

**EFFECTIVENESS OF COST - SAVING MEASURES IN IMPROVING
KCSE PERFORMANCE IN PUBLIC SECONDARY SCHOOLS: THE
CASE OF MARAKWET WEST DISTRICT, KENYA**

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DECLARATION

This Project is my original work and has not been presented for a degree in any other university.

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DEDICATION

This project is dedicated to my loving wife, Rose and children Kiptoo, Jerono, Kimwetich, Jerutto, Jepchirchir and Kipkemboi for their support towards my studies.

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ABSTRACT

This study sought to assess the effectiveness of cost saving measures in improving KCSE performance in public secondary schools in Kenya. Specifically, the study aimed at meeting objectives such as analyzing resource endowment of public secondary schools, the effectiveness of cost saving measures in improving KCSE performance and make recommendations on the effectiveness of cost saving measures in improving KCSE performance in public secondary schools in Marakwet West district. Generally, the research examined in absolute terms resource issue and the implication of resource allocation and utilization in improving KCSE performance and finding out if the phenomenon of KCSE performance was directly related to this problem. The study obtained qualitative and quantitative aspects based on the data from the public secondary schools which were selected in Marakwet West district. In the study, nineteen (19) head teachers from KCSE schools or centers were put into strata through stratified sampling. Moreover, (one) 1 district education officer was involved in the study. The head teachers were given questionnaires while the DEO was interviewed by the researcher. The questionnaires were administered personally by the researcher after being piloted at Moi Kapsowar Girls Secondary School and Kapcherop Boys Secondary School for validity and reliability tests of the instruments. The data collected was both quantitative and qualitative in nature. Quantitative data was analyzed using descriptive statistics and SPSS-X computer programme. Qualitative data was analyzed according to themes, objectives and the research questions. Inferences, conclusion and recommendations were then drawn based on the findings. The findings of the study revealed that most public secondary schools in the district did not have adequate learning resources to improve KCSE performance as the district mean score in 2009 was 4.678 with only 2 students attaining A-, and 27 getting the grade of B+. It was also found that all schools had cost-saving measures in place despite low performance in KCSE and the existence of small schools with low pupil-teacher ratio and low pupil-worker ratio. Otherwise, it was found that public secondary schools in the district were 92.8% optimistic of implementing effective cost -saving measures in the future. The study would help educationists to identify effective cost- saving measures so as to improve KCSE performance in public secondary schools. Additionally, the study drew attention to MoE and public secondary school management to the hindrance of implementing effective cost -saving measures and also added literature to the body of knowledge on the effectiveness of cost- saving measures in improving KCSE performance in public secondary schools.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS.....	vi
TABLES	x
FIGURES	xi
LIST OF ACRONYMS AND ABBREVIATIONS	xii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background to the problem.....	1
1.1.1 Global View	1
1.1.2 Africa	2
1.1.3 Kenya.....	2
1.1.4 Marakwet West District Perspective.....	7
1.2 Statement of the Problem.....	8
1.2.1 Purpose of the Study	8
1.3 Objectives of the Study.....	9
1.4 Research Questions.....	9
1.5 Significance of the Study	9
1.6 Limitation of the Study	10

1.6.1 Delimitation of the Study.....	10
1.7 Assumptions of the Study.....	11
1.8 Theoretical Framework.....	11
1.8.1 Conceptual Framework.....	12
1.9 Operational Definition of Terms.....	14
CHAPTER TWO	16
LITERATURE REVIEW	16
2.1 Introduction.....	16
2.2 Education Production Function.....	16
2.3 Cost - Saving Measures	17
2.4 Measures of Effectiveness	21
2.5 Determining Factors in KCSE Performance.....	23
2.6 Summary.....	25
CHAPTER THREE	26
RESEARCH METHODOLOGY AND DESIGN	26
3.1 Introduction.....	26
3.2 Research Design.....	26
3.3 Locale of the Study.....	27
3.4 Target Population.....	27
3.5 Sample and Sampling Procedure	27
3.6 Research Instruments	28
3.7 Questionnaires for Head teachers	29

3.71 Interview for DEO	29
3.8 Piloting.....	29
3.9 Reliability.....	30
3.10 Validity	30
3.11 Data Collection Procedure	31
3.12 Data Analysis	31
CHAPTER FOUR.....	32
DATA ANALYSIS, PRESENTATION AND INTERPRETATION	32
4.1 Introduction.....	32
4.2 Back ground information on public secondary schools in Marakwet West District	34
4.3 Resource Endowment	38
4.4: Established cost saving measures.	44
4.5: Effectiveness of the established cost saving measures	46
4.7 PRESENTATION.....	60
CHAPTER FIVE	65
SUMMARY, CONCLUSION AND RECOMMENDATIONS.....	65
5.1 Introduction.....	65
5.2 Summary	65
5.3 Conclusion	67
5.4 Recommendation	67
5.5 Suggestion For Further Research.....	68
REFERENCES	70

APPENDIX A: Budget	75
APPENDIX B:Time Schedule	76
QUESTIONNAIRE FOR HEAD TEACHERS	77
APPENDIX C	84
INTERVIEW SCHEDULE FOR DEO	84

TABLES

1.1 Recurrent expenditure of Ministry of Education 2003/2004 – 2007/2008 financial years.....	3
1.2 KCSE Performance in Marakwet West district.....	8
3.1 Number of Public Secondary Schools Selected for the Sample.....	28
4.1 Sizes of Secondary Schools in the District.....	35
4.2 Present Enrolment in Public Secondary Schools.....	36
4.3 KCSE Performance in public Secondary Schools	37
4.4 Responses on Teacher Establishment	39
4.5 Number of Un-Trained Teachers.....	40
4.6 Number of trained teachers.....	41
4.7 Number of Non-Teaching Staff.....	42
4.8 Qualification of School Accounts Clerk.....	43
4.9 Qualification of Laboratory Technician.....	43
4.10 Established cost -saving measures in public secondary schools.....	45
4.11 Explanations on the Effectiveness of Established Cost- Saving Measures...	48
4.12 Potential Cost -Saving Measures.....	49
4.13 Reasons for Adopting Other Cost -Saving Measures.....	50
4.14 Optimal Utilization of Educational Resources.....	52
4.15 Responses on the Realized output.....	53
4.16 Specification of problems faced.....	56
4.17 Possible solutions to the problems.....	57
4.18 Other Factors Determining KCSE Performance.....	59

FIGURES

1.1 The effectiveness of cost - saving measures in improving KCSE performance in public secondary schools.....	12
4.1 A bar graph showing public secondary schools by type.....	34
4.2 Performance graph 2006	38
4.3 Pie chart showing adequacy of resources in public secondary schools.....	44
4.4 Bar graph showing head teachers rating on the effectiveness of cost -saving measures.....	47
4.5 Problems encountered by head teachers in adopting effective cost -saving measures	55
4.6 The future of adopting effective cost- saving measures.....	58

LIST OF ACRONYMS AND ABBREVIATIONS

DEO	District Education Officer
GNP	Gross National Product
FPE	Free Primary Education
RoK	Republic of Kenya
MDGs	Millennium Development Goals
GoK	Government of Kenya
EFA	Education for All
FDSE	Free Day Secondary School Education
MoE	Ministry of Education
MoEST	Ministry of Education Science and Technology
SAPS	Structural Adjustment Programmes
EDSAC	Education Sector Adjustment Credit
ASAL	Arid and Semi-arid Lands
MoEHRD	Ministry of Education and Human Resource Development
MoPND	Ministry of Planning and National Development
KCPE	Kenya Certificate of Primary Education
KESSP	Kenya Education Sector Support Programme
DRC	Democratic Republic of Congo
LRC	Learning Resource Centre
ISBN	International Standard Book Number
IPAR	Institute of Policy Analysis and Research
UNESCO	United Nations Education Scientific and Cultural Organization
TSC	Teachers Service Commission

CHAPTER ONE

INTRODUCTION

1.1 Background to the problem

It is widely believed that using public money to provide education will benefit society at large by generating increased wealth, improved employment opportunities and reduction in social problems. This scenario was evident in 1960 when massive increase in spending on education sector took 3.02 percent of world Gross National Product (GNP). Also, in third world countries, increase in total public expenditure on education has been rising to the extent that it exceeds the rate increase in GNP hence the review on the benefits from education investment with the suggestion that spending on education be reduced or its growth be more strictly controlled (Eshiwani, 1993).

1.1.1 Global View

The experience in United States (US) and the rest of the world suggest that providing added resources to schools is an ineffective way to improve quality. This is evidenced by the fact that in US between 1960 and 2000, pupil teacher ratio fell almost 40 percent hence expenditure has increased and the former proved be an unproductive policy (Hanushek, 2003). This implies that in US, small schools incur high costs of operation. Also, in United Kingdom (UK), primary school expenditure diminished sharply as the size of the school increased up to the number of 80 pupils (Nafukho, 1991).

In India, large scale study on student achievement shows that increasing classroom size is effective as tests scores per rupee for various inputs is relative to teacher salary (Pritchett & Filmer, 1997).

Also, countries as wealth as Singapore used double-shift schools throughout primary system for cost effectiveness reasons (Aoki, Drabble, Marope, Mingat, Mook, Purphy, Paci, Patrons, Tan, Winter & Andyang, 2002).

1.1.2 Africa

In the province of Kwazulu Natal in South Africa ,for example, 2009 budget saw the number of no fee schools increase to improve quality of education to poor South Africans (Mkhize 2009).Additionally, effort to expand primary education in Burkina Faso through reduction of unit costs has been hampered by the high cost of teachers. However unit cost was lowered through better focused teachers training (Nafukho, 1991).

In Tanzania, secondary education in 1980 was tightly rationed for financial and manpower planning. The Tanzanian government started with a smaller system, accepted that post primary education should not be expanded beyond the requirements of the economy as gauged by the existing input –output relationships, and budgetary priority to primary education and literacy (Knight & Sabot, 1987).

On educational reforms in Uganda, curriculum review aim to remove many of the inefficiencies in the system such as those associated with the cost effectiveness of teaching individual subjects that are built into the curriculum statements, and system structures and implementation (Clegg & Bregman 2008).

Ultimately, Burkina Faso and Zambia have found multi-grade schooling to be the most cost effective way of making optimal use of classroom facilities and of providing complete primary schooling in sparsely populated areas (Aoki et al, 2002).

1.1.3 Kenya

In Kenya, since independence, there has been a remarkable improvement in her education system which is attributed to large government expenditure and change in the attitude of parents towards education (Kiugu, 1990). This was realized in 1963 when government of Kenya allocated 15 percent of recurrent expenditure to education for paying teachers' salaries and providing instructional materials and equipment as local communities took the initiatives of building schools (Njeru & Orodho, 2003).

Kenya government has further continued to increase resource allocation to education in an effort to provide basic and higher education. This is realized in the Ministry of Education (MoE) expenditure from 2003/04 to 2007/2008 financial years which increased from Kshs. 109.8 billion in 2006/2007 fiscal year to 125.3 billion in 2007/2008 financial year reflecting government commitment to ensuring adequate grants to schools under Free Primary Education(FPE) program. Also, the recurrent expenditure to secondary education increased eight times from Kshs 1.06 billion in 2006/2007 to Kshs 7.8 billion in 2007/2008 fiscal year to cater for newly introduced Free Secondary Tuition. Similarly, recurrent expenditure on teacher education increased by 67.0 percent from Kshs 144.9 million in the 2006/2007 financial year to Kshs 242.0 million in the 2007/2008 financial year as observed in the table below.

Table 1.1: Recurrent expenditure of the Ministry of Education 2003/2004 – 2007/2008 financial years

Kshs. Million

	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
General administration and planning	55,776.74	59,140.80	64,139.32	72,946.86	80,762.52
Pre-primary education	5.51	25.66	57	-50.45	50.45
Primary education	5,966.52	6,583.42	7,148.58	7,746.53	7,874.59
Secondary education	945.42	938.79	2,893.70	1,018.98	7,758.98
Technical education	1,171.40	1,546.55	1,291.09	2,819.00	2,900.00
Teacher education	192.83	210.41	177.72	144.87	242.04
Polytechnic education	175.13	209.77	193.14	353.12	407.56
Special education	466.01	1,538.2	571.72	567.99	584.40
University education	7,470.08	9,735.25	11,885.24	14,158.61	11,904.61
Miscellaneous	240.9	311.06	-	-	-
Total	72,410.54	80,239.91	88,357.51	99,806.41	112,485.61

Source: Economic Survey, 2008*Provisional

From the preceding information, it is clear that there has been rising cost on education and training denying the government the ability to provide adequate financing to other sectors of the economy. For example, with reference to 2004/2005 financial year, government expenditure on social services increased by 4.9 percent from Kshs 106.1 billion in 2003/2004 financial year to Kshs 111.3 billion. Most of the spending financed education service with recurrent expenditure taking the highest share of the total government expenditure on social service with 80.2 percent of the government finance going to Ministry of Education Science and Technology (Ministry of Education Science and Technology (MoEST, 2005). Further increase to investment in social service is realized in 2007/08 financial year whereby government is expected to spend Kshs 175.2 billion on social services compared to 149.5 billion in 2006/07 financial year. This translates to increase in recurrent expenditure to social sector by 16.6 percent mainly due to a 12.7 percent expected increase to education Ministry of Planning and National Development (MoPND, 2008).

The growth of recurrent expenditure on education is largely attributed to greater demand for education, change to education policies and world recession accompanied by inflation. For example, in 1963, the secondary school enrollment stood at 30,120 as compared to 1,382,211 in 2008. This increase in the number of pupils will imply enhanced expenditure on capitation grant, instructional materials and school operating costs. Provisions of administration and professional services have also led to the rise in the current expenditure. For instance, in 2005/06 financial year, increment in teachers and civil servants salaries contributed to the increase in expenditure in general administration and planning from Kshs 59.1 billion in 2004/05 to Kshs 64.1 billion in 2005/06 financial year (GoK, 2006). Another factor, which has led to increase in recurrent expenditure, is improving teacher qualification. To illustrate this, Ministry of Planning and National Development (MoPND) (2008) shows that the recurrent expenditure on teacher education increased by 67.0 percent from 144.9 million in the 2006 and 2008 financial years.

Structural changes in the curriculum such as introduction of 8-4-4 system of education in 1985 has also led to the rise of recurrent expenditure on education as it required more teachers as witnessed in 1984 when number of secondary school teachers rose by 5.9 percent (UNESCO, 1994). Furthermore, the government's commitment to achieve the international development commitment such as Millennium Development Goals (MDGs) and Education For All (EFA), which saw major reforms in the education sector such as the launch and implementation of Free Primary Education (FPE) in January 2003, and the introduction of Free Day Secondary Education (FDSE) in 2008 have added to increase in education recurrent expenditure. To explain this, MOE expenditure from 2003/04 to 2007/08 financial year increased from Kshs 109.8 billion in 2006/07 to Kshs 125.3 billion in 2007/2008 fiscal year to ensure adequate grant to schools under FPE programme. Also, the recurrent expenditure to secondary education increased eight times from Kshs 1.0 billion in 2006/07 to Kshs 7.8 billion in 2007/2008 to cater for newly introduced Free Secondary Tuition. Otherwise, in 2009/2010 financial year Ksh. 5.2 billion was released for FDSE programme (Siringi 2010).

Although the Kenyan government has been committed in financing education, it experiences constraints on the continued growth of public spending on the sector. Therefore, there is need to curb educational expenditure. For example, Kenya Education Commission Report part 1, (1964) recommends that high non teaching staff cost be examined for possible economies, most new secondary schools must be day schools, a minimum of four streams in boarding secondary schools and three in day schools and the policy of equal fees throughout the public secondary schools in Kenya among others.

Secondly, the report on the National Committee on education objectives and Policies (1976) notes with concern the rising cost of educational materials due to inflation and recommends that schools should obtain educational materials from alternative sources. In addition, for secondary schools to afford very expensive facilities such as for science and technical subjects, they should be consolidated into large units with at least four

streams (8 classes) and grouping of schools together to share the use of expensive and scarce specialist teachers. The commission also points out the need to utilize resources that the country possess to maximum benefit through improving teachers education, expanding and strengthening management and co-ordination of education and training and production of educational materials that are culturally relevant, reasonably cheap and expeditiously delivered to those who need them.

Furthermore, in 1986, Kenya government issued Sessional Paper NO. 6 on economic management for renewal growth which saw the introduction of cost sharing in all sectors. The paper was critical to high recurrent expenditure on education and training. Consequently, it recommended control measures to be taken to reduce such expenses to manageable levels (Njeru & Orodho, 2006). Through this Sessional paper, the government decided to reduce the expenditure on formal education to about 30 percent, which would be achieved through increased cost sharing in financing of educational training and in the use of more cost effective measures in the utilization of education facilities, equipment, materials and personnel. (Ibid) further shows that, 1988 Presidential Working Party on Education and Training studied the education sector and recommended ways of ensuring delivery of education and training services within limits of the contained economic conditions and hence recommended the introduction of cost sharing in education. Also, in 1994/05, MoEST reduced allocation to recurrent expenditure on secondary education to below 2 percent. This was due to the previous implementation of Structural Adjustment Programmes (SAPS) through cost sharing in the 1988/89 fiscal year then further adjustment through Education Sector Adjustment Credit(EDSAC)in 1991/92 fiscal year which emphasized among others constraining employment of staff within educational institutions, provision of school textbooks in the disadvantaged and Arid and Semi Arid Lands(ASAL) districts and placed emphasis on quality education and budget rationalization (Njeru & Orodho, 2000).

Still on the issue of cost- saving measures in Kenya education sector, Education Minister Sam Ongeri in Saturday Nation 19th, January 2010 said:

“We must continue the expansion of secondary schools with less than three streams to accommodate more students”.

Also, MoPND, (2008) identifies various cost saving strategies such as efficient utilization of teachers which includes raising the secondary school average teaching load from 18 hours to 20 hours per week, retraining some of the under utilized teachers to specialize in the optional subjects for which supply exceeds demand and sharing teachers across school as deemed appropriate. Other cost-saving measures put in place included placing a lower limit on class size for optimal subjects and considering various options for retraining and deploying teachers below the cut off teaching load. The above measures were strengthened by Teachers Service Commission (TSC) order requiring Principals to have full number of lessons in addition to administrative duties (Daily Nation, Monday 25th, January 2010).

1.1.4 Marakwet West District Perspective

Marakwet West district benefits from government of Kenya support in FDSE. However, the district had a number of challenges ranging from inadequate learning facilities and understaffing. Despite the challenges, the district had introduced intervention measures which include stakeholders meeting, audit of secondary school accounts and training of stakeholders on management of educational institutions to improve KCSE performance (DEO’s Message, 2010).

Considering the Kenya government budgetary constraints against the cost -saving measures established to optimize the production of particular outcome, for example, improving KCSE performance given certain inputs, the need to relate cost saving measures in the identified district to examination results, particularly KCSE performance as illustrated in the table below was timely.

Table 1.2: KCSE Performance in Marakwet West district

KCSE YEAR	ENTRY	GRADES												MEAN SCORE
		A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	
2005	999	-	12	44	70	90	138	146	146	178	118	33	-	5.236
2006	976	1	11	22	54	69	115	122	179	181	162	56	4	4.963
2007	1000	-	7	30	50	78	150	150	200	190	120	25	-	5.330
2008	1048	1	7	32	54	76	121	164	198	196	143	46	-	4.793
2009	1275	-	2	27	59	105	142	179	284	240	186	79	-	4.678

Source: DEOs office file

1.2 Statement of the Problem

Government of Kenya is committed to financing education despite the fact that resources available for education service are limited. As a result of this prevailing situation, there is need for efficient utilization of various inputs in order to obtain the maximum feasible levels of the desired outputs (Jeson, Myston and Smith,1987).This implies that for optimum production of desired output, effective cost - saving measures should be put in place. However, no systematic attempts had been taken to assess KCSE performance as far as the effectiveness of cost - saving measures were concerned as Kosgei and Rono 2004 carried out study on determining optimal size and cost efficiency while Musoga 2005 studied in general terms cost - saving measures in public secondary schools. These implied that the relationship between established cost - saving measures and KCSE performance was not clearly understood. Therefore, this study sought to assess the effectiveness of cost - saving measures in improving KCSE performance in public secondary schools in Marakwet West district.

1.2.1 Purpose of the Study

Based on the problem statement, the purpose of this study was to assess the effectiveness of cost - saving measures in improving KCSE performance in public secondary schools

in Marakwet West district as far as getting students through public examination with better grades hence improving education in terms of quality and relevance.

1.3 Objectives of the Study

The objectives of this project are:

- (i) To analyze the resource endowment of public secondary schools in Marakwet West district.
- (ii) To assess the existence of cost-saving measures in public secondary schools in Marakwet West District.
- (iii) To analyze the effectiveness of cost - saving measures in public secondary schools in Marakwet West District.
- (iv) To make recommendations on the improvement of the effective cost - saving measures in improving KCSE performance in public secondary schools in Marakwet West District.

1.4 Research Questions

The questions which guided the research are as follows:

- (i) How is the resource endowment of public secondary schools in Marakwet West district?
- (ii) Do public secondary schools in Marakwet West district have existing cost-saving measures?
- (iii) What is the effectiveness of cost - saving measures in improving KCSE performance in public secondary schools in Marakwet West district?
- (iv) What should public secondary schools do to ensure sustainability of cost-saving measures in order to improve KCSE performance?

1.5 Significance of the Study

This study sought to identify effective cost - saving measures in improving KCSE performance and draw attention to the Ministry of Education and the Public Secondary School Management to the hindrance of the effective cost saving measures.

The findings will also equip policy makers with complete information on the relationship between cost- saving measures and student achievement and assure the government that existing resources are being deployed in the most effective manner and also allocated to maximize educational output.

The study will further offer recommendations for effective cost - saving measures in public secondary schools and add to the body of knowledge on how each cost- saving measure impacts on students performance in KCSE.

1.6 Limitation of the Study

The study limited itself to Marakwet West district hived from the entire old Marakwet district. For more conclusive result, the entire old Marakwet District should have been studied. However, this was not possible due to financial and other logistical constraints such as terrain and inaccessibility.

Also, the study focused on effective cost - saving measures in improving KCSE performance. Notwithstanding time and financial challenges, other factors determining KCSE could be incorporated in the study.

1.6.1 Delimitation of the Study

The proposed study confined itself to principals in secondary schools who are charged with primary responsibility of management of resources of learning institutions. Although secondary education is provided by both public and private sectors, the principals involved were from state sponsored institutions. Also, the data collected from the DEO was inclined towards public secondary schools. The study was specific on the effectiveness of cost - saving measure within school environment with all other factors outside school being held constant.

1.7 Assumptions of the Study

In the proposed study, the following assumptions were made:

- (i) All respondents would co-operate and provide reliable response.
- (ii) All principals selected for the study were aware of the effectiveness of cost - saving measures.
- (iii) All public secondary schools had established effective cost - saving measures.
- (iv) Other determining factors in KCSE performance were effective.
- (v) The researcher did not know the level of effectiveness of cost - saving measures in improving KCSE performance in public secondary schools in the selected district.

1.8 Theoretical Framework

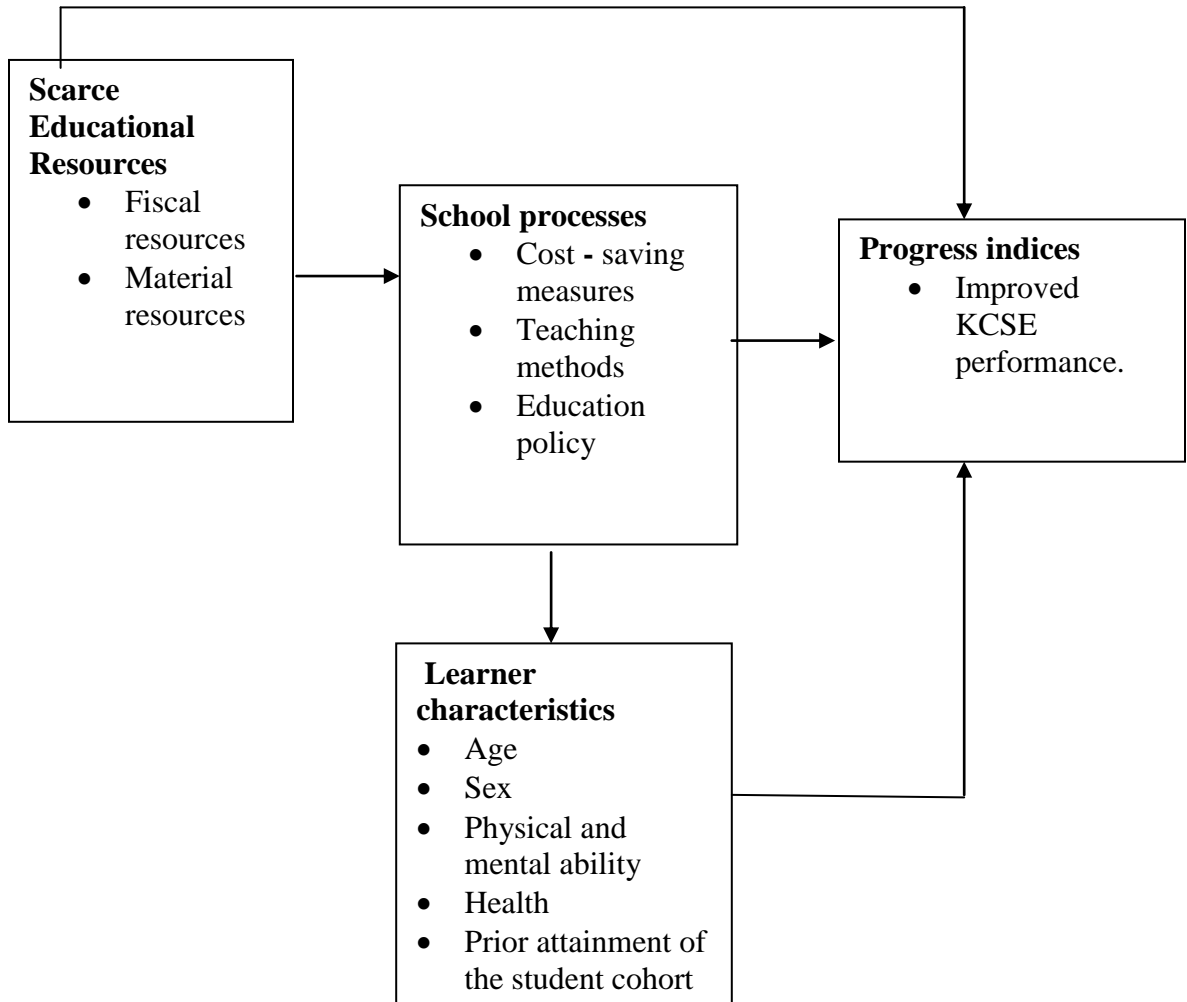
The study was based on production function theory of education which according to Bossier, (2004) thinks of schools as producers of education through the employment of capital, labor and other input to produce specific output. The common inputs are things such as school resources, teachers' quality, and family attributes, and the outcome is student achievement. Hanushek (2003) asserts that each of these resources should have a positive effect on student performance for the output of educational process – the achievement of individual student is directly related to input that are both directly controlled by policy makers.

Pritchett and Filmer (1997) say that education production function provides powerful insight into a positive theory of allocation of educational expenditures for resources are allocated to maximize educational output.

Based on the above evidence, the scarce educational resources coupled with the established cost - saving measures should prove effective in improving KCSE performance in Marakwet West district.

1.8.1 Conceptual Framework

Figure 1.3: The effectiveness of cost - saving measures in improving KCSE performance in public secondary schools.



Source: Researcher

The conceptual model depicted in figure 1.3 captures the independent variable; scarce educational resources and school processes, and the dependent variables; school processes and the progress indices, and their relationships. The major task to be accomplished in the model is to assess the effectiveness of cost - saving measures in improving KCSE performance in public secondary schools. In the model, two distinct aspects of schools are related: school input and school processes or policies and practices. According to Jesson, Mayston and Smith (1987) production of educational outcomes can be viewed as a flow process where inputs are linked with outputs via processes which are capable of differentiation. As such, the model denotes that schools KCSE performance is a function of the characteristics and the experience of individual students which depends on school resources and process as family background is put under control.

Generally, school output represents the KCSE performance within a school and is a function of school inputs, school processes and characteristics of individual learner.

1.9 Operational Definition of Terms

Public schools

Schools maintained by central government. For example, all schools benefiting from FDSE or free tuition grants

Private schools

Schools which receive no grant from the central government instead they are financed by private entrepreneurs.

Recurrent expenditure

Refer to expenditure which occurs every year in the budget such as staff salaries, general administration, stationery and repairs.

Effectiveness

Means assessing outcomes in educational terms for example student performance in KCSE.

Efficiency

This refers to obtaining maximum output from a given input. For example, teacher quality, class size instructional materials among other should lead to improved KCSE performance.

Dependent variables

Refer to variables which a researcher measures in order to establish the change of the effect created on them. For example, school processes, learner characteristics and improved KCSE performance.

Independent variables

Refer to variables whose effect the researcher would like to establish in a study such as effective cost saving measures against scarce educational resources in improving KCSE performance.

Material Resources

Refer to important items of performance assessment in education. For example, textbooks, laboratory equipment, computers among others.

Fiscal Resources

Refer to important money resource for performance assessment in education. For example, the amounts spend on teachers' salary, support staff salary, stationery among others.

Cost - Saving Measures

Refer to curbing educational expenditure while ensuring maximum benefits of scarce educational resources such as fiscal resources, material resources and personnel within limits of the contained economic conditions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This literature review addresses the issue of effectiveness of cost - saving measures in improving KCSE performance on the following sub-headings: Education Production Function, Cost - Saving Measures, Measures of Effectiveness and the Determining Factors in KCSE Performance. Ultimately, the review focuses on summary of the entire chapter.

2.2 Education Production Function

Johnson (1978) defines production function as the technology by which inputs are combined to produce outputs. The inputs measured in education are number of courses offered; dollars spend per student, number of books in the library and the likes. Outputs are measurable quantities such as number of earned credits and examination scores.

According to Bossier (2004) education production function thinks of schools as producers of education through employment of capital, labor and other input to produce specific output.

The common inputs are things like school resources, teachers' quality, and family attributes, and the outcome is student achievement. Hanushek (2003) asserts that each of these resources should have a positive effect on student performance for the output of educational process –the achievement of individual student is directly related to input that are both directly controlled by policy makers such as the characteristics of schools, teachers, curricula, and so forth.

Pritchett & Filmer (1997) say that education production functions provide powerful insight into a positive theory of allocation of educational expenditure such that resources are allocated to maximize educational output.

Otherwise, education production function approach treats the school as a production unit which has an intake of students and uses resources such as teachers and books to add value in terms of increased educational attainment or examination results which is a single aggregate measure which summarizes school performance (Hurd, Mangan & Adnett, 2005).

2.3 Cost - Saving Measures

The call for cost saving in education sector has been of concern in Kenya. Republic of Kenya (RoK) (1976) observes that Kenya must utilize the resources it possesses to the maximum benefit. As a result of the preceding information, Nafukho (1991) identifies increasing school size through consolidation as one of the strategies of reducing unit cost as experienced in USA when small schools were consolidated reducing the number of independent school districts from more than 80000 to fewer than 20000 by 1970. RoK and Musoga (2005) also put that utilization of educational resources can be realized through increasing school size from single to minimum of four streams in boarding secondary schools and three in day schools.

Kosgei and Rono (2004), suggest that existing facilities in small schools should be expanded than building new ones. Also, the issue of setting up new schools should be avoided instead the existing ones should be expanded and used optimally before new ones are constructed. Guellemette (2005) puts that those school systems that have smaller classes have to employ more teachers than otherwise, forcing them to hire less qualified teachers as seen in Canada. Hanushek (2003) points out that in United States (US), for example, a very popular recent policy is funding or mandating smaller class sizes. But as the evidence indicates this is an expensive and generally unproductive policy.

World Bank (2005) recommends increase of class size by reducing all secondary schools with very small sizes. For example, in Democratic Republic of Congo (DRC), all schools with very small class sizes would be gradually reduced by 28% which implies that there

would be 1800 fewer secondary schools in 2015 compared to 2004. Furthermore, (ibid) suggests increase in overall pupil-teacher ratio in primary and secondary education without affecting quality through multi-grade teaching, increasing class size of small schools and rational deployment of teachers. Mehotra & Buckland (2001) further point out that where ratios decline from very high levels (above 45 or 50:1) there would be possible gains in terms of quality which could offset the increase in costs per pupil. They point that where ratios are reduced below 30-35, it suggests a level of teacher utilization that may be unaffordable.

RoK (2008) identifies efficient utilization of teacher resources by raising the secondary school average teaching load from 18 hours to 20 hours per week placing lower limit on class size for optional subject and retraining some of the underutilized teachers to specialize in the optional subject for which supply exceeds demand. On the same note, Kosgei et al., (2004) propose proper utilization of teacher resources by raising student teacher ratio through increased enrolment up to optimal level .Otherwise, as teacher input rise and the number of students decline, expenditure per pupil rises (Hanushek, 2003). Siringi (2010) envisions a financial gap of Ksh 11.2 billion in the next financial year. Therefore, there would be sharing of teachers across schools to ensure better utilization. Mehrotra et al., (2001) put that poor teacher deployment often results in utilization level below the system guidelines for workloads in terms of hours of work and sometimes in terms of pupil teacher ratio. Therefore, strategies such as linking promotion services to rural hardship services can have impact without such direct cost implications. So do redeployment of teachers as experienced in South Africa and Guinea. (ibid) further point that in the recruitment of Para-teachers as initiated in India in response to fiscal crisis has positive aspects as there was greater accountability of the Para-teachers as she or he is drawn from the community, better linkages with the community as the latter is involved in the recruitment process. Given the excess supply of teachers at the high salary rates, Para-teachers have been hired at salaries that are a third of the regular teachers despite the

fact that there is no difference in terms of minimum prescribed qualifications between a Para-teacher and a regular teacher.

Aoki et al., (2002) suggest the use of private sector to expand education coverage through NGO or for profit private providers as this can lead to better quality education by mobilizing available management capacity, providing more choices for families and increasing competition among providers as in Peru. Otherwise, Clegg, Bregman & Ottowanger (2008) show that the existence of private schools is strength of the existing system as it is an effective cost sharing mechanism.

On teaching learning contact hours, Aoki et al (2002) observe that there are clear links between students learning and effective instructional time. Therefore, for cost effectiveness, the school calendar of 1000 hours per year should be adhered to. Also, rescheduling of school hours to permit more efficient use of physical facilities can increase the actual contact hours.

RoK,(1964) advocates that, most new secondary schools must be day schools. This statement is echoed by MoEST, (2005) and TSC (2007) which say that the government will promote the development of day schools as a means of expanding access and reducing cost to parents. Also IPAR (2007) recommends the abolition of public boarding secondary schools in Kenya.

Institute of Policy Analysis and Research (IPAR) (2007) mentions issue of governance as potential cost reduction strategy. They cite that governance is important at reducing cost of secondary school education and for optimal functioning of the schools.

Practices that reduce textbook cost should be adopted as well. IPAR (2007) observes that unit cost of textbook could be reduced by developing domestic capacity to prepare, produce and distribute textbooks at the lower costs. However, Hurd et al, (2005) and Hanushek (1992) estimated the cost effectiveness of additional books as 18 times that of

teachers' salary inputs in a study of secondary schools in North- Brazil. Also, a study in India found that extra spending on teaching materials was 14 times more effective than raising teachers' salary inputs in enhancing learning outcomes.(ibid) further say that on reviewing nearly 40 studies, Fuller & Clarke (1994) claim there is a broad consensus among researchers that books and instructional materials are of relatively greater importance to improving school performance, at the margin than increasing inputs and increasing class sizes.

World Bank (2005) observes that unit cost of classroom construction can be reduced through evaluation of the choice of technology and building materials with respect to cost, quality maintenance requirements as in community managed construction and in use of locally available input.

Similarly, Shepherd (2009) focuses on better schools for less money as in United Kingdom. This were necessary through breakdown of construction cost which opened up avenues for rationalization of school construction methods and ultimately for controlling school construction cost and inspiring economies by setting cost limits on all proposed construction. Aoki et al., (2002) recommend the reduction of construction costs by as much as half through the use of more modest but still safe and adequate design standards; the use of lower cost local construction materials; and through mobilizing community labor to help build schools.

According to Boss (2009), in Springfield school, reduction in cost is achieved by avoiding filling position of retired non-teaching staff unless felt necessary after retirements or resignation or unless it was deemed essential. Otherwise, it is advisable not to fill but reduce in hours or make positions part time when full time personnel left. On electricity account and water bill, (Ibid) puts that they can be reduced by switching off electricity suppliers and concerted conservation methods.

Aoki et al (2003) show that multi-grade schooling as used in Colombia, Guatemala, Burkina Faso Zambia, the Philippines and other countries is the most effective way of making optimal use of classroom facilities and providing complete primary schooling in sparsely populated areas. Also, through double –shift schools, there is intensive use and more efficient use of school infrastructure, freeing up of resources for other priorities as used in countries as wealth as Singapore throughout system for cost effectiveness reasons.

2.4 Measures of Effectiveness

Coombs & Hallack (1972) put that cost have little meaning or value unless they are set against educational results and the results are weighted against the objectives. This imply that despite scarce resources, the effectiveness of cost - saving measures need to be assessed.

Ominde, RoK (1964) shows that large schools secure maximum economies of building and equipment as full use of certain space can only be obtained where there are three or four streams.

Kosgei et al., (2004) add that recurrent expenditure per pupil had an inverse relationship with the size of the school as increase in size of the school triggers reduction in recurrent expenditure and hence the school realizes substantial amount of savings. Rumberger & Palardy (2005) say that large schools are more effective in improving student learning than midsized schools. However, large schools have significantly lower test scores than medium sized or small schools.

According to Guellemette (2005) reducing class size is expensive. Also, later primary (three and six) and secondary grades finds no significant improvement in student performance from smaller classes. For example, in US, over the past quarter century a steady decline in pupil-teacher ratio had no corresponding measure of student achievement. (Ibid) further observes that a wide discrepancies in pupil-teacher ratio across countries and time show little relationships to achievements as in science and

maths test, countries such as South Korea with very large sizes routinely outperformed richer countries such as US and Canada where classes are much smaller.

Cooper, Valentine, Chariton & Melson (2003) indicate that modified school calendars were associated with higher achievement for economically disadvantaged students. They say that extended school calendar is a panacea to where there is a great need for additional schools and classrooms as the existing buildings are in use year round. They also show that proponents of modified calendars suggest that children learn best when instruction is continuous.

Abagi et-al., (1997) says that if pupils do not get the specified contact hours, the system is inefficient hence syllabus may not be completed in time, extra time would be created for coaching pupils outside the normal classroom hours and teachers service become more costly. Otherwise, Aoki et al., (2002) points that meeting the required school calendar; 1000 hours per year indicates how efficient the curriculum is being implemented and implies how cost effective teachers' salaries are.

IPAR (2007) observes that poor governance leads to rampant corruption at administration and board levels with regard to procurement of school equipment, consumables, learning materials and hiring of teachers and non-teaching staff. Therefore, poor board management increases transactional cost of secondary education.

Crooks (1983) on the effectiveness of distance education points that significant economies of scale are available in distance learning system for as the number of students increases so the average cost declines until when the number of students is very large, the average cost is very close to marginal costs. Secondly, distance learning materials are of quality and standard necessary to motivate students and minimize drop-out.

On education technology, Anderson (2005) says that it has been demonstrated to increase student learning cost effectively hence enhance quality of education both by increasing availability of up to-date teaching materials and providing the most highly qualified teachers with the means of reaching wider audience. In addition, Pritchett and Filmer (1997) add that education production function is determined by an underlying pedagogical process.

Research shows that in multi-grade schooling, student learning compares very favorably with learning outcomes in traditional classrooms. Also, double-shift schools can allow students adequate instructional time without impairing learning (Aoki et al., 2002).

2.5 Determining Factors in KCSE Performance

School performance in KCSE is a function of school resources. However, learning resources are likely to be subject to diminishing returns such that mathematics text book is likely to add substantially to learning effectiveness, but additional text books are likely to contribute successively smaller amounts (Hurd et al., 2005).

Another factor determining performance in KCSE is the school size. Rumberger & Palardy (2005) point out that some studies have shown large schools to have significant lower test scores than medium sized or small schools. However, other studies have revealed no significant effects of school size. (Ibid) further indicate that teachers expectations and efficacy as well as their instructional practices, affect student learning in high school. Also, social and academic climate of schools; amount of homework done by students, influence their achievements.

Other factor affecting KCSE performances are the school processes. This is due to the fact that schools have control over how school input are organized and managed, teaching practices they use and the climate they create for student learning. They also reveal that a number of policies and practices have been shown to affect performance. Some studies have shown that school organizational practices which include teachers and parents in

decision making, affect student achievement in middle and high schools as in USA. However, communal organizations, including democratic governance had no impact on achievement (Rumberger et al, 2005).

Aoki et al (2002) identify teacher quality as the most important determinant of school effectiveness; KCSE performance. As such, Hanushek, (2003) says that high quality teachers are ones who consistently obtain higher than expected gains in student performance.

Research has demonstrated that a wide variety of individual student characteristics are related to student test scores, including demographic characteristics such as ethnicity and gender, family characteristics and structure and academic characteristics such as previous achievement and retention (Rumberger et al., 2005). Ibid further add that student characteristics influence student achievement not only at an individual level but also at aggregate or social level that is social composition of students in a school which in turn influence student achievement apart from the effect of student characteristics at an individual level. According to Aoki et al., (2002) student factors such as poor health can be a major cause of low learning achievement .Also, physical or learning disabilities effect achievement if proper assistance is not given.

Also, violence influence KCSE performance. Education Minister Sam Ongeru in TSC (2009) says that post election violence of early 2008 caused disturbances, displacement of students and teachers, loss of learning time as well as closure of schools in the affected areas as a result drop in the candidates performance in KCSE.(Ibid) further identified school unrests as determining KCSE performance as they lead to destruction of school facilities.

Lastly, Hanushek (2003) points out that where there is low learning achievement, there is need to investigate both input and processes. Inputs that contribute to low learning

achievement include irrelevant, poorly articulated; overloaded curricula, inadequate teaching and learning materials, inadequate instructional time, and unsuitable learning environment. Associated processes include poor teaching quality, inadequate utilization and monitoring of the curriculum and poor use of instructional materials, poor school management and instructional leadership.

2.6 Summary

The foregoing literature review embodied some studies that depicted the position of cost - saving measures in Kenya education sector for maximum utilization of resources on the basis that they were scarce against the rising demand for educational opportunities and improved standards.

It is from this point that measures of effectiveness and factors determining KCSE performance were discussed.

During the review of the literature, it was clear that very few studies had been undertaken in assessing the effectiveness of cost saving measures. Nafukho, (1991) carried out a study to find out the optimal size of secondary schools in Kakamega district as Rono and Kosgei, (2004) carried out a study to determine the optimal size and cost efficiency of Nandi district secondary schools. In addition to these, Musoga, (2005) carried out a study on cost saving measures in public secondary school in Kakamega district. From this review, it was clear that none of this was carried out in Marakwet West district and also none addressed in-depth investigation on the effectiveness of cost- saving measures thus leaving a potential gap in literature that this study sought to fill.

This study therefore aimed to fill the gap by assessing the effectiveness of cost saving measures in improving KCSE performance in public secondary schools in Marakwet West district. By filling this gap, the study would contribute to the body of knowledge available on the issue.

CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

3.1 Introduction

This chapter gives detailed outline on how the study was carried out. Its sub-sections are geared towards describing the research design that was in the study, target population, sample and sampling procedure, research instruments, piloting, data collection and data analysis in the case study of public secondary schools in Marakwet West district, Kenya.

3.2 Research Design

This study adopted both qualitative and quantitative approaches and used descriptive survey design. Mwiria and Wamahiu (1995) observe that qualitative research technique enables a researcher to get in-depth data, record actual behaviour, cross check truth statements, collect and experience wider larger materials and the content of the action can be drawn thereby giving meaning to attitude, behaviour and materials.

Hair and Money (2007) identify the properties of quantitative approach as useful for testing, tracking trends and as more structured data collection technique and objective rating. Also, emphasis on achieving reliability and validity of measures used hence give results that are relatively objective.

Qualitative and quantitative approaches used a descriptive survey design to assess the effectiveness of cost saving measures in improving KCSE performance for education efficiency. Orodho (2005) says that descriptive survey design is used in preliminary and exploratory studies to allow researcher to gather information, summarize, present and interpret data for the purpose of clarification. (ibid) further puts that descriptive survey is intended to produce statistical information about aspects of education such as the effectiveness of cost - saving measures in improving KCSE performance in public secondary schools that interest policy makers and educators.

3.3 Locale of the Study

The study was carried out in Marakwet West district. Marakwet West district is in the county of Elgeiyo and Marakwet. It is to the north of Keiyo district, south of Pokot Central district and to the west of Baringo East district. Furthermore, the study area is to the east of Transoia East district. The district had varied climatic conditions for it comprised of hot and dry Kerio Valley and cold and wet highlands around Cherangany hills. These varied climatic conditions had shaped economic activities in the district in that in the Kerio valley, the inhabitants were mostly livestock farmers with little crop farming under irrigation. Otherwise, in the highlands, subsistence and commercial farming was practised.

The district was chosen because it has public secondary schools which benefit from public financing through FDSE, qualified teachers and has increased enrolment despite the fact that, most schools had not been attaining quality grades in KCSE performance since 2005 (MoE, 2010).

3.4 Target Population

The study targeted 19 principals of KCSE public secondary schools and 1 DEO as the informed specialists in the mentioned district. According to MoEST (2003) the management of resources of learning institutions shall be the primary responsibility of the head of that institution. The DEO who makes up the BoG lends support to the head of the institution with respect to resource management and also acts as a government agent whom management of learning institution is accountable to on behalf of the government in respect to the use of the institutions' resources. Therefore, Principals and the DEO as the target respondents were crucial informed specialists in the research.

3.5 Sample and Sampling Procedure

This study employed stratified sampling. Hair, Money, Samouel & Page (2007) observe that stratified sampling requires the researcher to partition the sampling frame into relatively homogeneous sub-groups that are distinct and none overlapping, called strata.

(ibid) notes that stratified sampling increases the accuracy of the sample information but does not necessarily increase the cost.

Based on the above explanation, the researcher stratified the public secondary schools as boys boarding, girls boarding, mixed boarding, and mixed day as shown in the table below:

Table 3.1: Number of Public Secondary Schools Selected for the Sample

School Type	Target Population	Percentage Sample Size (%)	Proportionate Sample Size (n)
Boys Boarding	8	42.11	8=42.11%
Girls Boarding	8	42.11	8=42.11%
Mixed Boarding	1	5.26	1=5.26%
Mixed Day	2	10.53	2=10.53%
Total	19	100	19

From the table above, proportionate stratified sample of 19 public secondary school principals produced information that was sufficiently accurate for decision making. According to Kasomo (2007) a population size of 20 would give a sample size of 19.

3.6 Research Instruments

The researcher collected data using questionnaires for public secondary school head teachers and face to face interviews for the DEO Marakwet west district. Orodho, (2005) observes that questionnaires are appropriate because they are efficient, questions can be

easily analyzed, anonymity is possible and questions are standardized. Hair et al (2007) add that questionnaires ensure accuracy of data.

On DEO's interview schedule, Hair et al, (2007) put that, interviews are particularly helpful in gathering data when dealing with complex and sensitive issues. Interviews also enable researcher to obtain feedback. Furthermore, interviews are flexible in where they can be conducted, e.g. at work and the researcher can increase participation rates by the project and its values.

3.7 Questionnaires for Head teachers

The study utilized one set of questionnaire for head teachers as shown in appendix B. The instrument asked both closed and open ended questions as far as the effectiveness of cost-saving measures in improving KCSE performance was concerned. Orodho, (2008) says that open ended questions are easy to construct and give greater depth of information. Also, closed ended questions are easy to analyze.

3.71 Interview for DEO

The DEO was interviewed because he makes up the BoG and lends support to the head of the institution with respect to resource management. Also, as a government agent whom management of learning institutions is accountable to on behalf of the government as appropriate for the use of institutions' resources (MoEST, 2003)

3.8 Piloting

After the questionnaires had been constructed, they were piloted. Kasomo, (2007) says that questionnaires will be pre-tested on a pilot group similar to the sample to which they will be given. Therefore, the questionnaires were piloted in two public secondary schools; Moi Kapsowar Girls High School and Kapcherop Boys Secondary School which did not participate in the actual research. After piloting the instrument, the researcher was able to identify ambiguities with the questions and revised them clearly as (ibid) shows

that pilot run would provide a check on the feasibility of the proposed procedure for coding data and show up flaws and ambiguities.

(Ibid) further notes that piloting yields suggestion for improvement. This was why the piloting carried out by the researcher revealed that it was not possible to get adequate information on the effectiveness of cost-saving measures with mostly closed ended questions but with more open-ended question although they might be difficult to analyze.

3.9 Reliability

Reliability of an instrument is the consistency in providing a reliable result (Orodho, 2005).The consistency of the instrument was determined using Test re-test method whereby the questionnaires were given to the respondents to fill in then the answered questions were scored manually. Spearman rank order correlation (r) was employed to compute the correlation co-efficient in order to establish the extent to which there is consistency in eliciting the same response every time the instrument was administered. The correlation co-efficient of 0.75 was found to be the measure of reliability. This measure was accepted because according to Orodho (2008) coefficient of about 0.8 should be considered high enough to judge the reliability of instruments.

3.10 Validity

According to Kasomo (2007) validity refers to the quality that a procedure or an instrument used in the research is accurate, correct, true, and meaningful and right. The content validity of the research instruments was assured through expert opinion from the two supervisors and further professional advice from other key specialists at the department. This approach is affirmed by Njihia, (2005) and Gall, Borg & Gall (1996) who point out that content experts help determine content validity by defining in precise terms the domain of the specific content that the test is assumed to represent. Therefore, the experts' opinion facilitated the assessment of the effectiveness of cost - saving measures in improving KCSE performance in the current study.

3.11 Data Collection Procedure

Orodho, (2005) indicates that the method of data collection is arrived at basing on the research objective, reliability, validity, representativeness or generalization explanatory powers, administrative convenience, speed and avoidances of ethical or political difficulties in the research process. Prior to the actual collection of data, the researcher obtained introductory letter from the Department of Education Management, Policy and Curriculum Studies, Kenyatta University and a permit from the Ministry of Higher Education.

In the field, the researcher had the practical appreciation, familiarity and rapport with the respondents to create a positive solidarity.

Otherwise, primary data was collected by the researcher for the particular purpose of assessing the effectiveness of cost - saving measures in improving KCSE performance in public secondary schools hence fulfilling the aim of the research since the gathering of the data was directed towards answering questions precisely. The data was collected with self administered questionnaires where according to Kasomo (2007) completion rate is very high. Also, face to face interview was contacted which Hair et al., (2007) allude that participation rate can be increased by the researcher.

3.12 Data Analysis

The study analyzed data both qualitatively and quantitatively. The data was coded, computer formatted and analyzed statistically using SPSS-X on the data file using descriptive command for frequencies, mean, standard deviation and percentages then results were presented in tables, pie charts and graphs from which generalization and conclusions were made. Additionally, open ended questions which elicited qualitative data were analyzed according to themes based on the research questions and the objectives and thereafter, inferences and conclusions were drawn.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents an analysis and interpretation of the data collected. The information analyzed was collected through administering questionnaires to nineteen secondary school head teachers and an interview schedule for the DEO. However, not all the nineteen questionnaires administered were returned. The researcher received fourteen duly completed questionnaires for analysis.

The data collected from the head teachers was analyzed both qualitatively and quantitatively. The data was coded manually and analyzed using SPSS .Closed-ended item responses were analyzed and recorded on a tally table from which frequencies and percentages were computed. Frequencies were also prepared for all other items that required quantifying and percentages were computed on the basis of the frequencies. Responses to open-ended questions were analyzed according to themes based on the research questions and the objectives and thereafter, inferences and conclusions were drawn.

The interpretation and presentation of the data collected in this study was analyzed under the following headings:

- i. Background information on public secondary schools in Marakwet West District:**
Type of schools, School size, Present enrolment and KCSE performance
- ii. Resource Endowment:** Teaching and Non teaching Staff Establishment, Qualification of Staff, Physical Resources and the State of these resources

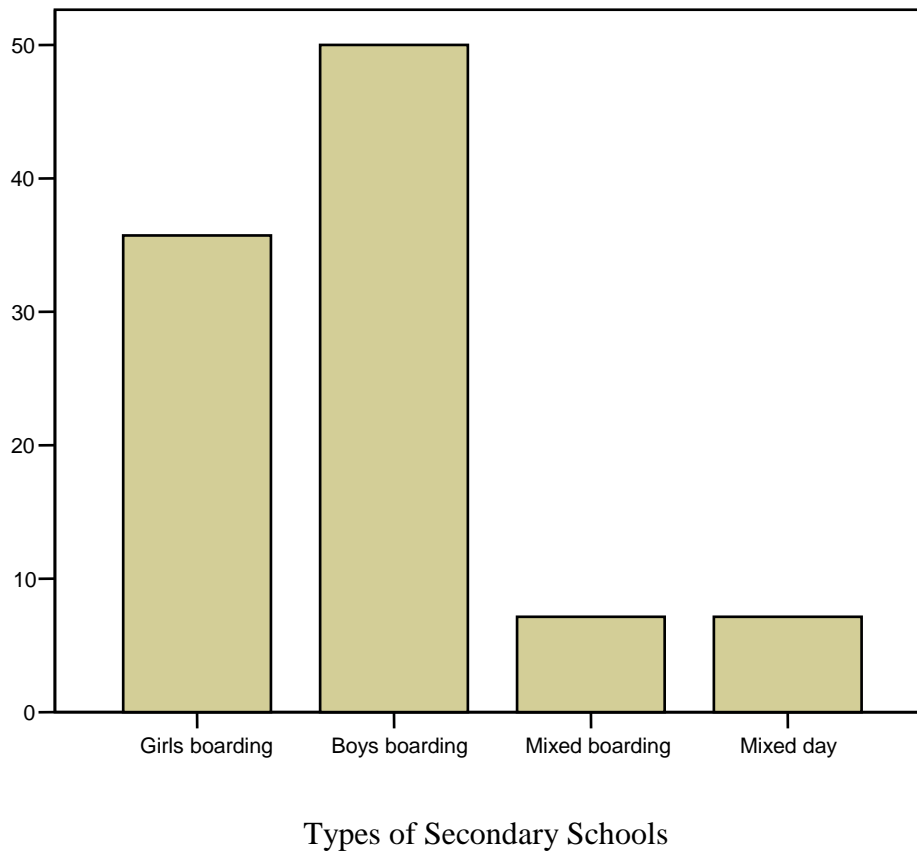
- iii. Established cost -saving measures:** Increased enrolment, staff qualification among others.
- iv. Effectiveness of cost- saving measures:** Reasons for effectiveness, optimal utilization of resources, other effective cost saving measures
- v. Sustainability:** problems, solutions and the future of adopting cost -saving measures
- vi. Other factors determining KCSE performance**
- vii. Presentation:** Data analysis and interpretation

4.2 Back ground information on public secondary schools in Marakwet West District

Before embarking on the main tasks of the study, background information on public secondary schools in Marakwet West district was established. The background of the research focused on types of schools, school size, the present enrolment of public secondary schools and KCSE performance from 2005 to 2009. In addressing this background, data was analyzed as below:

The researcher sought to find out the types of public secondary schools in Marakwet West district. The findings are revealed in figure 4.1 below.

Figure 4.1: A Bar graph showing Public secondary schools by type
(N=14)



Source: Headteachers' Questionnaire

Findings in figure 4.1 reveals that types of secondary schools were 5 (35.7%) girls boarding, 7 (50%) boys boarding, 1(7.1%) mixed boarding, and 1(7.1%) mixed day. From this information, it is clear that most of the schools were of boarding type despite what was advocated by RoK (1964) that most new secondary schools must be day schools.

The researcher’s findings on the size of secondary school in the district are revealed in table 4.1.

Table 4.1: Size of Secondary Schools in the District (N=14)

		Frequency	Percent
Valid	Single stream	6	42.9
	Double stream	4	28.6
	Triple stream	4	28.6
Total		14	100.0

Source: Headteachers’ Questionnaire

Table 4.1 shows that 6(42.9%) schools in the district were of single stream, 4(28.6%) were double stream, while 4 (28.6%) schools were triple stream. This implies that majority of the secondary schools were still below the proposed size by RoK ,National Committee on Educational Objectives and Policies (1976) which advocates that schools should have at least four streams (8 classes).

The researcher further sought to ascertain on the present enrolment as shown in table 4.2 below.

Table 4.2: Present Enrolment in Public Secondary Schools (N=14)

Valid	Frequency	Percent
70.00	1	7.1
102.00	1	7.1
104.00	1	7.1
126.00	1	7.1
127.00	1	7.1
189.00	1	7.1
230.00	1	7.1
284.00	1	7.1
340.00	1	7.1
411.00	1	7.1
523.00	1	7.1
560.00	1	7.1
615.00	1	7.1
630.00	1	7.1
Total	14	100.0

Source: Headteachers' Questionnaire

Table 4.2 reveals that public secondary school enrolment ranged from 70 students to the highest of 630 students. The schools with the least enrolment were day secondary schools which were found to be of single stream category.

The researcher sought to investigate performance in KCSE from 2005- 2009. The findings are recorded in table 4.3 below:

Table 4.3: KCSE performance in public secondary schools from 2005- 2009

(N= 21)

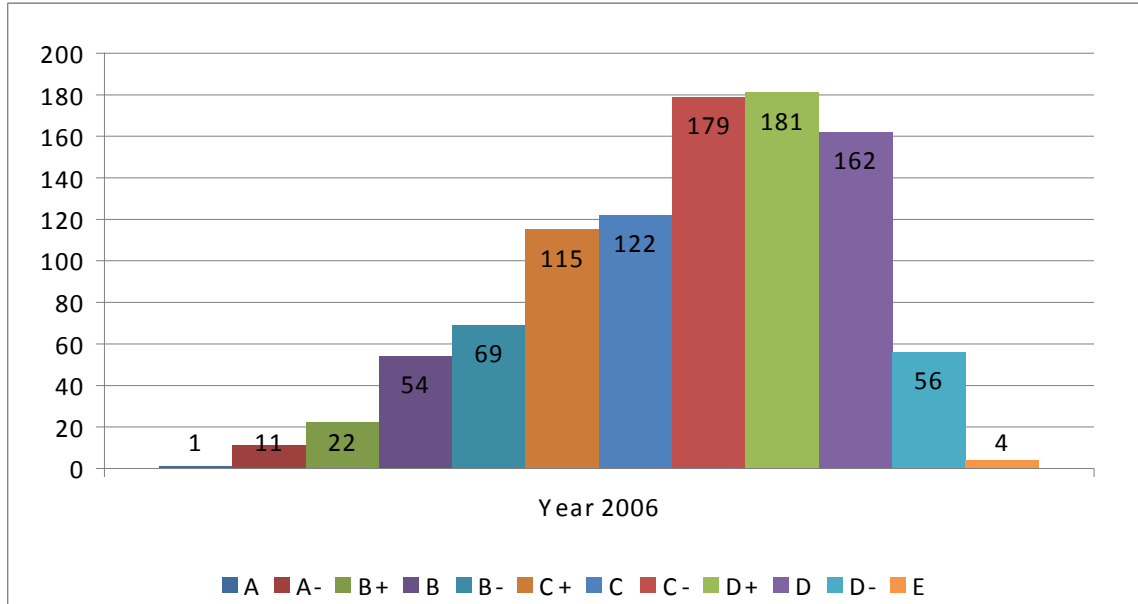
KCSE YEAR	ENTRY	GRADES												MEAN SCORE
		A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	
2005	999	-	12	44	70	90	138	146	146	178	118	33	-	5.236
2006	976	1	11	22	54	69	115	122	179	181	162	56	4	4.963
2007	1000	-	7	30	50	78	150	150	200	190	120	25	-	5.330
2008	1048	1	7	32	54	76	121	164	198	196	143	46	-	4.793
2009	1275	-	2	27	59	105	142	179	284	240	186	79	-	4.678

Source: DEO's Office File

Table 4.3 reveals that number of KCSE candidates rose from 999 in 2005 to 1272 in 2009. Also, the number of graduates scoring quality grades; B and above were still few. The performance of the academic year 2006 underscores what has been mentioned above as shown in Figure 4.2.

Figure 4.2: Performance graph 2006

(N=21)



Source: DEO's Office File

Figure 4.2 reveals that in the academic year 2006, the number of students who sat for KCSE was 976 with 88 students scoring B and above against 888 students who got below grade B, which was the designated quality grade to competitively qualify for courses at the university.

4.3 Resource Endowment

The first research question was: How is the resource endowment of public secondary schools in Marakwet West district? This research sought to establish the resource endowment by focusing on the establishment of teaching and non-teaching staff, qualification of staff and the overall resource situations of public secondary schools. To address this, research questions are presented and analyzed as follows:

The researcher sought to find out teacher establishment. The researcher's findings are revealed in table 4.4.

Table 4.4: Respondents' responses on teacher establishment

(N=14)

valid	Frequency	Percent
4.00	2	14.3
8.00	1	7.1
9.00	3	21.4
12.00	1	7.1
13.00	1	7.1
15.00	2	14.3
17.00	1	7.1
19.00	1	7.1
22.00	1	7.1
25.00	1	7.1
Total	14	100.0

Source: Headteachers' Questionnaire

Findings in table 4.4 reveal that, all schools in the district were adequately staffed. The least staffed school had 4 teachers while the most staffed one had 25 teachers.

Furthermore, the researcher sought to find out the number of untrained teachers. The findings are revealed in table 4.5.

Table 4.5: Number of Un-trained Teachers

(N=14)

Valid	Frequency	Percent
1.00	2	14.3
2.00	1	7.1
3.00	1	7.1
4.00	3	21.4
-	7	50.0
TOTAL	14	100.0

Source: Headteachers' Questionnaire

Table 4.5 reveals that there were 19 untrained teachers in public secondary schools in the district. All of these teachers were found in day secondary schools.

The researcher further sought to find out the number of trained teachers at the institutions. The findings are shown in table 4.6.

Table 4.6: Number of Trained Teachers

(N=14)

Valid	Frequency	Percent
4.00	3	21.4
5.00	2	14.3
7.00	1	7.1
11.00	1	7.1
13.00	1	7.1
14.00	1	7.1
15.00	1	7.1
17.00	1	7.1
19.00	1	7.1
22.00	2	14.3
Total	14	100.0

Source: Headteachers' Questionnaire

As shown in table 4.6 all secondary schools in the district had trained teachers. The least staffed school had 4 qualified teachers while the most staffed one had 22.

The researcher also sought to know the status of non-teaching staff at the public secondary schools. The respondents' feedbacks are as in table 4.7.

Table 4.7: Number of Non –teaching staff

(N=14)

Valid	Frequency	Percent
4.00	1	7.1
5.00	2	14.3
7.00	2	14.3
9.00	1	7.1
11.00	1	7.1
15.00	1	7.1
17.00	2	14.3
18.00	1	7.1
20.00	1	7.1
22.00	1	7.1
24.00	1	7.1
Total	14	100.0

Source: Headteachers' Questionnaire

Findings in table 4.7 indicate that the 14 secondary schools had non-teaching staff. The least number of non-teaching staff in school was 4, while the highest had 24. The non teaching staff was greatly underutilized for the least populated school had pupil-worker ratio of 17:1 while the most enrolled maintained it at the ratio 26:1.

The researcher sought to find out the qualifications of the school accounts clerk as recorded in table 4.8.

Table 4.8: Qualification of School Accounts Clerk

(N=14)

Valid	Frequency	Percent
Trained	14	100.0

Source: Headteachers' Questionnaire

Table 4.8 shows that all 14 (100%) public secondary schools had trained school accounts clerks indication that financial records are handled by qualified personnel.

Also, the researcher sought to find out the qualification of laboratory technicians as revealed in table 4.9.

Table 4.9: Qualification of Laboratory Technician

(N=14)

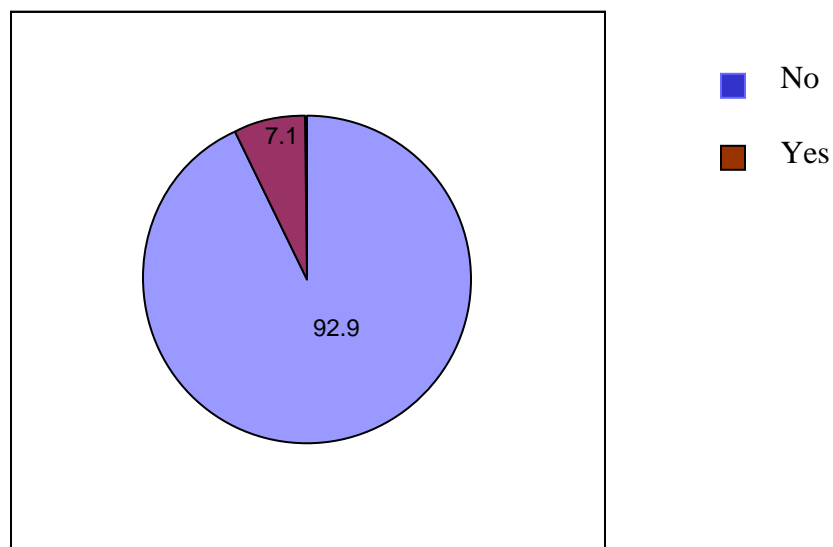
Valid	Frequency	Percent
Trained	10	71.4
Untrained	2	14.3
Total	12	85.7
-	2	14.3
Total	14	100.0

Source: Headteachers' Questionnaire

Table 4.9 reveals that 10 (71.4%) schools had trained laboratory technicians while 2 (14.3%) had untrained laboratory technicians. Two (14.3%) head teachers did not respond to the question.

The researcher further sought to discover the adequacy of existing resources. The findings are in figure 4.3.

Figure 4.3: Pie-chart Showing Adequacy of Resources in Secondary Schools (N=14)



Source: Headteachers' Questionnaire

Figure 4.3 reveals that 1(7.1%) schools had adequate resources for learning process. Thirteen (92.9%) secondary schools did not have adequate resources.

4.4: Established cost -saving measures

The second research question was: Do public secondary schools in Marakwet West district have existing cost-saving measures? This research sought to establish cost-saving

measures put in place in public secondary schools in Marakwet West district. The question addressing this research question was analyzed as below:

The researcher sought to find out cost saving measures put in place in public secondary school. The findings are summarized in table 4.10.

**Table 4.10 Established Cost - Saving Measures in Public Secondary Schools
(N=14)**

	Frequency	Percentage
Proper management of available resources	11	78.6
Supply of adequate text books	13	92.9
Limited choice of subjects	9	64.3
Availability of printing machines to avoid outsourcing	10	71.4
Use of alternative fuel rather than electricity	11	78.6
Avoidance of midterm breaks to cover syllabus on time	10	71.4

Source: Headteachers' Questionnaire

Table 4.10 reveals that established cost-saving measures in secondary schools were 11(78.6%) proper management of available resources as evidenced by hiring of trained accounts clerks for proper record keeping and existence of rules governing the handling of school property by students and staff. 13 (92.9%) ensured adequate supply of text books. Nine (64.3%) schools cited limited choice of subjects as an established cost saving measure, ten (71.4%) had printing machines to avoid outsourcing for printing of tests to students from private entrepreneurs. The table also reveals that 11(78.6%) schools used alternative fuel rather than electricity for lighting up their class rooms, libraries, dining

hall and dormitories. This involved the use of solar panels. Ten (71.4%) schools avoided midterm breaks to enhance syllabus coverage.

4.5: Effectiveness of the established cost -saving measures

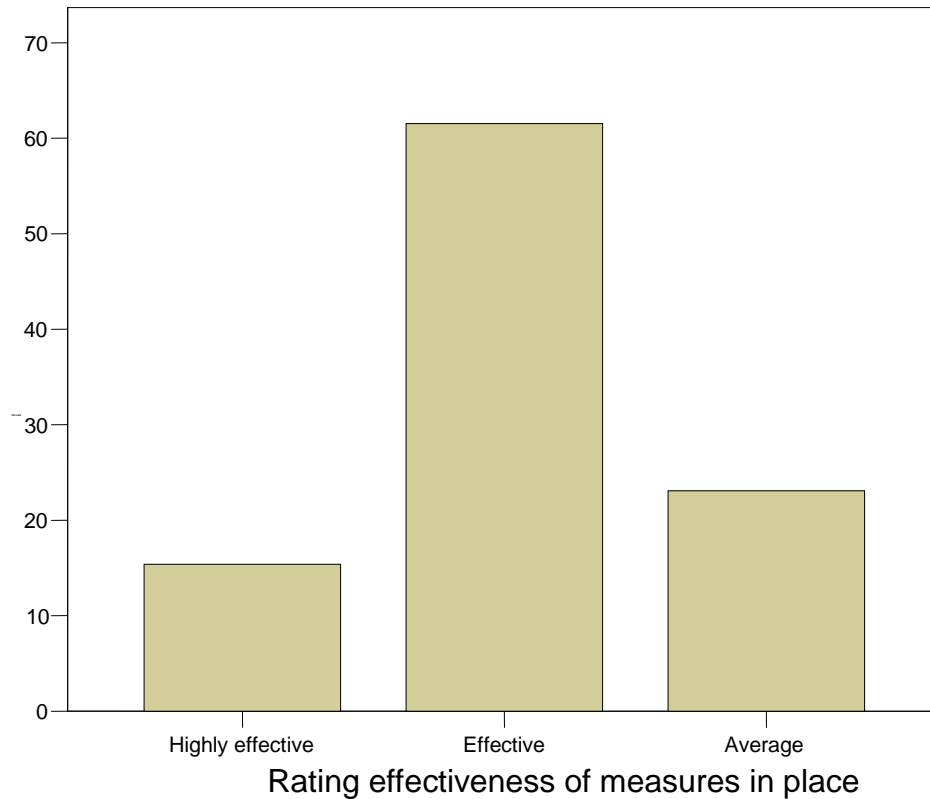
The third research question was: What is the effectiveness of cost - saving measures in improving KCSE performance in public secondary schools in Marakwet West district?

This research sought to establish the effectiveness of the established cost-saving measures in public secondary schools in Marakwet West district. The questions addressing this research question were analyzed as below:

The researcher sought to find out the effectiveness of the established cost-saving measures in public secondary schools. The findings are recorded in figure 4.4.

Figure 4.4: Bar-graph showing head teachers' rating of the Effectiveness of Established cost- saving measures

(N=14)



Source: Headteachers' Questionnaire

Findings in figure 4.4 reveals that 2 (14.3%) schools rated existing cost-saving measures as highly effective, 8 (57.1%) effective, 3 (21.4%) average effective while 1(7.1%) never responded to the question.

Due to the rating done above, the researcher sought for explanation from the respondents on the effectiveness of cost- saving measures. They findings are recorded in table 4.11.

**Table 4.11: Explanation on Effectiveness of the established cost-saving measures
(N=14)**

Explanation	Frequency	Percentage %
Eliminated time wastage	1	7.1
Promoted learning	1	7.1
Total	14	100.0

Source: Headteachers' Questionnaire

Table 4.11 reveals that 1(7.1) eliminated time wastage in implementing school programs such as acquisition of curriculum materials, 1(7.1%) promoted student learning as lessons could be attended without delay. Twelve (85.7%) of the 14 head teachers never gave their explanations.

The researcher sought to find out if there were some potential cost- saving measures that could be adopted for effectiveness in public secondary schools. The respondents' answers are recorded in table 4.12.

Table 4.12: Potential Cost-Saving Measures**(N=14)**

	Frequency	Percentage%
Proper time management	10	71.4
Use of school farm for food production	10	71.4
Adequate supply of qualified teachers	6	42.9
Sharing of school bus with neighbouring schools	12	85.7
Reduction of school trips	13	92.9
setting of own internal exams other than buying	9	64.3
Using student labour other than hiring support staff	13	92.9
Total	14	100.0

Source: Headteachers' Questionnaire

Table 4.12 reveals the potential cost-saving measures to improve KCSE performance. Ten (71.4%) head teachers advocated proper time management when schools open and close and also between lessons to enhance syllabus coverage hence improve KCSE performance.

Ten (71.4%) supported the use of school farm for food production to ensure continuous supply of balanced meals which guarantee good health. Six (42.9%) suggested adequate supply of teachers considering the fact that secondary school teachers teach at least two subjects. Twelve (85.7%) gave the possibility of sharing school bus or vehicles with the neighboring schools. If this is adopted, it would facilitate sharing of additional costs as salaries and related payroll tax and maintenance costs. Thirteen (92.9%) suggested the reduction of school tours and trips that might not be of any significance to the core

curriculum. On student evaluation, 9 (64.3%) head teachers advocate school setting own internal examinations instead of buying from examination printers entrepreneurs who charged exorbitantly. The 13 (92.9%) of the 14 respondents put forward the use student labour other than hiring support staff. This idea would relieve the schools of spending so much on support staff that had been identified earlier in this project as being underutilized as the existing pupil –worker ratios were below the approved one of 30:1.

The researcher sought to find out reasons for adopting effective cost -saving measures. The responses are shown in table 4.13.

Table 4.13: Distribution of Reasons for Adopting other Cost-Saving Measures (N=14)

Reasons	Frequency	Percentage
Make education affordable to many	12	85.7
Reduce school un rest and teacher indiscipline	8	57.1
Save money and diverting it to other crucial curriculum areas	10	71.4
Save time in performing certain tasks	10	71.4
Improve KCSE performance	8	57.1
Total	14	100.0

Source: Headteachers' Questionnaire

Table 4.13 reveals that 12(85.75%) head teachers were optimistic of affordable education. This was shown by the increasing number of candidates sitting for nation examination since 2005 despite low enrolment in day schools which are cheaper than boarding schools. Eight (57.1%) supported the possibility of minimizing cases of school

unrest and teacher indiscipline as students and teachers would be motivated by the accomplishment of every activity planned for in the school programmes. Ten (71.4%) foresaw the appropriateness of cost-saving measures in saving money and diverting to other crucial curriculum areas. Another 10 (71.4%) schools cite the reason that they save time in performing certain tasks at the institutions. Eight (57.1%) talked of improved KCSE performance. On the optimal utilization of resources, the head teachers' responses are recorded in table 4.14 below.

Table 4.14: Distribution of Head teachers' Optimal Utilization of Educational Resources

(N=14)

	Frequency	Percentage
Prompt lesson attendance	8	57.1
Increased enrolment	11	78.6
Increased class size.	14	100.0
Used computers for book keeping and testing learners.	10	71.4
Strict on opening and closing dates.	9	64.3
Proper management of support staff.	11	78.6
Used school workshop for repairs and commercial purposes.	8	57.1
School farm for food production.	9	64.3
Laboratory for all science subjects.	13	92.9
Library stocked with enough books.	12	85.7
Lecture –halls used as dining –halls.	11	78.6
Proper spending of School fees.	11	78.6
Adherence to Free Tuition Funds vote heads.	9	64.3
Total	14	100.0

Source: Headteachers' Questionnaire

Table 4.14 reveals that, 8 (57.1%) of the 14 head teachers had ensured prompt lesson attendance by learners and teachers within the planned time. Eleven (78.6%) increased enrolment, fourteen(100%)increased class size, 10 (71.4%)used computers for book keeping and evaluating learners,9(64.3%)encouraged teachers and students to be prompt on opening and closing days as they appear in the school calendar and eleven (78.6%) ensured proper management of support staff. Eight (57.1%)used the school workshop for repairs and production of furniture for the school and also for sell to the local community, 9 (64.3%) produced food from the school farm for the school kitchen and also for sell, 13 (92.9%)used laboratory for all science subjects instead of building separate laboratories for each science subject, 12 (87.7%)stocked the school library with adequate but relevant books only, 11(78.6%) used lecture halls as dining halls as well,11 (78.6%) spend school fees for the planned purpose while 9 (64.3%) head teachers cited adherence to the spending vote heads of free tuition fund.

The researcher further sought to find out the realized output from the optimal utilization of educational resources. The findings are summarized in table 4.15.

Table 4.15: Distribution of Responses on the Realized Output**(N=14)**

	Frequency	Percentage%
Improved syllabus coverage.	10	71.4
Better planning.	10	71.4
Proper utilization of resources.	11	78.6
Quick and timely results.	9	64.3
Saved time.	9	64.3
Balanced diet and good healthy.	10	71.4
Better performance in science subjects	8	57.1
Improved reading culture.	9	64.3
Acquisition of permanent structures.	9	64.3
Acquisition of enough text books and other curriculum materials.	8	57.1
Minimized sending away students for fees.	14	100.0
Saved money.	8	57.1
Total	14	100.0

Source: Headteachers' Questionnaire

Table 4.15 reveals that 10 (71.4%) head teachers support that proper time management has ensured lesson attendance and improved syllabus coverage hence KCSE performance as realized in 2007 when the district mean score rose to 5.330. Ten (71.4%) cited improved planning. However, the DEO alluded to the fact that most secondary schools in the district do not have strategic plans. Eleven (78.6%) head teachers attributed proper school management to proper utilization of resources. Nine (64.3%) realized good management of data as well as quick and timely results with education technology. Ten (71.4%) witnessed the strengthening of teacher morale, eight (57.1%) realized all repairs

done in school saving on time and transport costs, nine (64.3%) obtained adequate but balanced food supply from the school farm, 9 (64.3%) proper utilization of laboratory led to better performance in science subjects, 8 (57.1%) proper stocking of the school library resulted to improved reading culture, 9 (64.3%) acquisition of permanent structures, 8 (57.1%) acquisition of text books and other curriculum materials, 14 (100%) minimized sending away of students for fees and, 8 (57.1%) head teachers mentioned to have saved money.

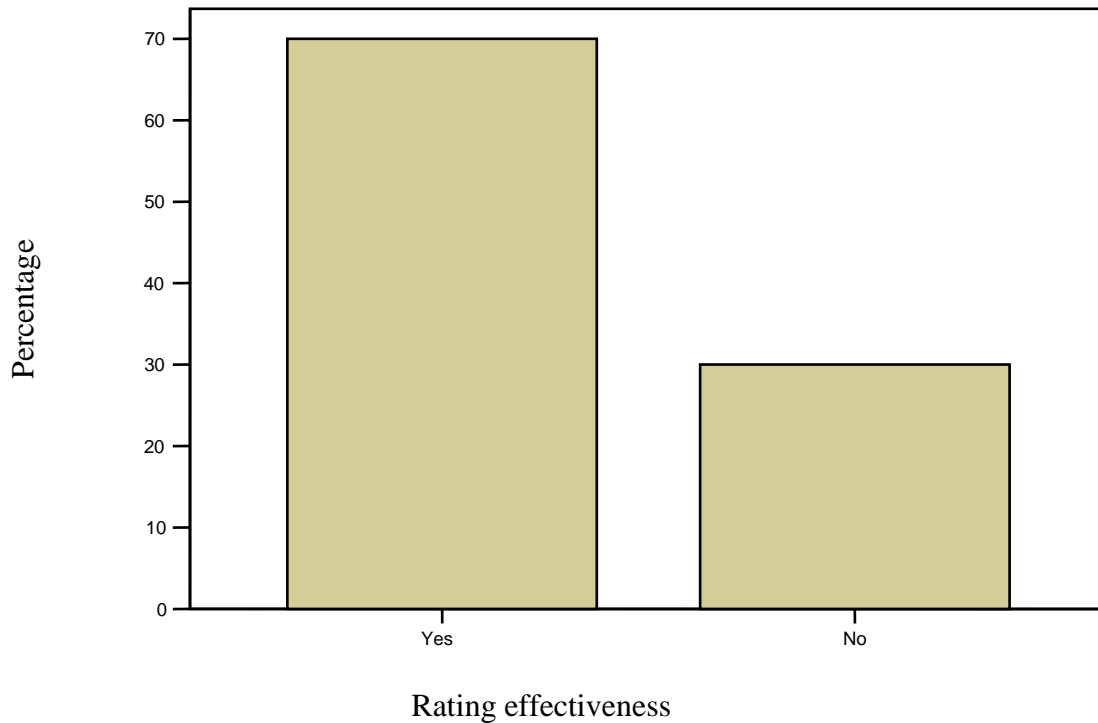
4.6: Sustainability of cost- saving measures.

The fourth research question was: What should public secondary schools do to ensure sustainability of cost-saving measures in order to improve KCSE performance? This research sought to find out the sustainability of cost-saving measures by ascertaining the problems encountered by education managers in implementing effective cost-saving measures, the possible solutions to the identified problems and the future of adopting cost-saving measures in public secondary schools. The questions addressing this research question were analyzed as below:

The researcher sought to find out problems encountered in implementing effective cost - saving measures in public secondary schools. The findings are recorded in figure 4.5.

Figure 4.5: Problems Encountered by Head Teachers in Adopting Effective Cost - Saving Measures

(N=14)



Source: Headteachers' Questionnaire

Figure 4.5 reveals that 7 (50%) responded 'Yes' to the question that they encountered problems in adopting effective cost -saving measures. Conversely, 3 (21.4%) answered 'No' to the same question. However, 4 (28.6%) head teachers did not respond.

The researcher also sought to find out the specific problems encountered by schools in implementing effective cost-saving measures. The findings revealed are in table 4.16.

**Table 4.16: Specification of problems faced
(N=14).**

	Frequency	Percent
Uncooperative parents	7	50.0
Limited resources	8	57.1
Conflicting priorities	7	50.0
Total	14	100.0

Source: Headteachers' Questionnaire

Table 4.16 reveals that, 7(50%) head teachers experienced problem of uncooperative parents. While 8 (57.1%) cited limited resources to manage against the educational rising needs, seven (50%) experienced conflicting prioritize from other stakeholder such as parents and MoE officials against the actual needs planned for by the school administration.

The researcher sought to find out possible solutions to the identified problems. The findings are recorded in table 4.17.

Table 4.17: Possible Solutions to the Problems
(N=14)

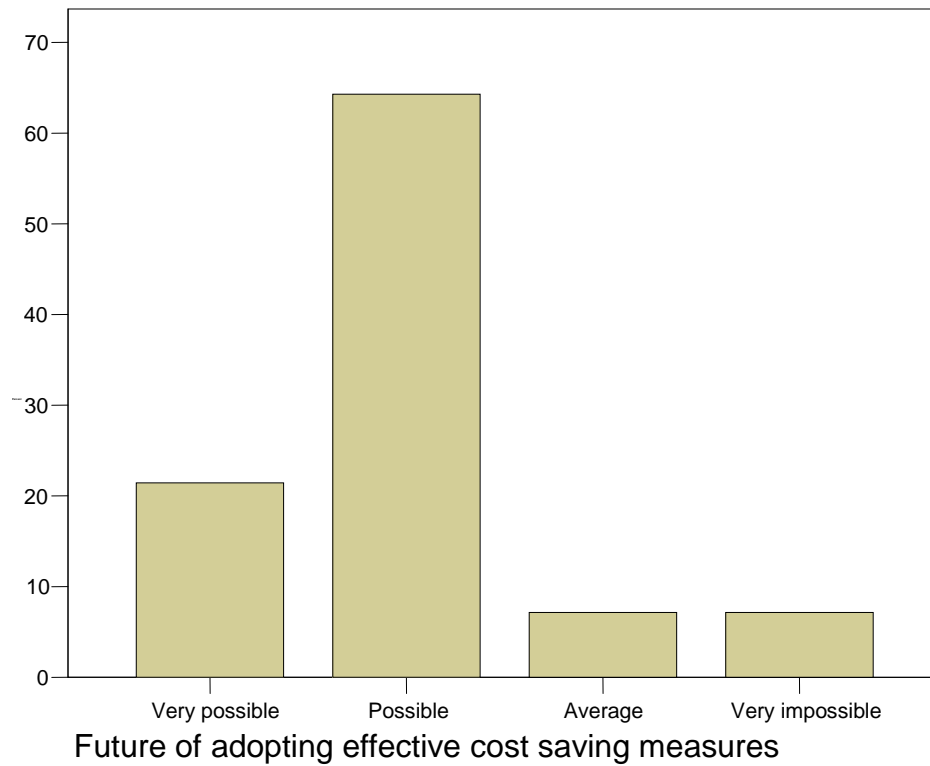
	Frequency	Percentage%
Talking to parents	7	50.0
Instilling sense of accountability and responsibility	8	57.1
Government to pay staff in schools	8	57.1
MoEST to increase grants to schools		
Total	14	100.0

Source: Headteachers' Questionnaire

Table 4.17 reveals that, 7 (50%) believed in creating awareness to parents as the possible solution. Eight (57.1%) suggested instilling sense of accountability and responsibility in education stakeholders while another 8 (57.1) identified the need for government to increase grants to schools.

The researcher sought to rate the future of adopting effective cost -saving measures at secondary school level. The findings were recorded in figure 4.6.

Figure 4.6: The Future of Adopting Effective Cost -Saving Measures
(N=14)



Source: Headteachers' Questionnaire

Figure 4.6 reveals that, 3 (21.4%) rated the future of adopting effective cost saving measures as very possible, nine (64.3%) put them at possible, 1(7.1%) head teacher put it at average as another1 (7.1%) termed as very impossible.

The researcher sought to ascertain other factors determining KCSE performance. The findings are recorded in table 4.19 below.

Table 4.18: Other Factors Determining KCSE Performance**(N=14).**

	Freq	Perc%
Attitude	12	85.7
Reliance on the leadership skills and wisdom from God	10	71.4
Entry behaviour of students	9	64.3
Discipline	9	64.3
Student hard work	9	64.3
Traditions in Performance	8	57.1
Teamwork in management	8	57.1
Motivation of students, teachers and support staff	12	85.7
Parenting styles	13	92.9
Methods of teaching	14	100.0
Learning and teaching resources	14	100.0
Total	14	100.0

Source: Headteachers' Questionnaire

Table 4.18 reveals that, 12(85.7%) identified learners' and teachers' attitude as determining KCSE performance. 10 (71.4%) mentioned reliance on the school administration and wisdom from God. Nine (64.3%) cited social and academic climate of schools; amount of homework done by students. Nine (64.3%) alluded entry behaviour of student , 9 (64.3%) discipline, 9 (64.3%) student hard work, and 8 (57.1%) school tradition in performance. Motivation of students, teachers and support staff 12 (85.7%), parenting styles 13 (92.9%), methods of teaching 14 (100%), education technology 14 (100%), availability of up to-date teaching materials, and learning and teaching resources 14 (100%).

4.7 PRESENTATION

This presentation is based on the findings of the study. To start with, 85.7% of the secondary schools in the district were boarding. This clearly indicated that the cost of education was high because more resources were required to provide boarding facilities. The existing resources could be used to improve core curriculum areas if most secondary schools were day schools hence improve KCSE performance in the district.

Secondly, the findings revealed that most schools in the district were single stream. As cited earlier, Musoga (2005) puts that utilization of educational resources can be realized through increasing class size from single to minimum of four streams in boarding secondary schools and three in day schools. Therefore, underutilization of resources was realized in most schools as evidenced by their sizes which had also affected performance in KCSE.

Thirdly, the low enrolment in most schools was a clear indicator of an expensive system because the schools did not enjoy the economies open to large school. Hanushek (2003) shows that funding or mandating smaller class sizes is expensive and unproductive. Otherwise, increased enrolment would mean enhanced expenditure on capitation, instructional materials and school operating cost hence effective in improving KCSE performance.

Fourth, the findings revealed that, the number of KCSE candidates rose since 2005 to 2009. However, the number of form four graduates scoring quality grades, B and above were few. This state was opposite from Pritchett et al, (1997) who observes that increasing classroom size is effective as test score is relative to teachers salary.

Fifth, all schools in the district were overstaffed with pupil-teacher ratios between 15:1 and 26:1. This also was an indication of underutilizing the existing resources as Musoga

(2005) shows the recommended national ratios to range between 25:1 and 30:1 .The revealed state means increased cost as Hanushek (2003) put that low pupil teacher ratios in school qualifies the fact that rise in teacher input and decline in the number of students leads to rise in expenditure per pupil. This imply that schools in Marakwet West district would continue being expensive and witness poor KCSE performance unless proper utilization of resources was realized

Sixth, there were 19 untrained teachers in the secondary schools in the district. All these teachers were found in day secondary schools which had low enrolment. Guellemette, (2005) shows that schools systems that have smaller classes have to employ teachers as otherwise forcing them to hire un-qualified teachers. The presence of unqualified teachers in the system is clear indication of ineffectiveness which might have caused the poor KCSE performance.

The findings also revealed that all schools have trained teachers .This underscored the fact that high quality teachers are ones who consistently obtain higher than expected gains in student performance. Therefore, public secondary schools the district could be posting KCSE performance commensurate to the level of teacher qualification.

Fourteen (100%) secondary schools have trained account clerks which is an indication that financial records are handled by qualified personnel. However, not all laboratory technicians were trained but 71.4% had training against 14.3% who were not trained. This means, resource utilization and management was efficient hence effective delivery of curriculum in most schools.

The findings also revealed that 92.9% secondary schools did not have adequate resources for learning. As earlier cited, Hanushek (2003) point that each of the educational resource should have positive affect in student performance for the output of educational

process-the achievement of individual student is directly related to the input. Therefore, all secondary schools should optimally utilize their available resources as KCSE performance is dependent on resource endowment and utilization.

The finding revealed that public secondary schools have established cost-saving measures such as proper management, supplying adequate text books to their students, limited choice of subjects among g others.

92.8% schools rated the established cost-saving measures effective. This qualified Jeson et al (1987) who observed that there is need for efficient utilization of various inputs in order to obtain the maximum feasible levels of the desired output. This positive rating shows the bright implementation of these strategies hence improved KCSE performance as seen in the year 2007.

The reasons for adopting effective cost- saving measures by public secondary schools included the fact that they eliminated time wastage in implementing school programmes and promoted learning.

The findings also revealed the potential cost-saving measures to be adopted to improve KCSE performance. These include use of school farm for food production to ensure balanced meals which guarantee good health. Aoki et al (2002) show that, student factors such as poor health can be a major cause of low achievement. Another potential strategy is sharing of school bus or vehicle with the neighbouring schools to facilitate sharing of additional costs as salaries and related payroll tax and maintenance cost. These and others indicate that public secondary schools could employ cost-saving measures to enhance student achievement in KCSE.

The findings also revealed other reasons for adopting effective cost-saving measures. These include provision of affordable education, reducing school unrest and teacher indiscipline, save money and diverting to other crucial curriculum areas among others.

The research findings have revealed optimal utilization of resources. For example, 57.1% schools ensured prompt lesson attendance by learners and teachers within the planned time. Cooper et al (2003) indicate that school calendar was associated with higher achievement for students. This indicated that secondary schools can optimally utilize their resource and realize improved syllabus coverage, better planning, proper utilization of resources, and better performance in sciences subjects and improved reading culture among others.

Schools experienced problem in implementing cost -saving measures .The findings revealed that parents were un- cooperative in paying fees and in supporting other school programmes that enhance learning. TSC (2007) observes that when parents do not cooperate in paying fees, it meant that schools could not buy enough text books to cater for its needs, which seriously hamper academic performance and also affect teacher motivation as there would be no incentives to motivate them as schools would be doing badly financially .Another challenge is limited resources to manage against rising human needs and conflicting priorities from other stakeholders such as parents and MoEST officials contrary to TSC (2007)view that adequate improvement in service delivery entails giving managers at all levels the authority and resources to do their work effectively. Otherwise, possible solutions to these problems include creating awareness in parents, instilling sense of accountability and responsibility and the need for MoEST to increase grants to secondary school sector.

Majority of the respondents were optimistic of adopting effective cost-saving measures in future to improve KCSE performance. As observed, 71.4% rated possible giving a

positive bright future the adoption of cost-saving measures then improving KCSE performance.

Lastly, the findings revealed other factors determining KCSE performance. These include learners' and teachers' attitude, reliance on leadership skills and wisdom from God, entry behavior of students, discipline, student hard work and school traditions in performance among others. This indicates that apart from addressing the issue of cost effectiveness public secondary schools should identify and address other factors determining KCSE performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter gives the summary of the study, conclusions and recommendations as analyzed in chapter four.

5.2 Summary

The following were revealed by the research findings:

First, 92.9% of public secondary schools did not have adequate learning resources. However, each of the educational resource should have a positive effect in student performance in KCSE for the output of educational process of individual student is directly related to the input hence the situation above calls for the fact that adopting effective cost-saving measures would be appropriate to improve KCSE performances of public secondary schools in Marakwet West district.

Secondly, all schools in the district established cost -saving measures which were rated 57.1% effective .This rating indicated the bright possibility of improving students' performances in KCSE for better future. However, the small class sizes, small school sizes and the existence of many boarding schools against the preferred cost effective day secondary schools have led to increased cost and poor performance in KCSE in public secondary schools in Marakwet West District.

Thirdly, sixteenth, 85.7% head teachers were optimistic of adopting cost-saving measures in the future. This means, resources available at the institutions should be utilized towards achieving best students in KCSE. This rating would mean that the future of adopting effective cost- saving measures is very bright hence improve KCSE performance of individual student and mean score for the entire district.

Also, 85.7% of the head teachers did not explain on the rating of the effectiveness of cost-saving measures. This meant that most of them were neither able to identify, implement nor evaluate the effective strategies in relation to resource utilization. In an environment of scarce educational resources the managers should be well versed with efficient and effective utilization of resources for best performance in KCSE.

The challenges which hinder the implementation of effective cost-saving measures were un-co-operative parents, inadequate resources to manage against the rising educational needs and conflicting priority areas in investment from education stakeholders including MoEST. Otherwise, Parents have the responsibility of paying fees and providing moral support to the institutions for better performance in KCSE. However, when parents fail paying fees, it meant that school would not implement all their programmes which seriously affect academic performance hence KCSE results.

There are other factors which determine KCSE performance. These include learners' and teachers' attitude, school administration and wisdom from God ,social and academic climate of the school, entry behavior of students, student discipline, student hardwork, motivation of students and staff, parenting styles, methods of teaching, school history and available learning teaching resources among others.

5.3 CONCLUSION

The findings of the study revealed that;

Most public secondary schools in the district did not have adequate learning and teaching resources. This resource inadequacy might have been the root cause of poor performance in KCSE from 2005 to 2009.

All public secondary schools in the district had established cost-saving measures. Otherwise, the school types which were majorly boarding, the school sizes which were mostly single stream, low enrolment and inadequate capacity of secondary school head teachers on identification, implementation and evaluation of effective cost-saving measures had increased costs hence poor performance in KCSE. Otherwise in an environment of scarce educational resources the managers should be well versed with efficient and effective utilization of resources for best performance in KCSE.

Most public secondary schools were optimistic of adopting other effective cost saving measures. This is very essential considering the fact that resources are scarce against many human needs and the desire to bring in fast developments to individual and the general society.

Public secondary schools had other than effective cost saving measures, other factors such as learners' and teachers' attitudes, school history among others which influence performance in KCSE.

5.4 RECOMMENDATION

Based on the findings, the researcher's recommendations are:

First, public secondary schools should utilize the available resources effectively to improve students' performance in KCSE considering the fact that resources are scarce and government is spending most of her financial resource in education.

Second, public secondary schools should strive to secure maximum economies of buildings and equipment, reduction in expenditure and to realize substantial savings by increasing their school size to at least three streams unlike what was revealed of 42.9% single stream, 28.6% double stream and 28.6% triple stream.

Third, public secondary schools, particularly the newly found and with low enrolment should not hire unqualified teachers on BoG. Instead, qualified teachers should be sought to fill up their vacancies.

Fourth, MoEST should train public secondary school head teachers on identifying, implementing and evaluating effective cost- saving measures.

Fifth, Public secondary school should take a leading role in creating awareness to the parents, teachers and the entire community on resource utilization and their importance on good KCSE performance.

Sixth, Public secondary schools without strategic plans should develop them and ensure adherence to it for effectiveness.

Public secondary schools should identify and address other factors determining KCSE performance in order to correct the prevailing situation of poor performance in national examination as experienced in the last five year.

5.5 SUGGESTION FOR FURTHER RESEARCH

The researcher recommends:

- i. Research should be carried out at other levels of education particularly the primary school level to find out their level of success in adopting effective of cost saving measures and possibly give comparative picture of the whole basic education sector.
- ii. Research should be carried out to find out the utilization of teacher resource at public secondary schools so as to increase learning output.
- iii. Research should also be carried out to find out the possible challenges that might have prevented the establishment of day secondary schools in Marakwet West district or in any other part of the country despite being the most appropriate cost - saving measure.

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Appendix A: Budget

Budget Item	Total cost (Kshs)
Production of research instruments	
Typing 7 pages of research instruments @20/= per page (7x20)	140
Printing 200 pages of instruments @5/= per page (200x5)	1,000
Typing approximately 100 pages of project @20/= per page (100x20)	2,000
Printing 400 pages of project @5/= per page (400x5)	2,000
Binding 4 copies of project @400/= per copy (400x4)	1,600
Transport and subsistence	
Public transport to field for 32 days @500/= per day (500x32)	16,000
Boarding during field work @500/= per day for 32 days (500x32)	16,000
Sub Total	38,600
Stationary (pens, pencils, foolscaps)	10,000
Contingencies	14,580
Grand total	63,180

APPENDIX B

Time Schedule

Time	Activity	Action taken by
December-February	Develop proposal	Researcher
March-April	-Field work study -Pilot study	Researcher
May-July	-Data collection -Data Analysis	Researcher
August-September	-Report writing	Researcher
September-October	-Submit project for examination	Researcher
October-November	-Make corrections -Submit final copy	Researcher
December	-Graduation	Researcher/School

APPENDIX C

QUESTIONNAIRE FOR HEAD TEACHERS

The purpose of this questionnaire is to collect information on the effectiveness of cost saving measures in improving KCSE performance in public secondary schools, Marakwet West District, Kenya, for academic purposes only. Please feel free to provide your answers truthfully in the space provided.

A) Background Information

(1) Name of the school

.....

(2) Type of the school (please tick appropriately)

(a) Girls Boarding (b) Boys Boarding (C) Mixed
(d) Girls Day (b) Boys Day (c) Mixed

(3) School size: Single stream Double stream Triple stream

(4) Present enrolment

a) Boys

b) Girls

Total

5. Complete the table below on KCSE performance at your institution.

KCSE YEAR	ENTRY	GRADES												MEAN SCORE
		A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	
2005														
2006														
2007														
2008														
2009														

B) Resource endowment

(6)Teacher establishment (Please give the number)

Male

Female.....

Total

(7)Teacher qualification (Please give the number)

Untrained..... Trained

(8)Non-teaching staff establishment (Please give the number)

Male

Female

Total

(9) Qualification of (please tick one)

I. School accounts clerk

Trained Untrained

II. Laboratory technician

Trained Untrained

(10)Physical resource (enter the number available in the corresponding column)

Item description	Quantity
Classroom(s)	
Laboratory	
Dining room(s)	
Playing field(s)	
Land	
Computer(s)	
Library (s)	
Bus(s)	
Van(s)	
Store(s)	
Latrine(s)/toilet(s)	
Workshop(s)	
Lecture Hall (s)	
Any other	

(11)Are the above resources adequate for learning process at your school?

Yes _____

No _____

C) Established Cost- saving measures

(12)If No to the above (12) what cost saving measures have you put in place to improve KCSE performance at your institution ranking them in order of importance?

1. _____

2. _____

3. _____

4. _____

5. _____

D) Effectiveness of established cost-saving measures in improving KCSE performance

(13)What is your assessment of the effectiveness of the above (13) cost saving measures? (Please tick one)

- Highly effective
- Effective
- Average
- Ineffective
- Highly ineffective

(14)If ineffective, what could be the reasons behind?

1. _____
2. _____
3. _____
4. _____

(15)For each of the above reasons, give a possible solution.

1. _____
2. _____
3. _____

(16)If highly effective (16), explain

(17) (a) Give other potential cost saving measures that could be adopted at your school to improve KCSE performance .

1. _____
2. _____
3. _____
4. _____
5. _____

(b) For each cost saving measure given above (18a) write reasons why you think it has been effective.

1. _____
2. _____
3. _____
4. _____
5. _____

(18) Complete the tables below on how you have ensured optimal utilization of the following educational resources in improving KCSE performance at your institution.

Input	Resource utilization	Realized output
Teachers		
Classroom Space		
Class size		
Computers		
School calendar (time)		
Support staff		
School workshop		
School farm		
Laboratory		
Library		
Lecture Hall		
School fees		
Free tuition fund/Free day		
secondary Education		
Grants.		
Economic stimulus fund		
Others		

(19) Which are the most effective cost saving measures in improving KCSE performance put in place at your school?

E) Problems in adopting effective cost-measures

(20) (a) Do you encounter problems in adopting effective cost saving measures?

Yes _____

No _____

(b) If yes to the above (21a) please specify

1. _____

2. _____

3. _____

4. _____

(c) Do suggest solutions to these problems

1. _____

2. _____

3. _____

4. _____

5. _____

F) The future of adopting effective cost saving measures

(21)(a) What is your view on the future of adopting effective cost saving Measures in your institution? (Please tick one)

Very possible

Possible

Average

Impossible

Very impossible

(b) If very possible, what reasons might lead to adopting effective cost saving measure in improving KCSE performance at your institution?

1. _____
2. _____
3. _____
4. _____
5. _____

(22) What recommendations would you make as far as effectiveness of cost saving measures is concerned?

1. _____
2. _____
3. _____
4. _____
5. _____

G) Other factors determining KCSE Performance

(23) Which other factors determine KCSE performance at your institution?

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

APPENDIX D

INTERVIEW SCHEDULE FOR DEO

The purpose of this interview schedule is to collect information on the effectiveness of cost saving measures in improving KCSE performance in public secondary schools, Marakwet West District, Kenya, for academic purposes only. Please feel free to provide your answers truthfully.

A) Background information

1. What is the name of your district?-----

2. How many public schools which are already KCSE centers in the district?

(i)Boys Boarding

(ii) Boys Day

(iii) Girls Boarding

(iv) Girls Day

(v) Mixed School

2.How were KCSE performance of public secondary schools in your district since 2005 to 2009?

KCSE YEAR	ENTRY	GRADES												MEAN SCORE
		A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	
2005														
2006														
2007														
2008														
2009														

(3.What is your view on the trend of KCSE performance in your district in relation to optimal utilization of resource?

B) Resource endowment

(4.What is the situation of following resources as found in public secondary schools in your district. Say either adequate or inadequate.

Item description	Adequate	Inadequate
Classrooms		
Teachers		
Laboratory		
Dining rooms		
Playing field		
Land		
Computers		
Library		
Bus/vehicle		
Stores		
Latrines/toilets		
Workshop		
Free Day Secondary		
Education /Tuition Fund		
Economic Stimulus Fund		
Lecture halls		
Any other		

C) Established cost-saving measures

(5.If inadequate to the above (4), what cost saving measures have you put in place to improve KCSE performance in public secondary schools in your district?

- i)
- ii)
- iii)
- iv).....
- v)

D) Effectiveness of the established cost saving measures

(6.) What is your assessment of the effectiveness of the above (6) cost saving measures (please tick one)

- Highly Effective
- Effective
- Average
- Ineffective
- Highly ineffective

(7)If ineffective, what could be the reasons behind?

- i.....
- ii.....
- iii.....
- iv.....
- v.....

(8) What do you think should be done to improve the effectiveness of cost saving measures?

- i
- ii
- iii
- iv

(9) Which other effective cost saving measure could be adopted to improve KCSE performance in your district?

- i.....
- ii.....
- iii.....
- iv.....
- v.....

(10) Why do you think the above cost saving measures would be effective if adopted?

- i.....
- ii.....
- iii.....
- iv.....
- v.....

(11) How have you utilized the following educational resources in improving KCSE performance in your district?

(i) Teachers

.....
.....

(ii) Free tuition money

.....
.....

(iii) Other government grants

.....
.....

iv) School calendar

.....
.....

(v) School fees

.....
.....

(vi)Others

.....
.....

E) Problems in adopting effective cost-saving measures

(12 a)Do you encounter problems in implementing effective cost saving measures?

Yes-----

No-----

(b) If yes to the above (12a) please specify.

i

ii

iii

iv

v.....

(13)What recommendations would you make as far as the effectiveness of cost saving measures in improving KCSE performance is concerned?

i

ii.....

iii.....

iv

v.....

F) Other factors determining KCSE performance

(14)Which other factors determine KCSE performance in your district?

i.....

ii.....

iii.....

iv.....