predict student retention rates in public boarding secondary schools. Further, it revealed that there was an indirect relationship between the direct costs of education and students retention rate. The principals confirmed that the costs of accommodation, school meals, activity fees and the cost of Repairs, Maintenance and Improvement were important inputs in the teaching /learning process and therefore parents have to meet them. However, they noted that they could affect students' retention rate if not paid on time. The findings indicated that each aspect of the direct costs of education differs in their level of effect on students retention rate. Likewise, it revealed that their contribution to the changes in student retention rate differs. For instance, the study showed that the cost of Repairs, Maintenance and Improvement had the highest contribution while the

cost of school meals accounted for the lowest change. The study, therefore, concludes that direct costs of education affect students retention rate because any increase in the costs could result in a drop in student retention rate and vice versa.

Hidden costs of education included the cost of compulsory admission/entry requirements, cost of school uniforms, cost of students' personal effects, motivation fees and the cost of Board of (BOM) teachers' salaries. The study findings indicated that these costs have an inverse relationship with students' transition rates in public boarding secondary schools. The results indicate that these costs are associated with students' transition rates. Principals said that these costs are critical in public boarding secondary schools even though they are not reflected in the Government recommended fee structure. The study showed that each aspect of the hidden costs differs in their level of influence and contribution to the changes in students' transition rate. For example, the study revealed that school uniform cost made the highest contribution as the cost of BoM teachers' salaries contributed the least. For each unit increase on each aspect of hidden cost, there would be a subsequent drop in the level of students' transition rate and vice versa. This leads to the conclusion that hidden education costs affect transition rates of students in public boarding secondary schools.

Equally, the study noted that hidden costs of education namely; the cost of students' personal effects, motivation fees, cost of BOM teachers' salaries, cost of school uniforms and that of compulsory admission requirements are predictors of students' retention rates in public boarding secondary schools. The study revealed that the five aspects of hidden costs of education vary in their level of influence and contribute

differently to the changes in students' retention rate. In this case, the cost of students' school uniform highly affects the level of students' retention while the costs of teachers' motivation and cost of BoM teachers' salary each explains a negligible proportion of the variance. Principals who were interviewed in this study confirmed that these costs though not listed by the Government in the official fees structure play a key role in boarding schools. Again, they added that their absence significantly affects students' participation in schools if they are not provided for. The study further confirms that, for each increase in the cost of each aspect of hidden costs, there is a drop in the level of students' retention rate. From the study results, therefore, it can be concluded that hidden costs of education are among the reasons for low students' retention rates in public boarding secondary schools in Kenya.

5.4 Recommendations

This study provides recommendations related to policy, practice and further research.

5.4.1 Policy Recommendations

i. The government through the state department of Basic education and early learning should review and further increase the capitation per student to cover up to boarding expenses in public boarding secondary schools which are not covered by the Free Secondary Education programme. The study findings showed that boarding expenses form the bulk of fees paid in public boarding secondary schools as indicated by the principals during interviews. The study also indicated that costs could affect students' participation. It is therefore recommended that the government acts on these costs in order to

enhance students' participation (transition and retention rates).

ii. The government through the Teachers Service Commission should employ enough teachers to prevent schools from hiring teachers through parents as a means to curb understaffing. This will relieve parents of the payment of Board of Management (BOM) teachers' salaries.

iii. The study recommends that the bursary allocation amount should be increased and the bursary allocation criterion and procedures should be streamlined to allow the truly needy students to benefit. The allocation of Ksh 5000 per student under the bursary scheme is too little for students in boarding schools as indicated by the principals. This recommendation is based on the principals' reports that the allocations are not enough to meet all the boarding requirements. Again, they reported that non-deserving students are awarded at the expense of the true and deserving needy students.

5.4.2 Recommendation for Practice

The study presents the following recommendations b for practice;

i. The government should empower parents through favorable and stable prices for their agricultural products such as maize, milk, wheat, tea, and coffee among others to boost their economic power and hence their ability to meet financial obligations which include fee payments in boarding secondary schools. The government should also offer loans with little interest for poor parents to invest in and educate their children. Alongside empowerment, parents need to be sensitized on their role in enhancing student's participation.

ii. Schools should solicit funds from diverse sources such as donors, sponsors, well-wishers and entrepreneurs to support the needy students and hence improve their participation in schools.

iii. The government should construct enough school facilities and fully fund school projects to relieve parents/guardians from the cost of school projects under the Repairs, maintenance and improvement which the study singled out as a threat to students transition and retention rates. Again, on the same note, funds allocated to the Constituency Development Fund for the allocation of school projects should be increased to match the rising demands in schools.

iv. The government should ensure consistency and sustainability in the supply of sanitary towels to girls in secondary schools. The basis of this recommendation originates from the principals of girls secondary schools who reported that girls from low economic backgrounds drop from school due to persistent lack of critical items such as sanitary towels. In addition, they reported that, a number of girls who resort to seeking support from boda boda riders and other male sponsors/supporters have dropped out of school because of teenage pregnancy.

5.4.3 Recommendation for Further Research

i. Since this research was done in public boarding schools, another study should be replicated in private boarding schools in Kenya for triangulation.

ii. A study ought to be done to examine the influence of household education costs on other indicators such as student attendance and completion rate.

iii. The current study focused on direct costs and hidden costs of education only. There is a need for another study to explore the effect of indirect costs of education also known as the opportunity costs on students' participation. These are the foregone earnings as households take their children to school. They could also be influencing students' participation.

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APPENDICES

APPENDIX I: QUESTIONNAIRE FOR PARENTS ON HOUSEHOLD EDUCATIONAL COSTS AND THEIR EFFECTS ON STUDENTS PARTICIPATION

Dear parents, I am Naumy Jeptanui a student at Kenyatta University. I am pursuing a Doctor of Philosophy degree in Education Planning and Economics of Education. Currently, I am carrying out a study on household education costs and their effect on student participation in public boarding secondary schools in Uasin Gishu County, Kenya. You have been selected to take part in the study because you are aware of the costs households/families incur in taking their children to secondary schools. This questionnaire therefore is meant to collect data/information for the sole purpose of this study alone. You are persuaded to fill it with a lot of honesty and sincerity. For confidentiality purposes, never write your identification anywhere. Thank you

Part A: Background Information of the Parents. (Put a tick where applicable)

1. What is your gender?

   Male [ ] Female [ ]

2. Kindly indicate your age?

   Between 20-29 years [ ]
   Between 30-39 years [ ]
   Between 40-49 years [ ]
   Between 50 and above years [ ]

3. Tick your highest education level?

   None [ ] Primary [ ] Secondary [ ]
   Middle level college [ ] University [ ]
   Others specify……

4. What is your main source of income?

Salary	[ ]	Wage	[ ]	Business	[ ]
Donation	[ ]	Farming	[ ]		

Others specify.....

5. What is your average income per year in Kenya Shilling?

Below 30,000	[ ]	30,001 - 60,000	[ ]
60,001 - 120,000	[ ]	120,001 - 180,000	[ ]
180,001 - 240,000	[ ]	241,000 and above	[ ]

Part B: Direct Costs of Education

1. Boarding Equipment and Stores Fee (Cost of accommodation and meals)

i. How much have you paid for your child's school bedding in Kenya shillings? Please tick appropriately.

Term 1, 2019		**Term 2, 2019**		**Term 3, 2019**	
Not applicable	[ ]	Not applicable	[ ]	Not applicable	[ ]
1-1000	[ ]	1-1000	[ ]	1-1000	[ ]
1001-2000	[ ]	1001-2000	[ ]	1001-2000	[ ]
2001 &above	[ ]	2001 &above	[ ]	2001 &above	[ ]

ii. How much have you paid for your child's **school meals** in Kenya shillings?

Please tick appropriately.

Term 1, 2019		**Term 2, 2019**		**Term 3, 2019**	
Not applicable	[ ]	Not applicable	[ ]	Not applicable	[ ]
1-1000	[ ]	1-1000	[ ]	1-1000	[ ]
1001-2000	[ ]	1001-2000	[ ]	1001-2000	[ ]
2001 &above	[ ]	2001 &above	[ ]	2001 &above	[ ]

2. Activity Fees

How much have you paid for your child's Activity fees in Kenya shillings? Please tick appropriately.

Term 1, 2019		**Term 2, 2019**		**Term 3, 2019**	
Not applicable	[ ]	Not applicable	[ ]	Not applicable	[ ]
1-1000	[ ]	1-1000	[ ]	1-1000	[ ]
1001-2000	[ ]	1001-2000	[ ]	1001-2000	[ ]
2001 &above	[ ]	2001 &above	[ ]	2001 &above	[ ]

3. Repairs Maintenance & Improvement Cost

How much have you paid for PTA projects in your child's school? Please tick appropriately.

Term 1, 2019		**Term 2, 2019**		**Term 3, 2019**	
Not applicable	[ ]	Not applicable	[ ]	Not applicable	[ ]
1-1000	[ ]	1-1000	[ ]	1-1000	[ ]
1001-2000	[ ]	1001-2000	[ ]	1001-2000	[ ]
2001 &above	[ ]	2001 &above	[ ]	2001 &above	[ ]

Part C: Hidden Costs of Education

1. Admission/Entry Items Requirement

How much did you pay for your child's Entry Items Requirement (compulsory for admission) for form one admission (e.g umbrella, geometrical set, spring files, a ream or two of photocopy papers, secondary school atlas, Oxford advanced learners' dictionary, song books, Swahili reading books, English reading books, Kamusi, among others) in Kenya shillings? Please tick appropriately.

0-5000 [ ] 5001-10000 [ ] 10001-15000 [ ]

15000-20000 [ ] 20000 and above [ ]

2. Cost of School Uniforms

i. How much have you paid for your **child's regular school uniforms (e.g** short/long trousers/Skirt, school tie, school sweater, school socks etc) in Kenya shillings? Please tick appropriately.

Term 1, 2019	**Term 2, 2019**	**Term 3, 2019**
Not applicable[ ]	Not applicable[ ]	Not applicable[ ]
1-2500 [ ]	1-2500 [ ]	1-2500 [ ]
2501-5000 [ ]	2501-5000 [ ]	2501-5000 [ ]
5001 &above [ ]	5001 &above [ ]	5001 &above [ ]

ii. How much have you paid for your child's **Sports Uniform/Games kit** in Kenya shillings? Please tick appropriately.

Term 1, 2019	**Term 2, 2019**	**Term 3, 2019**
Not applicable [ ]	Not applicable[ ]	Not applicable[ ]
1-2500 [ ]	1-2500 [ ]	1-2500 [ ]
2501-5000 [ ]	2501-5000 [ ]	2501-5000 [ ]
5001 &above [ ]	5001 &above [ ]	5001 &above [ ]

iii. How much have you paid for your child's **school shoes** in Kenya shillings? Please tick appropriately.

Term 1, 2019	**Term 2, 2019**	**Term 3, 2019**
Not applicable [ ]	Not applicable[ ]	Not applicable[ ]
1-1000 [ ]	1-1000 [ ]	1-1000 [ ]
1001-2000 [ ]	1001-2000 [ ]	1001-2000 [ ]
2001 &above [ ]	2001 &above [ ]	2001 &above [ ]

iv. How much have you paid for your child's school **sports shoes** in Kenya shillings? Please tick appropriately.

Term 1, 2019	**Term 2, 2019**	**Term 3, 2019**
Not applicable [ ]	Not applicable[ ]	Not applicable[ ]
1-1000 [ ]	1-1000 [ ]	1-1000 [ ]
1001-2000 [ ]	1001-2000 [ ]	1001-2000 [ ]
2001 &above [ ]	2001 &above [ ]	2001 &above [ ]

3. Cost of child's school personal effects

How much have you paid for your **child's school personal effect** (i.e towels, soaps, tooth paste, tooth brush and bucket) in Kenya shillings? Please tick appropriately.

Term 1, 2019		**Term 2, 2019**		**Term 3, 2019**	
Not applicable	[ ]	Not applicable	[ ]	Not applicable	[ ]
1-1000	[ ]	1-1000	[ ]	1-1000	[ ]
1001-2000	[ ]	1001-2000	[ ]	1001-2000	[ ]
2001 &above	[ ]	2001 &above	[ ]	2001 &above	[ ]

4. Motivational fee

How much have you paid for motivational fee of teachers and students in your child's school? Please tick appropriately.

Term 1, 2019		**Term 2, 2019**		**Term 3, 2019**	
Not applicable	[ ]	Not applicable	[ ]	Not applicable	[ ]
1-1000	[ ]	1-1000	[ ]	1-1000	[ ]
1001-2000	[ ]	1001-2000	[ ]	1001-2000	[ ]
2001 &above	[ ]	2001 &above	[ ]	2001 &above	[ ]

5. BOM teacher's salaries

How much have you paid for Board of Management (BOM) teachers' salaries in your child's school? Please tick appropriately.

Term 1, 2019	**Term 2, 2019**	**Term 3, 2019**
a) Not applicable	a) Not applicable	a) Not applicable
b) 1-500	b) 1-500	b) 1-500
c) 501-1000	c) 501-1000	c) 501-1000
d) 1001 and above	d) 1001 and above	d) 1001and above

Part D: Students' Participation in Secondary Education

Transition rate

	Always 5	Mostly 4	Sometimes 3	Rarely 2	Never 1
My child promptly moves to the next class					
My child is always with his/her cohorts					
My child is in the right class according to his age					
My child has never delayed in the class level					
My child is in appropriate class according when he/she joined the class					

APPENDIX II: INTERVIEW SCHEDULE FOR PRINCIPALS ON HOUSEHOLD EDUCATION COSTS AND THEIR EFFECTS ON STUDENTS PARTICIPATION

Dear principal, My name is Naumy Jeptanui, and I am a doctoral candidate in the Department of Educational Administration, Policy and Curriculum Studies in the school of Education at Kenyatta University. Currently I am carrying out a study on household education costs and their effect on student participation in public Boarding secondary schools in Uasin Gishu County, Kenya as part of the requirements for the award of PhD degree of Kenyatta University. You were chosen as the head of the institution only so that you could give information for this study. Honesty and sincerity will be highly appreciated. Any information you give will be handled with high confidentiality.

A report shall be generated from the interview but your personal information including your name shall never be included whatsoever.

Issue	**Research question**	**Probing question**
SECTION A **Opening session**	Introduction	• How long have you been a teacher? • For how long have you been a principal in your current school?

Issue	Research question	Probing question
SECTION B **Direct costs of education**	To what extent do direct costs of education affect student transition rate in your school? What is the effect of direct costs of education on student retention rate/ attendance in your school?	• Do you have students who have failed to transit to the next class? • What are the reasons? • Which costs contribute mostly? • Are there students who have delayed or repeated classes since they reported to your school? • Are all the students who joined form one at the same time still moving together as a cohort? If No what are the reasons. • Are there students who have missed to report to school promptly on the opening date? • What are the reasons? • Are students sent back home for school payments? • How often? • Are there students who totally fail to return to school after being sent home for school levies? • What are the reasons? • Are there students who have missed to attend classes and or other school programmes? What are the reasons?

Issue	Research question	Probing question
Section C **Hidden costs of education**	How do hidden costs of education affect student transition rate in public boarding secondary schools? What are the effects of hidden costs of education on student retention rate in public boarding	• Which costs not covered by government capitation are parents required to pay? • How much do they pay? • How do these costs affect student transition from grade to grade in your school? • Are there students who declined to transit from one class to the next class? • What are the reasons? • Are there students who have delayed or repeated classes since they reported to your school? • What are the reasons? • Are all the students who joined form one at the same time still moving together as a cohort? If No what are the reasons. • How do these payments affect student retention/ attendance? • Do you have students who dropped out of school? • What are the reasons? Are there students who have missed to report to school promptly on the opening date? • What are the reasons? • Are students sent back home for

Issue	Research question	Probing question
	secondary schools?	school payments? • How often? • Are there students who totally fail to return back to school after being sent home for fees? • What are the reasons? • Are there students who have missed to attend classes and or other school programmes? • What are the reasons? • Do you think education costs affects student's participation?
Section D Strategies to enhance student participation	What policies/strategies can be availed to quarantee100% student participation in secondary schools?	• In your view, what can the government do to further reduce cost burden on households and enhance student retention and transition? • Propose how schools should respond in order to prevent low student participation.
Closing remarks		• Do you have any question you wish to ask apart from what we have covered? Do you have any comment you wish to make or add?

THANK YOU SO MUCH FOR YOUR TIME

GOD BLESS

APPENDIX III: DOCUMENT ANALYSIS

Data on students' enrollment per school

School Years/Class	2015	2016	2017	2018	2019	2020
Form 1						
Form 2						
Form 3						
Form 4						
Total						

APPENDIX IV: APPROVAL OF RESEARCH PROPOSAL FROM KENYATTA UNIVERSITY

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke
P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Internal Memo

FROM: Dean, Graduate School **DATE:** 26th October, 2020

TO: Ms. Naumy Jeptanui
C/o Department of Educational
Management, Policy & Curriculum

REF: E83/CE/26372/2011

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that Graduate School Board, at its meeting on 21st October, 2020, approved your Research Proposal for the Ph.D. Degree entitled, **"Household Education Costs and their Effects on Students Participation in Public Boarding Secondary Schools in Uasin Gishu County, Kenya."**

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation and Ethics Review Committee, Kenyatta University.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking and Progress Report Forms per semester. The Forms are available at the University's Website under Graduate School webpage downloads.

By copy of this letter, the Registrar (Academic) is hereby requested to grant you substantive registration for your Ph.D studies.

Thank you.

JULIA GITU
FOR: DEAN, GRADUATE SCHOOL

CC. Registrar (Academic) Att. Mr. Richard Chweya

Chairman, Department of Educational Management, Policy & Curriculum Studies
Supervisors:

1. Dr. Norbert Ogeta
C/o Department of Educ. Management, Policy & Curriculum Studies
Kenyatta University

2. Dr. John Ndiritu
C/o Department Educ. Management, Policy & Curriculum Studies
Kenyatta University

APPENDIX V: RESEARCH AUTHORIZATION FROM

KENYATTA UNIVERSITY

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Our Ref: E83/CE/26372/2011

DATE: 26th October, 2020

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MS. NAUMY JEPTANUI – REG. NO. E83/CE/26372/11

I write to introduce Ms. Naumy Jeptanui who is a Postgraduate Student of this University. She is registered for Ph.D. degree programme in the **Department of Educational Management, Policy & Curriculum Studies.**

Ms. Jeptanui intends to conduct research for a Ph.D. thesis Proposal entitled, **"Household Education Costs and their Effects on Students Participation in Public Boarding Secondary Schools in Uasin Gishu County, Kenya."**

Any assistance given will be highly appreciated.

Yours faithfully,

PROF. ELISHIBA KIMANI
DEAN, GRADUATE SCHOOL

APPENDIX VI: RESEARCH LICENSE

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **912152**

Date of Issue: **25/November/2020**

RESEARCH LICENSE

This is to Certify that Ms.. NAUMY JEPTANUI of Kenyatta University, has been licensed to conduct research in Uasin-Gishu on the topic: HOUSEHOLD EDUCATION COSTS AND THEIR EFFECTS ON STUDENTS PARTICIPATION IN PUBLIC BOARDING SECONDARY SCHOOLS IN UASIN GISHU COUNTY, KENYA. for the period ending : 25/November/2021.

License No: **NACOSTI/P/20/7626**

912152

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

APPENDIX VII: RESEARCH AUTHORIZATION FROM THE COUNTY DIRECTOR OF EDUCATION

REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING & BASIC EDUCATION

Mobile : **0721820731**
Email: cdeuasingishucounty@yahoo.com
: cdeuasingishucounty@gmail.com
When replying please quote:

County Director of Education,
Uasin Gishu County,
P.O. Box 9843-30100,
ELDORET.

Ref: No. MOEST/UGC/TRN/9/VOL III/200

5TH FEBRUARY,2021

NAUMY JEPTANUI
KENYATTA UNIVERSITY

RE: RESEARCH AUTHORIZATION

This office has received a request from your Institution to authorize you to carry out research on ***"Household Education Costs and their Effects on Students Participation in Public Boarding Secondary Schools",*** **in** Uasin Gishu County.

We wish to inform you that the request has been granted until **25th November, 2021**. The authorities concerned are therefore requested to give you maximum support.

We take this opportunity to wish you well during this data collection.

Psinen Michael
For: **COUNTY DIRECTOR OF EDUCATION**
UASIN GISHU

FOR: COUNTY DIRECTOR OF EDUCATION
UASIN GISHU COUNTY
05 FEB 2021
P.O. Box 9843 - 30100, ELDORET
TEL: 053-2063342 / 0719127212

APPENDIX VIII: RESEARCH AUTHORIZATION FROM THE COUNTY COMMISSIONER

REPUBLIC OF KENYA

OFFICE OF THE PRESIDENT
MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Cell phone: 0726 677 291
E-mail Address: ugcountycommissioner@gmail.com

When replying please quote:

COUNTY COMMISSIONER'S OFFICE
UASIN GISHU COUNTY
P O Box 30-30100
ELDORET

Ref:UG.ADM.15/10 VOL.III(200)

8th February, 2021

TO: WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION: MS. NAUMY JEPTANUI REG. NO. E83/CE/26372/11

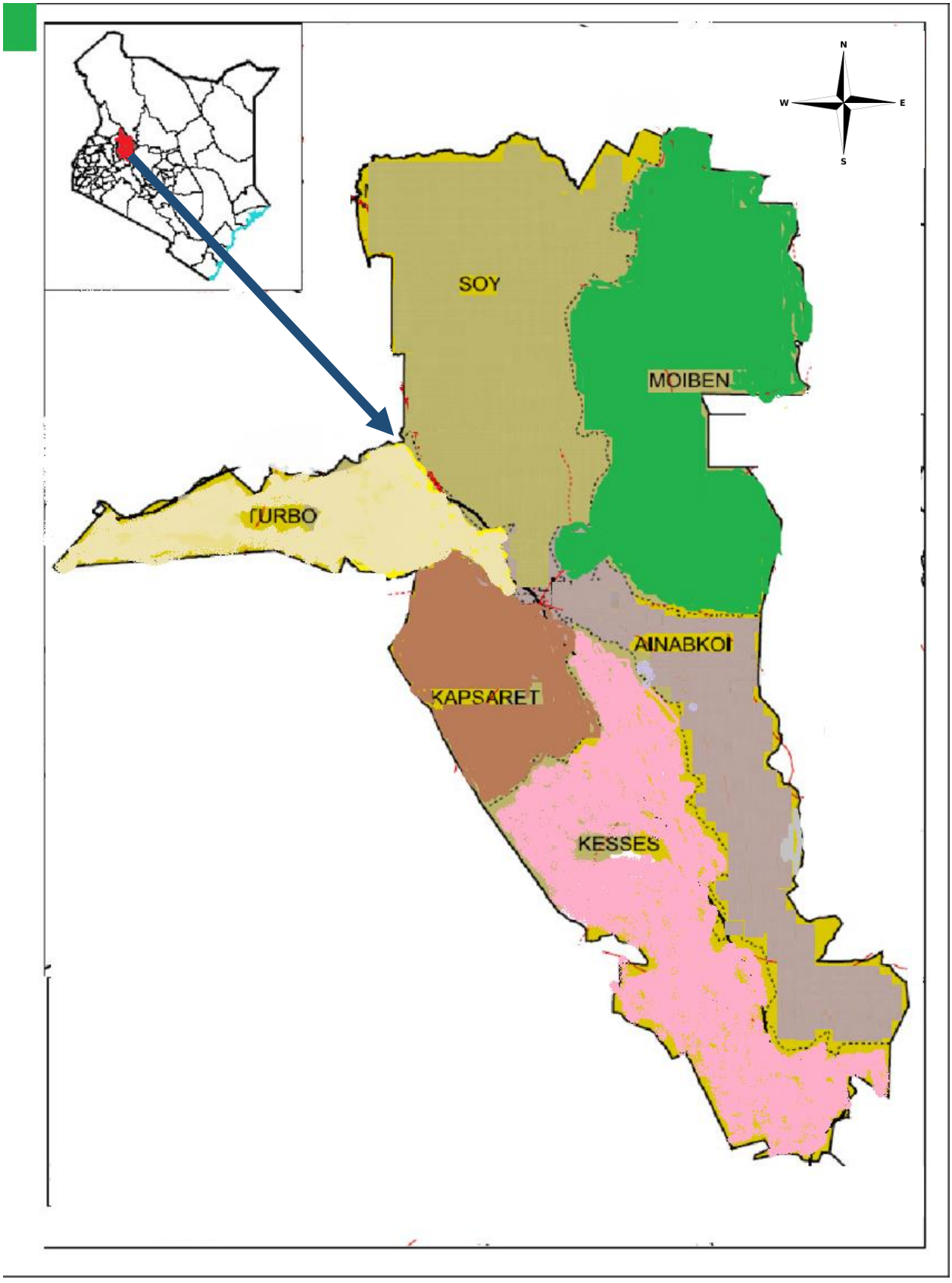
The above named person is a PhD student at Kenyatta University. She has been authorized to conduct research in Uasin Gishu County on the topic; '***Household Education Costs and their effects on Students participation in public boarding secondary schools in Uasin Gishu County, Kenya'*** for a period ending 25th November, 2021.

Kindly accord her the necessary support/ assistance as appropriate.

M. O. Orina
For: County Commissioner
UASIN GISHU

COUNTY COMMISSIONER
UASIN GISHU COUNTY

APPENDIX IX: MAP OF UASIN GISHU COUNTY



APPENDIX X: STUDENT ENROLMENT IN PUBLIC BOARDING SECONDARY SCHOOLS IN UASIN GISHU COUNTY (2015 – 2020)

S/NO	FROM 1	FORM 2	FORM 3	FORM 4	GRAND TOTAL
2020	5481	4629	4130	4055	18295
2019	4746	4666	4030	3760	17202
2018	4287	4084	3648	3732	15751
2017	3980	3856	3567	3485	14888
2016	3917	3626	3479	3167	14189
2015	3523	4204	3481	2829	14037