IMPLICATIONS OF PRICING GUIDELINES ON THE QUALITY OF EDUCATION OF SUB-COUNTY SECONDARY SCHOOLS IN BUSIA COUNTY, KENYA

BY

HEZEKIAH ADWAR OTHOO

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DECLARATION

This is my original work and has not been presented for any Degree program in any other university.

Hezekiah Adwar Othoo   _____ Date: _____

Reg No: PHD/ED/00093/2018

DECLARATION BY SUPERVISORS

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

Dr. Julius Gogo   _____ Date: _____

Department of Education Management and Foundations

Maseno University

Dr. Caren Olendo   _____ Date   _____

Department of Education Management and Foundations

Maseno University

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DEDICATION

I dedicate this thesis to my wife Rosemary Akoth for financial and moral support, to my parents the late Mr. Stephen Othoo and Mrs. Isdora Atieno for the love and encouragement and to my children Samuel, Joshua, Delbert and Susan. May God shower them with blessings.

ABSTRACT

The academic performance of public secondary schools in Busia County in the national examinations has been declining for the past three consecutive years below the national mean scores of 3.96 in 2018, 4.30 in 2019 and 4.53 in 2020 with the county attaining 3.80 in 2018, 3.68 in 2019 and 3.51 in 2020, the worst affected being Sub county schools compared to the neighbouring counties. Pricing as a strategic decision avails finances to schools for purchasing resources with which to offer services. For a county like Busia with high poverty index of 69.3% against national poverty index of 38.6%, there could be challenges of resourcing schools for quality attainment. The purpose of this study was to determine the implications of pricing guidelines on the quality of education in public sub-county secondary schools in Busia County, Kenya. The objectives were to: Establish the implications of pricing guidelines on the provision of infrastructural facilities for attainment of quality education; Analyze the implications of the pricing guidelines on the availability of and remuneration of human resources to facilitate processes of teaching and learning for quality education; Determine the influence of the pricing guidelines on the Kenya Certificate of Secondary Education Results (KCSE) and to determine the pricing guidelines that ensure optimal price for quality education. The study was informed by the Education Production Function. Descriptive survey and correlational research designs were used. Target population constituted 114 public Sub county secondary schools from Busia County, and 7 Sub county Directors of Education. Stratified random sampling was used to select 60 schools (principals), and purposive sampling to select 7 Sub County Directors of education for the study. Questionnaires for principals, interview schedule for sub county directors of education; observation checklist and document analysis guide were used to collect data. Face and content validity of the instruments were reviewed by experts in Planning and Economics of Education in Maseno University. The researcher pre-tested the instruments using 10 schools and a Pearson- r value of .80. Quantitative data was analyzed by use of percentages, mean scores, correlation and multiple linear regressions. Qualitative data was analyzed using content analysis. The findings indicated that the pricing guidelines did not provide adequate infrastructure as there was shortage of 110 classrooms, 117 laboratories and 279 doors of toilets. The pricing guidelines did not sufficiently address the employment and remuneration of human resource as there was shortage of 561 teachers with a deficit of sh.24, 216,084 required for their remuneration. There was a positive significant relationship between the fee paid to schools per student with mean scores in KCSE with a coefficient of determination of .120 (r =.346, p < 0.01). The pricing guidelines did not ensure optimal price for quality education. The study recommended that the Ministry of Education should revise the formula for pricing sub county secondary schools to address the salient needs of each school in order to enable them acquire resources with which to offer quality education. This study might help the Ministry of Education to formulate pricing guidelines policies that would ensure that public sub county secondary schools get sufficient resources to ascertain quality education. It might also be of help to academicians, researchers and scholars who may be interested in financing of schools and quality of education.

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ABBREVIATIONS AND ACRONYMS

ASAL: Arid and Semi-Arid Land

BES: Boarding Equipment and Stores

BOM: Board of Management

CSA: County School Audit

CAO: Chief Accounting Office

CBE: Curriculum Based Establishment

EWC: Electricity, water and Contingency

FDSE: Free Day Secondary Education

FSE: Free Secondary Education

HDI: Human Development Index

ICT: Information Communication and Technology

KCSE: Kenya certificate of Secondary Education

KESSHA: Kenya Secondary Schools Heads Association

KNEC: Kenya National Examination Council

KNUT: Kenya National Union of Teachers

KNBS: Kenya National Bureau of Statistics

 LCR: Learner to Classroom Ratio

LT&T: Local Transport and Travel

MOE: Ministry of Education

NESSP: National Education Sector Support Programme

NACOSTI: National Commission for Science, Technology and Innovation

OECD: Organization of Economic Cooperation and Development

PE: Personal Emoluments

RMI: Repair, Maintenance and Improvement

SPSS: Statistical Package for Social Sciences

SSA: Sub Saharan Africa

SSE: Subsidized Secondary Education

STR: Student Teacher Ratio

UNESCO: United Nations Educational, Scientific and Cultural Organization

UPE: Universal Primary Education

TSC: Teachers' Service Commission

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Education and training is critical in promoting political, social and economic development of any country. According to the Constitution of Kenya (2010), Education is a human right as enshrined in international treaties and conventions to which Kenya is a signatory. The 4th goal of the Sustainable Development Goals (SDGs) calls for all states to provide quality education for all by 2030. UNICEF (2000) viewed quality education as one that includes: environments that are healthy, safe, protective, gender sensitive and provides adequate resources and facilities; has processes through which trained teachers use child-centered teaching approaches in well managed classrooms and schools and skillful assessment to facilitate learning and reduce disparities; guarantees outcomes that encompass knowledge, skills and attitudes and are linked to national goals for education and positive participation in society.

World Bank (2019) observed that every learning institution today is faced with challenges of quality and to produce graduates who are relevant to the job market in the volatile and ever changing market. This is because the quality motive and task to remain in market pose a bounden of duties on educational managers. One of these huge tasks is pricing decision. The ultimate goal of any pricing decision is the achievement of the organization's objectives.

According to UNESCO (2018), secondary education is increasingly being recognized as a critical element in achieving the goals of human development, political stability and economic competitiveness. Furthermore, as an intermediary step between primary and tertiary education, it serves as a preparatory phase for youth before they enter the workplace, helping to equip a largely adolescent population with skills, aptitudes and social values for a productive and healthy adult life. This is the case "in countries where Universal Primary Education (UPE) has been reached, a bulging cohort of primary school learners is placing

increasing demands on the education sector to expand secondary education provision. Nonetheless, countries face enormous challenges when planning, pricing and resourcing secondary education expansion because it is many times more costly and complex than primary education" (Lewin 2008).

Yilmaz (2013) asserts that the amount of fees to be paid by students at secondary level of education has remained a problem in many developing countries. This is because the fee is set at unrealistic levels and in most cases they are not related to the costs incurred. They are determined by the governments or institutional policies that basically assume that students can afford the costs of their education. Obadara, Alaka and Abayomi (2010) while doing a study on Influence of Resource Allocation in Education on Secondary School Students Outcome in Nigeria observed that education had been in crisis for many years, much of the difficulty lye in the fact that the sector was poorly funded. This resulted in shortages of material and human resources experienced in the system: lack of qualified teachers; high turnover rate of teachers; shortage of classrooms, and a host of other problems. These difficulties had been most pronounced at secondary schools level and affected to greater extent quality of education.

The Constitution of Kenya (2010) makes education a basic right under the Bill of Rights where basic education is guaranteed to all children and the state is obliged to make its provision possible. In addition, the Government of Kenya set standards for schools to ensure healthy and safe learning environment to foster participation and quality education in schools. These standards are contained in the MOE Safety Standards Manual For Schools (2008) which postulated that for quality education to be attained schools should have   classrooms, toilets and laboratories with the following specifications; a classroom should be 8m x 9m and should house a maximum of 45 learners; 1 door of toilet/ pit latrine should serve, 30 boys or 25 girls; laboratory should be spacious to an extent that 2.4 square metres is utilized by one

student fixed at a maximum of 45 students, an additional one square metre for emergency corner shower point plus thirty two square metre, store preparation areas and teachers' office; Student Teacher Ratio (STR), the number of teachers both BOM and TSC that a school has against the required Curriculum Based Establishment (CBE) which provides that single streamed school offering eleven subjects should have a minimum of 9 teachers, 2 streamed 16 teachers, 3 streamed 25 teachers.; Learners' scores in K.C.S.E which can enable to ascend the academic ladder and become productive in the society.

According to the Ministry of Education in its Sessional Paper No.1.of 2019, the broad objectives of education sector interventions are to achieve hundred percent net secondary school enrolment rates and ensure quality education. It is in light of this observation that the government of Kenya embarked on various mechanisms as seen in education policies and financing of education to provide equitably for the gender, regional and social needs of education to its citizens. This has resulted in upsurge in enrolment with lowered quality of education. The quality education indicators have been examined before and after the implementation of pricing guidelines and the trends reported in Table 1.1 and Table 1.2 respectively.

Table 1.1: Trend of Enrolment and KCSE performance in Kenya from 2010 - 2014

Year	2010	2011	2012	2013	2014
Candidates with a mean grade of C+	97,134	119,658	123,704	12,337	124,865
Total KCSE candidates	354,341	410,586	432,443	44,552	451,360
Percentage of candidates with C+ and	27.4	29.1	28.6	27.7	27.6
Enrolment from F1-F4	1,653,38	1,767,720	1,914,823	21,042	2,136,731
Number of candidates with E grade	6,198	6,600	7,884	7,039	6,890
Percentage of candidates with E grade	1.7	1.6	1.8	1.5	1.5

Source: KNBS: Economic Survey, 2014

The trend of enrolment had been on steady increase from 2010 at 1,653,384 to 2,136,731 in 2014 representing a percentage increase of 29.2%. The candidates with quality grades (C+

and above) were averaging at above 27% in comparison with total KCSE candidates. The candidates who scored mean grade of E were below 2% of the total KCSE candidates before the implementation of new pricing guidelines.

Table 1.2: Trend of Enrolment and KCSE performance in Kenya from 2019 - 2023

Year	2019	2020	2021	2022	2023
Candidates with a mean grade of C+ and	125835	143,142	145,776	174,505	201,142
Total KCSE candidates	699,706	752,933	830,991	884,122	903138
Percentage of candidates with C+ and	17.98	19.01	17.54	19.74	22.27
Enrolment from F1-F4	3,260,000	3,520,400	3,692,000	3,920,300	4,109,300
Percentage increase in enrolment	10.8	7.99	4.87	6.18	4.82
Number of candidates with E grade	29,333	28,030	46,198	30,538	48,172
Percentage of candidates with E grade	4.19	3.72	5.56	3.45	5.33

Source: Kenya National Examination Council, 2024

The trend of enrolment from F1-F4 has been increasing from 2019- 2023. For instance, there was percentage increase in enrolment of 10.8% in 2019, 7.99% in 2020, 4.87% in 2021, 6.18% in 2022 and 4.82 % in 2023 (Kenya National Examination Council, 2024). The continual increase in enrolment overtime demands increase in the school resources, infrastructure inclusive, which pricing guidelines to schools issued by Ministry of Education from time to time plays a key role in their availability for utilization in schools in order to ensure quality education. The percentage of candidates with C+ and above versus the total number of KCSE candidates varied from 17.98% in 2019, 19.01% in 2020, 17.54% in 2021, 19.74% in 2022 and 22.27% in 2023. The percentage of candidates with E grades ranged from 4.19% in 2019, 3.72% in 2020, 5.56% in 2021, 3.45% in 2022 and 5.33% in 2023.

According to MOE in its National Education Sector Support Programme (2018) noted that despite the impressive performance in improving access due to government policy of 100% transition from primary to secondary levels of education, there are broad challenges and emerging issues being experienced by the sector which include falling learning outcomes and acute teacher shortage. It further observed that despite the Free Day Secondary

Education(FDSE), schools have continued to impose levies and other fees making education unnecessarily expensive. This level of education is in dire need of basic facilities especially for those schools hived from primary schools (sub-county schools category). This position is supported by Fuller (2017) who observed that despite the government's effort in expanding secondary education in Kenya, the overall provision of education remains inadequate in relation to quality considerations. He further noted that the impressive quantitative expansion of schools has overstretched the classrooms, laboratories and halls of residence due to favourable government school access policies. Further, it has become difficult for teachers to offer individualized instructions and many instructors have resorted to lecture methods to offer instructions which do not meet the 21st century pedagogical requirements (Kallio and Halverson, 2020).

The performance of secondary schools in Busia County in the national examinations has been declining for the past three consecutive years below the national mean scores. Further, Busia County school quality indicators such as Learner Classroom Ratio (LCR), Student Teacher Ratio (STR), School Size and Kenya Certificate of Secondary Education (KCSE) performance were compared with the national average and the neighbouring counties and presented in Table1.3.

Table 1.3: Comparison between education Average quality indicators: National versus Counties in Western region

	School size	Learner-Classroom Ratio (LCR)	Student-Teacher Ratio (STR)	KCSE PERFORMANCE		
				2021 Mean	2022 Mean	2023 Mean
National average	285	45	30	3.96	4.30	4.53
Kakamega County average	293	47	35	4.2	4.33	4.80
Busia County average	356	60	36	3.80	3.68	3.51
Bungoma County average	295	50	28	3.97	4.01	4.46
Vihiga County average	302	53	32	4.14	4.58	4.67

Source: MOE Statistical Booklet 2024

Data in Table 1.3 showed that, the National average school size is 285 learners. When the National average was compared with the counties in Western region, it was found out that, Busia County had the highest school size at 356, followed by Vihiga County at 302, Bungoma County at 295 and Kakamega County at 293.Busia County class sizes was higher than the neighbouring Counties. Similarly Learner to classroom Ratio was compared with the national average at 45, Busia County was at 60, Vihiga County at 53, Bungoma County at 50 and Kakamega County at 47. Moreover, Student Teacher Ratio was compared with the national average and the neighbouring Counties and the results indicated that Busia County was at 36 against the National Average at 30, Kakamega County at 35, Vihiga County at 32 and Bungoma County at 28. When the KCSE performance was compared it revealed that the National Average was 3.96 in 2021, 4.30 in 2022 and 4.53 in 2023 with Busia County having an average of 3.80 in 2021, 3.68 in 2022 and 3.51 in 2023; Kakamega county registering a mean of 4.2 in 2021, 4.33 in 2022 and 4.80 in 2023; Bungoma county having 3.97 in 2021, 4.01 in 2022 and 4.46 in 2023; Vihiga county had 4.14 in 2021, 4.58 in 2022 and 4.67 in 2023. This data showed that Busia County performed worst in the quality indicators so discussed as compared to the National and the neighbouring Counties. Performance of various categories of schools in Busia County was further analyzed and presented in Table 1.4

Table 1.4: Performance of Sub county schools versus County, Extra county and National Schools Category in Busia County

| School Categories | School size | Learner-Classroom Ratio (LCR) | Student-Teacher Ratio (STR) | KCSE PERFORMANCE | | |
				2021 Mean	2022 Mean	2023 Mean
Sub - County	285	63	40	3.24	2.96	2.72
County	430	50	38	4.71	4.30	4.86
Extra County	849	55	33	5.90	5.68	5.61
National	1155	62	29	7.84	7.01	6.81
County average	356	60	36	3.80	3.68	3.51

Source: County Director of Education, Busia County 2024

Various school categories quality indicators as in Table 1.4 showed that on school size, sub county schools was at 285, county schools at 430, Extra county schools at 849, National schools at 1155. The learner classroom ratio indicator was as follows; sub county schools were at 63, county schools at 50, Extra county schools at 55 and National Schools at 62 with the county average at 60. Moreover, Student teacher ratio indicated that sub county schools was at 40, county at 38, extra county at 33, National at 29 with the county average at 36. In addition, the KCSE performance of the various sub countries revealed that sub county schools scored a mean of 3.24 in 2021, 2.96 in 2022, and 2.72 in 2023; County schools scored a mean of 4.71 in 2021, 4.30 in 2022, and 4.86 in 2023; Extra county schools scored a mean of 5.90 in 2021, 5.68 in 2022 and 5.61 in 2023 while National schools scored a mean of 7.84 in 2021, 7.01 in 2022 and 6.81 in 2023.

In an effort to enhance the policy in secondary education related to improving relevance and expansion on student access to quality education through reduced indirect cost to the parents, the government of Kenya came up with pricing guidelines from 2013.Secondary education

financing has thus been guided by fee guidelines issued from time to time by the Ministry of Education (MOE). Sub county secondary schools receive capitation from the government of Ksh.22,244 and were not expected to charge extra levies apart from development fund agreed upon by Board of Management and ratified by MOE. However, schools have continued to charge different amount of fees ranging from Ksh.20,000 to Ksh.40,000 more than the amount recommended by the taskforce and gazetted by the Ministry of Education (MOE, Kenya Gazette 19th October, 2017). Worse still, the cost of secondary education has remained very high and education quality has continued to decline with increase in access.

Table 1.5: Government Fee Guidelines for Public Secondary Schools

VOTEHEAD	NATIONAL	BOARDING	DAY
Tuition	4792	4792	4792
BES	32385	27385	-
RMI	5846	5286	2886
LT&T	3454	2483	1833
Administration	5088	3422	1572
EW&C	8453	7051	2151
Activity	2054	1406	1256
P.E	11727	8860	5760
Medical Insurance	1999	1999	1999
Lunch Programme	N/A	N/A	3000
Development Fund	Varies	Varies	Varies
Total	75798	62679	22244
Less FDSE Grant	22244	22244	22244
Parent	53604	40435	0

Source: MOE, 2019

The Government of Kenya has been increasing spending on education, the funding was to provide on the equal share per child instead of an equitable share of public funds per child. Since the introduction of FSE in 2008, responsibility for constructing physical facilities and

providing other learning and teaching materials has been shifted to parents raising the cost of education; that parents are required to meet quality of facility and equipment. This means that regions and counties of the country with high population and high enrolment will continue getting more funds for education from government as the disadvantaged regions continue to lag behind. As in Table 1.5, schools do not have uniform fee structures due to variations in the amount that may be charged due to the need of each school in form of development fund. Other voteheads that constitute the fee charged by a particular school are fixed except the development fund which is designed to vary as stipulated in the pricing guidelines annexed in Appendix VI. Therefore the development fund pricing guidelines may result to variations in the provision of infrastructure such as classrooms, laboratories and toilets since each school has its own unique fee structure taking into account that the amount of development fund levy is decided by the parents of a given school. There is likelihood of discrepancies in the provision of infrastructural facilities to create an environment that guarantees quality education from school to school fueled by these pricing guidelines. According to UNESCO (2019) there is strong evidence that high-quality infrastructure facilitates better instruction, improves student outcomes, and reduces dropout rates, among other benefits.

According to Kenya National Bureau of Statistics in its Economic Survey (2022), Busia County has high poverty index of 69.3% against a national poverty index of 38.6%, thus there was likelihood that even the parents who form school community and stakeholders might not afford the infrastructural requirement for quality education. Worse still, according to KNBS and University of Nairobi (2020), Busia poverty level was categorized with the counties within Arid and Semi-Arid (ASAL) regions like Turkana, Mandera, Samburu and Garissa yet it is not among the ASAL counties. This implies that the households may not have the financial power with which to fulfil their financial obligations to schools like the development fund whose availability is dependent upon parents' economic status in different

localities. Therefore this study seeks to establish the implication of pricing guidelines on the availability of adequate infrastructure to public sub-county secondary schools in Busia County, Kenya.

Okoth (2021), observed that Busia County faces acute shortage of teachers with education stakeholders lamenting that it is hampering learning in schools. He noted that a school with 368 students only 9 teachers had been posted by TSC with 4 BOM teachers. He further observed that teachers are overworked in this county to the point of compromising standards and the school heads struggle to allocate Personal Emoluments funds alongside support from the parents to employ and pay teachers on BOM terms. Some schools satisfactorily mitigate this challenge through employment of such staff while others do not due to lack of enjoyment of economy of scale. This position is supported by the TSC County Director who while directing principals in a circular to explain the cause of poor performance noted that the County faces a shortage of 2381 teachers of which secondary schools lack 1039 teachers as at September 2021. The shortage levels did not take into account that staffing in secondary schools is inclusive of both TSC posted teachers and those that are employed by BOM. Moreover, the pricing guidelines put at a maximum the number of staff per school without considering population of students instead considered only number of streams.

According to Okoth (2021), the Personal Emolument Fund is meant to take care of payment and remuneration of school staff particularly the non-academic staff but school heads allocate some fraction to the remuneration of BOM teachers. Schools have tried to reduce the impact of teacher shortages by employing BOM teachers whose salaries are shouldered by Personal Emolument vote head and to some extent the additional money paid by parents for the employment of such teachers. Therefore schools within locations with high poverty index such as in Busia county (69.3%) might suffer with regards to employment of enough BOM teachers to mitigate the shortage. It is therefore necessary to assess the implications of the

personal emolument pricing guidelines on student teacher ratio, taking into consideration that teaching staff in secondary school comprise both TSC employed teachers and teachers employed by BOM, in public sub-county secondary schools in Busia County, Kenya.

Genevieve (2017) observed that tuition votehead as provided for by the government fee guidelines should be used to purchase learning and teaching materials and to conduct assessments in schools but schools still compel students to purchase reams of photocopying papers, exercise books among other tuition requirements. According to Eberly (2021), the goal of summative assessment is to evaluate student learning at the end of an instructional unit by comparing it against some standard or benchmark. He noted that for formative assessments inform of Continuous Assessments Tests (CATs) to be effectively practiced in schools there is need to have sufficient tuition resources. Formative assessments build and improve on summative assessments outcomes. This study will determine the influence of the pricing guidelines on the Kenya Certificate of Secondary Education Examination Performance in public sub-county secondary schools in Busia County, Kenya.

Ngetich, Wambua, and Kosgei (2014) in their study "Determination of Unit Cost among Secondary Schools in Kenya: A case of Nandi North District" observed that despite the fees guidelines issued by the Ministry of Education, schools have continued to ignore government policies on education costs. This position is supported by a report presented to Education Cabinet Secretary in February 2019 by Kenya Secondary Schools Heads Association (KESSHA) which revealed that the public secondary schools are underfunded citing huge budget deficits and proposed that secondary fee structure should be reviewed. This is further supported by Makori , Chepchieng, Misoi,and Kiplagat (2016) in their study "Secondary schools in a county in Kenya seem to be taking advantage of the cost sharing guidelines: understanding its practice and implications" averred that levels of fee payments and the entry items requirements were the two main challenges that most parents face as they attempt to

support their children educationally. Thus they recommended that the government should increase subsidy to schools and introduce subsidy on the entry items requirement. They observed that the two factors deny students opportunities to join secondary schools with a positive teaching-learning environment. These studies are however, silent on the amount of subsidy that the government needs to add. This is despite the government's effort of implementing Kilemi Mwiria report of free day secondary education and its commitment to allocating more resources to schools yearly as in Table 1.6.

Table1.6: Expenditure at secondary school level for the Ministry of Education 2015/16 – 2020/2021 in Ksh million

Financial Year	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Reccurent	57519.21	54977.03	83922.18	87966.70	89846.99	89128.76
Development	5258.23	8188.86	9064.74	7462.33	8378.88	12770.00
Total	62777.44	63165.89	92986.92	95429.03	98225.87	101898.76

Economic Survey 2021

Despite this annual increase in education expenditure, principals of secondary schools have constantly complained of running into financial crisis with huge budget deficit citing a big gap of the financial resources available to schools versus the expenditures incurred. Gogo (2012) underscored the importance of continuous review of financing secondary education with proper cost sharing guidelines between parents and the government taking into account the changing economics dynamics like inflation.

According to Kenya Bureau of Standards (KNBS, 2022), Kenya experienced the highest inflation rate in the month of July 2022 at 8.22, June 7.91, May 7.08, April 6.47, March 5.56, February 5.08, January 5.39. Therefore, the average annual inflation rate was at 6.45; in 2021, the average inflation was 6.1; 2020, 5.4 and 2019 was 5.3. The ever changing inflation rate has implications on the consumer price indices which has dire consequences on the households with low socio-economic status such as in Busia County with poverty index of

69.3%. This study seeks to determine the price guidelines that may result to optimal price for the operation of sub county secondary schools in Busia County with a view to addressing quality of education.

1.2 Statement of the problem

Amidst phenomenal growth in access to secondary education in Kenya occasioned by implementation of favourable school access policies, there had been lowered quality of education. This was more pronounced in Busia County which registered the lowest academic performance in the national examinations for the past five consecutive years compared to the neighbouring counties. Further, the academic performance has been declining for the past three consecutive years below the national mean scores with the worst affected being Sub county schools

The government pricing guidelines sent to schools from time to time are meant to ensure that schools are endowed with financial resources with which to purchase school resources for their efficient operations in order to realize quality education. Quality education is achieved through availing resources and facilities that are required to undertake process of teaching and learning in order to realize outcomes that can benefit the society. For example, the pricing guidelines on development fund being dependent on parents should avail school infrastructure such as classrooms, laboratories and toilets. In a county like Busia where poverty index is at 69.3% and given that the poor parents take their children to sub county schools due to the fact that they charge the lowest fee, the infrastructural status of such schools might suffer.

The pricing of secondary schools is determined by the government or institutional policies that basically assume that students can afford the cost of their education but they are not in tandem with the prevailing economic realities due to upsurge in inflation overtime. According to Kenya Bureau of Statistics 2022, the average inflation rate was 5.3 in 2019, 5.4

in 2020, 6.1 in 2021 and 6.4 in August 2022. Hence, there has been steady increase in the rate of inflation from 2019 todate which has in turn increased the consumer price indices overtime. Consequently, parents constantly complain that the cost of education is unbearably high due to huge increases in prices of school uniform, stationery, food and other voteheads which are not factored in fee structure like motivation/remedial, KCSE registration upload of student details. Kenya National Association of parents has continuously complained to the government about parents who are charged extra levies from the schools. Therefore secondary education pricing is characterized with fees guidelines and cost sharing programmes which may not avail optimal resources for the purposes of quality of education. Busia County being one of the counties in Kenya represents the country since the pricing guidelines are the same countrywide and the findings may be generalized to other counties but from the counties neighboring it, it is the poorest performer in terms of the quality indicators discussed.

1.3 Purpose of the study

The purpose of this study was to determine the implications of pricing guidelines on the quality of education of public sub-county secondary schools in Busia County, Kenya.

1.4 Objectives of the study

The objectives of the study were to:

1. Establish the implications of pricing guidelines on the provision of infrastructural facilities for attainment of quality education in public sub-county secondary schools in Busia County, Kenya.

2. Analyze the implications of the pricing guidelines on the availability and remuneration of human resources for quality education in public sub-county secondary schools in Busia County, Kenya.

3. Determine the implications of the pricing guidelines on the Kenya Certificate of Secondary Education examination performance in public sub-county secondary schools in Busia County, Kenya.

4. Determine the pricing guidelines that ensure optimal pricing for quality education in public sub-county secondary schools in Busia County, Kenya.

1.5 Research questions

The study answered the following questions:

1. What are the implications of pricing guidelines on the provision of infrastructural facilities for attainment of quality education in public sub-county secondary schools in Busia County, Kenya?

2. What is the implication of the pricing guidelines on the adequacy and remuneration of human resources to facilitate processes of teaching and learning for quality education in public sub-county secondary schools in Busia County, Kenya?

3. What is the implication of the pricing guidelines on the Kenya Certificate of Secondary Education Results (KCSE) in public sub-county secondary schools in Busia County, Kenya?

4. What are the pricing guidelines that ensure optimal price for quality education in public sub-county secondary schools in Busia County, Kenya?

1.6 Significance of the study

This study would yield useful information to the policy makers in education (both at school and government levels) in their efforts to improve education quality through controlled budgetary allocation and feasible policies. It would also act as a source of reference for educationists and researchers who are interested in finding more information on pricing of secondary education in Kenya as it would enrich the existing literature in this area. In

addition, those who are entering the teaching profession would get useful information on the subject combinations needed in the market in order for them to make informed decision.

In regard to its practical value the study would help education economists and planners to set up pricing guidelines that ensure acquisition of adequate resources for the realization of quality education in the sub county schools category. It would also enable the parents to have reliable prices to pay for the education of their children. The findings of this study might have significant implications for the future of public secondary schools in Kenya in addressing the quality of education.

1.7 Scope of the study

This study was done in Kenya, Busia County with the target population being sub county schools. The study covered public sub-county secondary schools sampled from Busia County because they admitted students with the same entry behavior and constituted the majority in the target population. Moreover, the public schools were subject to the government fee regulations and policies and the government was the main financier of these schools. This study focused on the secondary school level since this was the stage which formed the second cycle of the system of education in Kenya and therefore, the transitional stage between primary education and higher education, training, and the world of employment. It was "also a preparatory stage for adulthood therefore it needed to be carefully planned and executed in order to ensure that schools produce well-adjusted citizens, according to the objective of secondary school education" (GOK, 1988). It offered meaningful and gainful educational skills that may provide attractive employment opportunities, prepares people for various professions and laid a firm foundation for further education. The study targeted Principals of the sampled schools as they were the accounting officers of the schools and Sub county director of education in the target population since they oversaw the implementation of pricing guidelines in the said schools.

1.8 Assumptions of the study

The study was carried out on the basis of the following assumptions:

i.   All secondary schools prepared budget estimates at the beginning of each year and that these estimates were strictly followed.

ii.   Secondary school principals employed effective control measures in their financial management.

iii.   There was optimal utilization of the available school resources for the achievement of quality education in schools.

iv.   When the resources of right quantity and quality are injected in the learning institutions, then quality education is guaranteed.

1.9 Limitations of the study

This study was conducted on Sub County secondary schools hence its findings might not be easily generalized to other categories of secondary schools like County, Extra County and National schools categories. Some sub county directors were not found in schools at all times and this forced the researcher to visit some sub county Directors' offices several times looking for them, thus causing delay in obtaining data hence delayed completion of the study. Moreover, data on school finances were not easily responded to since they were considered secretive by schools. Further, data on school expenditure was difficult to access due to lack of proper filing. This was mitigated by collecting data through document analysis guide from county director and interviewing sub county directors of education to supplement that from the principals. Moreover, school audit reports were obtained from the county school audit units which provide data that was not provided by the school heads.

1.10 Theoretical Framework

This study employed the Education Production Function as proposed by Psacharopoulous and Woodhall (1985). They gave an illustration of a simple function for the education inputs that could yield quality which the researcher customized as:

$Y = f (x_1, x_2, x_3, x_4, \_ \_ \_ \_ \_)$ where:

x_1 = Infrastructural facilities

x_2 = Human Resource

x_3 = Fee paid to schools

x_4 = optimal pricing guidelines

Y = Quality Education (KCSE Scores)

Quality education is a function of the learning environment that is healthy, safe, protective and gender sensitive and provide adequate resources and facilities. Moreover, quality education is ensured from teaching and learning processes through which trained teachers use child-centered teaching approaches in well managed classrooms and schools. Further, quality education entails skillful assessment that facilitates learning and reduces disparities. Quality education guarantees outcomes that encompass knowledge, skills and attitudes and are linked to national goals for education and positive participation in the society. Quality education is therefore a product of optimal pricing guidelines that avails resources and services necessary for quality services in learning institutions. This means that the fee to schools paid by each learner which is an aggregate of tuition votehead, Boarding Equipment and Stores, Repairs Maintenance and Improvement, Local Transport and Travel, Administration costs, Electricity Water and Contingency, Personal emolument, Activity, Lunch programme, Development Fund should facilitate optimal provision of school resources for quality service delivery.

The "Education Production Function Theory" conceives schools as enterprises in which raw materials (students) and other inputs (teachers, infrastructure, libraries, laboratories, physical

facilities and financial allocations) are combined to produce certain outputs (skillful graduates). It is usually a function mapping quantities of measured inputs to a school and student characteristics to some measure of school output. The assumption in this theoretical framework is that when the resources of right quantity and quality are injected in the learning institutions, then quality product is guaranteed.

Education at whatever level is costly and investment in education claims a substantial share of national resources in most countries. Besides the direct costs, there are private and social indirect costs that are incurred whenever investments are made in education. In order to determine the optimal price of an education system, one must have knowledge of the effectiveness and quality of the variables that are used in educational processes. Education Production Function stresses the importance of inputs in right quantity and quality in order to attain quality outputs. The pricing guidelines for schools thus should take into consideration the prevailing costs of resources used in schools together with the inputs of right quantity and quality for the realization of quality education.

1.11 Conceptual Framework

The conceptual framework is a diagrammatic representation of diverse variables (independent, dependent, intervening), their indicators, and the interrelationships between the variables as set in the research objectives. This is elaborated in Figure 1.1

Independent Variables

Pricing Guidelines

Development fund, RMI, CDF, Infrastructure funds
- Classroom
- Laboratory
- Sanitation facilities

Personal emoluments
- CBE (subjects)
- No. of teachers
- Non- academic staff

Fee paid to schools
- Government capitation
- Parental contributions

Optimal price guidelines
- Income &Expenditure

Dependent variable

Quality of education
- KCSE results

- Socio-economic factors
- Administrative style
- Government policies

Intervening variables

Figure1.1: Conceptual Framework

Figure 1.1 shows that quality education is a factor of learning environment which provide facilities like classrooms, laboratories and toilets that enables learners to effectively participate in learning; processes that enable teaching and learning such as formative and summative assessments , adequate number of teachers and non-academic staff that support teaching and learning, learning outcomes that enables graduates progression and participate effectively in societal development and optimal pricing guidelines that avails the required resources for quality education.

Pricing guidelines constitute various voteheads like development fund, personal emoluments, tuition, Repair Maintenace and Improvement (RMI), Local Transport and Travel (LTT),

Administrative Costs, Lunch, Activity, Electiricity, Water and Contingency (EWC). Education cost of a student is met by several entities like household, government and other bodies mediating on behalf of the family or government like sponsors and donors. The government spends on teachers' remuneration, infrastructure, professional development of teachers, management and administration, grant capitation for each learner while the household meets the cost of some books, uniform, transport, boarding and lunch.

The students total cost on education is calculated by totaling all the expenditure incurred by the household on a particular student to the total expenditure incurred by the government on education on the same students. This yields an optimal price with other factors like pricing method taken into consideration. Inadequate price leads to unavailability of resources in schools resulting to low quality of education while overpricing affect access to secondary education. The pricing of public secondary education in Kenya is influenced by factors such as the pricing method, income and expenditure of the government and households, enrolments which are moderated by the government policies to realize the price. The price arrived at must be sufficient to attain quality education and ensure equity otherwise the cycle of setting appropriate price repeats. The government policies of pricing act as a moderating variable to the actual price setting of different public institution since it is the major funding agency of the said institutions. It is responsible for harnessing suitable cost sharing policies with parents and communities for the purposes of funding the institutions. Therefore, in this study, the independent variables include pricing guidelines such as: development fund, RMI meant for construction of laboratory and classrooms, Personal Emoluments for hiring of staff, tuition to facilitate formative and summative assessments and optimum price in terms of income and expenditure. If the income and expenditure balance and educational services are sufficiently provided for quality purposes then the optimum price shall have been attained. Quality Education in form of learning outcomes (KCSE) was the dependent variable.

1.12 Definition of key Operational Terms

Cost-sharing: Paying part of the cost of financing education by the government and the other part by the beneficiaries of education; the students and the community. In this study, it refers to paying part of the cost of financing secondary school level of education by the government and the other part by the beneficiaries of secondary cycle education, the students and the community.

Development expenditure: This is money allocated for construction of classrooms, dormitories, laboratories, toilets.

Enrolment: Total number of pupils registered in a given school.

Free Secondary Education   : This is education provided by the government in the second cycle of a school system i.e. secondary. The government caters for tuition expenses while the parent caters for boarding expenses.

Implications: The consequences of applying the pricing guidelines as issued by the Ministry of Education in availing resources and providing services to secondary schools in order to realize quality education.

Infrastructure: the basic immovable structures like classrooms, laboratories and toilets needed to facilitate the provision of services in a school.

Human Resources: Refers to teaching and non-teaching staff employed in a school

Optimal Price: This is weighted price which was worked out from the averages of the expenditures from each vote head which were then used to generate a multiple linear regression equation. The coefficients obtained from the linear regression equation were then used to calculate the optimal price payable to the school by each student enrolled to the school. The weighted price is usually used where price is considered to be crucial to the

outcome of a service.in this case the price is assumed to be a prerequisite in achieving quality education.

Pricing Guidelines: These are the directives sent to public secondary schools from the Ministry of Education (MOE) from time to time to guide the vote heads to be charged to learners, the amount to be charged on each vote head and the prudence expenditure of school finances for quality attainment.

Pricing: Pricing is the process of attaching a monetary value to a given educational level in terms of fee paid to such schools from parents and government. This include the development fund which the government has not attached a specific value but is left for school management to decide.

Fees paid: Quantifiable amount of money paid to schools by each learner.

Public Institution: An institution wholly owned by the Government or funded out of public funds for education and training purposes from the exchequer.

 Quality Education: The output from the educational institutions measured from Kenya Certificate of Secondary Education Examinations results (KCSE).This is brought about by environments which provide adequate resources and facilities in schools; processes of teaching and learning that ensure well managed classrooms and facilitate skillful assessment and reduce disparities and outcomes that enable recipients to be productive in the society.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section reviewed literature relevant to the research area. The review relates to implications of pricing guidelines on quality of education in Public sub county secondary schools in Busia County. The literature review was presented in this chapter based on the study objectives along the following major themes; implications of pricing guidelines on the provision of infrastructural resources; implications of the pricing guidelines on the availability of human resources to facilitate processes of teaching and learning; the influence of the pricing guidelines on the Kenya Certificate of Secondary Education examination performance; pricing guidelines that ensure optimal pricing for quality education in public sub-county secondary schools in Busia County, Kenya. A subsection was dedicated to summarize the major gaps detected in the reviewed literature.

2.2 Implications of pricing guidelines on the provision of infrastructural facilities for attainment of quality education in public sub-county secondary schools in Busia County, Kenya.

Price in economics is the balance between demand and supply. In an educational institution it is the demand for a particular level of education in relation to the supply of that education. Hence price in an educational institution cover fees such as tuition, Boarding Equipment and Stores (BES), Local Transport and Travels (LT&T), Electricity Water and Contingency (EWC), Personal Emoluments (PE), Repair Maintenance and Improvement (RMI), Administrative Costs, Activity, Medical Insurance and Development fund. Every learning institution today is faced with challenges of quality and also to produce graduates who are relevant to the job market in the volatile and ever changing market (World Bank 2019).

Virtually every country in the world has identified improving education quality as one of its highest national priorities. In spite of progress in responding to the demand for increased school access, developing more effective national planning and policy mechanisms, and implementing massive for teachers and administrators, dissatisfaction persists with the capability of education systems to support national economic and social aspirations. To some extent, plans and policies calling for higher quality schooling now supplement or even replace earlier attention to such priorities as education expansion and school access. It would seem that a consensus is forming that immediate attention of policymakers and involved international agencies should be focused on designing and implementing policies, programs and actions to improve education quality (Chapman 2002).

Education quality examined within context apparently may refer to inputs (number of teachers, amount of teacher training, number of textbook), processes (amount of direct instructional time, extent of active learning), outputs (test scores, graduation rates), and outcomes (performance in subsequent employments).Additionally, quality education may imply simply the attaining of specified targets and objectives. Interpretations of quality education may be based on an institution's program's reputation, the extent to which schooling has influenced change in student knowledge, attitudes, values and behavior or a complete theory or ideology of acquisition and application of learning (Adams 2002).

The quality motive and task to remain in market pose a bounden of duties on educational managers. One of these huge tasks is pricing decision. The ultimate goal of any pricing decision is the achievement of the organization objectives. Thus, "pricing guidelines is a crucial decision for any organization. An organization survival and profitability depends upon its pricing decisions thus price is the only element in the marketing mix that produces

revenue and thus ensures profitability" (Kotler & Keller, 2006). Effective pricing decision is tool for achievement of organization set objectives and may be a sufficient condition to meet the long term organizational goals. Pricing guidelines, if properly planned and evaluated can be a competitive weapon in the ever-dynamic market. However, management has a big responsibility before them in setting and adopting the most advantageous pricing guidelines.

Janssen et al in their study (2017) "Why education infrastructure matters for learning" indicated that buildings, classrooms, laboratories, and equipment- education infrastructure - are crucial elements of learning environments in secondary schools. There is strong evidence that high-quality infrastructure facilitates better instruction, improves student outcomes, and reduces dropout rates, among other benefits. For example, a study done by UNESCO (2022) in the United Kingdom found that environmental and design elements of school infrastructure together explained 16 percent of variation in primary students' academic progress. This research shows that the design of education infrastructure affects learning through three interrelated factors: naturalness (e.g. light, air-quality), stimulation (e.g. complexity, color), and individualization.

Although education policy makers are increasingly focusing on the quality of education and school learning environments, many countries use a fragmented or piecemeal approach to investing in their education infrastructure. In Romania, for example, decisions about education infrastructure investments have historically been made under an uncoordinated and decentralized model, driven by ad hoc needs and limited funding availability, rather than a strategic approach.

According to UNICEF (2009), a school is a special environment that exists for the purpose of enhancing the teaching and learning process. The school physical facilities require proper planning to provide inspirational setting for learning. Berry (2002), observed that effective

planning of a school's physical facilities is achieved through good design. This view is supported by UNICEF (2009), that, a well-designed school building is the one which is structurally sound so that it can provide a secure learning environment and able to enhance learning, boost students' and teachers' morale and increase motivation. However, according to Lackney (2008) a soundly constructed building that hinders learning may be more a liability than an asset.

Kenneth & Jeffery (2006) explained that over time, communities and parents have been responsible for and have made substantial investments in school infrastructure. Development partners, churches, Non-Governmental Organizations (NGOs) and individuals have also supported communities in order to improve learning environments. Hence given the importance of these public investments, the school administrator needs to adequately address the issues of planning of educational physical facilities in order to provide quality learning environment. Abend (2006) also asserted that educational buildings need to have learning spaces that support the learning process; are secure, comfortable and provide inspirational setting for teaching and learning to take place. This means that, the quality of school facilities seems to have direct effect on learning, an effect that is hard to measure. However, research has shown that clean air, good lighting and small, quiet, comfortable and safe learning environments are important for academic achievement.

According to a report by UNESCO (2016), some secondary schools are started within existing primary schools which already suffer from inadequate and poor quality facilities in which virtually all the sub county schools in Busia County began in this manner. Edward (2008) argues that, a child in poor quality facilities often feels being disregarded. This could negatively affect students' behavior, attitude and motivation, self-esteem, consequently their academic performance. Peterson (2011), observed that when students perceive that they are being prevented from succeeding due to unpleasant environmental conditions, they become

frustrated, angry and loose interest in education. He further noted that school buildings with sufficient environmental elements such as indoor air quality, ventilation, thermal comfort, day lighting, and classroom acoustics are well-designed and properly maintained, school climate improves and students respond by producing higher academic outcomes.

As revealed in a study by Williams, Persaud and Turner (2008), student success is related to overall school building condition. Furthermore, when a school's facility deteriorates, student absenteeism increases, reducing a student's likelihood of receiving a quality education. This means that, the condition of a school's facility sends a message to students, teachers, and administrators about the institution's concern for their academic interests.

According to UNESCO (2016) low levels of learning among children in developing countries may partly be attributed to poor or inadequate facilities in schools. Research shows that availability of the physical facilities has a significant positive influence on the performance of the students. For instance, a study undertaken in Nigeria by Shami and Hussain (2005) indicated that the availability of physical facilities in a school had a significant impact on students' performance. This is because, school facilities enable the teacher to accomplish his/her task as well and help the learner to learn and achieve effectively. Williams, Persaud and Turner (2008), further emphasized that "the availability and proper use of school facilities can affect the interest of the teacher to teach effectively in turn that positively affects student's academic achievement. Therefore, the school facilities in the school needs a proper attention as they have a great value in the support of teachers and students morale, motivation and plays a significant role to improve the quality of education.

Recognizing the importance of infrastructure in creating an environment in which quality education can be achieved; the Kenya Government through the MOE introduced new pricing guidelines where the responsibility of providing infrastructure to schools was shifted to Constituency Development Fund (CDF), MOE infrastructural funds, Repairs Maintenance

and improvement (RMI) votehead and Development fund. CDF is allocated to the schools within a jurisdiction of a given constituency. RMI is allocated uniformly to each learner enrolled in school thus the amount received is quite dependent on the enrolment of a school, that is, a school with high enrolment receive more and vice versa. Development fund is charged on parents depending on their infrastructural priority therefore it varies from school to school.

There has been a major concern amongst stakeholders about the development fund pricing guidelines against the infrastructure provision in Kenya's secondary schools. The guidelines are perceived to have led to congested classrooms and laboratory which do not guarantee quality learning. Schools are required to develop "budgetary plans peculiar to their needs resulting in varying fees structures. This is because of the need to streamline the development fund fees charged in schools.

The government therefore, came up with fees guidelines for different categories of schools; the guidelines were meant.to restrain situations of exorbitant fees in schools and bring about uniformity. The government insisted that schools had to levy uniform fees irrespective of their peculiarities. There was little success in restricting school budgets to government fees guidelines with school managements maintaining that schools could only attain observed levels of performance by levying fees higher than the guidelines.

According to MOE Statistical Booklet 2019, the share allocated to infrastructure is not sufficient to provide the required infrastructure in schools. Thus schools source for further development funding from parents but this must be discussed and agreed by all stakeholders at school general meetings and then the agreement deposited with the MOE education for implementation.

According to UNESCO (2022) there is a major backlog of infrastructural provision such as permanent and quality classrooms, particularly in marginalized areas such as North Eastern,

Narok, Turkana and Samburu. Therefore, there has been a marked increase in unplanned educational buildings that are poorly built and lacking basic facilities. At the same time, existing infrastructure were generally in poor condition due to lack of planning, poor construction standards and inadequate maintenance.

Sessional Paper No.1 of 2019 asserted that the significant increase in primary school enrolment following the introduction of Free Primary Education (FPE), government policy abolishing grade repetition, readmission of pregnant students after delivery and the Basic Education which makes education compulsory at primary and secondary levels, additional pressure has been put onto the existing secondary school infrastructure. This has led to poor conditions and overcrowding that may not be conducive to a good learning environment. The Koech Commission of Inquiry into the Education System in Kenya "placed importance on the provision of school physical infrastructure and attributed declining standards of education to inadequate and unsustainable physical facilities" (Republic of Kenya, 2003). Further the Sessional Paper No 1 of 2019 also recognized the need for additional school infrastructure to ensure the successful implementation of Free Secondary Education and upsurge of learners in schools due to 100% transition guidelines.

Nyakundi (2010) pointed out that the Tuition Free Secondary Education in Kenya coupled with 100% transition guidelines has led to a rapid expansion in enrolment in secondary schools. It is obvious that such an enrolment will bring about a demand for more school physical facilities. As a result, an additional number of public secondary schools have emerged due to Constituency Development Funds (CDF).

Schools in Kenya vary significantly in design, size and building materials. The school size, designs and quality have been left to schools and communities with little or no government supervision. This however has resulted into make-shift kind of structures in the name of

schools which are likely to hinder the learning process because of their poor quality. One may wonder if there are government construction guidelines that are supposed to be followed during construction of such schools. These standards are contained in the MOE Safety Standards Manual For Schools (2008) which postulated that for quality education to be attained schools should have   classrooms, toilets and laboratories   with the following specifications; a classroom should be 8m x 9m and should house a maximum of 45 learners; 1 door of toilet/ pit latrine should serve, 30 boys or 25 girls; laboratory should be spacious to an extent that 2.4 square metres is utilized by one student fixed at a maximum of 45 students, an additional one square metre for emergency corner shower point plus thirty two square metre, store preparation areas and teachers' office (Ministry of Education, 2008).

According to UNESCO (2019) the minimum student classroom space should be 1.5 square meters per pupil with one-seater desk, which would translate to 45 square meters for a room expected to hold 30 learners. Classrooms that are congested hardly provide space for movement and affect effective teachers' control of classes. An ideal classroom should be spacious to allow free movement, space where students can form round table discussion with movable tables and chairs. According to UNESCO (2018), only 10% of children from the poorest households in Kenya complete Secondary school, compared to 70% of children from the richest households. This gap is due to a number of factors, including access to quality education, teacher quality, and family resources. In addition, the current 100% transition policy has led to congestion in the classrooms in Secondary schools, with a significant number of class sizes exceeding the UNESCO-recommended 45 students per class. Many students and their families struggle to afford a University education. High living and tuition costs and a lack of available financial help make it difficult to increase enrollment and curb student dropout.

According to Presidential Working Party on Education Reform (PWPER) (2023), the allocation of funding and resources remains a critical issue in the education sector. Inadequate financial resources frequently impede infrastructure development, provision of learning materials, and student and teacher support systems. Although Kenya has made significant investments in its education sector, with expenditure reaching international benchmarks, both as a share of total government expenditure (TGE) and as a share of gross domestic product (GDP), every sub-sector complains about inadequate funding with acute shortage of key infrastructural facilities such as classrooms, laboratories and latrines that key ingredients of quality education.

In addition, report on Child Friendly School from the Ministry of Education (2019) indicated that secondary schools continued to experience many challenges relating to overcrowded classrooms and inadequacy of sanitation facilities. A report from the Busia County Education Office (2021) showed that secondary schools in Busia had an imbalanced provision of educational physical facilities. It was common to have schools with class sizes up to between 80-100 students. In some schools, there were inadequate classrooms, laboratories, and libraries. In some situations it was observed that some secondary schools in Busia County had structures of different sizes and constructed using different materials varying in quality from timber iron sheet to building blocks. Some classes lacked well fitted doors and window-panes, while others had leaking roofs, earthen and dusty floors. Many schools suffered from inadequate maintenance and have dusty compounds that were likely to be hazardous to the health of learners and teachers. This situation did not provide quality learning environment and therefore might have direct or indirect impact on the teaching and learning process and eventually, negatively affecting students' academic performance.

Since the introduction of pricing guidelines in 2015 the responsibility of constructing infrastructural facilities was to be shared between CDF, government infrastructure funds,

RMI votehead and Development fund charged on parents on need basis. Koriyow (2017) observed that the number and quality of infrastructural facilities and equipment has continued to deteriorate in most secondary schools as in Busia sub county schools despite the MOE changing the pricing guidelines in 2015. The pricing guidelines might favour institutions with high enrolment since the resources are allocated per student. This means that regions and counties of the country with high population and high enrolment will continue getting more funds for education from government as the disadvantaged regions continue to lag behind. For example, a county like Busia which has high poverty index of 69.3% (KNBS report for 2022), it was expected that even the parents who form school community and stakeholders might not afford the infrastructural requirement for quality education. Therefore this study seeks to establish the implications of pricing guidelines on the infrastructural facilities of public sub-county secondary schools in Busia County, Kenya.

2.3 Implications of the pricing guidelines on the availability and remuneration of human resources for quality education in public sub-county secondary schools in Busia County, Kenya.

Sharma and Pandey (2021) define Human Resources as comprising the personnel, staff, or workers in an organization employed to achieve its goals. They encompass both skilled and unskilled manpower collaborating to fulfill organizational objectives. The overarching aim of human resources is to ensure organizational success through effective manpower utilization. Human resource management entails the tasks of recruitment, selection, training, and skill development, alongside the maintenance of staff benefits and rewards to enhance performance. Human Resources foster the enhancement of staff skills, organizational competencies, managerial acumen, and a culture of care within the organization. This function serves as a motivational and directional force, guiding the efforts of teachers and other staff towards maximum productivity and optimal achievement of educational goals. In

various scenarios, Human Resource Management involves the process of motivating and promoting personnel within the organization to accomplish desired goals and objectives.

Human resource in school includes teachers, and support staff. Human resource as a factor of production is affected by adequacy and quality as reflected by level of training and level of motivation. Educators/teachers are a very important human resource in an educational institution. This is because they are front-liners who deal directly with students so that the success or failure of students lies in a teacher in the learning process.

Human resources in a school set up consist of teaching staff and non-teaching staff. Teachers are the people who constitute the staff workforce in a school. According to Olagboye (2014), people and knowledge, skills and attitudes in them constitute resources. Okwori (2016) agreed with this assertion and added that "expertise in technical, mechanical, managerial, social and other areas potentially available for utilization in social and economic institutions constitute human resources.

A secondary school as an educational institution has teaching staff, non-teaching personnel and students including their knowledge, abilities and skills as the human resources. Essentially, the personnel within the institutions and their capabilities in contributing to productivity and performance of institutional objectives are referred to as human resources. Teachers in secondary schools are engaged in the processing of all educational inputs, students inclusive, so that the educational institutions may be able to achieve their objectives. They disseminate knowledge and skills through teaching, contribute to advancement in knowledge and engage in community services. Their availability and use would determine the success or failure of the educational system.

Teachers constitute the core of the education system and their importance in student performance has been widely confirmed by many studies" (Rivkin, Stephen, Ertik & John, 2000). Thus teachers are an important resource in the teaching/learning process and their

training and employment therefore requires critical consideration. In recent years an increasing number of studies have expressed concern about current and prospective teacher shortages in many countries. According to Santiago (2022) severe shortages currently exist, and there is a gap between demand and supply of teachers needed to ensure effective teaching in many countries. Teacher shortages had therefore, become a major concern to educational authorities and should be addressed continuously by guidelines makers. Performance of teachers and non-teaching staff as reflected by level of training and teaching experience would determine the quality of grades attained in an examination.

Shyllon and Joshi (2015) highlighted Tanzania's challenges in financing human resources in education. According to the World Bank, primary sources of education finance in Tanzania encompass private resources of households, domestic government revenue, and external resources. However, significant shortfalls in infrastructure and human skills have hindered industrial development and growth, emphasizing the critical need for improved human development outcomes for Tanzania to realize its development potential.

Karigitho (2021) highlighted that financing of human resources in education in Kenya is primarily supported by the government and other stakeholders who are interested in education. According to the Global Campaign for Education, the Kenyan government has substantially increased its expenditure on education, allocating a significant portion of the national budget to the education sector, with specific allocations for teacher remuneration. Nevertheless shortages of teachers in learning institutions still exists. The study conducted by Khaemba (2014) reveals several key insights regarding the relationship between funding and educational performance, and quality, in public secondary schools. Firstly, it suggests that public subsidies may not effectively impact human capital investment due to delays in remittances. Additionally, some schools resort to charging levies to compensate for inadequate public funding. Conversely, the study indicates that private financing, which is

often adequate, allows parents to afford subsidized fees, thereby improving human capital investment. However, there is a decline in the educational quality overtime as the number of candidates that score the least grade E that could enable transition to other training institutions increased overtime as in Table 1.2. Moreover, schools face various challenges related to funding, including delayed government remittances, arrears, and limited financing sources, highlighting the need for increased commitment and support from all stakeholders to ensure successful human capital financing and improve educational quality in public secondary schools.

A method of determining the extent of teacher's utilization was through the number of students assigned to them for teaching. These are referred to as Students-Teacher Ratio (STR). STR was used to determine the number of students that were allocated to a teacher in a given educational level. The STR shows a teachers workload at a particular level of education. It also helps in determining the number of teaching manpower needed for a projected student's enrolment. Thus, it could be used to determine whether teachers are over-utilized or underutilized (Afolabi, 2005).

STR = Total number of students at a given educational level in a year
      Total number of teachers at a given educational level in a year

This ratio sometimes might not accurately indicate teacher shortage in secondary schools since there are so many subjects offered and those subjects' calls for different teachers with different subject combinations. To ascertain adequacy of teachers in schools, STR and subject combinations should be considered (CBE).

In 2015, following the appointment and submission of the Kilemi Mwiria's Taskforce Report on Secondary school fees in Kenya that was as a result of concerns raised by His Excellency the President and the general public on the high cost of secondary education, the next phase of this exercise was to implement the recommendations of the report. Amongst the key recommendations were: The rationalization and downsizing of bloated non- teaching staff

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workforces in secondary schools and the employment of adequate teaching staff for all schools thereby removing the burden of salaries of BOM/PTA from parents. The MOE thus came up with pricing guidelines and human resource guidelines. According to the guidelines adapted from the Kilemi Mwiria Taskforce report of 2014, day schools with one stream should only have a maximum of 5 workers while the largest school with 15 streams should only higher not more than 37 workers on BOM terms. The Teachers' Service Commission also came up with the guidelines on the number of teachers per school according to the number of streams. The teaching and non-teaching staff requirement according to the number of streams of a school has been analyzed and reported in Table 2.1

Table 2.1: Staffing Guidelines for Schools

Stream	No. of Teaching Staff	No. of Non-Teaching Staff	Total
One	9	5	14
Two	17	7	24
Three	25	11	36
Four	33	15	48
Five	39	16	55
Six	45	19	64
Seven	62	21	83

Source: Kilemi Mwiria Report (2014)

According to staff requirements of the schools as recommended by MOE, one streamed school should have 9 teachers, 5 non-teaching staff which totals to 14; two streamed should have 17 teachers, 7 non-teaching staff totaling to 24,; three streamed should have 25 teachers, 11 non-teaching staff totaling to 36,; four streamed school should have 33 teachers, 15 non-teaching staff totaling to 48,; five streamed should have 39 teachers, 16 non-teaching staff which totals to 55,; six streamed school should have 45 teachers, 19 non-teaching staff totaling to 64,; and seven streamed school should have 62 teachers and 21 non-teaching staff totaling to 83. However, financing of secondary education is done per individual learner not per stream leaving a gap between pricing guidelines and the adequacy and remuneration of human resources in schools.

The responsibility of employing and remunerating teachers has been delegated to TSC by the constitution while employment of other employees of the school has been entrusted to Board of Management of individual schools (BOM). The BOMs utilize the resources availed to them through the pricing guidelines to employ and remunerate the other staff that are not paid by TSC. However, the pricing guidelines put at a maximum the number of staff per school without considering population of students instead considered only number of streams. This might jeopardize the provision of human resource to schools for quality education.

MOE (2014) directed the schools to remunerate their staff as per the guidelines put forward by the Kilemi Mwiria report which proposed that the lowest earning worker should pocket Ksh.9660 while the highest earner should receive a monthly perk of sh.41000 as indicated in Table 2.2

Table 2.2: Remuneration Scale for Non-Teaching Staff in schools

Category	Minimum salary (Ksh.)	Maximum Salary (Ksh.)
Bursar	31,020	41,590
Secretary	12,210	24,662
Messenger	10,380	11,370
Lab technician	12,510	21,304
ICT technician	12,510	21,304
Groundsman	9,660	11,370
Cook	9,660	11,370
Kitchen Handler	9,660	10,380
Store keeper	12,510	21,304
Security	9,660	11,370

Source: Kilemi Mwiria Report 2014

According to Table 2.2, Bursar should earn a minimum of sh. 31,020 and a maximum of sh. 41,590; secretary should earn a minimum of sh.12,210 and a maximum of sh.24,662; messenger should earn a minimum of sh. 10,380 and a maximum of sh.11,370; Lab Technician should earn a minimum of sh.12,510 and a maximum of sh.21,304; ICT technician should earn a minimum of sh.12,510 and a maximum of sh.21,304; groundsman should earn a minimum of sh.9,660 and a maximum of sh.11,370; cook should earn a

minimum of sh.9,660 and a maximum of sh.11,370; kitchen handler should earn a minimum of sh.9,660 and a maximum of sh.10,380; storekeeper should earn a minimum of sh.12,510 and a maximum of sh.21,304 and security should earn a minimum of sh.9,660 and a maximum of sh.11,370. Kilemi Mwiria (2014) believed that the new pricing guidelines would enable the BOM to remunerate the staff as indicated in order to motivate them to provide services towards attainment of quality education. This study would therefore analyze the implications of the pricing guidelines on the adequacy and remuneration of human resources to facilitate processes of teaching and learning for quality education in public sub-county secondary schools in Busia County, Kenya in order to ascertain with the level of compliance with the fee policy as advocated by Kilemi Mwiria (2014).

According to Okumbe (2007), teachers are the most important resource that any country has because an efficient human capital development depends on the quality and effectiveness of teachers. Odhiambo (2010) contends that there was a growing demand from the Kenyan government and the public for teacher accountability in students' performance. Schools are commonly evaluated using students and teachers cannot be disassociated from the schools they teach and academic results of the students. Teachers celebrate and are rewarded when their schools and subjects are highly ranked.

Data obtained from TSC shows a shortage of 58,581 teachers in Secondary schools by January 2023. The shortfall in the number of teachers had been occasioned by an increase in the number of learners in Basic Education, the 100% transition policy and free day schooling for Secondary schools. This has led to high Student to Teacher Ratios (STR) and threatens to compromise the quality of education. Okoth (2021) observed that Busia County faces acute shortage of teachers with education stakeholders lamenting that it is hampering learning in schools. He noted that a school with 368 students only 9 teachers had been posted by TSC with 4 BOM teachers. He further observed that "teachers are overworked in this county to the

point of compromising standards. This position was supported by the TSC county director who while directing principals in a circular to explain the cause of poor performance noted that the country faces a shortage of 2381 of which secondary schools lack 1039 as at September 2021. In that circular, the director indicated that the performance standards had deteriorated since the county hardly produced A grades in national assessments. KESSHA Busia branch attributes this to shortage of teachers and non-teaching staff who facilitate the process of attaining quality in education. Therefore this study is tailored towards analyzing the implications of the pricing guidelines on the availability and remuneration of human resources for quality education in public sub-county secondary schools in Busia County, Kenya.

2.4 Implications of the pricing guidelines on the Kenya Certificate of Secondary Education examination performance in public sub-county secondary schools

Fueled by an historic convergence of globalization, knowledge-driven economies, human rights-based development and demographic trends, it has become clear that educational attainment is not only vital to the economic well-being of individuals but also for that of nations. Indimuli (2019) posits that in order to achieve the national goals of education, it is necessary to increase access to education and improve quality of learning by revising the pricing guidelines to schools. The first step toward a quality learning system is to ensure adequate resources, allocated in a healthy balance across core system parameters of the education system. Without this, few other policy objectives and programs can be implemented or sustained. Estimation of the unit cost of basic education makes an important contribution towards marshalling adequate resources and ensuring the sustenance of quality learning system. Secondary schools have been categorized into National, extra county, county and sub county schools. The various categories of schools have unique needs depending on enrolment, location, and its establishment with the high students' enrolment, high teacher

student ratio and overstretched facilities specifically in sub county schools amid standard fee guidelines by Ministry of Education. This contradicts Government policy on quality learning provision that has shown an increasing interest of attaining 100% access to secondary education, but many challenges remain. Quality learning provision in secondary schools could be compromised and even derail the free day secondary program due to inadequate financial resources and delayed disbursement of subsidies to schools.

Ivonne (2017) averred that quality education is critical in determining the socio-economic development of a country, as it is the basis for training human capital to drive economic sectors. International human rights law, which Kenya is a signatory to, states that primary education should be free and compulsory, while, secondary and higher education should be made progressively free of charge. Quality in education has assumed great significance throughout the world; at the same time it continues to be an issue of great complexity. While there is a growing acceptance that focus on quality as the key to successful education system, an outstanding difficulty is that there is much less agreement on what the term educational quality actually means in practice. There is currently a significant deficit seen in terms of having a common understanding and a common set of vocabulary/language for conversations within and among the various stakeholders. The concept of educational quality is hence a complex one.

According to Kilemi (2014), quality is at the heart of education and is neither a standalone entity nor a sequential element. It is integral to all the components; be it input, process, output or outcome. There is an emerging understanding among the different stake holders that there is a need for a mechanism to be in place that takes charge of the total quality requirements of the service being provided. Quality education through school improvement is best carried out by understanding a set of dimensions that are to be improved within each school, that is, students' learning outcomes (what students learn) and the governance of schools (how

schools are run). The third dimension for school improvement is through provisioning (providing the resources the school needs to improve).

Richard (2007) in his study on assessment, on accountability and students' learning outcomes made a distinction between students' outcomes and students' learning outcomes. He reported that students' outcomes are the aggregate statistics on group of students like graduating rates, retention rates, transfer rates and employment rates for graduating class. Generally, students outcomes tends to measure institutional performance while students' learning outcomes encapsulates wide range of students' attributes and abilities which consists of cognitive and affective skills which are measures of how the experiences students acquired in school have supported their development as individuals. Cognitive outcomes include demonstrable acquisition of specific knowledge and skills which are ingredients of productivity in the workplace which is the essence of quality education. Posneer (1992) refers to cognitive learning as the recall or recognition of knowledge and to the development of intellectual abilities and skills. This study focussed on students' learning outcomes to indicate education quality and specifically used standardized test results like KCSE to measure education quality.

World Bank (2019) asserted that education is a powerful driver of development and one of the strongest instruments for reducing poverty and improving health, gender equality, peace and stability. In addition, developing countries have made tremendous progress in getting children into the classroom and the majority of the children worldwide are now in school but learning is not guaranteed. For about half of the students, schooling is not learning. Hundreds of millions of children cannot read or write despite having attended school. In addition, in Sub- Saharan Africa, almost 90 percent of students do not have the minimum skills in reading and mathematics.

European Union (2014) argued that resources gained through fees derived income were not always invested in ways that would be expected to perceptibly improve the student experience and as a result there were the tendency for the students-staff ratios to rise, even when the institutional income per student was rising. Canada was highlighted as one extreme example, where student-teacher ratios rose detrimentally by 20% even as per student income rose by 40%. EU (2014) makes a further observation that while it may be true that fees make institutions better off, they do not necessarily make for a better student experience even when per student income is rising. It argued that this is due to: in some cases, new funds are dedicated to expansion rather than improvements in quality. Thus new money is devoted to giving the same experience to more people rather than a better experience for the same number of people; cost- inflation for academic staff, which increases the costs per student and thus contributes significantly to the phenomenon of extra funds not buying perceptible improvements.

Derek Glover and Rosalind Levacic (2020) observed that sharing out indirect costs between the users of a facility is not an easy task to undertake. Generally speaking, as already mentioned, the convention is to apportion costs either according to the units (take the total costs and divide them by the number of students, or the number of classes, and then multiply the unit costs by the number of participants engaged in the activity being costed) or according to the area being used by the activity (take the total costs and divide them according to the percentage of area used as a part of the total area). While the concept of apportionment is easily understood, the practicalities of using it are often complex.

In case of direct costs, teachers are not all on the same salary level; they do not have the same training needs or take the same whole-school paid responsibilities. As a result the teachers of one group may cost more than another. The issue here is whether to use the costs of the teachers engaged in the particular activity, who may cost more than average (due to

being more experienced and higher up the salary scale), or to cost all activities by the average teacher cost for the school or college. The number of students it is possible to teach varies according to the pedagogy used. If a didactic lecture system is used, then it is possible for a lecture to be given to 400 students, but if a tutorial system is used with intensive lecturer–student contact, any group beyond 20 would be ineffective.

Sessional Paper No.1 of 2019 posited that most education institutions use a combination of approaches and, as students follow different courses; precise apportionment requires making the calculation for each student and then aggregating it. The practice in supplying materials of instruction varies greatly. Where students purchase their own texts these costs do not impinge on the school budget, but where the school provides apparatus, technological equipment and materials, the cost of the course increases markedly. When room sizes vary, it is more difficult to attribute their heating, cleaning and service costs even though they may be used by similarly sized groups of students. Is it appropriate that some students cost more just because the classrooms they happen to have been allocated are more costly to run? All students incur administration costs, but some groups may be more demanding of counselling, learning support or physical facilities than others in ways that are difficult to assess accurately. The teaching and learning materials used for instruction in classrooms may result to quality learning or not. The extent of quality learning is measured using a standard test like KCSE at the end of the learning period. The resources used are a consequence of the pricing guidelnes which this study was interested in.

Schools and colleges are usually supported by external agencies for teacher training, curriculum support and leadership advice. How can the costs of these be apportioned at pupil or class level? Whether these are indirect costs depends on which organization is undertaking the costing of support. The complexity of apportionment has been outlined by Simkins (2000), who points out that: differences in costs per student require attention to differences in

the purposes of programmes, differences in the educational challenges posed by particular clienteles, and differences in scale which may give greater or fewer opportunities to obtain the benefits from economies of scale.

The provision of boarding facilities in some UK state schools shows apportionment at work. The guidance (Department for Education, 2015) offers outline procedures and examples of costing for what is seen as additional to the educational functions of a school using direct and indirect costing to calculate the actual cost of a boarding place but then, to secure more than repayment, suggests the addition of an 8.5 per cent rate of return for each pupil. The examples are based on 50 boarding places, but several such schools have had to consider the costing for an increased number of boarders to secure greater efficiency in the use of existing facilities.

Lewin (2016) on cost and quality in accessing secondary education in India, argued that good quality secondary education is a prerequisite for achieving sustained economic growth and employment creation, and that it plays an important role in reducing inequalities, enhancing peoples' life chances and building their resilience and agility in a rapidly changing world.

Research shows that differences in learning achievements matter more in explaining cross-country differences in productivity than do differences in the average length of schooling (Hanushek 2007). Research also shows that labour force skills as measured by international student tests such as PISA11 predict economic growth rates far better than do average years of schooling (OECD 2010). In this context, the very low levels of learning outcomes in SSA shown by national and regional student assessments are very worrisome and underscore the fact that the last decade's remarkable enrolment growth was not matched by comparable progress in learning outcomes. The urgency of redressing the quality of learning in most SSA countries, starting with basic education, cannot be over-emphasized.

NESSP 2018-2022 observes that more children at the basic education level do not learn adequately, with less than 20 per cent of the candidates sitting for KCSE exams scoring C+ and above (which is the entry qualification for university education) over the last two academic years. It advised that schools should strictly observe the pricing guidelines issued from time to time by the MOE. Nevertheless, KNUT, (2017) averred that with the sky-rocketing cost of living caused by high inflation, and schools being forced to hire teachers due to chronic teacher shortage that has faced Kenya over the years, it was becoming practically impossible to run schools with the gazette fees and meagre grants from the government. Building classrooms and laboratories, or stocking laboratories was not easy. Dormitories were congested and food was awful leading to frequent strikes. The meagre fees and government subsidies might not be adequate to run schools and provide quality education. Moreover, regional disparities present a major challenge in making quality secondary education affordable in all parts of the country (Sessional Paper No.1 of 2019).Thus this study filled this gap of determining the implications of the pricing guidelines on the Kenya Certificate of Secondary Education examination performance in public sub-county secondary schools in Busia County, Kenya.

Mwirichia (2020) in his report "*Education Financing in Kenya needs to be revised*" averred that Kenya had spent a lot of capital on education. However, there were issues of pricing guidelines and management challenges resulting in student repetition and poor performance in the education system. He further observed that poor quality of education has been reported alongside student stress, student suicides, depression and violence in education institutions mainly because of problems related to inadequacy of finances. It is against this backdrop that this study sought to determine the influence of the pricing guidelines on the national summative assessment outcomes in public sub-county secondary schools in Kenya.

2.5 Pricing guidelines that ensure optimal price for quality education

UNICEF (2020) noted that quality learning entails learners who are well-nourished, ready to participate and learn, healthy, and supported in learning by their families and communities. The content also should be reflected in relevant curricula and materials for the acquisition of basic skills, especially in the areas of literacy, numeracy and skills for life, and knowledge in such areas as gender, health, nutrition, HIV/AIDS prevention and peace. This would reduce disparities and outcomes that encompass knowledge, skills and attitudes that are linked to national goals for education and positive participation in society.

UNESCO (2012) indicated that the big challenge for secondary education in Latin American and East Asian countries in the context of increased primary school enrollment rates was increased pressure on resources as demand for secondary education increases. The major challenges that these countries were encountering were inadequate resource allocations, constraints of expansion and increasing the quality of secondary education. World Bank (2005) described secondary education as the crucial link between primary schooling, tertiary education, and the labour market. Nearly all countries in Sub Saharan Africa have implemented policies to ensure free universal primary education particularly through waiver of direct costs to households. This resulted in an increase in enrollment and completion rates and has brought increased demand for access to secondary education. With the increased enrollment in secondary schools, African countries must deal with issues of funding, quality learning and relevance of teaching and learning since quality education has been compromised with increase in access to education.

Kenya's Vision 2030, the country's new development blue print which aims to transform Kenya into a newly industrialized country by the year 2030 is based on three pillars: the economic, the social and the political. The policies of the first and second pillars are equally anchored on an all-round adoption of education as an implementation tool. One of the key

areas in realizing vision 2030 is quality education and training. Improved secondary education is fundamental to the creation of effective human capital in any country. The launch of Free Day Secondary Education (FDSE) in 2008 was initiated in order to promote pupil transition from primary to secondary schools, and retention and completion in secondary schools without discrimination. Government intended to remove major obstacles that have stood in the way of children who need to join and complete secondary education but overlooked the quality of graduates from such institutions which education quality should address.

Investing in education is widely recognized as an important development policy decision, with education investment directly linked to human capital formation. Thus, countries dedicate significant amounts of public expenditure to education in general and basic education in particular. Globally, countries spend an average of 4.3% of GDP on education, with North America spending 5.6%, Europe and Central Asia 5.1%, while most countries in the middle and lower income levels spend an average of 4.0%. There is a positive correlation between education expenditures and the level of economic development. Although Kenya invests above the global average, the country experiences high inefficiency levels leading to lower outcomes.

In sub-Saharan Africa (SSA), more than 50% of public resources in education are allocated to Basic Education, although the financing gap still exists. Countries with high investment in Basic Education tend to have higher education outcomes and human capital development. Kenya is investing approximately 5.1% of its GDP in education, which is higher than the global average of 4.3%. However, the sector needs to critically analyze the efficiencies of the operations and financing of education and training.

A review of funding frameworks globally showed that national governments are the main source of school funding, with sub-central governments' revenues and private spending

increasingly becoming important sources. International funding complements national sources of school funding in various countries (OECD, 2017).

In countries with more centralised school systems, various central-level agencies may contribute to managing and allocating school funds. The funding framework entails processes on who makes, implements and monitors the decisions about how funding is spent. Monitoring and evaluation is an integral part of the framework to ensure the effectiveness of resource use by providing information on whether resources have been allocated productively.

The main sources of school funds in Kenya are government capitation grants, fees, donations, levies, bursaries, Non-Governmental-Constituency Development Fund (NG-CDF) internally generated revenue and infrastructure funding. Capitation is the disbursement from the ministry based on enrolment. The cost drivers are teaching and learning materials, adapted learning materials, assistive devices and technologies, repairs and maintenance, local travel and international travel, administrative costs, electricity, water and conservancy (EWC), medical expenses, activity costs, personnel emolument, and insurance. The assumption is that the resources the Government provides through capitation are adequate to cover teaching and learning resources and activities. However, parents incur costs for boarding, meals, supplementary learning materials, and infrastructural development, among other requirements. The Government introduced Free Day Secondary schooling (FDSE) in 2008, with a capitation of Ksh.10,625 per student per year to support tuition. This was increased to Ksh.12,870 in 2015 and then to Ksh. 22,244 per learner in 2018. Parents and guardians were not supposed to pay any levies. However, parents with learners in day and boarding schools incur the cost of meals, transport and accommodation.

The government of Kenya, through Sessional Paper No.1 of 2005, made a commitment to increase transition from primary to secondary school from 49 to 70% by the year 2010. This

would be made possible by the government supplementing parents' efforts in meeting education costs at secondary level. The government supported the poor and needy students through bursaries. Further, tuition free secondary education policy was implemented in 2008 with the government's commitment to pay tuition fees for all students enrolled at secondary level.

With the government efforts, transition rate to secondary level of education has since increased from 59.6% in 2007 to 90% in 2019. Implementation of Subsidized Secondary Education (SSE) in Kenya was a major step in expanding access to education to majority of students from poor background. This was further reinforced by the international agreement on Education for All. The government provided subsidies towards funding SSE, however there were other costs that were not catered for by SSE but were to be catered for by the parents. Concerns have however been raised over effective implementation of this programme, and the impact of SSE on quality learning in sub county secondary schools following structural factors including inadequate and delayed disbursement of subsidies to school, shortage of human resources, limited physical and instructional resources.

World Bank (2019) observed that developing countries are investing heavily in their education systems and providing their children and youth with unprecedented levels of access to education without attaining the intended goals of education. It advised that achieving national education goals would require additional financial commitments over the years.

The secondary education sector faces the complex challenge of expanding rapidly while assuring quality and relevance within a context of limited domestic and aid resources. Sustainable financing should therefore be adopted in financing secondary education. Remi (2018) observed that most secondary education systems in SSA are still marked by the legacy of having been elite systems with few students and high cost per students compared to other regions as well as to unit costs in primary education. Whereas unit cost for secondary

education is 12 per cent of GDP per capita in low-income countries outside SSA, it is 40 per cent in SSA (Mingat et al. 2010). Moreover, while unit cost in low income countries outside SSA is almost the same for primary and secondary education, unit cost in upper secondary education in SSA is close to six times that of primary education and the cost of lower secondary education is close to three times that of primary education. While one may argue that improving quality in primary education may entail some increase in unit cost at that level, it is clear that unit cost in secondary education in SSA will need to decrease (Mingat et al. 2010). The most important drivers of recurrent unit costs are teacher salaries, use of instructional time and spending on complementary input (Mingat et al. 2010). Currently, there are large variations both between and within countries in all these three factors.

In 2010, the average pupil-teacher ratio was 26 for lower secondary and 24 for upper secondary against 43 in primary education. Including lower secondary education (65 per cent of total SSA secondary enrolment in 2010) as part of a longer basic education cycle could affect considerable cost savings. However, this would require streamlining curricula in the upper grades to limit the number of core subjects and moving from deploying specialized subject teachers to having teachers teach several subjects as practiced in many OECD countries. Adding classrooms to existing primary schools, rather than building separate lower secondary schools, could cut construction costs considerably. In addition, this would help enhance equity by reducing the commuting distance to lower secondary education for many rural children. Finally, public boarding expenses also need to be reviewed and should be limited to especially needy students.

Households and various forms of public-private partnerships make major contributions to secondary education funding in Africa. In addition to fees in both public and private schools, households fund textbooks, school uniforms, classrooms and salaries of community-recruited teachers. A survey covering 16 SSA countries found that, around 2005, the share of

household spending in total education expenditure was about 30 per cent for primary education, 49 per cent and 44 cent respectively for lower and upper secondary education, but only 22 per cent tertiary education (UNESCO 2011). Part of this funding supports pupils' private schools: The average share of such schools in total enrolment in 2010 SSA was 12 per cent in primary and 15 per cent in secondary education (UNESCO 2012). The share has been increasing over the last decade. Moreover, there are major differences between countries. For example, the share for secondary education ranged from 3 per cent or below in countries such as Lesotho, Africa and Swaziland to 40 per cent or above in Burkina Faso, Madagascar, Mauritius (UNESCO 2012). In a context of multiple demands on public resources, the pressure to expand secondary education is likely to result in increased pressure for private funding. However, there is a risk that structural inequalities develop with poorly-funded public schools focusing on rural areas and families' modest means, and private schools serving financially more able families who are seeking a better quality education for their children.

As observed by the PWPER (2023), the cost of basic education is influenced by the inflation rate, regional disparities, heterogeneities across schools, and the need for adequate child-friendly facilities. Current recurrent funding is based on a uniform rate per learner without considering the school's uniqueness. The recurrent costs include fixed and variable components falling into three categories.

(i) Minimum fixed costs relate to BOM expenses, postage, rental boxes, telephone and Internet connectivity in administration and teaching.

(ii) Quasi-fixed costs cover personnel emolument, insurance, electricity, internet connectivity and teaching aids at a fixed band of enrolment.

(iii) Variable costs are based on student enrolment, including costs for Learning and Teaching Materials, assistive devices, and teaching and non-teaching personnel.

A minimum infrastructure is required to support development and guarantee basic infrastructure to enable learning. PWPER (2023) thus recommended a Minimum Essential Package (MEP) for a school in order to have a realistic fixed operation cost and capitation to enable a school to operate irrespective of the number of students enrolled. The current capitation to schools is based on a flat-rate formula, where all learners from poor or well-to-do households receive equal capitation. For FDSE allocation is Ksh. 22,244 per student. The Equity-based funding model allows well-to-do families to pay for their children's education, thus reducing pressure on Government resources, which can be directed to cushion and support learners from poor and vulnerable households and communities. Given the cost drivers, public Secondary Schools with enrolment below 100 learners are deemed to be operating sub-optimally.

Ayodo (2016) in his study "Effects of hidden costs on Free Secondary Education on transition and completion rates in public boarding schools in Kisii County, Kenya" found out that there was a significant relationship between hidden costs and students transition and completion rates. This implies that though the introduction of FSE programmes had greatly reduced the financial burden of public secondary school going students, parents still incurred some hidden costs which negatively impacted on transition and completion rates. The study recommended that the government should increase allocation to school to ease the parent's burden but did not indicate by how much.

Ngetich et al, (2014) in their study "Determination of Unit Cost among Secondary Schools in Kenya: a case of Nandi North District" observed that despite the fees guidelines by the Ministry of Education, schools have continued to ignore government policies on education costs. This may make the cost incurred by parents to remain unchanged, watering down the Government's effort to make secondary education affordable.

A report presented to Education Cabinet secretary in February 2019 by KESSHA revealed that the public secondary schools are underfunded citing huge budget deficits and proposed that secondary fee structure should be reviewed. In addition the report unearthed congestion in classrooms, dormitories, hall, laboratories, school fields and washrooms amidst chronic shortage of teachers which threaten to further lower the quality of learning. This is despite the government's effort of implementing Kilemi Mwiria report of free day secondary education and its commitment to allocating more resources to schools yearly. Despite this, principals have constantly complained of running into financial crisis with huge budget deficit citing a big gap of the financial resources available to schools verses the expenditures incurred. The question is what is the optimum price in form of fee that should be paid by parents and what are some of the factors to consider when arriving at this price?

Genevieve et al (2017) in their study titled "Does Free Education Promote Equity in Public Secondary Schools in Kenya" observed that "in as much as the government is trying to promote equity by giving equivalent amount of money of Ksh. 22244 to every child who is in secondary school, the money is not adequate to sustain a child in secondary school thus schools compel parents to pay additional fee in form of motivation, development, KCSE registration (upload of details), photocopying papers , trips among other payment which varies in amount from one school to the other. The study further indicated that there is huge variance between the amount of money that the government budgets for secondary education and the cost incurred by the parents to educate their children (Genevieve et al, 2017).

Makori et al, (2015) in their study secondary schools in a county in Kenya seem to be taking advantage of the cost sharing guidelines: understanding its practice and implications averred that levels of fee payments and the entry items requirements are the two most challenges that parents face as they attempt to support their children educationally. Thus they recommended that "the government should increase subsidy to schools and introduce subsidy on the entry

items requirement. They observed that the two factors negatively affect access to education in public secondary schools in the country. They also deny students opportunities to join secondary schools with a positive teaching-learning environment. This study was however silent on the amount of subsidy that the government need to add neither on entry requirements (Makori et al, (2015). Maiyo (Chairperson of Parents Association) (2018), advised parents to resist illegal fees introduced by rogue principals which were in form of motivation, books, PTA levies, remedial, uniform, trips among others. This is an indicator that there are some elements of insufficiency in the current pricing levels of these schools to cate for all the intended services.

KESSHA (2019), in response to the government guidelines of 100% transition rate from primary to secondary gave the government red alert on compromising the quality of education further if they did not review the current methods of pricing the secondary education claiming that it is grossly inadequate. However, the ministry of education insisted that the fees are sufficient. Gogo (2010) underscored the importance of continuous review of financing secondary education with proper cost sharing guidelines between parents and the government taking into account the changing economics dynamics like inflation. From the aforementioned, it is clear that there is a mismatch of the methods of pricing secondary education and expenditure realities in schools versus the income to schools. It therefore calls for the examination of the current pricing methods used in schools with a view to addressing the highlighted gaps. Therefore this study sought to determine the pricing guidelines that ensure optimal pricing for quality education in public sub-county secondary schools in Busia County, Kenya with a view to addressing quality of education.

2.6 Chapter Summary and Study Gaps

This research adopted a thematic structure in its review of related literature, based on the four objectives of the study: implications of pricing guidelines on the provision of infrastructural resources; implications of the pricing guidelines on the availability of human resources to facilitate processes of teaching and learning; the influence of the pricing guidelines on the Kenya Certificate of Secondary Education examination performance; pricing guidelines that ensure optimal pricing for quality education in public sub-county secondary schools in Busia County, Kenya.

In the course of the review, a number of gaps were identified and, therefore, formed basis for this research. First, various studies have highlighted the importance of pricing guidelines in availing resources to schools which are ingredients of providing quality education. Psychoropolous and Woodhall in their Education Production Model asserted that when the resources of the right quantity and quality are injected in education, then there is likelihood of quality attainment. The inputs like infrastructure have been found to be inadequate and expensive to provide to schools. This study therefore established implications of various pricing guidelines and how they have equipped schools with such resources.

Secondly, Scholars have indicated shortages of resources but have not determined the implications of pricing guidelines on the quality of education in Kenya. Moreover, scholars have lumped together all the categories of schools that is, Sub County, County, Extra county and National schools when addressing educational financing. This study was particular on sub county schools financing which appeared to receive little attention from stakeholders. Further, the literature revealed the poor academic performance in sub county schools but did not relate to the pricing guidelines, the ever fluctuating inflation rate which may necessitate continuous revisions in pricing guidelines and general economic performance of the country and how this impacts on parental financial obligations to schools.

Lastly, the literature highlighted insufficient funds provided by both the government and parents and other stakeholders for quality schools operations. However, there were no suggestions of what amount is sufficient. Using linear regression model, the study was tailored to address this gap by modelling an optimal pricing guidelines that could ascertain optimal financial resources for quality education.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology that was adopted in this study. These include: research design, study area, target population, sample and sampling technique, data collection procedures, research instruments, validity and reliability of the instruments, data analysis methods and ethical considerations.

3.2 Research design

This study employed descriptive survey and correlational research designs. Descriptive survey research was employed because it guaranteed factual information, objectivity or neutrality of information collected. Tavakoli (2012) defines a descriptive survey research design as that research design that examines individuals, groups, institutions, methods and materials in order to describe, compare, contrast, classify, analyze, and interpret the entities and the events that constitute their various fields of enquiry. The descriptive research design thus describes conditions or relationships that exist; practices that prevail; beliefs, points of views, or attitudes that are held; processes that are going on; effects that are being felt or trends that are developing. Descriptive survey design allows the researcher to describe characteristic of a particular individual or group (Kothari, 2004).

In addition to the descriptive survey, the study employed correlational research design. The correlational research design is a research design in which the researcher seeks to describe and measure the degree of association between an independent and dependent variable (Creswell, 2012). Creswell (2012) notes that in correlational research design, the researcher does not control or manipulate any of the variables but rather examines on whether there exists a co-variation between two or more variables. The correlational design is used to find out whether two or more variables influence each other. The correlational research design is

further divided into explanatory design (also referred to as relational) and prediction research designs (Cohen et al., 2005). The explanatory research design is interested with the extent in which two or more variables co-vary (Creswell, 2012). In prediction correlational research design, the researcher seeks to determine the outcome of a variable (dependent variable) using another variable(s) (that is an independent variable) (Creswell, 2012). In this design, the dependent and independent variables are often referred to as criterion and predictor variables respectively. Since this study hinged on establishing the relationship between the pricing guidelines issued by the MOE to schools from time to time and the academic performance of learners in Kenya Certificate of Secondary Education (KCSE) in order to establish if there is any level of association between them and thereby predict the KCSE outcome from the pricing guidelines from time to time, correlational design was found suitable. Further, in determining optimal pricing guidelines for schools through multiple linear regressions in addition to performing correlation, correlational research design, in addition to, descriptive survey research design was considered suitable for this study.

3.3 Area of Study

This study was carried out in Busia County. The County is situated in Western region of Kenya and borders Bungoma County to the North, Kakamega to the East and Siaya to the South East, and the Republic of Uganda to the West. It lies between latitude 0^0 45' North and longitude 34^0 25' east. The county is the gateway to East Africa through two border points at Busia and Malaba towns.

Data from the KNBS report for 2022 placed the County at a poverty index of 69.3% against 38.6% national poverty index with HIV prevalence rate of 9.9% (KNBS, 2022).This is driven by the inequalities in resource allocation and distribution, the large size of households and the high number of female-led households, food poverty and poor infrastructure.

The main economic activity is trade with neighbouring Uganda, with Busia town - the county headquarters and largest town, being a cross-border centre. Away from the town, the county economy is heavily reliant on fishing and agriculture, with cassava, millet, sweet potatoes, beans, and maize and sugarcane being the principal cash crops.

Data from Busia County Director of Education (2022) indicated that there are 166 public secondary school and 5 private secondary schools. The public secondary schools comprised of 114 sub county secondary schools, 33 county schools, 17 extra county schools and 2 national schools. Further, the student enrolment was 79389 with 36847 boys and 42 542 girls. The county has the highest student to teacher ratio of 36 compared to the neighbouring counties as illustrated in Table 1.2. The county has bloated classrooms with some classes having up to 100 learners which was an indicator of inadequate key resources such as classrooms, teachers, laboratories and latrines which were more pronounced in sub county schools category.

 Busia County has registered the lowest academic performance in the national examinations for the past five consecutive years compared to the neighbouring counties, Table 1.3.

Further, the academic performance has been declining for the past three consecutive years below the national mean scores with the worst affected being Sub county schools (CDE, Busia County 2021), Table 1.4.

3.4 Target population

Target population refers to a group of elements about which a researcher seeks to make an inference (Fricker, 2019).Target population has also been defined by Creswell (2012), as a set of objects or people that have a distinguishing or common characteristics that is of interest to the researcher and to which the researcher would (normally) generalize their findings.

The target population was the public sub county secondary schools in Busia County with 114 schools in seven sub counties. Sub County Schools in Kenya form the lowest cadre of

secondary schools; after National, Extra County schools and County Schools. According to Busia County Education Director (2021), the sub county schools admit students from within the Sub country; from the immediate locality. The Schools were of mixed type; though there were a few single sex schools. The schools were Day Schools; though some were Day and Boarding Schools. These schools form the majority of secondary schools in Kenya and were found in all Counties. Sub counties secondary schools provided homogenious data for data analysis and accurate conclusions. Moreover, according to Economic Survey (2022) as supported by Table 1.4 sub county schools performed the poorest and had the highest shortage of school resources in Busia County. As a county, Busia represented all the other counties because the pricing policies were the same for the entire country, and as such information from Busia would be applied to other parts of the country. The population was distributed as in Table 3.1

Table 3.1: Distribution of target population according to the sub-counties in Busia County

Sub County	No. of Sub County Schools			
	Girls	Boys	Mixed	Total
Teso North	2	1	20	23
Teso South	3	2	13	18
Nambale	1	0	16	17
Busia	0	0	16	16
Butula	2	1	12	15
Samia	0	0	16	16
Bunyala	1	1	7	9
Total	**9**	**5**	**100**	**114**

Source: Busia County Director of Education, 2021

Table 3.1 showed that Busia County had a total of 114 schools out of which nine were girls' schools, five were boys' schools and 100 were mixed schools. Teso North Sub County had two girls' schools, one boys' school and 20 mixed schools adding to 23 schools. Teso South Sub County had three girls' schools, two boys' schools and 13 mixed schools totaling to 18 schools. Nambale Sub County had one girls' school and 16 mixed schools adding to 17

schools. Busia Sub County had 16 mixed schools while Butula Sub County had two boys' schools, one girl's schools and 12 mixed schools which totaled to 15 schools. Samia Sub County had 16 mixed schools whereas Bunyala Sub County had one girls' school, one boys' school and seven mixed schools adding to nine schools.

3.5 Sampling and Sampling Technique

3.5.1 Sampling design

Kumar (2011) indicated that sampling is the process of selecting a few members (sample) from a bigger group (sampling frame) to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group. Sampling is often undertaken to counter constraints relating to available time, logistical arrangements or financial availability amongst others. The study used stratified random sampling to select and distribute 60 school heads from a population of 114 school heads. Saturated sampling was used to sample all the 7 sub county Directors of Education.

The sampled schools resulted to 60 principals and seven sub county directors of education who provided data for this study. Stratified random sampling is a probability sampling technique in which particular strata or categories of people in the population is represented in the sampling process (Mathers, Fox, & Hunn, 2010). This technique of sampling is used in population that is heterogeneous in respect to the characteristics of interest. In this case, the population is composed of groups or sub populations that have distinct characteristics which are of interest to the researcher or have capacity to influence study results (Kutsanedzie et al., 2016). The strata included the various sub counties, school categories in terms of girls', boys' and mixed in Busia County. Nassiuma's Coefficient of Variation Sampling Formula was used to obtain samples from each stratum which summed to 60 schools (52.63% of the target population) from a sampling frame of 114 schools as illustrated below.

$$n = \frac{NC^2}{C^2 + (N-1)e^2} \quad \text{where;}$$

n - Sample size

N – Size of Target Population

C – Coefficient of variation

e – Margin of error

Coefficient of variation is the population standard deviation divided by population means (Kelley, 2007). The coefficient of variation of 0.5 was used because the maximum variability that can be observed in a population is 50% (Israel, 1992). At 50% there is equality in representation between population members with attributes of interest and those without.

The margin of error, also referred to as margin of precision, refers to a measure of the possible difference between sample estimate and actual population value (National Audit Office, 2010). In Social Sciences, 3% is often used as the margin of error. Therefore, this study used 3% as the margin of error in calculating sample size.

The sample size obtained was then classified as Boys, Girls or Mixed and the sample distributed in the county according to each stratum weight as indicated in Table 3.2

Table 3.2: Sampled sub county schools in Busia County for the study

	No. of Sub County Schools in Busia County						
	Girls		Boys		Mixed		
Sub county	N	N	N	N	N	n	Total (n)
Teso North	2	2	1	1	20	9	12
Teso South	3	3	2	2	13	6	11
Nambale	1	1	0	0	16	7	8
Busia	0	0	0	0	16	7	7
Butula	2	2	1	1	12	6	9
Samia	0	0	0	0	16	7	7
Bunyala	1	1	1	1	7	4	6
Total	**9**	**9**	**5**	**5**	**100**	**46**	**60**

Source: Author compilation, (2022)

Saturated sampling technique was used to select all the single sex schools,that was, boys' and girls' schools for the study since their numbers were small and manageable. Simple random

sampling was used to select the schools in the same strata in the same sub county for mixed schools for the purpose of data collection.

3.5.2 Respondents

The 60 out of 114 principals of the schools sampled and 7 sub county directors of education were the respondents of this study. This was in line with Orodho (2009) observation that at least a third of the population is sufficient to succinctly represent the whole populations and can be studied as distinct cases. The Nassiuma's Coefficient of Variation Sampling Formula yielded 60 schools out of which 60 respondents were obtained which was sufficient for the study to draw conclusions and generalizations as this comprised more than a third of the population.

3.6 Research Instruments

This study used questionnaires and document analysis guide to gather information from principals, interview schedule for Sub-County Director of Education and document analysis guide to obtain information from County director of education office. Moreover, observation checklist was used on infrastructure.

3.6.1 Questionnaires

This tool was used because the data gathered allowed measurement for and against a particular view point. Questionnaires were preferred because of their ability to ensure confidentiality of responses from the respondents (Saunders, 2003). Questionnaires were also considered ideal for collecting data from principals because they could individually read, interpret and fill them. They allowed information to be collected from a large number of respondents within a short time and ensured anonymity and also eliminated interviewer's bias (Orodho, 2009). Further, the questionnaires ensured freedom of expression and accountability

on the information given by the respondents. Both open-ended and closed-ended questions were used.

This instrument (Appendix II) was used to collect information from school principals. This was because principals were responsible for BOM teachers' employment, direct purchase of teaching and learning resources and they determined the entire teaching and learning environment. Moreover, they were the chief accounting officers of the schools. Principals' questionnaire had four sections. Section A addressed infrastructure and quality education, Section B addressed human resource and student, Section C addressed pricing guidelines versus the assessment outcome and Section D focused on optimal pricing guidelines as is in Appendix II.

3.6.2 Document Analysis Guide

Secondary data was sourced from relevant offices to give more information on: income and expenditure of schools; students' enrolments in public secondary schools in Busia county; KCSE performance of public secondary schools in Kenya; Guidelines for the use of FSE funds. In this case, document analysis guide was used to source information from the education offices and other relevant offices, thereafter; content analysis was done on the documents obtained to assess information which was used to supplement the data captured by the questionnaires (Appendix IV).

3.6.3 Observation Checklist

Observation checklist was used to source data on the number of classrooms, adequacy, nature and size of; classrooms, laboratories, library, and sanitation facilities. The physical state of the aforementioned was also observed (Appendix V).

3.6.4 Interview Schedule

This instrument was administered to sub county directors of education in a bid to seek information on the current status of educational resource provision in schools as availed by development fund, tuition fund, personal emoluments fund and enquire about the existing shortages and challenges in a bid to address the optimal annual price per student (Appendix III).

3.7 Validity

The validity of a test refers to the accuracy in which it measures what it is designed to measure (Heale &Twycross,2015). Content validity is also known as content related validity, intrinsic validity, relevance validity, representative validity and sampling validity (Yaghmaie,2003). Halek, Holle and Bartholomeyczik(2017) further posit that content validity together with face validity represent the minimum requirement for quality of a research instrument. In this regard, one of the methods of measuring content validity is the use of expert judgement and the interpretation of their results in a statistically rigorous ways (Nicolas,Mora & Silva, 2016).Content validity is determined by expert judges (Kothari, 2004). Consequently, face and content validity were examined by experts in planning and economics of education in Maseno University. They carefully evaluated and critiqued content of the instruments to establish their soundness in collecting data for the proposed study. They also ascertained the comprehensiveness of the instruments in addressing the research objectives and questions. Liu (2010), stated that, the foregoing approach acts as a check against any ambiguity or inadequacy that the instruments might have. Their suggestions were considered in making the necessary revisions on the final version of the instrument that was used to collect data.

3.8 Reliability

Reliability of a data collection instrument refers to the consistency of the instrument in measuring concepts being studied with accuracy and without random errors (Dikko, 2016). According to Mohajan and Mohajan (2017), reliability of a research instrument is the consistency or stability or ability to replicate the results over time, or across respondents or across test forms. There are diverse benefits of testing reliability in a research. According to Bolarinwa (2015), reliability contributes to validity of the results obtained through a given data collection instrument. Reliability of a measurement tool also ensures that there are no errors in measurements and consequently validity of the statistical inferences made. Kuthy and Patchell (2015) further noted that reliability is a necessary condition for validity.

A pilot study involving 10 principals who were randomly selected were sampled from the study population to test the reliability of the instruments.8 principals were obtained from each sub county contributing one mixed school except Teso North where the researcher selected 2 mixed schools because of the high population of such schools compared to other sub counties. One boys' school and one girls' school were randomly chosen from Teso South and Teso North Sub counties respectively. This added up to 10 principals used for pilot study. Test-retest method (administering the same instrument twice to the same group of subject), was used in the study to measure the reliability of the instruments (Mugenda & Mugenda, 2008). Test-retest assesses the stability of the test scores over time. Paiva et al., (2014) define test-retest reliability as a measure of the reproducibility of the scale, that is, the ability to provide consistent scores over time in a stable population. The test-retest stability is used in contexts where test scores may vary due to time factor.

In this approach, the test scores undertaken during two different time periods were correlated. The questionnaires were administered to the same people within duration of two weeks interval and the results of the two were compared for similarity or closeness. The open ended

questionnaires were scored based on the closeness and similarity of the responses emanating from first and second administrations. Pearson's Correlation coefficient was used to test for similarity or closeness as indicated below:

$$Pearson's \ r = \frac{(x - \bar{x})(y - \bar{y})}{N(S_x)(S_y)}$$

Where   x – scores from the first administration

$\bar{x}$ - mean score from the first administration

y – Scores from the 2nd administration

ȳ - mean score from the 2nd administration

N - total number of respondents

S_x - standard deviation of the scores from the first administration

S_y - standard deviation of scores from the second administration

Pearson's Correlation coefficient of 0.80 obtained from principals' questionnaire was considered adequate to illustrate reliability (Hale, 2015). Unclear or vague questions were revised accordingly.

3.9 Data Collection Procedure

This study used questionnaires, interview schedule, and document analysis guide and observation checklist to collect data. The questionnaires, interview schedule and observation checklist were developed by the researcher.

Before collecting data, the researcher obtained permit from Maseno University Scientific and Ethics Review Committee (MUSERC). Thereafter permit was granted by NACOSTI before seeking permission from the County Director of Education to visit the sub counties within the county. The sub County Directors of Education then authorized the researcher to visit schools. The researcher reported to the principals of various schools and a brief introduction

was done to the respondents before administering the questionnaires with the aim of explaining the nature and importance of the study to them.

The researcher explained the purpose, aims and significance of the study to the Principal and the other respondents. Questionnaires were then distributed directly to the respondents in each school by the researcher during normal school days. Respondents were given instructions and assured of confidentiality, after which they were given time to fill in the questionnaires. Filled questionnaires were thereafter collected by the researcher.

The researcher visited each sub county Director of Education where interviews were conducted as researcher recorded the information. A list of documents which the researcher was interested in as contained in the document analysis guide (IV) was then issued to the County Director of Education who then supplied the information required for the study. The researcher also used the observation checklist to collect data as listed in the checklist during the physical onsite data collection visits.

3.10 Methods of Data Analysis

Research data in a raw form convey very little meaning to user groups (Saunders, Lewis and Thorndike, 2007). These data therefore need to be turned into information so that it is useful. In this study, conversion of data into meaningful information was undertaken on two dimensions, one involving quantitative/metric data (nominal, ordinal and interval forms of data) and the other involving qualitative/non-metric data (textual open-ended data). The refined and organized quantitative data was analyzed using descriptive and inferential statistics involving percentages, mean scores, correlation, and regression analysis. According to Hair et al (2010), this statistical approach is essential when finding a way of condensing the information contained in a number of original variables into a smaller set of factors with a minimum loss of information. The statistic was generated with the aid of the computer software, Statistical Package for Social Sciences (SPSS) Version 20.0.

Qualitative data was analyzed using content analysis procedure, whereby the pool of diverse responses was reduced to a handful of key issues in a reliable manner. This was achieved through a stepwise process that involves two broad phases: firstly, taking each person's response in turn and marking in them any distinct content elements, substantive statements or key points; and secondly, forming broader categories to describe the content of the response in a way that allowed for comparisons with other responses. The categories obtained in second phase were numerically coded and then entered into the data file to be treated as quantitative data. In addition, Qualitative data was further categorized into themes and sub themes as they emerged using thematic analysis. Hence in:

Objective 1: *Establish the implications of pricing guidelines on the provision of infrastructural resources for attainment of quality education in public sub-county secondary schools in Busia County, Kenya.*

The researcher obtained the number of classrooms, toilets and laboratories that a school has against the pricing guidelines components like fee paid by parents inform of development fund, Repairs Maintenace and Improvement (RMI) votehead, Constituency Development Funds allocated and MOE infrastructure funds. The infrastructure was compared with enrolment if they conform to guidelines as stipulated in the MOE Safety standards Manual For Schools (2008), a classroom should be 8m x 9m and should house a maximum of 45 learners; 1 door of toilet/ pit latrine should serve, 30 boys or 25 girls; laboratory should be spacious to an extent that 2.4 square metres is utilized by one student fixed at a maximum of 45 students, an additional one square metre for emergency corner shower point plus thirty two square metre store preparation areas and teachers' office. A multiple regression was performed with current number of classrooms, current number of laboratories, current total toilets as independent variables and KCSE scores as dependent variable. The regression was considered suitable since it is able to establish cause and effect relationship between the

variables. Further multiple linear regression was suitable because there were more than one independent variables involved.

Objective 2: *Analyze the implications of the pricing guidelines on the adequacy and remuneration of human resources to facilitate processes of teaching and learning for quality education in public sub-county secondary schools in Busia County, Kenya.*

This was analyzed by obtaining the number of teachers and non-teaching staff that a school has against the required CBE as in Table 2.1. Moreover the study analyzed the implementation of remuneration of staff as in Table 2.2 which was to be facilitated by the pricing guidelines. A multiple regression was performed with number of teachers, number of non-teaching staff, remuneration of teaching staff, remuneration of non-teaching staff as independent variables and KCSE scores as dependent variable. The regression was considered suitable since it is able to establish cause and effect relationship between the variables. Further multiple linear regression was suitable because there were more than one independent variables involved.

Objective 3: *Determine the implications of the pricing guidelines on the Kenya Certificate of Secondary Education examination performance in public sub-county secondary schools in Busia County, Kenya.*

This was assessed based on the scores in national examination (KCSE) and Total fee paid to schools by parents. Correlation was performed between total fee paid to schools by parents and the KCSE scores to determine if there was a relationship between the two variables, direction of the relationship and magnitude of the relationship. Correlation was considered suitable because there was one independent variable (total fee paid to schools) and the dependent variable (KCSE scores).

Objective 4: *Determine the pricing guidelines that ensure optimal pricing for quality education in public sub-county secondary schools in Busia County, Kenya.*

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This was calculated based on a weighted price which was worked out from the averages of the expenditures from each votehead for 3 years with the average prevailing inflation rate which was then used to generate a multiple linear regression equation. The coefficients obtained from the linear regression equation was used to obtain the optimal pricing guidelines used to calculate the optimal price payable to the school by each student enrolled depending on the weight of each votehead. The weighted price is usually used where price is considered to be crucial to the outcome of a service. In this case the price was assumed to be a prerequisite in achieving quality education. This was summarized in Table 3.3.

Table 3.3: Matrix for Data Actualization

Objective	Independent variable	Indicators	Data Analysis Method
One:	• Pricing guidelines on infrastructural facilities 1. Fee paid 2. CDF funds 3. MOE infrastructure funds 4. Development fund	• No. of classrooms • No.of Laboratory • No. of Toilets/Latrines	Descriptive statistics by use of frequency counts, percentages, mean Inferential statistics by use of multiple linear regression
Two:	• Pricing guidelines on Human Resource 1. Fee paid	• No. of teachers • No. of non-teaching staff	Descriptive statistics by use of frequency counts, percentages, mean Inferential statistics by use of multiple linear regression
Three:	• Pricing Guidelines 1. Fee Paid	• KCSE	Inferential statistics by use of correlation on the fee paid per school against KCSE performance
Four:	• Optimal Pricing guidelines	• Income • Expenditure of various voteheads • Inflation rate	Inferential statistics by use of multiple linear regression equation of various voteheads and inflation rate

3.11 Ethical Considerations

According to Lester (2017), the expression 'basic ethical principles' refers to those general judgments that serve as a basic justification for the many particular ethical prescriptions and evaluations of human actions. Three basic principles, among those generally accepted in our cultural tradition, are particularly relevant to ethics of research involving human subjects: the principles of respect of persons, beneficence and justice. In this study, the researcher observed the following ethical considerations:-

Section A: Protection of Human Subjects as Key Respondents

The principle of respect for persons thus divides into two separate moral requirements: the requirement to acknowledge autonomy and the requirement to protect those with diminished autonomy. As the study will involve Principals and the Sub County Directors of education, the researcher will treat them as autonomous persons in that their opinions and choices will not be influenced in any way by refraining from obstructing their actions unless they are clearly detrimental. The participants will be well informed of the purpose of the study and explanations of both benefits and demerits will be provided to ensure they are not denied the freedom to act to those considered judgments, or to withhold information necessary to make a considered judgment.

The principle of beneficence was considered in that the researcher maximized on the possible benefits and minimize the possible harm to the participants. This was done by ensuring that the information was treated confidentially and only for the purpose of the study. Justice was observed in sampling. To ensure fairness, random sampling was used to ensure equal opportunities for all the public Sub County secondary schools in the study target population.

Section B: Participants' Consent and Data Processing

The researcher sought permission to conduct research in Busia County by getting research permit from the Ministry of Education after obtaining a letter of endorsement from Maseno

University authorities. Copies of research permit and letter from County Director of Education (CDE) was presented to the Sub County Directors of Education who will then authorize the researcher to move to schools and administer the questionnaires to the Principals' of the sampled schools. The researcher clearly explained to them the purpose of the study. A consent form was issued to them for signing to show approval to participate in the study. Being that the research was free and voluntary, they were informed that they were free to withdraw from the study anytime without victimization.

While in the schools the researcher sought consent of the principals by requesting them to sign the informed consent form (Appendix I) that had already been developed by the researcher. Similarly the Sub County Directors of Education were also requested to sign the consent forms before responding to the interview schedule in order to seek their consent for the study.

The Principals were given questionnaires to fill and were collected immediately after completion. The researcher requested the respondents to fill the questionnaires assuring them of anonymity, privacy and that the data so collected did not bear their names and were used for this research study only and was handled in strict confidence. The respondents were also assured that no other person other than the researcher would have access to the information collected. Data was coded and bore no names of the participant to protect their identity. The raw data from the field was kept under lock and key where only the investigator could assess. The processed data was stored in computer encrypted by password accessible to only the researcher. At the completion of the research, the information acquired was disseminated to the participants through the school administration channels so as to ensure feedback of the findings reach the study participants. At this point, benefits of the study would be communicated and potentially implemented in an effort to maximize the benefits to the participants and other non-participating schools at large.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

The study targeted 114 schools of which 60 were sampled giving respondents of 60 principals and 7 Sub county Directors of Education. Questionnaires were administered to the principals; the 7 Sub county directors were interviewed using the schedule. The response rate was 100%. In addition, the study sourced for documents from the County Director of Education and the County School Audit Unit. Further, the researcher did an onsite observation using the observation schedule. The purpose of this study was to determine the implications of pricing guidelines on the quality of education of public sub-county secondary schools in Busia County, Kenya. The findings were presented as per the objectives of the study.

4.2 Implications of pricing guidelines on the provision of infrastructural resources for attainment of quality education in public sub-county secondary schools in Busia County, Kenya.

In order to explicitly answer the first research objective, the study obtained data on the type of school, number of streams per school, enrolment, number of classrooms, laboratory, toilets, CDF allocation, MOE infrastructure fund, class size, and development fund charged per student which were analyzed and presented as follows.

4.2.1 Type of Schools

The schools were categorized into boys, girls or mixed. This information was obtained from the questionnaire issued to Principals, Document analysis guide and supplemented by interview schedule for the Sub County Directors of Education. This information was necessary for this study since resource requirements for different types of gender was at

variance, for instance, girls require more doors of toilets than boys. This information was presented in Figure 4.1
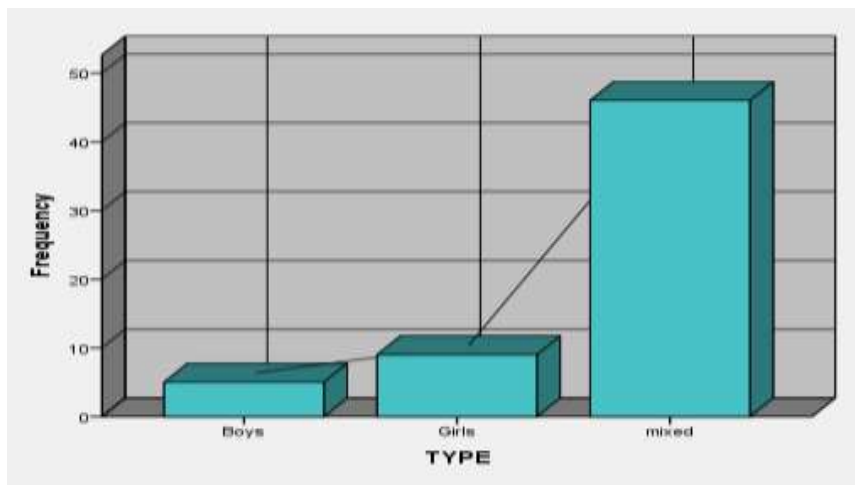
Figure 4.1: School Type in terms of gender

Figure 4.1 showed that 46 (77%) of the schools in the study area were mixed, 9(15%) were girls and 5(8%) were boys. This meant that 77% of the sub county schools were meant for both male and female students, followed by schools meant for female students. This was in agreement with the CBC Taskforce report (2021) which noted that there were more girls' schools than boys' schools in the country (1555 against 1072) and that mixed school account for over 75% of schools in the country.

4.2.2 Number of Streams in Schools

It was important to establish the number of streams in schools. The number of streams has an implication on the enrolment, teacher requirements since schools are staffed depending on the number of streams and it also has an effect on the other school resources required to provide quality education like teaching and learning materials. Data on this was provided by Principals of the schools through the questionnaire; Sub-county Directors of Education through the interviews and documents obtained from the County Director of Education, Busia County. The responses are presented in Figure 4.2.
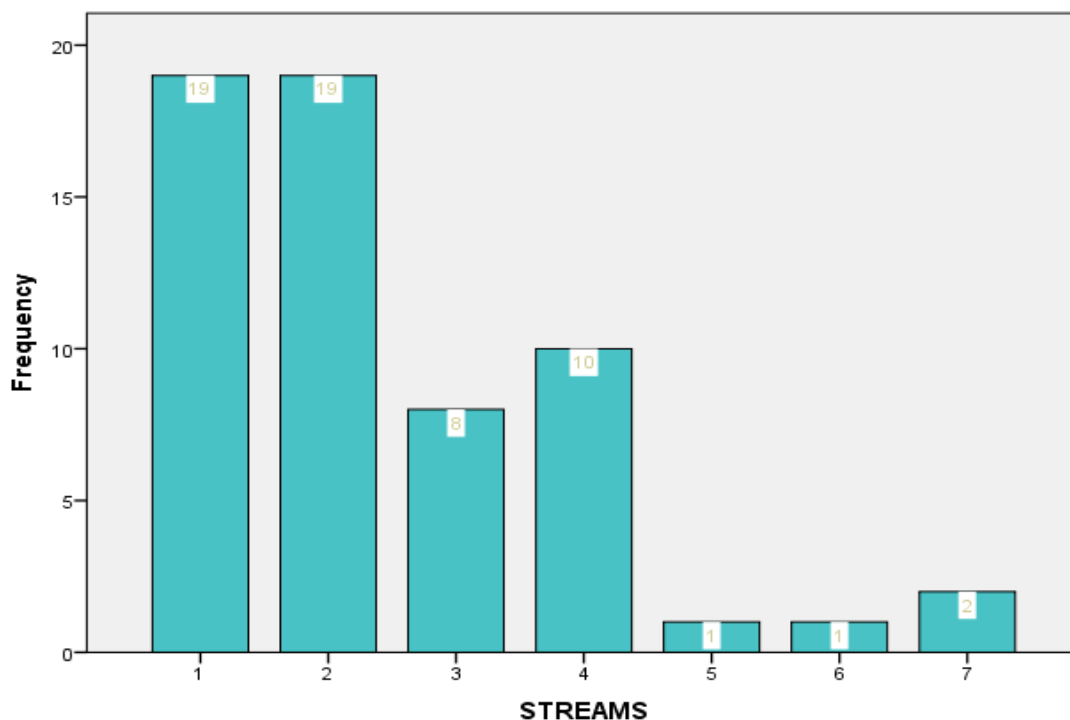
Figure 4.2: Number of streams per school

Figure 4.2 indicated that the number of one streamed and two streamed schools were equal at 19 (32%), 8(15%) schools were three streamed, 10 (17%) schools had four streams, 2(5%) schools were seven streamed and 1(2%) school was six streamed. The inference of this was that 64% of the sub-county schools in Busia County were one and two streamed implying likelihood of low student population in each school thus inadequate resources since schools were financed depending on enrolment therefore did not enjoy economy of scale. The findings concurred with PWPER (2023) which observed that schools were funded on a flat rate basis where each student is given ksh.22244, so schools with few students reflected by few streams did not enjoy economy of scale therefore operated sub-optimally. The implication of this was that schools should have a minimum of three streams to operate optimally and enjoy economy of scale.

4.2.3 Level of Enrollment of leaners in Public Secondary schools in Busia County

Data obtained from document analysis guide and questionnaire for principals and interview schedule from Sub County Directors of Education which sought for students' enrolment in public secondary schools in Busia County revealed the following information as tabulated in Table 4.1

Table 4.1: Enrolment of Learners Per Sub-County

S/NO	Sub County	No. of Schools	No. of streams	No. of Classes	No. of Learners (Enrolment)		
					Boys	**Girls**	**Total**
1	BUNYALA	13	30	125	2924	2272	5196
2	BUSIA	23	60	227	4911	5861	10772
3	BUTULA	29	23	311	5485	7594	12788
4	NAMBALE	25	65	238	5837	6606	12246
5	SAMIA	20	58	252	5395	6196	11591
6	TESO NORTH	31	74	282	6849	7253	14102
7	TESO SOUTH	25	97	271	5446	6760	12161
	TOTAL	**166**	**407**	**1706**	**36847**	**42542**	**79389**

Source: Busia County Director of Education (2022)

Table 4.1 indicated that the enrollment for boys was 36,847 and for girls was 42,542 giving a total enrolment of 79,389 for the entire county with all the category of schools in 2022. The Table further revealed there was a total number of 166 public secondary schools with 407 streams and 1,706 classes in Busia County. Teso North Sub-county had the highest number of schools at 31 with 74 streams, 282 classes and 14,102 learners. Teso South sub-county had the highest number of streams at 97 with 25 schools, 271 classes with 12161 learners. Butula sub- County had the highest number of classes at 311 but with least number of streams at 23

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nested in 29 schools, 23 streams with 12,788 learners. Bunyala Sub-county had the least number of schools at 13 with 30 streams, 125 classes and the least number of learners enrolment at 5,196. The enrolment for girls at 42,542 was higher than that for boys at 36,847 with a deviation of 5,695. Table 4.1 was subjected to a further transformation in order to obtain specific descriptive statistics for sub-county schools which was then summarized in Table 4.2.

Table 4.2: Enrolment of Learners in Public Sub-county secondary Schools

S/no.	Sub County	No. of schools	No. of sub county schools	Percentage of sub county schools	No. of streams	Sub county streams	County enrolment	Sub county enrolment	Percentage of enrolment
1	Bunyala	13	9	69	30	17	5196	2485	49
2	Busia	23	16	70	60	21	10772	4151	39
3	Butula	29	15	52	23	21	12788	3649	29
4	Nambale	25	17	68	65	24	12246	4099	35
5	Samia	20	16	80	58	18	11591	2613	23
6	Teso North	31	23	74	74	18	14102	3058	22
7	Teso South	25	18	72	97	27	12161	4580	38
	Total	**166**	**114**	**69**	**407**	**146**	**79389**	**24635**	**31**

From Table 4.2, 114 (69%) of the public secondary schools in Busia County belonged to the Sub county category. Samia Sub County had the highest number of sub county schools at 16(80%), Teso North Sub County 23(74%), Teso South 25(72%), Busia sub county 16(70%), Bunyala sub County 9(69%), Nambale Sub County 17(68%)and Butula Sub County at 15 (52%). Whereas 69% are sub county schools, only 31% (24635) of the learners were enrolled in the sub-county schools with Teso North Sub County having the lowest number of students

enrolled in sub county schools compared to other school categories in the sub county schools at 22% (3058) and Bunyala sub county with the highest number at 49% (2485). These findings concurred with the CBC Taskforce report (2021) which observed that sub county schools account for over 65% of the total number of secondary schools in Kenya. However, in Busia County, Sub County schools accounts for even a higher percentage above the national average of 65% at 69% of the schools belonging to the sub-county category. Nevertheless, 69% of the sub-county schools enrolled only 31% of the learners in the county. The rest of the learners (69%) were enrolled in either county, extra county, national or special schools categories. Therefore public sub county secondary schools in Busia County had not reached optimal enrolment levels in order to enjoy the financial strength due to lack of enjoyment of economy of scale.

4.2.4 Number of learners per classroom (Class Size)

Data on class size was sourced from the questionnaire administered to the principals. This was supplemented with data from the documents obtained from the County Director of Education and interview of the Sub-county Directors of Education. This was presented in Figure 4.3
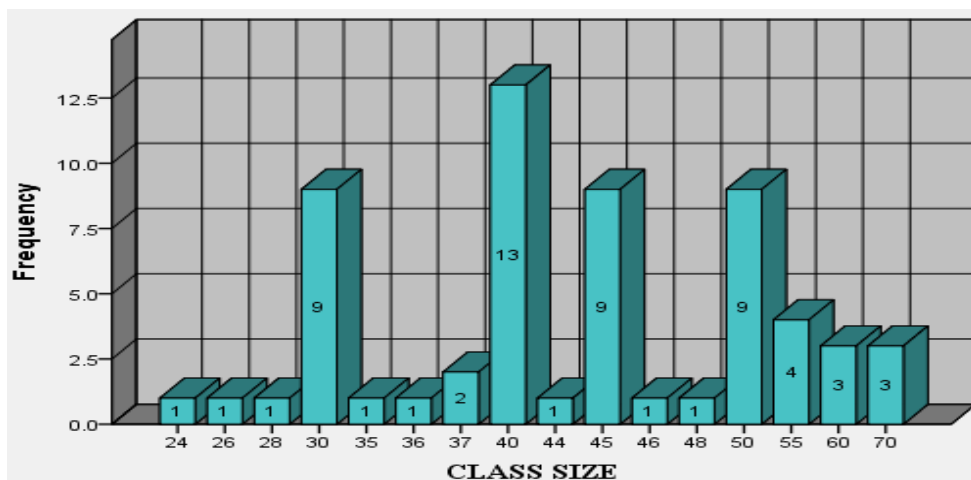
Figure 4.3: Number of learners per classroom (class size)

The findings showed that mean class size was at 43, with most schools having a class size of 40, and half of the schools having a class size of 44 and above. One school had the lowest class size of 24 learners per classroom and 3 schools had the highest class size of 70 learners per classroom. This finding contradicts the available data of congestion of classrooms in sub county schools in Busia County revealed by the reports from Busia Education Office (2021) which showed that secondary schools in Busia County mostly sub county level class sizes of up to between 80-100 students. However, when the data for sub county leveled schools were unpacked, it revealed a contrary situation with a mean class size of 43. This could have arisen from the fact that sub county schools in this county only enrolled 31% of the students despite the fact that they formed 69% of the secondary school population in the county. Thus 31% of the learners were left to compete for the few chances in County, Extra County and National Schools escalating their class sizes.

4.2.5 Development Fund Levy that parents were charged per learner

According to the MOE circular issued in 2015 affirmed in January 2022 as regards financing of secondary schools, it allowed for the use of Ksh. 5000 per student from the GOK subsidy as Maintenance and Improvement Fund per year to ensure a proper learning environment with adequate infrastructure and other improvements. Similarly, for boarding schools, an additional Ksh.2000 is provided for as parents' contribution. This vote was meant for immovable assets and other forms of infrastructure in the school that may require upgrading. An approval must be sought from the relevant office on utilization of this vote. Accordingly, the study sought to establish if the development fund pricing guidelines availed adequate infrastructure to public sub-county secondary schools in Busia County, Kenya. The result was presented in Figure 4.4
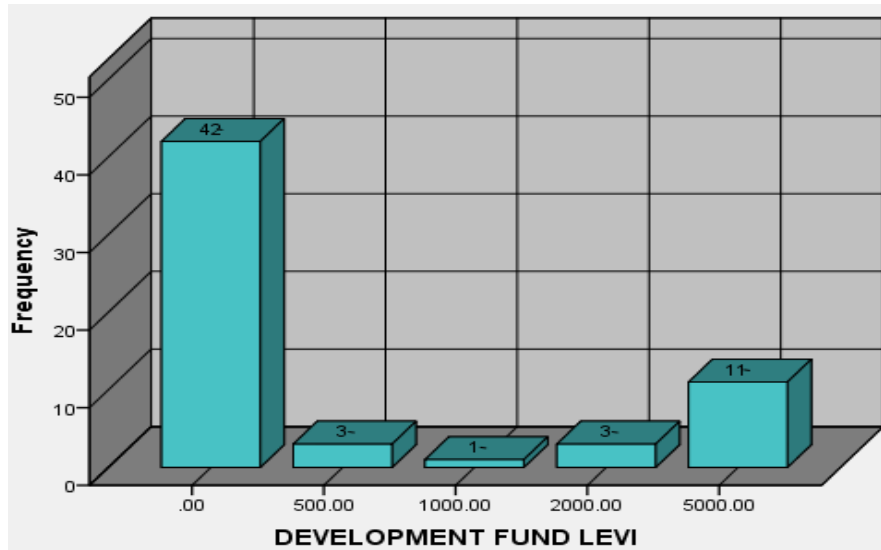
Figure 4.4: Development fund levy that parents were charged per learner

Figure 4.4 indicated that 42(70%) schools never charged parents any money for development, 3(5%) charged sh.500 per student, 1(1%) charged sh. 1000, 3(5%) charged sh. 2000 and 11(18%) charged sh. 5000. From the data gathered, it was noted that the pricing guidelines had made it difficult for schools to charge parents development levy and the government did not avail sufficient funds to put up new infrastructure rather it provided for the improvement of the existing infrastructure at Sh. 5000 per student per year. This situation was worsened by the fact that enrolment in schools continued to increase but was not matched with an increase in resources. This finding was in agreement with the World bank (2019) report which observed that developing countries, Kenya being one of them, had made tremendous progress in ensuring learners were in school due to favourable school access policies but did not come up with suitable policies to avail adequate infrastructure to schools for quality education to be achieved.

The study sought clarification on whether the amounts charged for development were spent and if they were adequate as per projects for which they were charged and the results were presented in Table 4.3.

Table 4.3: Expenditure and Adequacy of Development Fund

Expenditure and Adequacy Status	Frequency	Percent
• Not applicable	7	11.7
• Spent and was adequate	23	38.3
• Spent but was not adequate	30	50.0
Total	60	100.0

Data from Table 4.3 highlighted that 30(50%) indicated that the funds received was adequate for the projects it was meant, 23(38.3%) indicated that the amount was not adequate for the projects meant to finance them. Thus some projects remained uncompleted. It was common to observe foundations of classrooms and laboratories that had been put up but not completed. Similarly, it was not unusual to find pit latrines dug but the toilets were not yet constructed.

On other hand, 7(11.7%) of the schools did not receive and therefore did not spend on development projects in the last five years.

4.2.6 Allocation of Infrastructure Funds to Schools

The MOE financing policies has the component of infrastructure funding which is controlled from the national government and allocated to schools based on the institution's needs to fund infrastructural projects. The study was interested in establishing whether Busia Sub county schools also received such funds in the past five years to boost their infrastructural requirements. The Findings were presented in Figure 4.5.

HAS THE SCHOOL RECEIVED INFRASTRUCTURE FUNDS
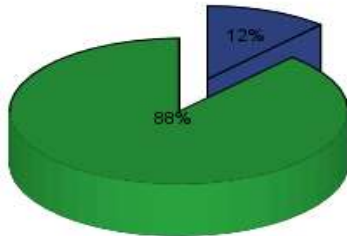
Figure 4.5: Schools that received Infrastructure funds from MOE

Data on Figure 4.5 showed that 53(88%) schools received infrastructure funds from the MOE in the last five years and 7(12%) did not receive the funds in the past five years. The schools that did not receive infrastructural support from the MOE relied on RMI, development fund, donors and CDF allocation to improve their infrastructure.

In addition, the Principals were required to provide information on the support they received from the government apart from FSE and infrastructure funds in the last five years. The data provided was presented in Table 4.4

Table 4.4: Support Schools received to improve infrastructure apart from FSE

Support	Frequency	Percent
• CBC, SEQIP, cdf	1	1.7
• CBC, SEQIP	1	1.7
• CDF	41	68.3
• CDF, SEQIP	1	1.7
• CDF, donor	1	1.7
• CDF, SEQIP	4	6.7
• None	8	13.3
• SEQIP	3	5.0
Total	60	100.0

From Table 4.4, 41(69%) schools indicated they received Constituency Development Funds (CDF), 8(13%) received none, 4(7%) received both CDF and Secondary Schools Quality Improvement Programme funds (SEQIP) and 2(3%) received CBC classrooms. In terms of the major financier of development projects in schools, all the respondents indicated that the government was the major financier of development projects in their schools. Therefore the government asserted its authority and responsibility vested on it by the Constitution of Kenya 2010 and Basic Education Act 2013, which obligates the government to provide quality education in all schools within the Republic of Kenya. However, the government had not provided sufficient facilities that could facilitate quality learning as observed by PWPER (2023).

4.2.7 Implication of pricing guidelines on the availability of adequate number of Classrooms in Public sub county schools in Busia County

The principals were requested to provide data on the available number of classrooms in schools, shortage and the total number of classrooms the school required in order to satisfy its CBE requirements. Data on classrooms were obtained through the observation checklist and the principal questionnaire and the result is presented in Table 4.5

Table 4.5: Implications of Pricing Guidelines on the Classrooms situation in public Sub county secondary schools

Sub County	Pricing Guidelines					Classroom shortage	Total classrooms Required	% shortage to Total
	CDF	MOE	Development	Donors	Total			
Bunyala	21	17	3	11	52	13	65	20
Busia	25	28	7	15	75	13	88	14.8
Butula	33	29	5	9	76	12	88	13.6
Nambale	42	35	10	12	99	21	120	17.5
Samia	30	24	2	10	66	12	78	15.4
Teso North	29	15	6	8	58	22	80	27.5
Teso South	45	16	13	20	94	17	111	15.3
Total	**225**	**164**	**46**	**85**	**520**	**110**	**630**	**17.5**

Source: Author's compilation, 2022

Table 4.5 indicated that there were 520 classrooms out of which , 225 classrooms were availed by Constituency Development Fund (CDF), 164 classrooms were as a result of infrastructural funds from MOE, 46 by Development fund pricing guidelines and 85 classrooms financed by various donors. The schools lacked 110(17.5%) classrooms which totals to 630 required classrooms in order to ensure quality education in public secondary schools in Busia County.

Nambale Sub County had the highest number of classrooms at 99 out of which 42 were financed by CDF, 35 by MOE, 10 by development fund and 12 by donors. Nevertheless, Nambale Sub County lacked 21 classrooms resulting to a percentage shortage to total classrooms required of 17.5%. Teso South Sub County had 94 classrooms out of which 45 classrooms were financed by CDF,16 classrooms by MOE, 13 classrooms by development fund and 20 classrooms by donors. However, Teso South Sub County lacked 17(15.3%) classrooms. Butula Sub County had a total of 76 classrooms financed as follows: 33

classrooms by CDF, 29 classrooms by MOE, 5 classrooms by Development fund, and 9 classrooms by donors. The sub county lacked 12 classrooms representing percentage shortage to total of 13.6%. Busia sub county had 75 classrooms out of which 25 classrooms were financed by CDF, 28 classrooms by MOE, 7 classrooms by development fund and 15 classrooms by donors. Busia Sub County lacked 13 classrooms representing percentage shortage to total of 14.8%.

Samia Sub County had a total of 66 classrooms financed as follows: 30 classrooms by CDF, 24 classrooms by MOE, 2 classrooms by development fund and 10 classrooms by donors. The sub county lacked 12(15.4%) classrooms. Teso North Sub County had 58 classrooms out of which 29 classrooms were financed by CDF, 15 classrooms by MOE, 6 classrooms by development fund and 8 classrooms by donors. The sub county lacked 22(27.5%) classrooms. Bunyala Sub County had the least number of classrooms at 52 out of which 21 classrooms was financed by CDF, 17 classrooms by MOE, 3 classrooms by Development fund and 11 by donors. The sub county had a shortage of 13 classrooms giving a total of 65 with a percentage shortage of 20 classrooms.

The implication of this was that the number of learners who were supposed to occupy these 110 classrooms that the sub county lacked was accommodated in the available classrooms. This led to congested classrooms in sub county schools which interfered with quality of learning in the schools affected. This was in consonance with the report of MOE Statistical Booklet 2021 supported by the PWPER 2023 which indicated that sub county schools had congested classrooms therefore needed more funds to construct more classrooms. The pricing guidelines has thus not addressed the classrooms needs in schools as was envisaged from 2015 when financing of infrastructure was diversified from the MOE and parents to CDF and Donors.

According to UNESCO (2019) the minimum student classroom space should be 1.5 square meters per pupil with one-seater desk, which would translate to 45 square meters for a room expected to hold 30 learners. Classrooms that are congested hardly provide space for movement and affect effective teachers' control of classes. An ideal classroom should be spacious to allow free movement, space where students can form round table discussion with movable tables and chairs. This is supported by MOE Safety Standards Manual For Schools in Kenya, First Edition (2008) which guided that the size of the classroom, in terms of length and width, should be as specified in the Ministry of Education building specifications (i.e. 7.5m x 5.85m or 7.5m x 6.0m). Such classrooms should accommodate a maximum of 30 learners in one-seater desks or 40 learners in two seater desks in line with the provisions of the Ministry of Education circular on Health and Safety Standards in Educational Institutions (2001). Due to shortage of classrooms, this standard was not achieved in sub county schools as classrooms had more than 40 learners as envisaged in the MOE quality standards. Moreover, the building specifications were not adhered to implying serious congestions in the classroom to the extent that the teacher could not get free space of movement to check the learners work.

4.2.8 Implication of pricing guidelines on the availability of adequate number of Laboratories in Public sub county schools in Busia County

Data on the current number and shortage of the laboratories was obtained through a questionnaire issued to the principals and observation checklist. It was noted that the laboratories in schools were financed by CDF, MOE infrastructure improvement funds, development fund votehead paid by parents and donors. The findings were summarized as in Table 4.6

Table 4.6: Number of Laboratories in Public Sub county schools in Busia County

Number of Laboratories	Schools	Percent
0	15	25.0%
1	26	43.3%
2	16	26.7%
3	2	3.3%
4	1	1.7%
Total	**60**	**100%**

The findings in Table 4.6 indicated that 15(25%) schools never had any laboratory, 26(43.3%) had one laboratory to accommodate all the subjects that required the use of a laboratory, 16(26.7%) had 2 laboratories, 2(3.3%) had 3 laboratories and only 1(1.7%) had up to 4 laboratories. Janssen et al (2017) in their study "Why education infrastructure matters for learning" showed that buildings, classrooms, laboratories, and equipment (education infrastructure) are crucial elements of learning environments in secondary schools. According to UNESCO (2019) there was strong evidence that high-quality infrastructure facilitates better instruction, improves student outcomes, and reduces dropout rates, among other benefits. Sub-county schools in Busia County lacked adequate number of laboratories with which to offer quality education and teach practically oriented subjects. This could partly explain the poor outcomes posted by this category of schools thereby interfering with quality education in public sub county secondary schools in Busia County.

The study obtained data on the number of laboratories in schools, the number of laboratories required, and the shortage levels through the questionnaires issued to the Principals.

Percentage shortage of laboratories was then worked out and the information presented in Table 4.7.

Table 4.7: Implications of Pricing Guidelines on the Laboratories situation in public Sub county secondary schools in Busia County

Sub County	Pricing Guidelines					Laboratory shortage	Total Laboratories Required	% shortage to Total
	CDF	MOE	Development	Donor	Total			
Bunyala	1	2	0	4	7	11	18	61
Busia	2	1	1	2	6	19	25	76
Butula	0	3	2	5	10	15	25	60
Nambale	2	3	2	3	10	14	24	58
Samia	2	3	0	6	11	15	26	58
Teso North	6	2	2	4	14	18	32	56
Teso South	1	4	0	5	10	25	35	71
Total	**14**	**18**	**7**	**29**	**68**	**117**	**185**	**63**

Source: Author's compilation, 2022

Table 4.7 showed that there were 68 laboratories out of which , 14 laboratories were financed by Constituency Development Fund (CDF), 18 laboratories were as a result of infrastructural funds from MOE, 7 laboratories by Development fund pricing guidelines and 29 laboratories were financed by various donors. The schools lacked 117(172%) laboratories which totals to 185 required laboratories in order to ensure quality education in public secondary schools in Busia County.

Teso North Sub County had the highest number of laboratories at 14 out of which 6 were financed by CDF, 2 by MOE, 2 by development fund and 4 by donors. Nevertheless, Teso North Sub County lacked 18 laboratories resulting to a percentage shortage to total laboratories required of 61%. Teso South Sub County had 10 laboratories out of which 1

laboratory was financed by CDF, 4 laboratories were financed by MOE, and 5 laboratories by donors. However, Teso South Sub County lacked 35(71%) laboratories. Butula Sub County had a total of 10 laboratories financed as follows: 3 laboratories by MOE, 2 laboratories by Development fund, and 5 laboratories by donors. The sub county lacked 15 laboratories representing percentage shortage to total of 65%. Busia Sub County had 6 laboratories out of which 2 laboratories were financed by CDF, 1 laboratory by MOE, 1 laboratory by development fund and 2 laboratories by donors. Busia Sub County lacked 19 laboratories representing percentage shortage to total of 76%.

 Samia Sub County had a total of 11 laboratories financed as follows: 2 laboratories by CDF, 3 laboratories by MOE, and 6 laboratories by donors. The sub county lacked 15(58%) laboratories. Nambale Sub County had 10 laboratories out of which 2 laboratories were financed by CDF, 3 laboratories by MOE, 2 laboratories by development fund and 3 laboratories by donors. The sub county lacked 14(58%) laboratories. Bunyala Sub County had 7 laboratories out of which 1 laboratory were financed by CDF, 2 laboratories by MOE, and 4 by donors. The sub county had a shortage of 11 laboratories giving a total of 18 with a shortage of 11(61%) laboratories.

This resulted to a percentage shortage to the total number of laboratories required by schools of 63% with the available ones only accounting for 37% of what the schools required. This meant that admitting a learner in a sub county school is predisposing that learner to lack of or poor conditions for practical learning especially in Science subjects which mostly required laboratory use. This finding was supported by Janssen (2017) who found out those schools that lacked laboratories in schools could not compete effectively with other schools that had well equipped laboratories and offer quality education. This could partly explain mass failure in national assessment outcomes and poor quality of education in sub county schools in Busia County as asserted by Busia County Director of Education in Table 1.4.

This meant that the schools were in serious shortage of laboratories, a situation which might worsen with continual increase in enrolment in these schools fueled by the existing government access policies like 100% transition policy and the CBC curriculum reforms (PWPER, 2023). Therefore, the pricing guidelines did not avail the required number of laboratories in order to create a conducive learning environment rich in facilities to facilitate practical subjects like sciences thus watering down the quality of education in Sub county Schools in Busia County. In addition, the existing laboratories did not comply with MOE Safety standards Manual For Schools (2008) which stipulated that a laboratory should be spacious to an extent that 2.4 square metres is utilized by one student fixed at a maximum of 45 students, an additional one square metre for emergency corner shower point plus thirty two square metre store preparation areas and teachers' office. The laboratories housed upto 70 learners per session and they did not have all the units prescribed in the MOE standard Manual of 2008.

4.2.9: Implication of pricing guidelines on the availability of adequate number of Toilets in Public sub county schools in Busia County

Data on toilets was obtained through the questionnaire to the principals, observation checklist and the interview administered to the County Directors of Education. From the data obtained, MOE required that 1 door of toilet should serve 25 girls whereas 1 door of toilet should serve 30 boys. It also required that staff toilets should have separate doors for male and female gender. All the toilets should be well labelled according to the gender meant for them. Table 4.8, summarized the data obtained.

Table 4.8: Implications of Pricing Guidelines on the Toilets situation in public Sub county secondary schools in Busia County

Sub County	Current Girls' toilets	Current Boys' toilets	Teachers Toilets	Current Total Toilets	Toilets shortage	Toilets Required by the school	Percentage of the shortage to the required toilets
Bunyala	57	33	12	102	29	131	22.1
Busia	54	63	14	131	44	175	25.1
Butula	74	59	7	140	32	172	18.6
Nambale	74	60	10	144	61	205	29.8
Samia	52	47	20	119	34	153	22.2
Teso North	42	45	20	107	30	137	21.9
Teso South	77	55	14	146	49	195	25.1
Total	**430**	**362**	**97**	**889**	**279**	**1168**	**23.9**

Source: Author's compilation, 2022

From Table 4.8, the current girls' toilets were 430, current boys' toilets were 362, teachers toilets were at 97 and the current total toilets were 889. Teso South Sub County had the highest number of girls' toilets at 77 while Busia Sub County had the highest number of boys' toilets at 63. Cumulatively Teso South Sub County had the highest number of both girls' and boys' toilets at 146. On the other hand, Busia sub county schools lacked a total of 279 doors of toilets with Nambale sub county schools lacking the highest number at 61 and Bunyala Sub County lacking the least number at 29 doors of toilets. Overall, the sub county schools in Busia required 1168 doors of toilets in order to serve the learners population but had a percentage shortage to the toilets required at 23.9%. Nambale Sub County had the highest percentage shortage of 29.8%, Teso South at 25.1% and Busia at 25.1%, Samia Sub

County at 22.2%, Bunyala at 22.1%, Teso North at 21.9% and the least being Butula Sub County at 18.6%. The findings did of the availability and usage of toilets did not conform to guidelines as stipulated in the MOE Safety standards Manual For Schools (2008), which required that 1 door of toilet/ pit latrine should serve, 30 boys or 25 girls. Thus 1 door of toilet served more than 30 boys or more than 25 girls. This created unconducive environment for learners to actively participate in quality learning due to unhealthy environment as asserted by UNICEF (2020) that for quality education to be realized the school environments should provide adequate resources and facilities in schools.

4.2.10 Strategies schools employed to address shortage of infrastructure

The principals had put in place strategies to avail adequate classrooms, laboratories and toilets. The result is summarized in Table 4.9

Table 4.9: Strategies to avail adequate infrastructure to schools

Strategy	Frequency	Percent
• Cost sharing	12	20.0
• Fundraising	1	1.7
• Lobbying for CDF funds	9	11.7
• Outsourcing	1	1.7
• Prudent utilization of FSE funds	11	19
• Requesting the government to put up more infrastructure	1	1.7
• Lobbying political leadership	1	1.7
• Writing proposals to donors	14	23.3
• Writing proposals to the government to avail more funds	9	11.7
Total	60	100.0

Table 4.9 show some of the strategies the respondents were pursuing in a bid to ensure adequate number of infrastructure. Fourteen (23.3%) respondents were writing proposals to potential donors to assist in infrastructural development in schools, 12(20%) respondents proposed that cost sharing of school resource requirements between the government and

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parents should be strengthened and clear cost sharing policies be developed in order to help resource schools. They observed that schools require a lot of resources and resourcing of schools were an expensive venture that if left alone to the government may result to serious shortages of infrastructure. Further, 11(19%) principals indicated prudent utilization of FSE funds while 9(15%) were writing proposals to the government to avail more funds. Other strategies included prudent utilization of FSE, lobby political leadership, outsourcing and annual construction of the required infrastructure.

4.2.11 Implications of fee guidelines on the availability of infrastructure

The principals gave a testimony with regards to their experience on sufficiency of the fee guidelines in addressing the individual infrastructural needs of their schools and the result is presented in Table 4.10.

Table 4.10: Sufficiency of pricing guidelines towards addressing infrastructural gaps in schools

Does the Current Fee Guidelines avail enough infrastructure to schools?	Frequency	Percent
• No	50	83.3
• No. 100% transition policy has strained the schools	1	1.7
• No. capitation is based on enrolment	3	1.7
• No.100% transition has stained the schools	1	1.7
• No. The process of acquiring approval of development fund from the government is long	1	1.7
• Yes	4	6.7
Total	60	100.0

From Table 4.10, 56(93%) indicated that the fee guidelines on development fund did not avail adequate classrooms, laboratories and sanitation facilities to the school. The explanation that they alluded to this included 100% transition policy which had strained the schools in terms of infrastructure; capitation is based on enrolment therefore schools with small enrolment suffered. They also indicated that the process of acquiring approval of

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development fund from the government was long and tedious which discouraged most of the schools from requesting parents to chip in. Nonetheless, 4(7%) schools indicated that the process availed adequate resources. The findings contrast the Kilemi Mwiria proposal on pricing secondary institutions which envisaged availability of adequate resources to schools after adoption of the new funding method. It however conquered with Sessional Paper No.1 of 2019, PWPER (2023) report and the proponents who have advanced shift in pricing strategies to schools.

This was further elaborated by the Sub county directors of education who responded to an interview question which sought the challenges the MOE was facing in the provision of school infrastructure and some of the replies were as follows

> *''Parents have a notion that the government provides everything therefore they don't feel the need of paying development levies yet schools have no standard classrooms as well as laboratory and toilets. Students share the resources and classrooms are congested, students are not comfortable learning under such conditions, yet we don't have enough funds to maintain the resources.''*

From the above statement, it was noted that principals encountered difficulties in working with parents in funding school projects since parents have shifted their responsibility to government thus did not fulfil their parental obligations of paying school fee thereby resulting to schools having huge fee arrears and dilapidated infrastructure. Bakari, Ahmed and Ghulam (2014) in a study on effects of physical facilities on performance in Kenya Certificate of Secondary Examination in public schools in Bungoma acknowledged that the academic performance of schools with adequate physical facilities had been improving over the years, while performance in schools that had inadequate physical facilities in K.C.S.E fluctuated with time despite new reforms and innovations that have been designed and introduced to make education relevant to socio-economic and political aspirations and expectations of the society at large. One of the factors that promote teacher's satisfaction is the school environment which constitutes a whole range of factors that influence the teaching

and learning process within the school. They include; classrooms, libraries, technical workshops, and quality teaching methods among other variables that can affect the teaching and learning process (Ajayi, 2001).

Owoeye and Yara (2011) linked performance of students to the provision of adequate physical facilities while referring to a survey of 51 primary schools in Botswana, that students performed significantly better on academic tests when they had adequate classrooms, desks and chairs, they succinctly said that school buildings are very vital input to educational system: emphasizing that even though they do not teach, but their use may facilitate or impede learning.

Physical facilities are fundamental factors for better learning and achievements of the students (Saeed & Wain, 2011). All facilities must be provided to the schools for the students' better, concrete and real experiences, they help to enhance the learning of the students. Research shows that availability of the physical facilities including classrooms, water, electricity, boundary walls, toilets, furniture, playgrounds, libraries and dispensaries have a significant positive influence on the performance of students and their achievement (Saeed & Wain, 2011).

4.2.12 Mitigation of infrastructural challenges occasioned by the fee guidelines

The study sought guidance from the principals and sub county directors of education since they were the officers charged with the responsibility of implementing the government policies at school and sub county levels respectively on how the challenges occasioned by the existing government price guidelines could be mitigated. The principals gave their views as recorded in Table 4.11.

Table 4.11:   Mitigation of challenges occasioned by the pricing guidelines towards infrastructural provision

Mitigation Measures	Frequency	Percent
• Change the method of financing to reflect the needs of the school	29	48.3
• Commit the entire CDF to construction of infrastructure in schools	1	1.7
• Cost sharing	8	13.3
• Observe fairness in distribution of infrastructure money by MOE	2	3.4
• Government should increase capitation, cost sharing	4	6.7
• Government should use a standard rate for funding projects in schools	6	10
• Government to carry out needs assessment of individual schools	1	1.7
• Government to finance schools according to their needs	1	1.7
• Government to finance schools according to their needs in order of priority	1	1.7
• Increase capitation	9	15
• Increase FSE	1	1.7
• MOE to revise the fee upwards	2	3.4
• Parents to pay for infrastructure	1	1.7
• Review the funding model for schools, do away with the bursaries and avail cheap loans for needy student	1	1.7
Total	60	100.0

Table 4.11 illustrated that 29(48.3%) of the respondents indicated that the government need to revise the methodologies of financing secondary education by increasing capitation based on the needs of the schools; 8(1.3%) respondents indicated strengthening cost sharing policies; 6(10%) responses explained that a need assessment of schools should be done and then the resources should be availed based on need. They further explained the need of a paradigm shift from capitation method which is based on the current enrolment of the schools to one that considers the school unique needs. Other strategies proposed included: commit the entire CDF to construction of infrastructure in schools; Observe fairness in distribution of

infrastructure money by MOE and review the funding model for schools, do away with the bursaries and avail cheap loans for needy student among others.

Besides the principals' responses on how the challenges occasioned by the fee guidelines can be corrected, the Sub county Directors of Education suggested the following mitigation measures in an interview which were then prescribed and the content that arose presented in Table 4.12

Table 4.12: Sub County Directors of Education response on rectifying the infrastructure situation in schools

Mitigation Measures	Frequency	Percentage
Each school to have and implement strategic plans	7	100
Observe MOE recommendations	4	57
Affordable and attractive staff quarters	3	43
Relook at the Method of financing schools	7	100

All the sub county directors of education suggested that each school should develop and implement strategic plans and relook at the method of financing schools. Four (57%) advised that the school managers should observe MOE recommendations on the use of funds while 3(50%) indicated constructing affordable and attractive staff quarters.

4.2.13 Implications of Pricing guidelines on the provision of infrastructure for Quality Education

Based on the data obtained and analyzed, the study established that sub county schools had 520 classrooms, 68 laboratories and 889 doors of toilets but   lacked 110(17.5%) classrooms, 117 (172%) laboratories and 279(23.9%) toilets. Therefore, there was pressure on the existing infrastructure which accommodated more than there capacities. For instance, it was common to find schools with over 70 students in a classroom as illustrated in Figure 4.6. Whereas the

MOE quality guidelines advocates for a maximum of 45 learners in a classroom, at least 1 square meter station for each student in a laboratory, 1 door of toilet for 25 girls and 1 door of toilet for 30 boys, it was not the case in the sub county schools. This was due to the fact that most schools did not levy the parents' development funds because of the strict requirements that it demanded whereby the MOE had to authorize such a levy after getting consent from the parents. However, the schools that charged development funds had less shortage of infrastructure compared to those that did not. Most schools relied on CDF and government infrastructure funds which were not given to all the schools.

The study further established the implication of the infrastructure on the quality of education performing a regression analysis of the number of classrooms, Laboratories and toilets a school had on its KCSE performance. The result was presented in Table 4.13

Table 4.13: Implications of the Infrastructure on the quality of education (KCSE performance)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.043	.114		17.984	.000
Current Number Of Classrooms	.178	.013	.831	14.118	.000
Current Number Of Laboratories	.40	.061	.33	6.652	.017
Current Total Toilets	.18	.072	.148	2.552	.013

a. Dependent Variable: KCSE Performance

Table 4.13 showed that the current number of classrooms influenced the academic performance of schools by 17.8%, current number of laboratories influences the academic performance by 40% and the current number of total toilets per school influenced the academic performance by 18%. The study therefore established that there was significant

relationship between the existing number of infrastructure and the academic performance of schools.

These findings concurred with previous studies conducted by Janssen (2017), UNESCO (2022) and Koriyow (2017) that high-quality infrastructure facilitates better instruction, improves student outcomes hence high quality of education.

4.3 Implications of the pricing guidelines on the adequacy and remuneration of human resources to facilitate processes of teaching and learning for quality education in public sub-county secondary schools in Busia County, Kenya.

The second objective of this study sought to analyze the implications of the pricing guidelines on the adequacy and remuneration of human resource to facilitate processes of teaching and learning for quality education in Public sub county secondary schools in Busia County, Kenya. This was analyzed at two levels; the number of both teaching and non-teaching staff and their remunerations. In order to objectively answer this, the researcher obtained data from the principals and the Sub County Directors of Education. Other data was sought through document analysis guide.

4.3.1 Implications of pricing guidelines on the Teaching Staff adequacy in schools

This study sought to establish the Curriculum Based Establishment (CBE) of each school in order to ascertain the staffing situation and how the Pricing guidelines had influenced the student teacher ratio by obtaining data on CBE, subjects offered in schools, number of teachers posted by Teachers Service Commission (TSC) to the schools, teachers employed by Board of Management (BOM) and the teachers shortage per school. This was analyzed and presented in Table 4.14

Table 4.14: The teaching staff situation in schools

Sub County	CBE	Subjects offered	Teachers posted by TSC to schools	Teachers the schools lacked	% of TSC teachers to CBE	% shortage of teachers to CBE
Bunyala	129	67	80	49	62	38
Busia	131	88	72	59	55	45
Butula	207	92	98	109	47	52.7
Nambale	137	89	76	61	55	44.5
Samia	196	90	117	79	60	40.3
Teso North	280	129	164	116	59	41.4
Teso South	212	126	105	107	50	23.6
Total	**1292**	**681**	**712**	**580**	**54.9**	**44.9**

Table 4.14 showed that the sub county schools in Busia County required a total of 1292 eachers, out of which 712 teachers had been posted by TSC, which was 54.9% of the teachers the schools required. The mean number of teachers the schools had was at 21 and most schools had 9 teachers posted by TSC. This resulted into a huge variance of 13 teachers from well-staffed schools to least staffed schools. Teso North Sub County had the highest teacher requirement of 280(22%) but had 164 teachers on duty representing 59% of what they required. Bunyala Sub County had the least CBE requirement at 129(10%) but had 80 teachers on duty, representing 62% of what they required. Busia sub county had 72(55%), Butula 98(47%), Nambale 76(55%),Samia 117(60%) and Teso South Sub County 105(50%) teachers posted by TSC. These findings concurred with the assertion of PWPER (2023) who observed that severe shortages existed and teacher shortages had become a major concern to educational authorities. The TSC had failed to provide the staffing requirements as proposed

in its staffing Norms which was an outcome of Kilemi Mwiria Report of 2014 adopted by MOE in 2015 for implementation.

The study established that 45.1% of the teacher requirements for the sub county schools in Busia County had not been provided by the TSC forcing the individual schools to look for alternative ways of staffing schools through employment of teachers on BOM terms in order for teaching and learning services to proceed. This is shown in Table 4.15

Table 4.15: Teachers Employed in Public Sub County Secondary schools in Busia County on BOM Terms

Sub County	Teachers employed by BOM	% of BOM teachers to CBE	Teachers posted by TSC to schools	% of TSC teachers to CBE	Total number of teachers in schools	Actual Shortage
Bunyala	45	35	80	62	125	4
Busia	29	42	72	55	101	30
Butula	51	25	98	47	149	58
Nambale	36	26	76	55	112	25
Samia	63	32	117	60	180	16
Teso North	55	20	164	59	219	61
Teso South	63	30	105	50	168	44
Total	**342**	**26.5**	**712**	**54.9**	**1054**	**238**

Table 4.15 indicated that there were a total of 342 teachers employed on BOM terms in sub county secondary schools in Busia County. This represented half of the total number of teachers that had been posted by the TSC to these schools. Teso South and Samia sub counties had the highest number of teachers employed on BOM terms at 63(19%). Busia Sub county had the least number of teachers employed on BOM terms at 29(8%). The sub county schools lacked a total of 580 (44.9%) teachers with Teso North sub county lacking 115(21%) teachers and Bunyala sub county lacking the least number of teachers at 49(9%).

Overall, teachers employed on BOM terms accounted for 26.5% of the total staffing requirements in Sub county schools in Busia County with Busia Sub County having the highest percentage of BOM teachers to TSC teachers at 42% and Teso North Sub County having the least percentage at 20%. According the pricing guidelines that were to be implemented in schools from 2015, the MOE did not envisage a situation where the TSC would fail to provide the required number of teachers resulting to shortages that would necessitate the various BOMs to employ other teachers to complement what had been provided by the government. Accordingly, the pricing guidelines did not provide for remuneration of such teachers from the various voteheads that constitute the fee components. However, the schools utilized the finances availed to them by reallocating funds from voteheads such as personal emolument.

4.3.2 Personal Emolument votehead used for employment and remuneration of human resource in schools

The personal emolument pricing guideline was designed to take care of the monthly salaries and allowances of non-teaching, social security, NHIF service gratuity for non-teaching staff and work injury benefits according to the MOE fee guidelines issued from time to time. Personal Emolument vote head was not specified by the MOE for recruitment and remuneration of teachers employed on BOM teachers. Data obtained indicated that 26.5% of the teachers in Busia County constitute those on BOM terms. Thus, it was the interest of the study to establish how the teachers on BOM were remunerated and what percentage of personal emolument was used by individual schools towards the same. The researcher posted a question to the principals in the questionnaire, "What percentage of the Personal Emoluments facilitates the employment and payment of BOM teachers?" Further, Principals were asked to indicated the shortage if any in terms of percentage.

Table 4.16: Personal Emolument (PE) funds used for remuneration of BOM teachers in Public Sub county Secondary schools in Busia County

PE Fund used for payment of BOM teachers(Ksh.)	Frequency	Amount (Ksh.)	Shortage (Ksh.)	Frequency	Amount (Ksh.)
0	7	0	0	2	0
201,600	3	604,800	302,400	1	302,400
302 ,400	1	302,400	403,200	2	806,400
403, 200	16	6,451,200	443,520	1	443,520
504 ,000	1	504,000	604,800	17	10,281,600
604, 800	7	4,233,600	806,400	9	7,257,600
1,008 ,000	1	1,008,000	1,008,000	1	1,008,000
1,189 ,440	1	1,189,440	1,990,656	3	5,971,968
1,990,656	8	15,925,248	1,411,200	8	11,289,600
1,411,200	14	19,756,800	1,512,000	1	1,512,000
1,572,480	1	1,572,480	1,612,800	7	11,289,600
			1,814,400	2	3,628,800
Total	**60**	**51,547,968**	**Total**	**60**	**53,791,488**

Source: School Audit Reports (2022)

The principals indicated spending a total of Ksh.51, 547,968 of the personal emolument funds in employment and remuneration of BOM teachers with 16(27%) schools, spending Ksh. 403,200 of PE each; 14 (23%) spent Ksh. 1,411,200 of Personal Emolument funds in employment and remuneration of teachers on BOM terms, 8(13.3%) used Ksh. 1,990,656, 7(12%) principals spending Ksh.604, 800 of the PE funds for the same purpose. Only 7 (12%) schools did not spend PE funds to recruit and remunerated teachers on BOM terms. Further, the schools were unable to employ enough BOM teachers due to shortages of funds amounting to Ksh. 53,791,488 out of which 17(28.3%) schools lacked Ksh.604,800; 9(15%) lacked Ksh.806,400; 8(13.3%) lacked Ksh.1,411,200; 7(11.7%) lacked Ksh.1,612,800; 3(5%) of ksh.1,990,656. These findings are in agreement with Okoth (2021) who observed that Busia county faced acute shortage of teachers with education stakeholders lamenting that it is

hampering learning in schools. He noted that a school with 368 students only 9 teachers had been posted by TSC with 4 BOM teachers.

The researcher posted a question to the principals in the questionnaire, "What percentage of the Personal Emoluments facilitates the employment and payment of BOM teachers?" The response obtained is presented in Table 4.17

Table 4.17: Percentage of Personal Emolument fund used to remunerate BOM teachers

Percentage of Personal Emolument (PE) Fund used for payment of BOM teachers	Frequency	Percent (%)	Percentage Shortage	Frequency	Percent (%)
0	7	11.7	0	2	3.3
10	3	5.0	15	1	1.7
15	1	1.7	20	2	3.3
20	16	26.7	22	1	1.7
25	1	1.7	30	17	28.3
30	7	11.7	40	9	15.0
50	1	1.7	50	1	1.7
59	1	1.7	60	3	5.0
60	8	13.3	70	8	13.3
70	14	23.3	75	1	1.7
78	1	1.7	80	7	11.7
Total	60	100.0	90	2	3.3
			100	6	10.0

The principals indicated spending a mean of 37.45% of the personal emolument funds in employment and remuneration of BOM teachers with most schools, 16(27%), spending 20% of PE. 14 (23%) spent over 70% of PE funds in employment and remuneration of teachers on BOM terms, 8(13.3%) using 60%, 7(12%) principals spending 30% of the PE funds for the same purpose. Only 7 (12%) schools adhered to the MOE fee guidelines of not using the PE funds to recruit and remunerate Teachers on BOM terms. This meant that 88% of the principals flouted the government pricing guidelines probably because it did not take care of the Teachers on BOM terms which formed a large fraction of staff in the schools.

On the other hand, the study also sought data on the percentage shortage of PE funds that if availed the schools would be operating optimal staffing levels. Data obtained indicated that the schools had a mean shortage of 53% of PE funds, that is there were running at   -53% of PE funds. Most schools 17(28%) were operating at -30% of the personal emolument funds with the worst case of 2 schools operating at -100% of the personal emolument funds. only 2(3%) schools never had shortage in terms of payment of BOM teachers. They could have sourced for funds from elsewhere or getting some returns from income generating activities which is then used to pay BOM teachers.

4.3.3 Strategies that schools used to ensure adequate number of teachers

The study also sought to establish the strategies that the Principals were applying in the schools to ensure adequate number of teaching staff and the results are presented in Table 4.18

Table 4.18: Strategies schools used to ensure adequate number of teachers in schools

Strategy	Frequency	Percent
• Annual Employment	1	1.7
• Employing BOM teachers	38	63.3
• Employing BOM teachers, • liaising with TSC for more teachers in areas with shortage	1	1.7
• Employing BOM teachers, • Use TP students on practice	10	33.3
Total	60	100.0

According to Table 4.18, 38(63%) of the schools suggested employing teachers on BOM terms, 20(33%) employed teachers on BOM terms and used students on Teaching Practice, 1(2%) employed teachers on BOM terms, liaised with TSC for more teachers in areas with

shortage, and, 1(2%) relied on annual employment by TSC. Accordingly, as observed by Ngetich (2014), schools continued to float the government pricing guidelines by using funds from personal emolument votehead to remunerate teaching staff in schools as opposed to government pricing guidelines that restricted the use of such funds to employment and remuneration of non-teaching staff. Due to this, Mwirichia (2020) recommended that pricing guidelines need to be revised to respond to the peculiar staffing needs of the individual schools. The findings revealed that this has not been done therefore resulting to shortages and reallocation of funds.

4.3.4 Sufficiency of teachers in each subject

The study also established if there were enough teachers in each subject combination by posing the question "Are there enough teachers for each subject?" The responses were presented in Figure 4.6
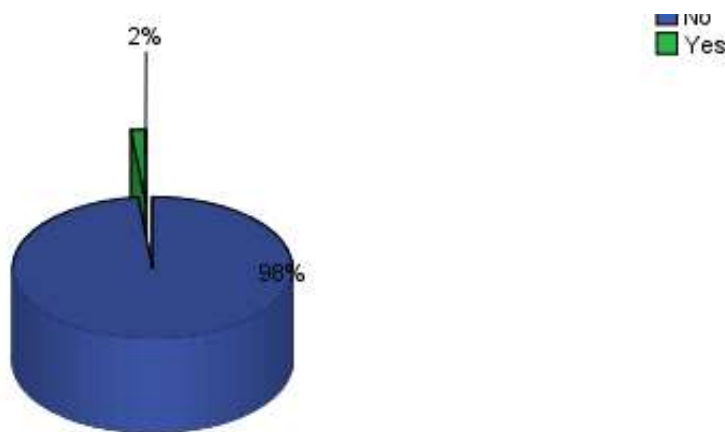
Figure 4.6: Levels of sufficiency of teachers in different subject combinations

According to Figure 4.6, 59(98%) principals indicated that the schools were deficient of enough teachers in each subject combination. Only 1(2%) indicated sufficiency in all the subject combinations.

The Sub County Directors of Education in an interview unanimously indicated that there was chronic shortage of human resource in their schools and the personal emolument votehead was insufficient to cater for both teaching and non-teaching staffs. One of the Sub County Directors commented as follows

> *''Principals of schools are expected to pay non-teaching staff from personal emolument votehead and at the same time struggle to use the same votehead to employ and remunerate teaching staff on BOM terms, what should be done by TSC. The votehead is not sufficient and the government does not remit the insufficient to schools in time. This has stressed the principals and made management of schools very difficult considering the huge numbers of students' enrolment without adequate resources.''*

The above explanation indicated the real situation in schools with regard to human resource situation which is dire as had been observed by the PWPER (2023), Busia County Director (2022) and the studies conducted by Okoth (2021) that exposed that schools lacked key resources with which to offer services but did not link the shortage to pricing of such schools, a gap which this study filled.

4.3.5 Subject Combinations in shortage

The study ascertained the subjects' combinations in shortage by posing the question, "If No, indicate the subjects affected and the shortage". The responses were presented in Table 4.19.

Table 4.19: Subject Combinations in Shortage

Subject Combination	Frequency	Percent
Agric/Bio	51	9
CRE/Geog	22	4
Bs/Maths	35	6
Eng/Lit	60	11
Kisw/CRE	42	7
Geog/Maths	12	2
Maths/Chem	40	7
Bio/Chem	57	10
Geog/Hist	14	3
Maths/Phy	56	10
Eng/CRE	2	0.4
Hist/CRE	45	8
Phy/Chem	39	7
Geog/Bs	38	7
P.E	1	0.2
Kisw/Hist	27	5
Kisw/Geog	9	1.6
Comp/Maths	10	1.8
Hsc/Bio	1	0.2
Total	**561**	**100.0**

In Table 4.19, English/ Literature combination had the highest shortage at 60(11%), Biology/Chemistry at 57(10%),Mathematics/Physics at 56(10%), Agriculture/Biology at 51(9%), History/Christian Religious Education (CRE) at 45(8%), Kiswahili/CRE at 42(7%), Physics/Chemistry at 39(7%), Geography/ Business Studies at 38(7%), Mathematics/Business Studies at 35(6%) among other subject combinations as illustrated in the table. Based on the TSC remuneration scales, in order to employ 561 teachers, the government will spend Ksh.26, 086,500 per month or Ksh. 313, 038,000 per year at the rate of salary of Ksh. 46,500 per month per teacher.

If the teachers were to be employed through BOM terms then the schools would spend Ksh.7 854 000 per month or Ksh. 94, 248, 000 per year at the rate of Ksh. 14,000 per month per teacher. It is therefore cheaper to employ teachers on BOM terms than on TSC terms. The

BOM terms were on contract mostly not exceeding 2 years while TSC terms were on Permanent and Pensionable. UNICEF (2020) asserted that for quality education to be achieved, adequate and sufficient number of teachers should be available in schools to facilitate processes of teaching and learning. In the absence of adequate number of teachers in schools, the learners were not attended to as expected resulting to compromised and low education quality.

4.3.6 Student Teacher ratio in Public Sub county secondary schools in Busia County

Student teacher ratio (STR) was worked out as a quotient of the enrolment versus the number of teachers, both BOM and TSC employed in schools. The result is tabulated in Table 4.20

Table 4.20: The amounts used to remunerate teaching staff

Sub County	Enrolment	Teachers on Duty	PE used on BOM teachers' salary(Ksh)	STR
Bunyala	5196	125	6,782,628	42
Busia	10772	99	4,371,027	109
Butula	12788	149	7,686,978	86
Nambale	12246	112	5,426,101	110
Samia	11591	180	9,495,678	65
Teso North	14102	219	8,283,240	65
Teso South	12161	168	9,502,316	73
Total	78856	1052	51,547,968	

Source: School Audit Report (2022)

From Table 4.20, the highest STR is in Nambale Sub county where one teacher handles 110 students used Ksh.5,426,101 of PE to employ and remunerate BOM teachers ; Busia is 109 students per teacher used Ksh.4,371,027 of PE on BOM; Butula sub county at 86 students per teacher spent Ksh, 7,686,978; Teso South at 73 spent Ksh.9,502,316; both Samia and Teso North at 65 but spent Ksh.9495678 and Ksh. 8,283,240 respectively on BOM teachers; and Bunyala at 42 used Ksh.6,782,628 on BOM teachers. All the sub counties operated below the

quality requirement of 40 students per teacher as stipulated by the MOE and the higher the amount of PE funds used on BOM teachers, the lesser the STR. This contradicts the provisions of pricing guidelines put forward by the MOE as annexed in appendix IV which under looked the teachers employed by BOM of different schools.

4.3.7 Implications of pricing guidelines on the Non- Teaching Staff adequacy   in schools

This study established the level of implementation of non-teaching staff personnel as was proposed by the pricing guidelines adopted from Kilemi Mwiria Report(2014) of each school in order to ascertain the non-teaching staff situation and how the Pricing guidelines had influenced their adequacy and remuneration. This was analyzed and presented in Table 4.21

Table 4.21: The Non-teaching staff situation in schools

Sub County	Streams	Number of non-teaching staff required	Number of non-teaching staff employed	Number of non-teaching staff in excess	% of excess non-teaching staff
Bunyala	17	85	96	11	13
Busia	21	63	58	-5	-8
Butula	21	68	79	11	16
Nambale	24	73	82	9	12
Samia	18	67	77	10	15
Teso North	18	64	70	6	9
Teso South	27	86	95	9	11
Total	**146**	**506**	**557**	**51**	**10**

Table 4.21 showed that Busia county public sub county schools had employed a total of 557 non-teaching staff against a maximum of 506. This indicated excess employment of this cadre of employees by 51(10%). Bunyala Sub County employed 96 non-teaching staff against 85 representing excess of 11(13%) employees. Busia Sub County employed 58 employees against a maximum of 63 representing underemployment of -5(-8%). Butula Sub County employed 79 non-teaching staff against 68 representing overemployment of 11(16%)

employees. Nambale Sub County employed 82 non-teaching staff against a maximum of 73, representing overemployment of 9(12%). Samia Sub County employed 77 non-teaching staff against a maximum of 67, representing overemployment of 10(15%). Teso North Sub County employed 70 non-teaching staff against 64 representing overemployment of 6(9%) employees. Teso South Sub County employed 95 non-teaching staff against 86 indicating an overemployment of 9(11%) non-teaching staff. This information contradicted the Kilemi Mwiria Report (2014) on staffing guidelines as adopted by MOE in 2015 which capped the number of non-teaching staff based on the number of streams in schools. Schools flouted these staffing guidelines by employing excess non-teaching staff therefore running to financial unsustainability thereby affecting the teaching and learning services in schools.

4.3.8 Non-Teaching Staff Remuneration in Public Sub County Secondary schools in Busia County

The study was interested in unearthing the implications of pricing guidelines on remuneration of non-teaching staff and the findings are reported in Table 4.22.

Table 4.22: The amounts used to remunerate non-teaching staff in Public Sub County Secondary Schools in Busia County

Sub County	Streams	Non-Teaching Staff on Duty	Required Amount (Ksh) per year	Actual Amount paid (Ksh.) per year	Deficit (Ksh.)
Bunyala	17	96	18,285,540	11,730,000	6,555,540
Busia	21	58	13,766,760	11,575,872	2,190,888
Butula	21	79	14,953,200	11,942,160	3,011,040
Nambale	24	82	16,742,112	12,172,896	4,569,216
Samia	18	77	14,844,252	11,687,748	3,156,504
Teso North	18	70	13,793,280	11,764,224	2,029,056
Teso South	27	95	18,503760	15,799,920	2,703,840
Total	**146**	**557**	**110,888,904**	**86,672,820**	**24,216,084**

Source: Schools' Audit Report (2022)

Table 4.22 showed that Ksh. 110,888,904 was required to remunerate 557 non-teaching staff in Public sub county secondary schools in Busia County but only Ksh.86, 672,820 was used leaving a deficit of Ksh.24, 216,084 which the schools owed the non-teaching staff by 31st December, 2022. Bunyala Sub County required Ksh.18, 285,540 to pay 96 non-teaching staff but spent Ksh.11, 730,000 with a deficit of Ksh.6, 555,540. Busia Sub County required Ksh.13, 766,760 to pay 58 non-teaching staff but spent Ksh.11, 575,872 with a deficit of Ksh.2, 190,888. Butula Sub County required Ksh.14, 953,200 to pay 79 non-teaching staff but spent Ksh.11, 942,160 with a deficit of Ksh.3, 011,040. Nambale Sub County required Ksh.16, 742,112 to pay 82 non-teaching staff but spent Ksh.12, 172,896 with a deficit of Ksh.4, 569,216. Samia Sub County required Ksh.14, 844,252 to pay 77 non-teaching staff but spent Ksh.11, 687,748 with a deficit of Ksh.3, 156,504. Teso North Sub County required Ksh.13, 793,280 to pay 70 non-teaching staff but spent Ksh.11, 764,224 with a deficit of Ksh.2, 029, 056. Teso South Sub County required Ksh.18, 503,760 to pay 95 non-teaching staff but spent Ksh.15, 799,920 with a deficit of Ksh.2, 703, 840.

This information showed that schools were operating on deficits in remunerating non-teaching staff thereby making the pricing guidelines ineffective in addressing the non-teaching staff adequate employment and remuneration. This finding contradicts the advice by NESSP (2022) that indicated that schools should stick to the pricing guidelines issued to them from time to time by the MOE in order to avoid financial challenges of running the teaching and learning process. Worse still, the salary given to the non-teaching was far below the recommended salary by Kilemi Mwiria Report as in Table2.2, which implied that the non-teaching staff was under remunerated. This could affect their motivation to offer best services to the institutions thereby jeopardizing provision of quality education.

4.3.9 Implications of the pricing guidelines on the adequacy and remuneration of human resources for Quality Education

The principals have utilized Ksh.9, 456,200 per annum to employ and remunerate 681 BOM teachers with a shortage of Ksh. 27,000,000 to employ 238 teachers. Similarly, the schools employed 557 non-teaching staffing and utilized Sh.86, 672,820 to remunerate them with a deficit of Sh. 24, 216,684. Consequently, there was high student teacher ratio compared to the enrolments. This implied that the pricing guidelines did not adequately address the required student teacher ratio as dictated by CBE in order to offer quality education and the optimal number of non-teaching staff per school as advanced by Staffing Guidelines to Schools adopted from Kilemi Mwiria Report (2014). The implication was that there was huge teacher shortage of 561 teachers. However, 37.45% of PE funds were used to pay the salaries of BOM teachers as opposed to government fee guidelines of using PE funds on non- teaching staff only.

The study further analyzed the implication of adequacy and remuneration of human resource on the performance of schools by carrying out a multiple linear regression on the number of teachers and support staffs in school and their remuneration on KCSE performance and the findings were reported in Tables 4.23, 4.24 and 4.25.

Table 4.23: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.684[a]	.547	.665	1.02097

a. Predictors: (Constant), Remuneration of Non-Teaching Staff, Remuneration of Teaching Staff, Number of Teachers, Number of Non-Teaching Staff

b. Dependent Variable: KCSE Performance

The model summary demonstrates a strong positive relationship (*R*=.684) between the predictors and the dependent variable, with approximately 54.7% of the variance in the

dependent variable explained by the independent variables (R^2=.547). The adjusted R Square of .665 suggests that while the model provides a good overall fit, there may be some predictors that are not significantly contributing to the explanation of the dependent variable's variance.

Table 4.24: ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	9.909	4	2.477	2.377	.043[b]
Residual	57.330	55	1.042		
Total	67.240	59			

Table 4.24 indicates the statistical significance of a regression model attempting to predict KCSE performance. The F-statistic, which assessed whether the model effectively explains variance in KCSE performance, yields a significant p-value of 0.043, against the standard significance level of 0.05. This suggests that there was potential relationship between the predictors, including " Remuneration of Non-Teaching Staff, Remuneration of Teaching Staff, Number of Teachers, Number of Non -Teaching Staff, which were implications of pricing guidelines " and KCSE performance which was an indicator of education quality.

Table 4.25: Implications of Employment and Remuneration of Human Resource on KCSE Performance

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	3.951	.280		14.127	.000
Number of Teachers	.495	.050	1.100	2.224	.030
Number of Non-Teaching Staff	.111	.498	2.877	1.194	.038
Remuneration of Teaching Staff	.08	.619	4.307	1.471	.044
Remuneration of Non-Teaching Staff	0.05	.700	5.801	.757	.048

a. Dependent Variable: KCSE Performance

Table 4.25 showed that the number of teachers influenced the academic performance of schools by 49.5%, current number of Non-teaching staff influenced the academic performance by 11.1%. Remuneration of the teaching staff accounted for 8% of the academic performance of schools in KCSE while remuneration of non-teaching staff accounted for 5% of the academic performance of schools in KCSE. The study thus established that there was significant relationship between the pricing guidelines as it influenced the existence and remuneration of human resource that in turn had significant influence on the academic performance of schools.

These findings concurred with study done by Santiago (2022) who noted that severe shortages existed, and there was a gap between demand and supply of teachers needed to ensure effective teaching in many countries. He further noted that teacher shortages had therefore, become a major concern to educational authorities and should be addressed continuously by guidelines makers. He observed that Performance of teachers and non-teaching staff as reflected by level of training and teaching experience would determine the quality of grades attained in an examination. This was echoed by KESSHA (2021) that indicated that the number and remuneration of teaching and non-teaching staff in schools determined how the schools performed in national examinations hence predicted the quality of education. However, the findings contradict the assertion of the MOE (2014) which indicated a cap on the remuneration and number of human resource per schools which it presumed would influence the quality of education positively. This study established that due to insufficiency of the pricing guidelines to address the human resource of schools, the schools employed fewer staff below the requirement and remunerated them at lower pay than the amount directed by the MOE (2014).

4.4 Implications of the pricing guidelines on the Kenya Certificate of Secondary Education Performance (KCSE)

4.4.1 KCSE performance of sub county schools from 2017-2021

Principals were requested to provide information on performance of their schools in summative evaluation (KCSE). This was then verified with the information obtained from Sub County Directors of Education and County Director of Education offices through data analysis guide. The mean performance of the sampled sub county schools was obtained for each year per Sub County with the help of SPSS. This is presented in Table 4.24

Table 4.26: KCSE Performance of Sub County Schools from 2017-2021

Sub County	2017	2018	2019	2020	2021
Bunyala	3.313	3.146	3.312	4.005	3.555
Busia	2.785	2.927	3.086	3.413	3.180
Butula	3.287	3.233	3.500	3.504	3.029
Nambale	2.015	2.450	2.867	2.957	2.836
Samia	2.506	3.161	3.311	3.746	3.134
Teso North	3.003	3.139	3.435	3.650	3.163
Teso South	2.681	2.962	3.204	3.147	2.840
Mean	**2.786**	**3.003**	**3.250**	**3.471**	**3.080**

Table 4.26 showed that sub county schools in Busia County got a mean of 2.786 in 2017, 3.003 in 2018, 3.25 in 2019, 3.471 in 2020, and 3.080 in 2021. In 2017, Bunyala Sub County led with a mean of 3.313 and Nambale Sub County registered the lowest mean at 2.015. In 2018, Bunyala Sub County still led with a mean of 3.146, a deviation of −0.167 from the previous mean while Nambale was still the last with a mean of 2.867. It is noticeable that Bunyala sub county schools registered highest performance compared to other sub county but

the highest was in 2020 with a mean of 4.005 (D+). On the other hand, Nambale consistently registered low performance of sub county school with the worst being in 2017 at 2.015 (D-). This findings concurred with the assertion of low quality of educational outcomes in Sub County secondary schools as advanced by Fuller (2017) who observed that quality of education deteriorated in as much the as the government implemented various education reforms including changing the pricing guidelines to schools which made education more accessible but with deteriorated quality outcomes

4.4.2 Formative Assessments

The principals were asked to give data on the number of formative assessments done per term. This was because formative assessments when conducted properly were found to influence the outcome of Summative assessment. The more the number of formative assessments conducted in schools was done, the better the KCSE outcome. The more the formative assessments conducted in a school, the more the financial resources required to facilitate such assessments. The pricing guidelines were responsible for availing such financial resources. This was presented in Figure 4.7
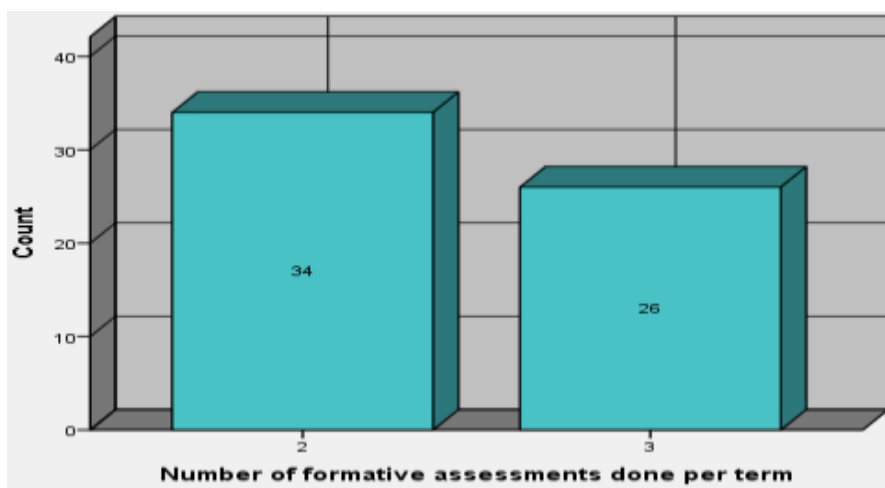
Figure 4.7: Number of formative assessments done per term in various schools

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Figure 4.7 showed that 34(57%) conducted 2 formative assessments per term while 26(43%) conducted 3 formative assessments per term. This finding agreed with the assertion of Eberly (2021). Nevertheless, the number of formative assessments done in a school(Continuous Assessment Tests) was a factor of finances availed in schools through pricing guidelines particularly the Tuition vote head meant for teaching and learning materials and assessments.

4.4.3 Implication of Pricing Guidelines for the conduct of Formative Assessments

Principals being the Chief Accounting Officers (CAO) of the schools provided data on whether the Tuition Vote head was adequate for the conduct of Assessments in schools. The results are presented in Figure 4.8
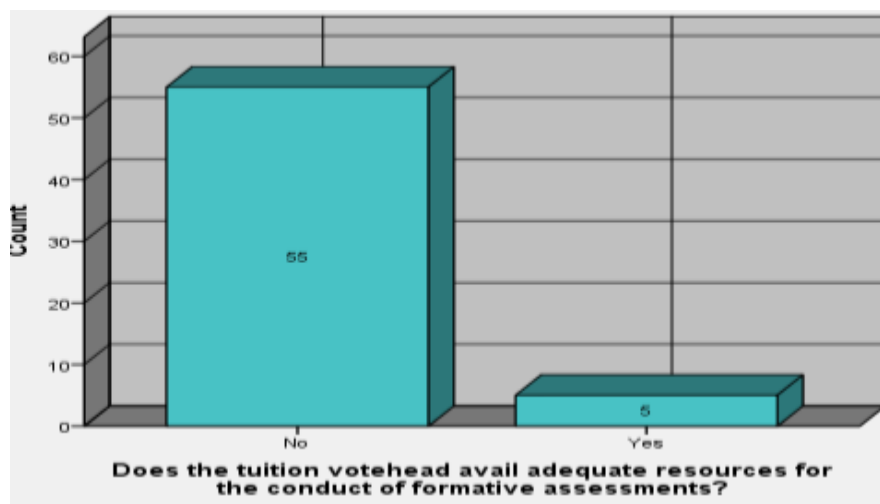
Figure 4.8: Sufficiency of Tuition Votehead for conduct of assessments

Figure 4.8 indicated that 55(92%) Principals asserted that the Tuition Vote head was not adequate to facilitate the conduct of formative assessments whereas 5(8%) were of the contrary opinion. The implication of this was that schools did not effectively conduct assessment for learning to ascertain if learning was taking place due to lack of resources thereby resulting to poor performance in KCSE. This contradicted Kilemi Mwiria (2013) findings that the tuition votehead amount as was proposed was sufficient to provide for effective assessments that could lead to quality assessment outcomes.

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The study further sought explanation on why majority of the principals averred that tuition vote head was inadequate or otherwise. The response was presented in Table 4.27

Table 4.27: Explanation on why the Tuition Vote head was inadequate

Reason why the Tuition Vote head is inadequate	Frequency	Percent
• Allocation is constant despite continuous change in inflation	5	8.3
• Cost of stationery and printing has gone up	10	16.7
• Disbursement is based on enrolment yet the resources required are expensive and there is increased inflation	2	3.3
• Facilitates so many other activities like T/L materials, practicals,e-learning	9	15.0
• Not enough to fund the assessments and other needs	12	20.0
• Not enough to purchase all the assessment requirements	4	6.7
• Not enough to purchase reams of papers and laboratory equipment and chemicals for regular practicals	2	3.3
• Purchase of laboratory equipment and chemicals, exercise books and stationery is far much higher than the amount allocated. Furthermore the government retains money on textbook votehead yet the school lacks relevant revision materials	2	3.3
• Students have to avail a ream of photocopying paper each per term	2	3.3
• Too little to finance all the activities meant for it	6	10.0
• Under funding	6	10.0
Total	**60**	**100.0**

Principals offered varied information on the tuition vote head as outlined in Table 4.27. Twelve(20%) observed that the tuition vote head was not enough to fund the assessments and other needs, 10(17%) indicated that the cost of stationery and printing had gone sup due to inflation, 9(15%) observed that it facilitates so many other activities like T/L materials, practicals, e-learning, 6(10%) indicated that the allocation was too little to finance all the activities meant for it, 5(8%) observed that allocation was constant despite continuous change in inflation among other reasons.

4.4.4 Variation in Internal and KCSE assessment outcomes

The respondents provided data on the variation in the internal and KCSE assessments

outcomes for schools. This is recorded in Figure 4.9
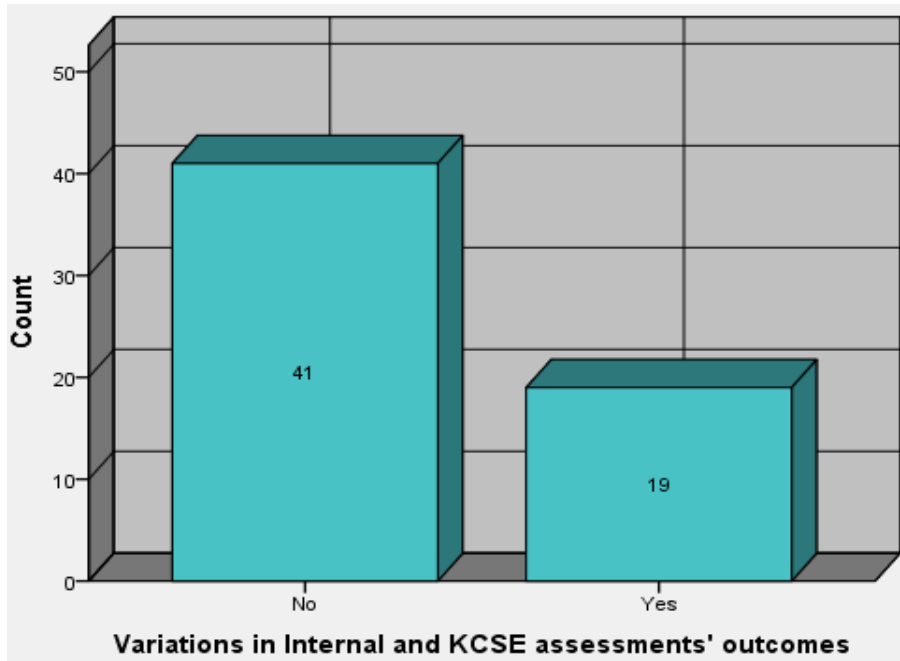
Figure 4.9: Variation between internal and KCSE assessments' outcomes

According to Figure 4.9, 41(68%) principals indicated that there was no variation between

the formative assessments done in the schools in form of Continuous Assessment Tests

(CAT) and end term examinations done internally in the schools and the summative

assessments in form of KCSE. On the contrary, 19(32%) principals indicated that there was

indeed a positive variation between the internal assessments and the KCSE performance. This

showed that when the schools were facilitated through pricing guidelines to conduct effective

internal assessments within the school, the outcomes were not different from the external

assessments.

The study enquired on the percentage variation and the responses were recorded in Figure

4.10
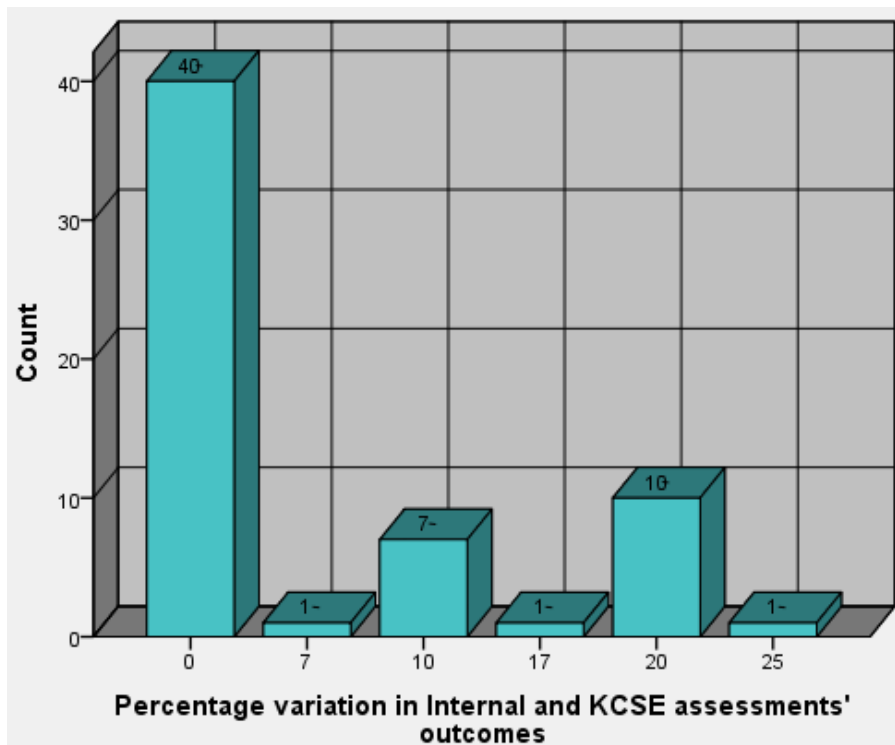
Figure 4.10: Percentage variation in internal and KCSE assessment' outcomes

Figure 4.10 showed that 40(67%) principals indicated that there was no variation, 10(17%) indicated a positive variation of 20%, 7(12%) indicated a negative variation of 10%, 1(2%) principal indicated a negative variation of 25%, 1(2%) principal indicated a negative variation of 17% and 1(2%) indicated a negative variation of 7%.

4.4.5 Implication of the pricing guidelines on the Kenya Certificate of Secondary KCSE performance in public sub-county secondary schools in Busia County, Kenya.

The study determined the influence of KCSE outcomes and the fee paid by individual learners in schools by establishing the nature of the scatter plot between the total fee paid to schools by individual learner and the KCSE performance. The scatter plot for this relationship was then drawn and the result presented in Figure 4.11

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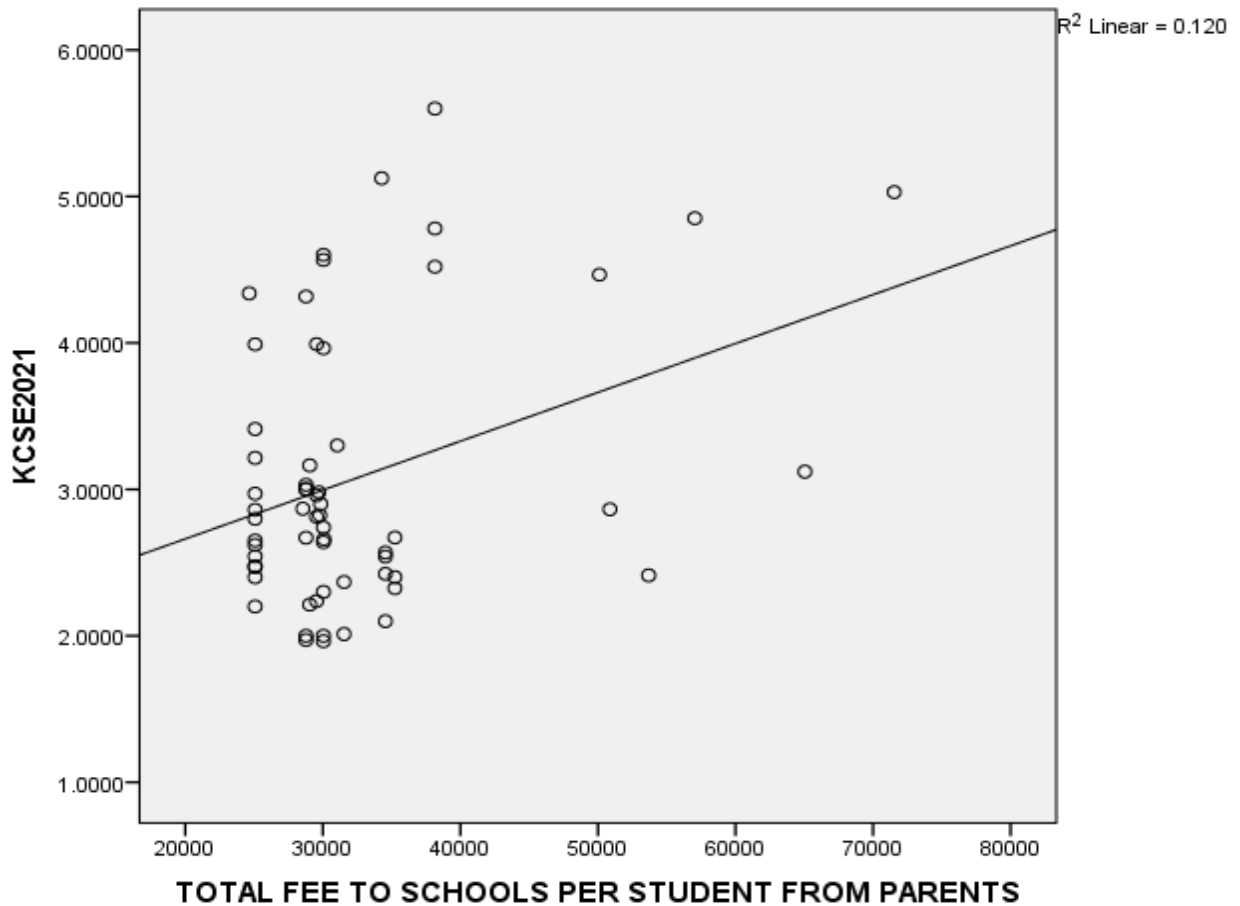
Figure 4.11: Relationship between Total Fee Paid to Schools per student and the KCSE results

There was a positive relationship between the total fee paid to schools per student with mean scores in KCSE with a coefficient of determination of .120 (R^2 =.120). This meant that 12% variance of total fee paid to schools was attributable to the KCSE performance of various public sub county schools in Busia County.

Further, a correlation coefficient between the total fee paid to schools by parents was worked out with the help of Statitistical Package for Social Sciences (SPSS) version 20 in order to determine the magnitude of the relationship. The findings were tabulated in Table 4.26

Table 4.28: Influence of fee paid to schools and the KCSE performance

		KCSE 2021	TOTAL FEE TO SCHOOLS PER STUDENT FROM PARENTS
KCSE 2021	Pearson Correlation	1	.346[**]
	Sig. (1-tailed)		.003
	N	60	60
TOTAL FEE TO SCHOOLS PER STUDENT FROM PARENTS	Pearson Correlation	.346[**]	1
	Sig. (1-tailed)	.003	
	N	60	60

**. Correlation is significant at the 0.01 level (1-tailed).

There was a positive significant relationship between the fee paid to schools and the KSCE performance ($r = .346$, $p < .01$). A positive correlation relationship between variables implied that an increase in one variable was associated with an increase in the other variable. This meant that the higher the fee paid to schools the higher the KCSE performance. It can therefore be intuitively deduced that the poor pricing guidelines that improperly finance schools was a cause of poor academic performance in schools thereby resulting to low quality education.

It can also be echoed from Mwirichia (2020) findings that there were issues in his pricing guidelines resulting in student poor performance in the education system. Indimuli (2019) demanded a change in pricing guidelines to schools in order to avail the vital resources for quality attainment. Nevertheless, change had not occurred by the end of this study. It is therefore inevitable for MOE to consider changing the pricing guidelines in order to realize quality education.

4.5 Optimal Pricing guidelines for Quality Education

The study sought to determine the optimal price for quality education by working out the weighted price from the averages of the expenditures from each vote head for 3 years which was then used to generate a multiple linear regression equation. The coefficients obtained from the regression equation were used to calculate the optimal price payable to the schools by each student.

4.5.1 Fee charged annually by schools

The study posed a question to the principals "Apart from the FDSE capitation, how much fee does your school charge annually?" The responses were tabulated in Table 4.29

Table 4.29: Fee Paid to Schools by Parents and the Government Subsidy

Fee paid by Parents	Cumulative Fee by Parents and Government (Ksh.22244)	Frequency	Percent
24,644	46,888	1	1.7
25,077	47,321	13	21.7
28,544	50,788	1	1.7
28,777	51,021	7	11.7
29,044	51,288	2	3.3
29,544	51,788	4	6.7
29,713	51,957	1	1.7
29,777	52,021	1	1.7
29,844	52,088	1	1.7
30,044	52,288	8	13.3
30,077	52,321	1	1.7
31,044	53,288	2	1.7
31,544	53,788	2	3.3
34,277	56,521	3	1.7
34,544	56,788	4	6.7
35,244	57,488	3	5.0
38,150	60,394	3	5.0
50,107	72,351	3	1.7
Total		60	100.0

From the data gathered from schools, the lowest fee paid by parents was atKsh.24,644 with a cumulative amount of Ksh.46,888, 13(21.7%) charged parents Ksh.25,077 resulting to cumulative total of Ksh. 47,321; 8(13.3%) charged parents Ksh.30,044 resulting to a cumulative total of Ksh.52,288; 7(11.7%) schools charged parents Ksh.28,777 resulting to a cumulative total of Ksh.51,021. 3(5%) schools charged parents Ksh. 50,107 bringing a cumulative total of Ksh.72,351.

It was noted that the fee paid by parents were far much above the government fee ceilings for Sub county schools as stipulated in the Fee guidelines provided in Appendix IX. This was due to the fact that some sub county schools also operated boarding units therefore charged the boarding fee; development fund which were agreed upon by parents of individual institutions, extra levies inform of examination fee, remedial fee, payment of BOM teachers, caution money, Bus funds, reams of photocopying papers, registration of KCSE candidates data in the KNEC portal, registration of learners in the NEMIS. These inflated the fee charged by schools above the government stipulated fee guidelines. Most of these funds were not included in the official fee structure of the various schools but were expressed in the income expenditure accounts. Therefore the amount paid by parents from school to school varied above the government guidelines and parents defied paying some levies which made the institutions to have high sundry debtors beyond 50% each year.

These findings concurred with the observations of Maiyo (Chairperson of Parents Association) (2018), Genevieve (2017), and PWPER (2023), who noted that the pricing guidelines to schools did not resource the schools adequately for quality education though they did not unpack the financial situation in sub county schools which the study revealed.

4.5.2 Sufficiency of Cumulative Funds (Fee and FDSE) in running the schools

Principals were requested in the questionnaire to indicate if the amount of money collected in form of fee and FSE were sufficient to run the school in a year and all the 60(100%) principals indicated that the funds were not sufficient to run the schools effectively in a year and realize quality education.

The principals and Sub county Directors of Education (SCDE) through the interview schedule were required to offer an explanation as to why they indicated that the amount received from both parents and students were inadequate and the emerging themes were presented in Table 4.30

Table 4.30: Explanation on whether the fee and FSE collected in a school is adequate to run the school annually

Emerging Themes	Frequency	Percent
• Charge on parents is too low to cater for the school's needs	2	3.3
• Cost of living has gone up while funding to schools has remained constant overtime	2	3.3
• Expenditure surpasses the income	17	28.3
• Fee payment of below 50%	17	28.3
• Inflation	22	36.7
Total	60	100.0

From Table 4.30, 22(36.7%) respondents alluded to the ever rising inflation as the reason why the funds were not sufficient to run the schools for a year; 17(28.3%) principals indicated that the fee payment by parents was too low (below 50%) and the government

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retained funds on some vote heads (books, activity, medical insurance) resulting to schools receiving Ksh.14600 from Ksh.22244; 17(28.3%) principals indicated that their expenditures surpassed the income resulting to huge debts owed to sundry creditors; 2(3.3%) respondents gave out an explanation that the Cost of living had gone up while funding to schools had remained constant overtime and 2(3.3%) respondents indicated that the Charge on parents was too low to cater for the school's needs.

4.5.3 Recommendations to the government from the Principals on how to address financing of sub county public secondary schools

The study required to give some mitigation measures on how to address the financial situations in public sub county secondary schools in order to operate efficiently and ensure quality education by interviewing the SCDE and the findings reported in Table 4.31

Table 4.31: Recommendations from the SCDE on how financial situation can be addressed in public sub county secondary schools

Themes	Sub Themes
Allow parents pay more on top of lunch of Ksh. 10000	Increased parental obligation
Allow the schools to review the figure upwards	Increased parental and Govt. obligation
Cost sharing on 50%-50% basis between government and parents	Increased parental and Govt. obligation
Finance schools according to their needs	Need-Based Financing
Free feeding programme,	Feeding programme
Government to increase capitation to check on inflation	Increase capitation
Reassess the unit cost of schooling and review the FSE capitation and generally the mode of funding	Mode of funding
Review the fees and FSE funding to be consistent with inflation and cost of living	Inflation

From Table 4.31, the major themes emanating from the responces from SCDE on how the financial situation in schools could be improved were: Allow parents pay more on top of lunch of Ksh. 10000; Allow the schools to review the figure upwards; Cost sharing on 50%-

50% basis between government and parents; Finance schools according to their needs; Free feeding programme; Government to increase capitation to check on inflation; Reassess the unit cost of schooling and review the FSE capitation and generally the mode of funding; Review the fees and FSE funding to be consistent with inflation and cost of living . The following sub-themes emerged from the findings: Increased parental obligation; Increased parental and Govt. obligation; Need-Based Financing; Need-Based Financing; Increase capitation; Mode of funding and Inflation.

4.5.4 Allocation and expenditure per vote head

The principals were asked to respond to how the money received in schools were allocated and spent and the deficit realized per vote head. The response was presented in indicated in Appendix xiii. It showed that most schools allocated sh.4144 to tuition, sh. 5000 to RMI, Ksh. 10000 to lunch, sh.5000 to development, sh. 1890 to LTT, 890 for administrative costs, sh. 1500 for activity and the BES ranged from 5200 to sh. 35000.This was further analyzed using descriptive statistics and presented in Table 4.32

Table 4.32 Summary of the allocations per vote head

Vote head	N	Minimum	Maximum	Mean	Std. Deviation
Tuition Vote head	60	4144	4644	4163.47	90.822
Boarding Equipment and Stores (BES)	60	0	35000	3724.83	8810.052
Repairs, Maintenance and Improvement(RMI)	60	600	6000	4183.33	2002.809
Local Transport and Travel (LTT)	60	529	2000	1517.37	452.499
Administration	60	808	2000	1220.40	469.731
Electricity, Water and Contingency (EWC)	60	500	2151	1002.38	411.823
Activity	60	500	1550	1478.33	184.429
Personal Emolument(PE)	60	1500	5755	4600.22	957.044
Lunch	60	0	13000	9850.00	1505.076
Development	60	0	5000	788.33	1595.023

From Table 4.32, schools allocated and spent a minimum of Ksh. 4144 and a maximum of Ksh.4644 resulting to a mean allocation of sh.4163 with a standard deviation of sh.90.80. Boarding Equipment and Stores (BES), the minimum allocation was sh.0 for day schools and a maximum allocation of sh.35000 for boarders in sub county schools resulting to a mean allocation of sh.3724.80 with a standard deviation of sh.8810. For RMI, schools allocated a minimum of sh.600 and a maximum of sh.6000 giving a mean of sh. 4183.30 and a standard deviation of sh.2002.90.

Schools allocated a minimum of sh.529 and a maximum of sh.2000 with a mean of sh.1517 and standard deviation of sh.452.50 to LTT. For administration costs, the schools allocated a minimum of sh. 808 and a maximum of sh.2000 with a mean of 1220.40 and a standard deviation of 469.70. For EWC, schools allocated a minimum of sh.500 and a maximum of sh.2151 with a mean of sh.1002.40 and standard deviation of sh.411.80. For activity, the schools allocated a minimum of sh.500 and a maximum of sh.1550 with a mean of sh.1478.30 and a standard deviation of sh. 184.40. For Personal Emolument (PE), the schools allocated a minimum of sh.1500 and a maximum of sh.5755 with a mean of sh.4600.20 and a standard deviation of sh.957. For lunch, boarding schools did not charge therefore allocated sh.0 while the maximum allocation was sh.13000 with a mean of sh. 9850 and standard deviation of sh.1505. For development, schools allocated a minimum of sh.0 for schools which did not levy the funds on the parents but those that did levied a maximum of sh. 5000 giving a mean of sh. 788.30 and standard deviation of sh.1595.

The allocations and reallocations of voteheads contradicted the directives given by MOE contained in fee guidelines annexed in Appendix IX. Thus contradicted Kilemi Mwiria(2014) pricing Guidelines thereby implying that the pricing guidelines had to be modified to enable the principals run the schools.

4.5.5 Adequacy of various vote heads

The principals were asked to indicate whether the vote heads as allocated and provided for in the pricing guidelines were adequate and sufficient to cater for all the expenditures and services required of them. The responses were recorded in Table 4.33.

Table 4.33: Adequacy of the Various Vote heads

VOTEHEAD	NO		YES	
	Count	Percent	Count	Percent
Boarding Equipment and Stores (BES)	58	96.7	2	3.3
Repairs Maintenance and Improvement (RMI)	55	91.7	5	8.3
Local Transport and Travel (LTT)	58	96.7	2	3.3
Administration Costs	58	96.7	2	3.3
Electricity, Water and Contingency (EWC)	55	91.7	5	8.3
Activity	57	95.0	3	5.0
Personal Emolument (PE)	59	98.3	1	1.7
Lunch	57	95.0	3	5.0

According to Table 4.33, 58(96.7%) principals indicated that BES vote head is insufficient, 2(3.3%) indicated it was sufficient; 55(91.7%) principals responded that RMI funds were insufficient, 5(8,3%) indicated that it was sufficient. For LTT, 58(96.7%) indicated that it was inadequate whereas 2(3.3%) indicated that it was adequate. For Administrative Costs, 58(96.7%) principals indicated that it was inadequate but 2(3.3%) principals indicated that it was adequate. For EWC, 55(91.7%) principals indicated that it was inadequate while 5(8.3%) showed that it was adequate. For activity vote head, 57(95%) principals indicated that it was inadequate but 3(5%) showed that it was adequate. For PE, 59(98.3%) indicated

that it was inadequate while 1(1.7%) indicated that it was adequate. For Lunch funds, 57(95%) principals indicated that it was inadequate whereas 3(5%) principals indicated that it was adequate. Hence all the vote heads had inadequate funding. This concurred with the World Bank (2019) which noted that developing countries underfunded their educational institutional institutions thus lowering quality education hence advised developing countries to increase funding to schools.

4.5.6 Expenditures on various vote heads

Data on the expenditure per vote head was obtained from the school audit reports and school budgets sourced from the County School Audit (CSA) and various schools respectively. The average expenditure from each vote head for 3 years was calculated and divided by the school enrolment for various years in order to obtain unit expenditure per student in the various vote heads and was presented in Table 4.34.

Table 4.34: Expenditures and Optimal Price Per Student

Expenditure on Vote head	N	Minimum	Maximum	Mean	Std. Deviation
Expenditure on Tuition	60	4144	9644	7580.13	1151.776
Expenditure on Boarding, Equipment and Stores	60	0	43000	5549.83	9938.794
Expenditures on Repairs Maintenance and Improvement	60	1300	9000	6150.00	2768.864
Expenditures on Local Transport and Travels	60	1129	4650	2335.70	714.228
Expenditures on Administrative Costs	60	1290	5000	1838.73	901.516
Expenditures on Electricity, Water and Contingency	60	700	2651	1443.93	442.356
Expenditure on Activity	60	1500	4550	2811.67	582.322
Expenditure on Personal Emolument	60	3500	11000	6483.55	1114.731
Expenditure on Lunch	60	0	17000	14825.00	2047.787
DEVELOPMENT	60	0	5000	788.33	1595.023
Optimal Price per Student	60	35577	98044	49696.20	12376.704

Table 4.34 indicated that schools spent minimum of Ksh.4,144 and a maximum of Ksh.9,644 with a mean of Ksh.7,580 and a standard deviation of 1,151.80 on Tuition vote head. Expenditure on Boarding, Equipment and Stores was at a minimum of Ksh.0 for pure day

schools and a maximum of Ksh.43,000 for boarders with a mean of Ksh.5549.80 and standard deviation of 9,938.80. Expenditures on Repairs Maintenance and Improvement were at a minimum of Ksh.1,300, maximum of Ksh.9,000 with a mean of Ksh.6,150 and standard deviation of 2,768.90. Expenditures on Local Transport and Travels were at minimum of Ksh.1,129, maximum of ksh.4,650 with a mean of Ksh.2,335.70 and standard deviation of 714.30.

Expenditures on Administrative Costs were minimum at Ksh.1,290 and maximum at Ksh. 5,000 with a mean of Ksh.1,838.70 and standard deviation of 901.60. Expenditures on Electricity, Water and Contingency was minimum at Ksh.700, maximum at Ksh.2,651 with a mean of Ksh.1,444 and standard deviation of 443. Expenditure on Activity was minimum at ksh. 1,500, maximum at Ksh.4,550 with a mean of Ksh. 2,811.70 and standard deviation of 582.40. Expenditure on Personal Emolument was minimum at Ksh.3,500, maximum at Ksh.11,000 with a mean of Ksh.6,483.60 and standard deviation of 1,114.80. Expenditure on development ranged from Ksh.0 to Ksh. 5,000 with a mean of 788.40 and standard deviation of 1,595.10.

The data above generated an optimal price that should have been paid per student in order for the schools to operate optimally at Minimum of Ksh.35,777, Maximum of Ksh.98,044 with a mean of Ksh.49,696.20 and a standard deviation of 12,376.80.These descriptive statistics of the expenditures of each vote head was obtained through the analysis of case by case summaries of the vote heads presented in Appendix xiv. The summary helped in working out the optimal cost of operation for schools which was labelled as the optimal price per student.

4.5.7 Determination of Optimal Price Equation pricing guidelines

The study sought to determine an equation that could be used from time to time to determine the price per learner that should be due to the institution. This was done by calculating a

weighted price worked out from the averages of the expenditures from each vote head for 3 years which was then used to generate a multiple linear regression equation. The assumptions underlying the test of multiple linear regression (linearity, homoscedasticity, normality, independence of errors, multicollinearity and independence of independent variables) were checked part of which were reported in Apppendix XIV. The coefficients obtained from the linear regression equation was used to calculate the optimal price payable to the school by each student enrolled depending on the weight of each vote head. The model summary was reported in Table 4.35.

Table 4.35: Multiple Linear Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.796[a]	.591	.789	1275.115

a. Predictors: (Constant), Expenditure on Lunch, Expenditure on Tuition, Expenditures on Electricity, Water and Contingency, Expenditure on Activity, Expenditures on Repairs Maintenance and Improvement, Expenditure on Boarding, Equipment and Stores, Expenditures on Local Transport and Travels, Expenditure on Personal Emolument, Expenditures on Administrative Costs
b. Dependent Variable: Optimal Price per Student

The model summary demonstrates a strong positive relationship ($R=.796$) between the predictors and the dependent variable, with approximately 59.1% of the variance in the dependent variable explained by the independent variables ($R^2=.591$). The adjusted R Square of .789 suggests that while the model provides a good overall fit, there may be some predictors that are not significantly contributing to the explanation of the dependent variable's variance with standard error of the estimate at 1275.115.

Table 4,36 : ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	8804932840.345	9	978325871.149	601.706	.000[b]
1	Residual	79670039.215	49	1625919.168		
	Total	8884602879.559	58			

a. Dependent Variable: Optimal Price per Student

b. Predictors: (Constant), Development,Expenditure on Lunch, Expenditure on Tuition, Expenditures on Electricity, Water and Contingency, Expenditure on Activity, Expenditures on Repairs Maintenance and Improvement, Expenditure on Boarding, Equipment and Stores, Expenditures on Local Transport and Travels, Expenditure on Personal Emolument, Expenditures on Administrative Costs

Table 4.36 indicated the statistical significance of a regression model attempting to predict optimal price per student. The F-statistic, which assessed whether the model effectively explains variance in optimal price per student, yielded a significant p-value of 0.000, against the standard significance level of 0.05. This suggests that there was relationship between the predictors, and the dependent variable.

The regression coefficients were then obtained and reported in Table 4.37

Table 4.37: Regression Coefficients of Various vote heads

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-4909.882	5562.030		-.883	.382
Expenditure on Tuition	.198	.222	.060	3.144	.003
Expenditure on Boarding, Equipment and Stores	.58	.024	.789	43.653	.000
Expenditures on Repairs Maintenance and Improvement	.127	.118	.254	9.575	.000
Expenditures on Local Transport and Travels	.042	.537	-.082	-2.650	.011
Expenditures on Administrative Costs	.496	.469	.110	3.186	.003
Expenditures on Electricity, Water and Contingency	.036	.537	.073	3.793	.000
Expenditure on Activity	.048	.984	.113	2.530	.015
Expenditure on Personal Emolument	.173	.396	.058	1.698	.096
Expenditure on Lunch	.137	.378	.080	4.064	.000
Development	.066	.025	.176	3.91	.000

a. Dependent Variable: Optimal Price per Student

The regression coefficients as indicated in Table 4.35 revealed the following vote head weights: Expenditure on Tuition .198, Expenditure on BES .58, Expenditure on RMI .127, Expenditure on LTT .042, Expenditure on Administration .496, Expenditure on EWC .036, Expenditure on Activity .048, Expenditure on PE .173, Expenditure on Lunch .137, Development .066.

This study noted that the existing price guidelines to schools from MOE from time to time never considered the inflation rate. According to Kenya Bureau of Standards (KNBS, 2022),

Kenya experienced the highest inflation rate in the month of July 2022 at 8.22, June 7.91, May 7.08, April 6.47, March 5.56, February 5.08, January 5.39. Therefore, the average annual inflation rate was at 6.45. Gogo (2010) asserted that in determination of fee paid to schools, inflation should be taken into account therefore fees should be revised from time to time to take care of the inflation.

The value of different vote heads in optimal price determination was as presented in Table 4.38

Table 4.38: Value of Vote heads in determination of optimal price

Value of Each Vote head	Mean	Std. Deviation
Total Fee to Schools Per Student (Day Scholars)	32528.67	9611.433
Total Fee to Schools Per Student (Boarders)	49696	12376.704
Tuition Vote head	4163.47	90.822
Boarding Equipment and Stores	3724.83	8810.052
Repairs, Maintenance and Improvement	4183.33	2002.809
Local Transport and Travel	1517.37	452.499
Administration	1220.40	469.731
Electricity, Water and Contingency	1002.38	411.823
Activity	1478.33	184.429
Personal Emolument	4600.22	957.044
Lunch	9850.00	1505.076
Development	788.33	1595.023

For the purpose of optimal price determination for Sub county Schools, Day scholars Regression equation had a constant of Ksh.32528.70, Boarders Ksh.49696 distributed in

various vote heads as follows: Tuition vote head Ksh.4163.50, BES Ksh.3724.80, RMI Ksh.4183.30, LTT Ksh.1517.40, Administration Ksh.1220.40, EWC Ksh.1002.40, Activity Ksh.1478.30, PE Ksh.4600.20, Lunch Ksh.9850 and Development Ksh.788.30. The weight of each vote head was obtained in determining optimal pricing guidelines from the regression coefficient as shown in Table 4.37

Hence considering the various weights of each vote head and the existing rate of inflation, the optimal price for sub county schools (day scholars and boarders) were determined from the multiple linear regression coefficients as follows:

Optimal Price (Day Scholars): $y = 27618.10 + 0.198x_1 + 0.58x_2 + 0.127x_3 + 0.042x_4 + 0.496x_5 + 0.036x_6 + 0.048x_7 + 0.173x_8 + 0.137x_9 + 0.066x_{10} + \beta$

Optimal Price (Boarders): $y = 44786.10 + 0.198x_1 + 0.58x_2 + 0.127x_3 + 0.042x_4 + 0.496x_5 + 0.036x_6 + 0.048x_7 + 0.173x_8 + 0.137x_9 + 0.066x_{10} + \beta$

Where; 27 618.10 for day scholars was obtained by adding the constant of -4909.90 to (Table 4.37) to the base value of 32528 (Table 4.38). Similarly, for boarders equation 44786 was obtained by adding the constant of -4909.90 to (Table 4.37) to the base value of 49696 (Table 4.38) whereas x_1 = Tuition votehead fixed at Ksh.4,163.50; x_2= BES fixed at Ksh. 3,724.80; x_3= RMI fixed at Ksh.4,183.30; x_4 = LTT fixed at Ksh. 1,517.40; x_5=Administration fixed at Ksh.1,220.40; x_6= EWC fixed at Ksh.1,002.40; x_7 = Activity fixed at Ksh.1,478.30; x_8 = PE fixed at Ksh.4,600.20 ; x_9 = Lunch fixed at Ksh. 9,850; x_{10} = Development fixed at Ksh. 788.30 β = Inflation at 0.0645 equivalent to 6.45% of the prevailing dollar to Ksh. Exchange rate fixed at the highest exchange rate as at August 2022 of 1$ =Ksh.119.20

Hence in order for optimal price operations as illustrated in the multiple linear regression equations so determined, the public sub county secondary schools should charge price per

student as follows; Day scholars, Ksh. 33,718; Boarders Ksh. 50,886. These amounts included both the government capitation and the parents' contributions. These findings contradicted the proposal of the PWPER (2023) of adjusting fee to schools to Ksh. 22,527 with government paying everything. The sh.22, 527 was way below the running expenditures of schools as determined and fixed at Ksh. 33,718 for day scholars and sh.50,886 for boarders. However, the study concurred with the previous scholars and reports like Gogo (2010), KNBS (2022), and PWPER (2023) on continuous revision of the pricing guidelines after a given duration especially 3 years in order to check on inflation which changes overtime.

Therefore in order for schools to operate optimally and ensure effective services with adequate resources in schools, the study suggested that both Government and Parents should have an obligation if fee payment as in Table 4.39

Table 4.39: Parents and Government obligations in Fee payment

Value of Each Vote head	Dayscholars			Boarders		
	Parents	Government	Total	Parents	Government	Total
Tuition Vote head	0	4792	4792	0	4792	4792
Boarding Equipment and Stores	0	0	0	17168		17168
Repairs, Maintenance and Improvement	0	2886	2886	0	2886	2886
Local Transport and Travel	0	1833	1833	0	1833	1833
Administration	0	1572	1572	0	1572	1572
Electricity, Water and Contingency	0	3428	3428		3428	3428
Activity	0	1256	1256	0	1256	1256
Personal Emolument	0	5760	5760	0	5760	5760
Lunch	11191	0	11191	11191	0	11191
Development	0	1000	1000		1000	1000
Total	**11,191**	**22,527**	**33,718**	**28,359**	**22,527**	**50,886**

Table 4.39 elaborated that for quality to be obtained in sub county secondary schools, the fee should be adjusted such that day scholars pay Ksh.33, 718 where the parents pay Ksh.11,191,

government Ksh. 22,527 (adopted from PWPER, 2023). For boarders the fee should be adjusted to Ksh. 50,886 per annum whereby parents should payKsh.28,359 and the government Ksh.22, 527. Tuition votehead should be allocated Ksh.4792 with the parents paying sh.0 and the government sh.4792. BES votehead should be charged on boarders only where the parents should pay Ksh. 17168. RMI votehead should be allocated Ksh.2886 with the parents paying sh.0 and the government sh.2886. LTT votehead should be allocated Ksh.1833 with the parents paying sh.0 and the government sh.1833. Administration votehead should be allocated Ksh.1572 with the parents paying sh.0 and the government sh.1572. EWC votehead should be allocated Ksh.3420 with the parents paying sh.0 and the government sh.3420. Activity votehead should be allocated Ksh.1256 with the parents paying sh.0 and the government sh.1256. PE votehead should be allocated Ksh.5760 with the parents paying sh.0 and the government sh.5760. Lunch votehead should be allocated Ksh.11191 with the parents paying the whole amount for day scholars. Development fund votehead should be allocated Ksh.1000 with the parents paying sh.0 and the government sh.1000.

The data analysis elaborated what the pricing guidelines were able to avail in terms of resources with which to offer quality education. It was noted that there were inadequacies and insufficiencies ranging from infrastructure to impairment of services with high teacher shortages. The performance of students in examinations was not equally admirable. The actual expenditures in schools were beyond what the pricing guidelines were able to avail. Therefore quality of education continued to deteriorate with time in the sub county schools**.** These findings were echoed by MOE in Sessional Paper No.1 of 2019, MOE Statistical Booklet 2021, KNUT (2017), Genevieve (2017) and PWPER (2023) who advised on increase in capitation. However, they did not provide the actual figures that should be charged on each vote head and the pricing guidelines for sub county schools which this study did.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to determine the implications of pricing guidelines on the quality of education of public sub-county secondary schools in Busia County, Kenya. The summary of the research findings, conclusions and recommendations for policy makers and suggestions of topics for future researchers and educational practitioners were indicated per objective as follows;

5.2 Summary of Research Findings

5.2.1 Implications of pricing guidelines on the provision of infrastructural facilities

An analysis of the first objective of the study revealed that the sub county schools in Busia County had 68 laboratories with a shortage of 117 and 889 doors of toilets with a shortage of 279 doors of toilets. The schools had 520 classrooms with a shortage of 110 classrooms resulting to a percentage shortage of 21.15%. Therefore, the pricing guidelines did not adequately avail infrastructures in schools. This created unequitable learning environment for learners to actively participate in quality learning due to, lack of enough classrooms, laboratories and toilets that are prerequisites for quality education to be ascertained. .

The study further established that the current number of classrooms influenced the academic performance of schools by 17.8%, current number of laboratories influences the academic performance by 40% and the current number of total toilets per school influenced the academic performance by 18%. The study therefore established that there was significance relationship between the existing number of infrastructure and the academic performance of schools. Consequently, shortage of infrastructure brought about by the pricing guidelines

accounted for the low quality of education in the public Sub county schools in Busia County, Kenya

5.2.2 Implications of the pricing guidelines on the availability of and remuneration of human resources

This objective was investigated against the number of teachers and their remuneration both BOM and TSC that a school had against the required CBE and the number of support staff as per the staffing norms issued by MOE. The study found out that the CBE of public sub county secondary schools in Busia County was at 1292 teachers with 681 subjects offered. The number of teachers employed by TSC was at 712, teachers employed on BOM terms at 342 with an overall teacher shortage of 561. The study noted that BOM teachers accounted for 30% of the staffing in Sub County schools in Busia County. However, despite this high percentage of BOM teachers employed in all the schools in Busia County, the pricing guidelines did not account for their remuneration necessitating the principals to flout the pricing guidelines by reallocating resources to cater for their remuneration. Even with the reallocation, the funds were not sufficient for the employment and remuneration of teachers the schools required. The study also established that some schools charged parents to pay for BOM teachers. Due to the huge shortage of staff, most schools mitigated this through the utilization of students on teaching practice.

Busia county public sub county had employed a total of 557 non-teaching staff against a maximum of 506. This indicated excess employment of this cadre of employees by 51(10%). The study revealed that Ksh. 110,888,904 was required to remunerate 557 non-teaching staff in Public sub county secondary schools in Busia County but only Ksh.86, 672,820 was used leaving a deficit of Ksh.24, 216,084 which the schools owed the non-teaching staff by 31st December, 2022. This information showed that schools were operating on deficits in

remunerating non-teaching staff thereby making the pricing guidelines ineffective in addressing the non-teaching staff adequate employment and remuneration.

The number of teachers influenced the academic performance of schools by 49.5%, current number of Non-teaching staff influenced the academic performance by 11.1%. Remuneration of the teaching staff accounted for 8% of the academic performance of schools in KCSE while remuneration of non-teaching staff accounted for 5% of the academic performance of schools in KCSE. The study thus established that there was significant relationship between the pricing guidelines as it influenced the existence and remuneration of human resource that in turn had significant influence on the academic performance of schools.

5.2.3 Implications of the pricing guidelines on the Kenya Certificate of Secondary Education examination (KCSE) performance

The study established that the public sub county schools in Busia County had KCSE mean scores of 2.786 in 2017, 3.003 in 2018, 3.25 in 2019, 3.471 in 2020, and 3.080 in 2021. These generated an overall mean of 3.128 (D) for the sub county schools from 2017-2021. This performance was too low and indicated low quality education outcome. The study also revealed that schools conducted 2-3 formative assessments per term. The principals indicated that pricing guidelines did avail insufficient finances to provide adequate materials for the conduct of assessments.

There was a positive significant relationship between the fee paid to schools and the KSCE performance ($r = .346$, $p < .01$) with a coefficient of determination of .120 ($R^2 = .120$). A positive correlation relationship between variables implied that an increase in one variable was associated with an increase in the other variable. This meant that the higher the fee paid to schools the higher the KCSE performance. It can therefore be intuitively deduced that the

poor pricing guidelines that improperly finance schools was a cause of poor academic performance in schools thereby resulting to low quality education.

5.2.4 Optimal pricing guidelines for quality Education

The study established that schools charged a cumulative fee of Ksh.46888 to Ksh. 72351 annually. This wide variation was attributable to the pricing guidelines which allowed the individuals to determine price at their level in some voteheads like development and the fact that the pricing guideline did not provide enough funds for the operations of schools. Hence the principals took advantage and charged extra levies which varied from school to school. The amounts were far much beyond the government fee ceilings. The extra levies were examination fee, remedial fee, payment of BOM teachers, caution money, Bus funds, reams of photocopying papers, registration of KCSE candidates' data in the KNEC portal, registration of learners in the NEMIS in search for quality education.

All the respondents indicated that the fee paid to schools from each learner was not sufficient to fund all the requirements of the school and noted that the guidelines did not take care of inflation. Allocation in each votehead was not adequate to finance programmes under them. Schools incurred debts in all the voteheads with serious reallocations of voteheads to finance what was not meant for them. The voteheads accounted for 95.8% of the total financial resources spent in schools. Therefore the major financiers of school programme were government and parents. The optimal price for dayscholars in sub county schools was determined at Ksh.33, 718 of which parents should pay Ksh.11, 191 and government Ksh. 22,527 and boarders at Ksh.50, 886, with parents paying Ksh. 28,359 and government Ksh. 22,527 considering the trends of expenditures and inflation for the last three years.

5.3 Conclusion

The purpose of this research was to determine the implications of pricing guidelines on the quality of education of public sub county secondary schools in Busia County, Kenya. The findings revealed that the pricing guidelines did not avail adequate infrastructure in form of classrooms, laboratories and toilets. This lack of adequate infrastructure created unequitable learning environment and strain on the existing school infrastructure that could not ascertain quality education.

Further, the pricing guidelines did not address the teaching staff inadequacies in schools. However, the principals used school finances to employ and remunerate teachers, an act which contradicted the provisions of fee guidelines to schools. Worse still, non-teaching staff in public sub county schools was not adequately remunerated as schools accumulated huge debts owed to them. The principals did not equally observe the staffing norms issued by MOE on the cap of the number of non-teaching staff to schools as there were 51 excess non-teaching staff personnel employed. This further created strain on the available finances to schools for effective service delivery thereby jeopardizing quality education.

The findings revealed that the KCSE performance for sub county schools category was constantly low from 2017 to 2021 with remarkable deviations from school to school. It was noted that schools that charged higher fees performed better thus pricing guidelines as implemented from school to school predicted the scores of sub county schools in KCSE.

Moreover, the pricing guidelines insufficiently resourced schools for quality education. All the voteheads that constitute the pricing guidelines proved inadequate to finance what was meant for them.

5.4 Recommendations

On the basis of the conclusions made from the study, the study recommended the following for quality education to be ascertained;

1. The pricing guidelines to schools should be revised in order to provide adequate infrastructural facilities in public sub county secondary schools in Busia County.

2. The pricing guidelines should accommodate the employment and remuneration of teaching staff to supplement those that are deployed to schools by TSC. Further strict adherence to the staffing norms should be enforced in order to ensure that schools do not overemploy non-teaching staff.

3. The schools should be financed adequately and in order to achieve high education outcomes in form of performance in national examinations and to reduce the variations in KCSE performance from school to school.

4. The MOE should revise the pricing guidelines for sub county secondary schools so that day scholars are charged sh.33, 718 per annum and boarders charged sh.50, 886 per annum in order to address resource needs of schools so as to enable them adequately and sufficiently acquire resources with which to offer quality education.

5.5 Suggestions for Further Research

5.5.1 A study should be conducted to suggest ways through which government can foster adherence to the financial guidelines issued to Principals by the government.

5.5.2 A study should be conducted to suggest ways in which public secondary schools can supplement the income received from parents and government

5.5.3 A study should be conducted to ascertain if the pricing guidelines ensure equity in education in various secondary schools in Kenya.

5.5.4 A study should be done to establish the causes of poor fee payment in Public sub county secondary schools in, Kenya.

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APPENDICES

APPENDIX I: INFORMED CONSENT

You are being requested to participate in a research study entitled: *Implications of Pricing Guidelines on the quality of education in public sub county Secondary schools in Busia County, Kenya.* The purpose of this study is to determine the implications of pricing guidelines on the quality of education of public sub-county secondary schools in Busia County, Kenya.

In order to participate in the study, you will be asked to fill out a questionnaire that has 26 items. Finishing the questionnaire should take approximately 20 minutes. Your participation in this study is voluntary. If you sign the bottom of this Form, it means that you are giving your consent to be in the study. You will NOT write your name on the questionnaire and this Form is separate from the questionnaire—this ensures that your identity will not be revealed. No one other than the researcher and advisers will have access to the data. All data will be kept on a password protected computer.

If you do not want to participate in the study, do not begin filling the questionnaire or participating in other research activities. If you start to fill the questionnaire and decide you do not want to participate, stop filling it and give it to the researcher. There is no penalty for not participating and your questionnaire will not be used.

If you participate, you will contribute to knowledge about increased understanding of the financial resources that should be availed in schools to enable them operate optimally. There are no identifiable risks in participation. The researcher will answer any questions that you have about the study and you should ask them now.

If you have complaints or concerns about this research, please contact:

The Secretary, Maseno University Ethics Review Committee, Private Bag, Maseno;

Telephone numbers: 057-51622, 0722203411;

Email address: muercsecretariate@maseno.ac.ke

Thank you.

Hezekiah Adwar Othoo (Doctoral Student in Planning and Economics of Education)

By signing below, I agree to participate in this research.

Signature _____Date _____

APPENDIX II: QUESTIONNAIRE FOR PRINCIPALS

I am a post-graduate student at Maseno University. The questions below address the pricing guidelines used in financing public sub – county secondary schools in Busia county,Kenya. Your school has been chosen and you are requested to respond to the questions as honestly as possible. The researcher would like to assure you that the information you provide will be highly confidential and will be used for research purposes only.

Section A: Pricing Guidelines versus Infrastructure

1. Fill in the number of streams per form as in the table below.

Form	Streams
1	
2	
3	
4	

2. Indicate the enrolment of your school as provided in the table below

Girls	Boys	Total

3. Fill in the table below

Infrastructure	Current Number	Shortage	Total
Classrooms			
Laboratory			
Toilets			

4. What is the average class size in your school? _____

5. How much development fund does the school get from each student per year?

_____

_____

6. a) Has your school ever received infrastructure improvement fund from the government in the last five years? Yes ☐ No ☐

b) If yes, was it spent, was it adequate

_____

_____

_____

c) If NO, why

_____

_____

7. Apart from FDSE and infrastructure improvement fund, which other support has your school received in the last five years.

_____

_____

_____

8. Who is the major financier of development projects in your school?

a) Parents ☐ b) Government ☐ c)Donors ☐ d) Community ☐

9. What strategies has the school put in place to ensure adequate number of classrooms and laboratories?

_____

_____

_____

_____

10. From your experience as an administrator, does the current government fee guidelines on development fund avail adequate classrooms and laboratories to the schools?

a) If No, explain

_____

_____

_____

_____

b) If Yes, how

_____

_____

_____

_____

11. How can the situation be rectified?

_____

_____

_____

12. Indicate the number of toilets for boys and girls as specified in the table below

Girls	
Boys	

Section B: Pricing Guidelines versus Human Resource

13. a) What is the CBE of this school? _____

b) How many TSC teachers are currently posted to this school? _____

c) How many Non - Teaching staff is currently employed in this school? _____

14. How many BOM teachers has the school employed? _____

15. What number of teachers does the school lack in order to meet its CBE requirement?

_____

16. What percentage of the Personal Emoluments facilitates the employment and payment of

BOM teachers _____

17. a) Is the Personal emolument money sufficient to facililate employment and payment of

salary to BOM teachers?   Yes [ ]   No [ ]

b) If No, what is the shortage, _____

c) What strategies does the school employ to ensure adequate number of teaching staff?

_____

_____

_____

18. a) How many subjects does the school offer? _____

   b) Are there enough teachers for each subject?

    Yes [ ]   No [ ]
   c) If No, indicate the subjects affected and the shortage

_____

_____

_____

_____

Section C: pricing guidelines versus KCSE Outcomes

19. Provide the KCSE performance of your school for the periods indicated in the table below

Year	KCSE Performance (Mean)

2021	
2020	
2019	
2018	
2017	

20. How many formative assessments does the school carry out on average in a term?

_____

21. a) Does the tuition votehead avail adequate materials for the conduct of formative

assessments in the school?   Yes [ ]   No [ ]

   b) If No, explain

_____

_____

_____

_____

   c) If yes, how?

_____

_____

_____

_____

22. a) Is there any significant variation in the internal and KCSE assessments outcomes of the

school?   Yes [ ]   No [ ]

   b) If yes, by what percentage _____

   23. Explain some of the strategies that the school has adopted to ensure good performance

   in national examinations.

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_____

_____

_____

Section D: Optimal Pricing Guidelines

23. Apart from the FSE capitation, how much fee does your school charge annually?

    Provide in the table below

Form (F)	Fee (Ksh.)
F1	
F2	
F3	
F4	

24. How much do you get from the government as FSE funds for each student? _____

25. a) Is the amount of money collected in forms of fee and FSE enough to run the school

    for a year?   Yes ☐   No ☐

    b) Explain your answer in (a) above.

_____

_____

    c) What recommendations can you give to the government based on (b) above?

_____

_____

26. The table below assesses the allocations per votehead and whether each votehead is enough to finance its operations per year. Please respond as directed

Votehead	Allocation(FSE+Fee) (Ksh.)	Is it enough? (Tick)	Not enough? (Tick)	Deficit (Ksh.)
Tuition				
BES				
RMI				
LT&T				
Admistration				
EW&C				
Activity				
Personal Emolument (PE)				
Lunch Programme				
Development				

THANK YOU FOR PARTICIPATING IN THIS STUDY

APPENDIX III: INTERVIEW SCHEDULE FOR SUB COUNTY DIRECTOR OF EDUCATION

Introduction

I am a post-graduate student at Maseno University. The questions below address the pricing guidelines used in financing public sub – county secondary schools in Busia county,Kenya. This sub county has been chosen and you are requested to respond to the questions as honestly as possible. The researcher would like to assure you that the information you provide will be highly confidential and will be used for research purposes only.

1. How many sub county secondary schools are there in this sub-county. Please indicate by category as girls, boys or mixed.

2. What is the current average class size (average number of students per classroom) in these schools?

3. How much development fund on average do schools charge students per year in this sub county?

4. a) What are the challenges the MOE faces in provision of school infrastructure in this sub county.

   b) How can the challenges be mitigated?

7. a) What is the required CBE of sub county schools in this sub county?

   b) What has the government provided?

   c) What is the shortage?

8. a) How many teachers have been employed by BOM in this sub county?

   b) Is the Personal Emolument votehead sufficient to pay the BOM teachers?

   c) Explain your answer in 8b

9. a) From the tuition votehead, what amount or percentage should be used to carry out formative assessments in schools?

b) Is the amount adequate to avail the assessment materials and conduct a formative assessments?

c) Explain your answer in 9b

10. a) Do you think the amount of fee paid per student in sub county secondary schools is optimal?

 b) If yes, why?

c) If No, explain

11. What strategies do the sub county schools in this sub county employ to have adequate resources for the purposes of quality education?

APPENDIX IV: DOCUMENT ANALYSIS GUIDE

I am a post-graduate student at Maseno University. The questions below address the pricing guidelines used in financing public sub – county secondary schools in Busia County, Kenya. This sub county has been chosen and you are requested to provide the documents as listed to aid this study. The researcher would like to assure you that the information you provide will be highly confidential and will be used for research purposes only.

1. School budgets/annual Income and Expenditures for 2017, 2018, 2019.

2. Students' enrolments in public secondary schools of Busia County.

3. KCSE performance of public secondary schools of Busia county from 2017, 2018 and 2019

4. Approved fee structure for public secondary schools in Kenya

5. Guidelines for the use of FSE funds

6.   School Audit reports for 2017,2018,2019

7. Financial Guidelines Handbook for secondary schools

APPENDIX V: OBSERVATION CHECKLIST

Information on the following will be obtained through observation:

1. Classrooms to Learner Ratio

2. Adequacy of sanitation facilities

3. Adequacy of laboratories

4. Number of toilets versus the enrollment

APPENDIX VI: PRICING GUIDELINES

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

PRESS STATEMENT: ISSUED UNDER ARTICLE 35(3)-*that provides that the state shall publish and publicize any important information affecting the nation.*

FEES GUIDELINES FOR PUBLIC SECONDARY SCHOOLS IN KENYA

February, 2015

Following the appointment and submission of the Dr.Kilemi Mwiria's Taskforce Report on Secondary school fees in Kenya that was a result of concerns raised by His Excellency the President and the general public on the high cost of secondary education, the next phase of this exercise was to implement the recommendations of the report. Amongst the key recommendations were:

1) The rationalization and downsizing of bloated non- teaching staff workforces in secondary schools.
2) The removal of the responsibility of developing infrastructure from parents to CDF and County governments.
3) The merging of non-viable and uneconomical schools to free the otherwise thinly spread teaching force.
4) The redistribution of teachers by TSC throughout the country.
5) The employment of adequate teaching staff for all schools thereby removing the burden of salaries of BOM/PTA from parents.
6) Subsidizing the cost of electricity and water consumed in schools as is done in special economic zones.

The taskforce recommendations on realistic unit cost of secondary education provided for **KES.25,973** for Day Schools, **KES 51,559** for Boarding Schools and **KES.55, 455** for special needs secondary schools. This was dependent on full implementation of the preceding recommendations. These recommendations were arrived at following wide ranging stakeholder consultations that culminated in the national stakeholders' forum on 28th and 29th April 2014 at the Kenya Education Management Institute.

Table 4 : fees structure for secondary schools

Voteheads	Sub County/ Day Schools (KES)	National, Extra County & County Boarding (KES)	Special Needs
Teaching Learning Materials	4,792	4,792	9,067
BES and Meals/L	0	32,385	32,385
Repairs, Maintenance & Improvement.	1,886	3,192	2,422
Local Travel and Transport	1,833	2,421	2,144
Administration Costs	1,572	3,316	1,900
EWC	3,151	7,802	4,047
Medical	689	786	1,614
Activity Fees	1,256	1,398	1,462
Personal Emolument	5,755	8,672	13,155
Approved PTA Development. Projects	0	0	0
Insurance (Medical & Property)	1,310	1,660	1,614
Total School Fees	**22,244**	**66,424**	**69,810**
Less GOK Subsidy	12,870	12,870	32,600
Total Fees Less Government Funding	**9,874**	**58,558**	**57,210**

The maximum cost of day schooling is **KES. 22,244** while that of boarding schools stands at **KES.66,424** and **KES.69,810** for special needs secondary schools —an increase of 31% over and above the taskforce recommended fees structure. This takes cognizance of the fact that teacher redistribution and employment, rationalization of non- teaching staff, merger of uneconomical schools and implementation of the proposed subsidies are yet to be effected.

With the government capitation of KES.12,870 for regular schools and KES.32,600 for special needs schools, the maximum payable fees by parents shall be KES. 9,374 for day schools KES.53,553 for boarding schools and KES.37,210 for special needs schools. The government will meet the full cost of examination for KCSE and has already paid for the 2015 candidates in public secondary schools.

Schools shall spread these fees into the three school terms at the ratio of **50:50:20**. The government appreciates schools that have been levying fees below these ceilings and urges them to continue with that trend.

I want to state that it is the responsibility of every parent to ensure that their children attend school and meet their parental obligations including paying any approved levies as provided for at section 29 (2) (b) of the Basic Education Act 2013.

In coming up with the above fees structure, it should be noted that certain non-essential vote heads such as teacher motivation, education improvement, county education levies, among others have been discontinued with immediate effect.

Levies for on-going **approved infrastructure and school transport projects** will continue for the current forms 2,3 and 4 students until the lapse of the said projects and as such will **NOT** be levied on 2015 form one students. All future infrastructural projects will be undertaken through CDF or any other government financing mechanisms.

The Government will progressively review the Free Day Secondary Education capitation taking into account changes in cost of living. Any variation of school fees shall therefore be guided by the Cabinet Secretary from time to time and gazetted accordingly.

These guidelines will be gazetted in due course and supersede any other and **take effect from January 5th, 2015.**

PROF. JACOB T. KAIMENYI, PhD, FICD, EBS
CABINET SECRETARY

February 20th, 2015

All County Directors of Education

RE: GUIDELINES ON IMPLEMENTATION OF FREE DAY SECONDARY EDUCATION FOR THE YEAR 2022

1.0 INTRODUCTION

1.1 Purpose

This circular is issued in accordance with article 48 of the Public Finance Management (PFM) Act, 2012, and article 39 of the Basic Education Act 2013, to provide the implementation of Free Day Secondary Education (FDSE) programme for the Year 2022. The purpose of the circular is to provide: -

1.1   Specific Guidelines for secondary schools on: -

    1.1.1   Funding for secondary education under the FDSE programme

    1.1.2   guidelines for the utilization of the Government Subsidy to secondary schools in Banks accounts to be held by schools and how they are to be operated

    1.1.3   Fees Structures

    1.1.4   Parental obligations in secondary schools

    1.1.5   Financial obligation of secondary schools

    1.1.6   Ineligible expenditures in secondary schools

    1.1.7   Employment by Board of Management of secondary schools

1.2 Information on: -

    1.2.1   Medical insurance cover for students in secondary schools

    1.2.2   Transfers and re-entry

    1.2.3   Procurement and Delivery of SET books to secondary schools

    1.2.4   The annual procurement plan for secondary schools

2.0 Background

In 2022, the Government of Kenya (GOK) will continue to ensure attainment of Universal Secondary Education (USE) as provided for in the Medium-Term Plan III (2018-2022) of Vision 2030, the Constitution of Kenya,2010, the Post COVID 19 Economic Recovery Strategy and Sessional paper No 1 of 2019, a policy framework for Education Training and Research. Secondary schools are required to: - (i) meet schooling needs of all learners; (ii) ensure high quality and relevant content delivery; (iii) raise standards of secondary education; (iv) ensure gender parity in enrolment; and (v) unlock technology for effective service delivery.

3.0 SPECIFIC GUIDELINES

3.1 FDSE Capitation to Schools

GOK subsidy (Capitation) to schools to actualize Free Day Secondary Education (FDSE) will be **KES. 22,244.00** annually per learner as stipulated in Table 1.

Table 1: FDSE Structure

Item	Description	Amount
(i)	Tuition (Teaching learning materials and exams)	4,144.00
(ii)	Medical/Insurance	2,000.00
(iii)	Activity	1,500.00
(iv)	SMASSE	200.00
(v)	*Other Vote heads - *(Local Transport and Travel, Administrative Costs, Electricity, Water and Conservancy, Personnel Emoluments)*	9,400.00
(vi)	Maintenance and Improvement	5,000.00
	Grand Total	**22,244.00**

Provision of the GOK Subsidy (capitation grants) to schools will be done in equal installments of 25% of the Approved Budget every quarter of the Financial Year. The following shall apply during disbursements; -

    3.1.1   The GOK subsidy will be provided to public schools under the following conditions: -

        3.1.1.1   The school **MUST** be duly registered and headed by a Principal appointed by Teachers Service Commission (TSC).

3.1.1.2 The school **MUST** be registered on the National Education Management Information System (NEMIS) platform

3.1.1.3 The school **MUST** register and update learners records on NEMIS

3.1.1.4 Bank accounts for Tuition, Operational and Infrastructure Grants as operated by the school **MUST** be registered in NEMIS and with MOE at all its levels.

3.1.1.5 Details of Bank accounts for Infrastructure be submitted to the Ministry before the end of the second quarter i.e March 15th.

3.1.2 Enrolment data to be used for provision of the GOK Subsidy will be obtained from NEMIS on various dates as follows: -

3.1.2.1 First Tranche 15th December 2021

3.1.2.2 Second Tranche 31st March 2022

3.1.2.3 Third Tranche 30th June 2022

3.1.2.4 Fourth Tranche 30th September 2021

3.1.3 Under the Operation Account, schools may seek authority from the CEBs to vire savings or surplus funds from one item to another when it is absolutely necessary but the same does not apply for both Tuition and the Infrastructure Accounts.

3.1.4 Personell emolument will not be restricted to payment of Non teaching staff.

3.2 School Data on NEMIS

It is the responsibility of the principal to ensure accuracy of the data available on NEMIS where every eligible learner is fully registered on the platform. The following shall apply: -

3.2.1 NEMIS must be used at all time during admission and transfer of students;

3.2.2 Transfers of students should be avoided in the course of the academic year and may only be sanctioned by the Director General under special circumstances;

3.2.3 Funds will be disbursed using the data available on NEMIS at the time of disbursement as indicated in 3.1.2;

3.2.4 Schools which receive GOK subsidy for students above the enrolment will be penalized and the Principal surcharged for loss of public resources as provided for in the PFM Act, 2012 Sections 197, 198 and 202;

3.2.5 Principals should ensure that schools records on NEMIS are accurate at all times by regularly updating these records;

3.2.6 Changes in information on a school's bank accounts **WILL ONLY** be done at MOE headquarters. Requests for change should be generated by the school and forwarded by the Sub County Director of Education to Director Secondary Education.

3.3 Insurance and Students Medical Cover

To ensure effective implementation of the five-year contract entered between the Ministry of Education (MOE) and the National Hospital Insurance Fund (NHIF) for the provision of comprehensive medical cover to all the students in public secondary schools, the following should be adhered to: -

3.3.1 Principals **SHOULD** acquaint themselves with the terms of the cover to ensure that students access quality health services from NHIF accredited health facilities and cease requesting parents to meet medical expenses.

3.3.2 Schools **MUST** fully register a student in NEMIS for him/her to obtain an NHIF number to be able to access services even when on holidays.

3.3.3 Principals **MUST** ensure that all learners know their UPI and NHIF numbers by entering this information in their Identification Cards.

3.3.4 Principals should inform parents about the requirement for the cover.

3.3.5 Principals **SHOULD** to send death notification letters to the Principal Secretary within seven (7) days of death of any student in their schools and also help their parents/guardians fill a claim form for last expense and group life benefits.

3.3.6 MOE will retain **KSH 1350** from the medical vote head to fund the medical cover. The rest of the vote head funds will be disbursed to schools to meet other medical and insurance related expenses.

3.4 Fees Structures

Following the shortened academic calendar from 39 weeks to 30 weeks for the academic year commencing on 25th April 2022, Parents will continue to pay the revised fees and had been indicated by the Ministry of Education in the circular dated 16th June 2021. In this regard, the fees to be paid for the various category of schools is as indicated in parts 3.4.1, 3.4.2, 3.4.3 and 3.4.4 respectively.

3.4.1 Fees structure for Day Schools

GOK will continue to offer free day schooling and the fees structure for day schools in shown in Table 2.

Table 2: Fees Structure for Day Schools

Vote Heads	Parent	GOK (KSH)
Teaching learning materials and exams	0	4,144.00
Maintenance and Improvement	0	5,000.00
*Other vote heads – (Local Transport and travel, Administrative Costs, Electricity, Water and Conservancy, Personnel Emolument)	0	9,400.00
Activity fee	0	1,500.00
Medical and Insurance	0	2,000.00
SMASSE	0	200.00
Total school fees	0	22,244.00

3.4.2 Fees structure for Boarding Schools Category A*

Schools classified as Category A* are *all National Schools and Extra County Schools that are located in the following towns: Nairobi, Mombasa, Nakuru, Kisumu, Nyeri, Thika and Eldoret* only. For these schools, GOK will provide a subsidy for each learner in that is equal to the subsidy for each learner in a day school. In order to meet the cost of boarding as well as maintenance and improvement, parents will pay the boarding fees as shown in Table 3.

Table 3: Fees Structure for Category A* Boarding schools

Vote head	GOK	Parent	Total (Ksh)
Teaching, Learning materials and Exams	4,144	0	4,144.00
Boarding Equipment and Stores	0	25,000	25,000.00
Maintenance and Improvement	5,000	2,000	7,000.00
*Other vote heads- (Local Transport and Travel, Administrative Costs, Electricity, Water and Conservancy, Personnel Emolument)	9,400	17,202	26,602.00
Activity fees	1,500	798	2,298.00
Medical and Insurance	2,000	-	2,000.00
SMASSE	200	-	200.000
Total school fees	22,244	45,000	67,244.00

3.4.3 Fees structure for Boarding Schools Category B*

Schools classified as Category B* include *all schools that are boarding schools and extra county schools that are located in other areas other than the town of Nairobi, Mombasa, Nakuru, Kisumu, Nyeri, Thika and Eldoret.* For these schools, GOK will

provide a subsidy for each learner in that is equal to the subsidy for each learner in a day school. In order to meet the cost of boarding as well as maintenance and improvement, parents will pay the boarding fees as shown in Table 4

Table 4: Fees Structure for category B* Boarding schools

Vote Head	GOK	Parent	Total (Ksh)
Teaching, Learning Materials and Exams	4,144	0	4,144.00
Boarding Equipment and Stores	0	20,830	20,830.00
Maintenance and Improvement	5,000	2,000	7,000.00
*Other Vote heads- (Local Transport and travel, Administrative Costs, Electricity, Water and Conservancy, Personnel Emolument)	9,400	11,670	21,070.00
Activity fees	1,500	500	2,000.00
Medical and Insurance	2,000	0	2,000.00
SMASSE	200		200.00
Total school fees	22,244	35,000	57,244.00

3.4.4 Fees structure for Special Needs Boarding Schools

Schools classified as Special needs are those schools that cater for learners with impairment e.g. visual, physical, hearing and mental. For this schools GOK will provide an enhanced capitation to **KES. 53,807.00** per learner. This includes a GOK subsidy of **KES. 19,053.00** per learner for **Boarding Equipment and Stores** and a top up grant of **KES 12,510.00** per learner to **cater for assistive devices and any additional personnel needed.** In order to meet the cost of boarding as well as maintenance and improvement, parents will pay the boarding fees as shown in Table 5.

Table 5: Fees Structure for Special Needs Boarding Schools

Vote Heads	GOK	Parent	Total (Ksh)
Teaching, Learning Materials and Exams	4400	0	4,644.00
Boarding Equipment and Stores	19,053	8,860	27,913.00
Maintenance and Improvement	5,000	2000	7,000.00
*Other Vote heads (Local Transport and Travel, Administrative Costs, Electricity, Water and Conservancy, Personnel Emolument)	9,400	0	9,400.00
Activity fees	1,500	0	1,500.00
Medical and Insurance	2,000	0	2,000.00
**Top Up	12,510	0	12,510.00
SMASSE	200	0	200.00
Total school fees	53,807.	10,860	65,167.00

3.4.5 Maintenance and Improvement Funds

MOE has allowed for the use of KES 5,000.00 per student from the GOK subsidy as Maintenance and Improvement Fund per year to ensure a proper learning environment with adequate school infrastructure and other improvements. Similarly, for boarding schools, an additional KES 2000.00 per student is provided for as a parent's contribution. This vote should only be used for immovable assets and other form of infrastructure in the school that may require upgrading. Approval must be sought from the relevant office on utilization of this vote. Detailed guidelines will be issued on the approval of projects under this fund.

3.5 Bank Accounts

To ensure accountability and smooth implementation of the FDSE programme, all schools are required to operate the following bank accounts.

3.5.1 **Tuition Account:** – For banking of tuition funds and all payments should strictly be made by cheques. Funds in the tuition account must be utilized for the procurement of teaching and learning material (TLMs) only.

3.5.2 **Operational Account:** – This account is used for banking of all GOK subsidies except the tuition and infrastructure funds.

3.5.3 **School Infrastructure Account:** - for banking infrastructure grants from GOK and Maintenance and Improvement (M&I) funds.

3.5.4 **Boarding Account:** - This account is for banking of funds paid by parents for boarding related expenses.

3.5.5 **A Saving Account:** - This account is for banking funds from the Boarding Account Cash Book that cannot be put to immediate use.

3.5.6 Schools with income generating activities shall open separate bank accounts for the same.

3.6 Operational Procedures for School Bank Accounts

In addition to the above, the following procedures will continue to apply:

3.6.1 Each account must have a separate cash book.

3.6.2 All schools must acknowledge the receipt of funds by a letter to the CDE/uploading an official receipt on the NEMIS platform.

3.6.3 A receipt is issued to every learner for the amount received as GOK subsidy for every disbursement made by GOK.

3.6.4 Schools must post on their notice boards the amounts received.

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3.6.5	No virement is authorized from the Tuition Account.
3.6.6	All CDF and donations or funds from Harambee must be receipted officially and entered into the school Cash books. These include incomes from hire of school facilities e.g., grounds, classrooms, halls or billboards on school compounds.
3.6.7	School may open additional bank accounts as may be necessary. For example, school may need a bank account for CDF funds only

3.7 Financial Obligations

All schools' management are expected to ensure prudence in the use of school funds and to adhere to the laid down financial regulations as stipulated in the reviewed **Handbook on Financial Management for Public Secondary Schools, Teacher Training Colleges and Technical and Vocational Colleges in Kenya** issued by the MOE, the Public Finance Management Act, 2012 and the Public Procurement and Disposal Act, 2015.

All stipulated accounting procedures and other necessary measures, including cost-saving, must be adhered to by all schools at all times. In addition, the following will apply: -

3.7.1	Schools **MAY NOT** enter into financial contracts e.g., Hire purchase, bank loans without the express written approval of the Cabinet Secretary in line with Section 18 of 4th Schedule of the Basic Education Act, 2013.
3.7.2	Every Principal shall be responsible for application and utilization of funds as the **Accounting Officer** of the school. Guidelines of the same shall be given before the actual disbursement.

3.8 Ineligible Expenditures
As stipulated in the **Public Finance Management (PFM) Act, 2012,**

3.8.1	Every public officer employed in a public entity shall comply with the Constitution and all laws relating to the conduct of public officers when carrying out a responsibility or exercising a power under this Act.
3.8.2	Without prejudice to PFM Act provisions, a public officer shall ensure that the resources in his purview are used in a way, which is (a) lawful and authorized; and (b) Effective, efficient, economical and transparent.

3.13 Parental Obligations

Parents will continue to meet the following cost:

3.13.1 School uniforms.

3.13.2 Boarding related costs as reflected in the boarding school fees structure.

3.13.3 Lunch for the day scholars; and

3.13.4 Clear their fees balances for continuing students prior to April 2022.

All county directors of education are required to ensure strict adherence to the guidelines on implementation of the FDSE programme and bring this information to the attention of all field officers and secondary schools principals under their purview.

Julius O. Jwan, PhD, CBS
PRINCIPAL SECRETARY

Copy to: Cabinet Secretary
Chief Administrative Secretary
Chief Executive Officer, Teachers Service Commission
Director Schools Audit Services
Director, Quality Assurance and Standards
All Regional Directors of Education

APPENDIX VII: CLASSROOMS SITUATION IN SCHOOLS

SAMPLE			CURRENT NUMBER OF CLASSROOMS	CLASSROOM SHORTAGE	TOTAL CLASSROOMS REQUIRED
		1	4	0	4
		2	8	6	14
		3	4	0	4
	Bunyala	4	12	2	14
		5	14	2	16
		6	10	3	13
		Sum	**52**	**13**	**65**
		1	3	1	4
		2	4	1	5
		3	6	1	7
		4	8	0	8
	Busia	5	11	3	14
		6	12	2	16
		7	15	1	16
		8	16	4	20
		Sum	**75**	**13**	**90**
SUBCOUNTY		1	4	2	6
		2	4	0	4
		3	4	1	5
		4	8	0	8
	Butula	5	9	3	12
		6	9	4	13
		7	18	0	18
		8	20	2	22
		Sum	**76**	**12**	**88**
		1	18	1	5
		2	8	2	10
		3	6	2	8
		4	8	4	12
	Nambale	5	12	1	13
		6	11	1	12
		7	18	0	18
		8	18	10	28
		Sum	**99**	**21**	**106**

Samia	1	4	0	4
	2	8	2	10
	3	4	1	5
	4	4	1	5
	5	4	0	4
	6	10	2	12
	7	8	3	11
	8	24	3	27
	Sum	**66**	**12**	**78**
Teso North	1	6	2	8
	2	3	1	4
	3	3	2	5
	4	3	2	5
	5	4	2	6
	6	6	1	7
	7	7	1	8
	8	7	1	8
	9	6	2	8
	10	4	4	8
	11	9	4	13
	Sum	**58**	**22**	**80**
Teso South	1	5	0	5
	2	7	0	7
	3	8	0	8
	4	4	0	4
	5	6	1	7
	6	6	2	8
	7	8	0	8
	8	8	2	10
	9	14	4	18
	10	13	2	15
	11	15	6	21
	Sum	**94**	**17**	**111**
Total	N	60	60	60
	Sum	520	110	618

APPENDIX VIII: LABORATORIES SITUATION IN SCHOOLS

	Sample		Current Number Of Laboratories	Laboratory Shortage	Total No. Of Laboratories Required
	Bunyala	1	1	2	3
		2	2	1	3
		3	1	2	3
		4	1	2	3
		5	1	2	3
		6	1	2	3
		Sum	**7**	**11**	**18**
	Busia	1	0	3	3
		2	0	3	3
		3	0	3	3
		4	0	2	2
		5	1	1	2
		6	1	2	3
		7	0	3	3
		8	4	2	6
		Sum	**6**	**19**	**25**
SUBCOUNTY	Butula	1	1	2	3
		2	1	2	3
		3	0	3	3
		4	1	2	3
		5	2	1	3
		6	1	2	3
		7	2	1	3
		8	2	2	4
		Sum	**10**	**15**	**25**
	Nambale	1	0	3	3
		2	1	2	3
		3	1	2	3
		4	1	1	2
		5	1	2	3
		6	2	1	3
		7	2	1	3
		8	2	2	4
		Sum	**10**	**14**	**24**
	Samia	1	0	3	3
		2	2	1	3
		3	1	2	3

	4	0	3	3
	5	3	1	4
	6	2	1	3
	7	1	3	4
	8	2	1	3
	Sum	**11**	**15**	**26**
	1	2	1	3
	2	0	3	3
	3	0	3	3
	4	1	2	3
	5	2	1	3
Teso North	6	1	2	3
	7	3	0	3
	8	0	3	3
	9	1	2	3
	10	2	1	3
	11	2	0	2
	Sum	**14**	**18**	**32**
	1	1	3	4
	2	1	2	3
	3	1	2	3
	4	0	3	3
	5	0	3	3
	6	0	3	3
Teso South	7	2	1	3
	8	1	2	3
	9	1	2	3
	10	1	2	3
	11	2	2	4
	Sum	**10**	**25**	**35**
Total	N	60	60	60
	Sum	**68**	**117**	**185**

APPENDIX IX: TOILETS SITUATION IN SCHOOLS

	Sample	Current Girls Toilets	Current Boys Toilets	Current Total Toilets	Toilet shortage	Toilets Required By The School
	1	9	0	9	3	14
	2	18	0	18	4	26
Bunyala	3	2	3	5	2	9
	4	8	8	16	3	23
	5	10	12	22	10	32
	6	10	10	20	7	27
	Sum	**57**	**33**	**90**	**29**	**131**
	1	1	1	2	2	6
	2	8	6	14	0	14
	3	1	1	2	2	5
Busia	4	6	7	13	20	36
	5	8	7	15	0	15
	6	10	12	22	10	32
	7	20	13	33	4	43
	8	0	16	16	6	24
	Sum	**54**	**63**	**117**	**44**	**175**
	1	13	0	13	2	17
SUBCOU	2	2	2	4	2	8
	3	3	2	5	2	9
NTY	4	3	3	6	6	14
Butula	5	12	12	24	6	31
	6	10	7	17	4	21
	7	10	10	20	5	25
	8	21	23	44	5	47
	Sum	**74**	**59**	**133**	**32**	**172**
	1	4	0.	4	2	8
	2	9	7	16	0	20
	3	12	12	24	0	24
	4	12	4	16	6	26
Nambale	5	8	8	16	3	23
	6	14	14	28	0	28
	7	9	9	18	10	28
	8	6	6	12	36	48
	Sum	**74**	**60**	**134**	**61**	**205**
	1	3	0	3	3	8
Samia	2	7	7	14	2	21
	3	2	2	4	3	8
	4	3	3	6	3	12

	5	6	6	12	2	16
	6	12	12	24	4	30
	7	10	10	20	2	25
	8	9	7	16	15	33
	sum	**52**	**47**	**99**	**34**	**153**
	1	15	0	15	3	22
	2	1	1	2	2	4
	3	2	1	3	2	5
	4	2	2	4	0	6
Teso	5	4	3	7	3	12
	6	7	7	14	0	18
North	7	3	3	6	2	9
	8	2	2	4	8	13
	9	6	6	12	7	22
	10	0	2	2	3	5
	11	0	18	18	0	21
	Sum	**42**	**45**	**87**	**30**	**137**
	1	11	0	11	2	15
	2	4	0	4	4	10
	3	16	0	16	0	20
	4	3	3	6	4	11
Teso	5	1	1	2	2	4
	6	6	7	13	4	17
South	7	2	2	4	7	12
	8	0	16	16	0	20
	9	18	8	26	4	30
	10	6	8	14	12	26
	11	10	10	20	10	30
	Sum	**77**	**55**	**132**	**49**	**195**
Total	N	60	60	60	60	60
	Sum	**430**	**362**	**889**	**279**	**1168**

APPENDIX X: CASE SUMMARIES FOR OBJECTIVE 2

Sample			CBE	Teachers Posted by Tsc to the School	Teachers on BOM terms	Number of Teachers the school Lacked	Subjects
		1	31	21	22	10	11
		2	9	5	1	4	11
		3	24	10	4	14	12
	Bunyala	4	38	29	10	9	11
		5	18	9	2	9	11
		6	9	6	6	3	11
		Sum	**129**	**80**	**45**	**49**	**67**
		1	18	7	7	11	11
SubCounty		2	19	12	2	7	11
		3	19	12	3	7	11
		4	9	6	1	3	11
	Busia	5	19	10	4	9	11
		6	9	6	6	3	11
		7	29	12	5	13	11
		8	9	7	1	2	11
		Sum	**131**	**72**	**29**	**55**	**88**
	Butula	1	11	7	2	4	11
		2	49	21	10	28	11

	3	54	30	15	25	13
	4	38	12	10	26	12
	5	9	2	5	7	11
	6	18	7	3	11	11
	7	9	7	3	2	11
	8	19	12	3	7	12
	Sum	**207**	**98**	**51**	**110**	**92**
	1	19	10	5	9	11
	2	19	10	9	9	11
	3	13	6	4	7	11
	4	30	13	12	17	12
Nambale	5	9	7	1	2	11
	6	9	8	0	1	11
	7	19	9	3	10	11
	8	19	13	2	6	11
	Sum	**137**	**76**	**36**	**61**	**89**
	1	27	18	8	9	12
	2	26	15	11	11	11
	3	9	9	1	4	11
Samia	4	34	20	11	17	11
	5	28	12	15	16	11
	6	35	22	7	13	12
	7	9	7	1	2	11

	8	28	14	9	14	11
	Sum	**196**	**117**	**63**	**86**	**90**
	1	57	26	11	31	14
	2	9	7	1	2	11
	3	19	11	3	8	12
	4	19	10	7	9	11
	5	18	11	5	7	12
Teso North	6	9	5	3	3	11
	7	19	14	4	5	11
	8	45	36	6	9	13
	9	28	10	6	18	11
	10	19	15	0	4	12
	11	38	19	9	19	11
	Sum	**280**	**164**	**55**	**115**	**129**
	1	19	9	4	10	11
	2	25	13	7	12	11
	3	9	3	2	6	11
	4	19	9	3	10	12
Teso South	5	16	6	7	10	12
	6	23	12	8	11	11
	7	55	26	21	8	13
	8	9	7	4	2	11
	9	19	11	3	7	11

APPENDIX XI: CASE SUMMARIES FOR OBJECTIVE 3

Sample			KCSE 2017	KCSE 2018	KCSE 2019	KCSE 2020	KCSE 2021
SUBCOUNTY	Bunyala	1	3.5130	3.1500	3.5100	4.0400	3.3000
		2	5.3000	5.5450	6.0720	6.6620	5.1240
		3	4.1260	3.5130	2.8440	3.3620	3.0030
		4	3.5180	3.2890	4.5584	4.3719	4.7810
		5	3.4210	3.3810	2.8890	2.8810	2.7990
		6	.0000	.0000	.0000	2.7140	2.3250
		Mean	**3.31300**	**3.1463**	**3.3122**	**4.00515**	**3.55533**
	Busia	1	2.3200	2.5600	3.0000	3.1300	2.6700
		2	3.4110	3.6920	3.9380	3.0000	2.9710
		3	3.0000	3.3810	2.8890	2.8810	2.5690
		4	3.1250	3.7090	4.0000	4.7500	4.5660
		5	.0000	.0000	.0000	3.0710	2.8640
		6	2.9230	2.6790	3.0470	2.8850	2.6710
		7	4.7290	4.5700	4.9540	5.0900	5.0300
		8	2.7690	2.8260	2.8620	2.5000	2.1000
		Mean	**2.78462**	**2.9271**	**3.0862**	**3.41337**	**3.18012**
	Butula	1	2.4230	2.7500	3.3680	2.9170	2.8130
		2	3.8960	4.0650	4.5630	5.1520	4.3170
		3	3.2010	3.5270	3.9180	4.0200	3.9900
		4	3.8760	4.1260	4.4040	4.3450	3.1210
		5	3.1200	3.0000	3.2100	2.9600	2.7400
		6	2.4210	2.5880	2.6880	2.6900	2.2000
		7	2.7360	2.8100	2.9610	2.5900	2.4000
		8	4.6250	3.0000	2.8900	3.8390	2.6510
		Mean	**3.28725**	**3.2332**	**3.5002**	**3.56412**	**3.02900**
	Nambale	1	2.9810	2.4660	2.6630	3.2720	2.6600
		2	2.6730	2.4780	3.0000	2.7500	2.4130
		3	2.9720	3.0290	2.1140	2.6220	2.3670
		4	2.6460	3.2990	3.6810	4.5000	5.6000
		5	.0000	.0000	1.9090	2.1330	2.0000
		6	1.8730	2.0000	2.0280	2.1860	1.9630

	7		2.9720	3.0830	3.0800	2.7700	2.4690
	8		.0000	3.2410	4.4630	3.4260	3.2150
		Mean	**2.01462**	**2.4495**	**2.8672**	**2.95737**	**2.83587**
	1		3.1250	3.7090	4.0000	4.5680	4.4660
	2		2.8280	2.9863	3.2315	3.6364	2.9798
	3		2.2000	2.4710	2.1480	2.5000	1.9710
	4		3.1940	3.6980	3.9400	4.1930	2.8230
Samia	5		2.5132	3.0882	3.1912	3.8384	2.8678
	6		3.8210	4.1890	4.3040	4.3310	4.3380
	7		2.3670	2.5000	3.2500	2.4000	2.2130
	8		.0000	2.6470	2.4200	4.5000	3.4120
		Mean	**2.50602**	**3.1610**	**3.3105**	**3.74585**	**3.13382**
	1		4.2440	4.0520	4.1920	4.7680	3.9920
	2		2.2190	2.3080	2.3160	2.4400	2.0000
	3		2.6230	2.8929	2.9810	3.1550	3.0000
	4		2.2900	2.6890	2.2360	2.2656	2.2371
	5		2.6000	2.5800	2.7000	3.1600	2.9600
Teso North	6		2.8780	2.6880	2.7500	2.6190	2.0120
	7		2.6100	2.9000	3.0100	2.9600	2.6400
	8		3.4600	3.9670	5.3800	4.8400	4.8510
	9		3.0000	3.1180	2.7180	2.9890	2.5410
	11		4.2510	3.7500	5.0270	6.1250	4.6020
		Mean	**3.00336**	**3.1389**	**3.4348**	**3.64960**	**3.16346**
	1		2.1240	2.3030	3.1250	2.3800	2.3000
	2		2.7000	2.8000	2.9000	3.2000	2.9000
	3		2.4200	3.1000	2.8600	2.7400	2.6200
	4		4.2750	4.6840	3.8440	3.7810	3.0310
	5		.0000	.0000	2.5170	2.7500	2.4230
	6		3.2190	3.4920	3.4230	3.9891	3.1639
Teso South	7		4.3300	4.8800	4.7900	4.6600	4.5200
	8		2.5111	2.7440	3.4200	3.0740	2.8610
	9		2.8960	3.0000	2.4500	2.7470	2.5430
	10		2.4310	2.7890	3.0660	2.6600	2.4000
	11		2.5890	2.7860	2.8460	2.6330	2.4760
		Mean	**2.68137**	**2.9616**	**3.2037**	**3.14673**	**2.83980**
Total	N		60	60	60	60	60
	Mean		2.78583	3.0025	3.2502	3.47060	3.07997

APPENDIX XII: CASE SUMMARIES FOR OBJECTIVE 4

N	TUITION	BES	RMI	LTT	ADM	EWC	ACTVITY	PE	LUNCH	DEVELOPMENT
1	4144	20830	5000	1869	890	1246	1500	4628	10000	0
2	4144	0	5000	1869	890	1246	1500	4628	10000	800
3	4144	0	5000	1731	1872	2151	1500	3646	9000	2000
4	4144	0	5000	1700	2000	500	1500	5200	9500	500
5	4144	0	5000	1700	2000	500	1500	5200	9500	0
6	4144	0	5000	1700	2000	500	1500	5200	9500	0
7	4144	0	5000	2000	2000	500	1500	5200	9500	0
8	4144	0	5000	1869	2000	500	1500	5200	9500	0
9	4144	0	800	1869	890	1246	1500	4628	10000	0
10	4144	0	5000	1869	890	1246	1500	4628	10000	5000
11	4144	0	5000	1869	890	1246	1500	4628	9500	0
12	4144	0	5000	1869	890	1246	1500	4628	9500	0
13	4144	0	5000	1869	890	1246	1500	4628	9500	0
14	4144	0	5000	1869	890	1246	1500	4628	9500	0
15	4144	0	5000	1869	890	1246	1500	4628	9500	0
16	4144	0	5000	1869	890	1246	1500	4628	9500	0
17	4144	0	5000	1869	890	1246	1500	4628	10500	0
18	4144	0	5000	1869	890	1246	1500	4628	9500	0
19	4144	0	800	1869	890	1246	1500	4628	10000	0
20	4144	0	800	1869	890	1246	1500	4628	10000	0
21	4144	0	6000	529	808	808	1500	5755	10000	0
22	4144	0	5000	529	808	808	1500	5755	10000	0
23	4144	0	6000	529	808	808	1500	5755	10000	0
24	4144	0	6000	529	808	808	1500	5755	10000	5000
25	4144	0	6000	529	808	808	1500	5755	10000	5000
26	4144	20830	5000	529	808	1246	1500	4628	10000	5000
27	4144	5200	5000	1700	2000	1500	500	1500	9500	500
28	4144	5200	5000	1700	2000	1500	500	1500	9500	500
29	4144	0	6000	1100	1100	650	1550	5000	10000	500
30	4144	0	600	1100	1100	650	1550	5000	10000	500
31	4144	0	5000	1100	1100	650	1550	5000	10000	500
32	4144	35000	5000	1731	1872	2151	1500	3646	0	2000
33	4200	10000	3000	1650	2000	800	1500	2000	13000	0
34	4200	10000	3000	1650	2000	800	1500	2000	13000	0
35	4200	10000	3000	1650	2000	800	1500	2000	13000	0
36	4644	35000	6000	1100	1100	650	1550	5000	10000	0
37	4144	0	6000	1100	1100	650	1550	5000	9500	0
38	4144	0	6000	1100	1100	650	1550	5000	10000	5000
39	4144	0	6000	1100	1100	650	1550	5000	10000	500
40	4144	0	6000	1100	1100	650	1550	5000	10000	500
41	4144	20830	6000	1100	1100	650	1550	5000	10000	500
42	4144	0	6000	1100	1100	650	1550	5000	10000	500
43	4144	0	6000	1100	1100	650	1550	5000	10000	500
44	4144	0	6000	1100	1100	650	1550	5000	10000	500
45	4144	0	800	1869	890	1246	1500	4628	10000	0
46	4144	0	800	1869	890	1246	1500	4628	10000	0
47	4144	0	800	1869	890	1246	1500	4628	10000	0
48	4144	0	800	1869	890	1246	1500	4628	10000	0

|									
49	4144	0	800	1869	890	1246	1500	4628	10000	0
50	4144	0	800	1869	890	1246	1500	4628	10000	0
51	4144	5200	5000	1700	2000	500	1500	5200	9500	500
52	4144	5200	5000	1700	2000	500	1500	5200	9500	500
53	4144	35000	5000	1731	1872	2151	1500	3646	11500	5000
54	4144	0	800	1869	890	1246	1500	4628	10000	0
55	4144	0	800	1869	890	1246	1500	4628	10000	0
56	4144	0	800	1869	890	1246	1500	4628	10000	0
57	4144	0	800	1869	890	1246	1500	4628	10000	0
58	4644	0	6000	1100	1100	650	1550	5000	10000	0
59	4144	0	6000	1100	1100	650	1550	5000	10000	5000
60	4144	5200	5000	1700	2000	500	1500	5200	9500	500
N	60	60	60	60	60	60	60	60	60	60

APPENDIX XIII: Case Summaries of Average Expenditures on Various Vote head and

Optimal Price Per Student

N	Tuition	BES	RMI	LTT	ADM	EWC	Activity	PE	Lunch	Development	Optimal Price per Student
1	5144	22830	5000	2869	1290	1446	3000	6028	15000	0	62607
2	5144	2000	5500	2369	1290	1446	3000	6028	15000	800	42577
3	4644	1500	5500	2431	2172	2651	2500	5146	15000	2000	43544
4	4644	2000	5500	2200	2300	700	3000	6700	14500	500	42044
5	8144	0	8000	2300	2500	1000	3000	6700	15000	0	46644
6	8144	0	8000	2300	2500	1000	3000	6700	15000	0	46644
7	8144	0	8000	2600	2500	1000	3000	6700	15000	0	46944
8	8144	0	8000	2469	2500	1000	3000	6700	15000	0	46813
9	5144	0	1300	2369	1290	1446	3000	6028	15000	0	35577
10	5144	0	5500	2369	1290	1446	3000	6028	15000	5000	44777
11	8144	0	8000	2469	1390	1746	2500	6028	16000	0	46277
12	8144	0	8000	2469	1390	1746	2500	6028	16000	0	46277
13	8144	0	8000	2469	1390	1746	2500	6028	16000	0	46277
14	8144	0	8000	2469	1390	1746	2500	6028	16000	0	46277
15	8144	0	8000	2469	1390	1746	2500	6028	15000	0	45277
16	8144	0	8000	2469	1390	1746	2500	6028	16000	0	46277
17	8144	0	8000	2469	1390	1746	2500	6028	17000	0	47277
18	8144	0	8000	2469	1390	1746	2500	6028	15000	0	45277
19	8144	0	3800	2469	1390	1746	2500	6028	15000	0	41077
20	8144	0	3800	2469	1390	1746	2500	6028	15000	0	41077
21	8144	0	9000	1129	1308	1308	2500	7755	15000	0	46144
22	8144	0	6500	1129	1308	1308	2500	7755	15000	0	43644
23	8144	0	9000	1129	1308	1308	2500	7755	15000	0	46144
24	8144	0	9000	1129	1308	1308	2500	7755	15000	5000	51144

25	8144	0	9000	1129	1308	1308	2500	7755	15000	5000	51144
26	8144	25830	5000	1529	1308	1746	3000	6628	15000	5000	73185
27	8144	10200	8000	2700	2500	2000	1500	3500	14500	500	53544
28	8144	10200	8000	2700	2500	2000	1500	3500	14500	500	53544
29	8144	5000	9000	2100	1600	1150	2550	7000	15000	500	52044
30	8144	5000	3600	2100	1600	1150	2550	7000	15000	500	46644
31	8144	5000	8000	2100	1600	1150	2550	7000	15000	500	51044
32	4144	35000	5000	1731	1872	0	1500	3646	0	2000	54893.
33	9200	18000	8000	4650	5000	2300	4500	8000	15000	0	74650
34	9200	18000	8000	4650	5000	2300	4500	8000	15000	0	74650
35	9200	18000	4500	4650	5000	2300	4500	8000	15000	0	71150
36	9644	43000	7500	4100	4100	2150	4550	11000	12000	0	98044
37	8144	5000	9000	2100	1600	1150	2550	7000	15000	0	51544
38	8144	5000	9000	2100	1600	1150	2550	7000	16500	5000	58044
39	8144	5000	9000	2100	1600	1150	2550	7000	15000	500	52044
40	8144	5000	9000	2100	1600	1150	2550	7000	15000	500	52044
41	8144	25830	9000	2100	1600	1150	2550	7000	15000	500	72874
42	8144	5000	9000	2100	1600	1150	2550	7000	15000	500	52044
43	8144	5000	9000	2100	1600	1150	2550	7000	15000	500	52044
44	8144	5000	9000	2100	1600	1150	2550	7000	15000	500	52044
45	7144	0	1300	2369	1290	1446	3000	6028	15000	0	37577
46	7144	0	1300	2369	1290	1446	3000	6028	15000	0	37577
47	7144	0	1300	2369	1290	1446	3000	6028	15000	0	37577
48	7144	0	1300	2369	1290	1446	3000	6028	15000	0	37577
49	7144	0	1300	2369	1290	1446	3000	6028	15000	0	37577
50	7144	0	1300	2369	1290	1446	3000	6028	15000	0	37577
51	7144	5200	5500	2200	2400	700	3000	6600	14500	500	47744
52	7144	5200	5500	2200	2400	700	3000	6600	14500	500	47744
53	7144	35000	5500	2231	2272	2351	3000	5046	16500	5000	84044
54	7144	0	1300	2369	1290	1446	3000	6028	15000	0	37577

55	7144	0	1300	2369	1290	1446	3000	6028	15000	0	37577
56	7144	0	1300	2369	1290	1446	3000	6028	15000	0	37577
57	7144	0	1300	2369	1290	1446	3000	6028	15000	0	37577
58	7644	0	6500	1600	1500	850	3050	6400	15000	0	42544
59	7144	0	6500	1600	1500	850	3050	6400	15500	5000	47544
60	7144	5200	5500	2200	2400	700	3000	6600	14500	500	47744
Total N	60	60	60	60	60	60	60	60	60	60	60

APPENDIX XIV: MULTIPLE LINEAR REGRESSION DIAGNOSTICS FOR

OBJECTIVE 4
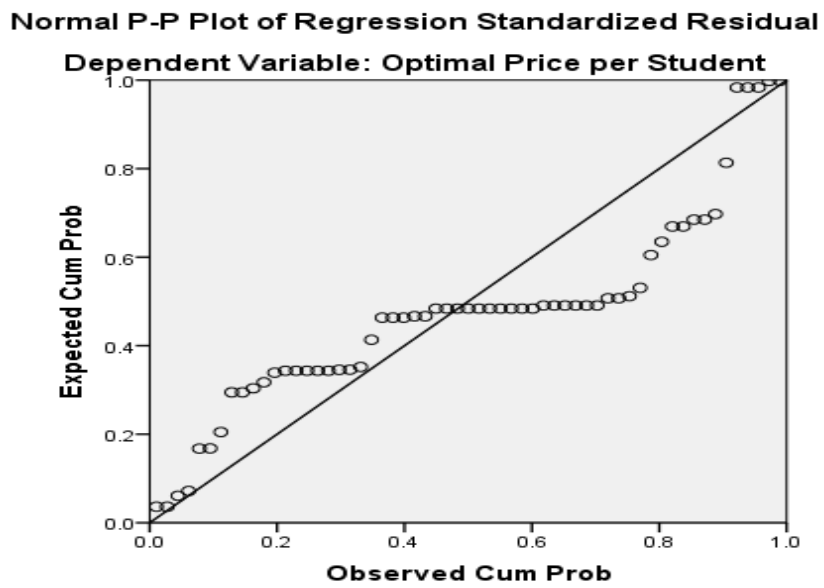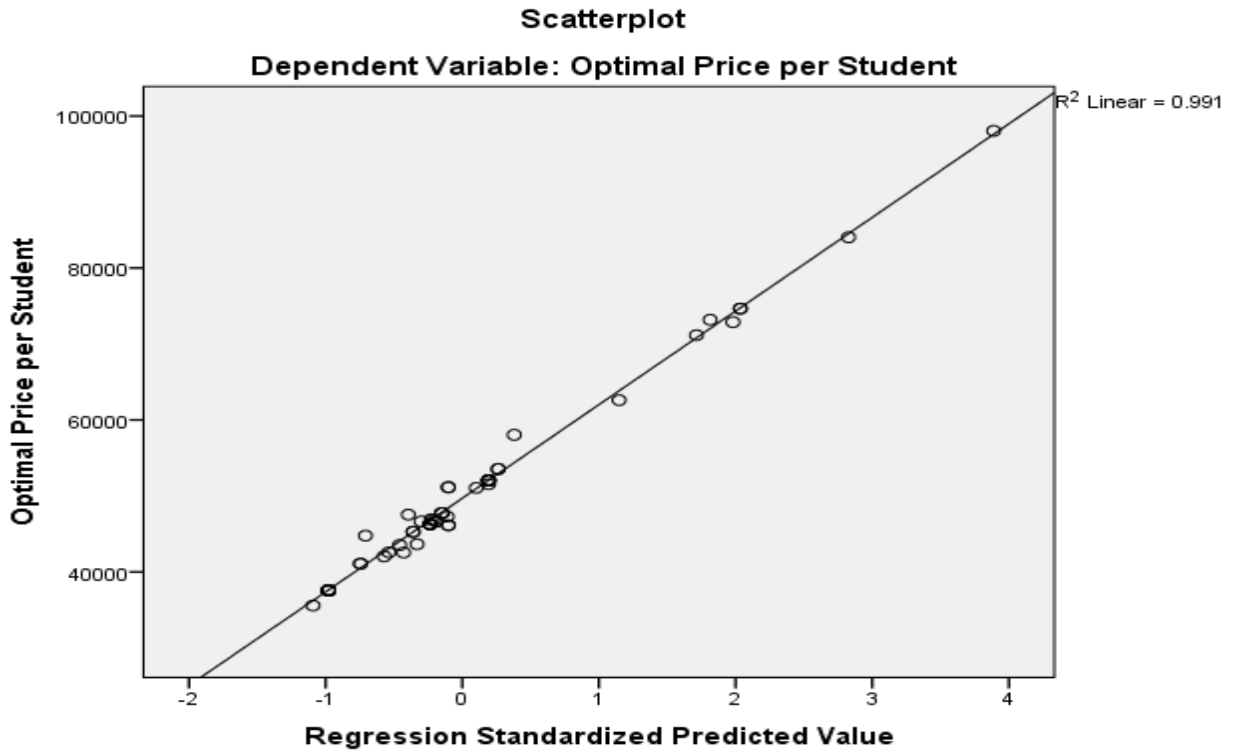
APPENDIX XV: LETTER OF RESEARCH AUTHORIZATION FROM MASENO UNIVERSITY SCIENTIFIC AND ETHICS REVIEW COMMITTEE

MASENO UNIVERSITY SCIENTIFIC AND ETHICS REVIEW COMMITTEE

Tel: +254 057 351 622   Ext: 3050
Fax: +254 057 351 221

Private Bag – 40105, Maseno, Kenya
Email: muerc-secretariate@maseno.ac.ke

REF: MSU/DRPI/MUSERC/01126/22   Date: 28th November, 2022

TO: Hezekiah Adwar Othoo
     PHD/ED/00093/2018
     Department of Educational Management and Foundations
     School of Education, Maseno University
     P. O. Box, Private Bag, Maseno, Kenya

Dear Sir,

RE: Implications of Pricing Guidelines on the Quality of Education of Sub-County Secondary Schools in Busia County, Kenya

This is to inform you that **Maseno University Scientific and Ethics Review Committee (MUSERC)** has reviewed and approved your above research proposal. Your application approval number is MUSERC/01126/22. The approval period is 28th November, 2022 – 27th November, 2023.

This approval is subject to compliance with the following requirements:

i.   Only approved documents including (informed consents, study instruments, MTA) will be used.
ii.   All changes including (amendments, deviations, and violations) are submitted for review and approval by Maseno University Scientific and Ethics Review Committee (MUSERC).
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to Maseno University Scientific and Ethics Review Committee (MUSERC) within 24 hours of notification.
iv.   Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to Maseno University Scientific and Ethics Review Committee (MUSERC) within 24 hours.
v.   Clearance for export of biological specimens must be obtained from relevant institutions.
vi.   Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to Maseno University Scientific and Ethics Review Committee (MUSERC).

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://oris.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely

Prof. Philip O. Owuor, PhD, FAAS, FKNAS
Chairman, MUSERC

MASENO UNIVERSITY IS ISO 9001 CERTIFIED

APPENDIX XVI: RESEARCH PERMIT FROM NACOSTI

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No. 700846

Date of Issue: 13/December/2022

RESEARCH LICENSE

This is to Certify that Mr.. Hezekiah Adwar Othoo of Maseno University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Busia on the topic: IMPLICATIONS OF PRICING GUIDELINES ON THE QUALITY OF EDUCATION IN PUBLIC SUB-COUNTY SECONDARY SCHOOLS IN BUSIA COUNTY, KENYA for the period ending : 13/December/2023.

License No: NACOSTI/P/22/22566

700846

Applicant Identification Number

Director General
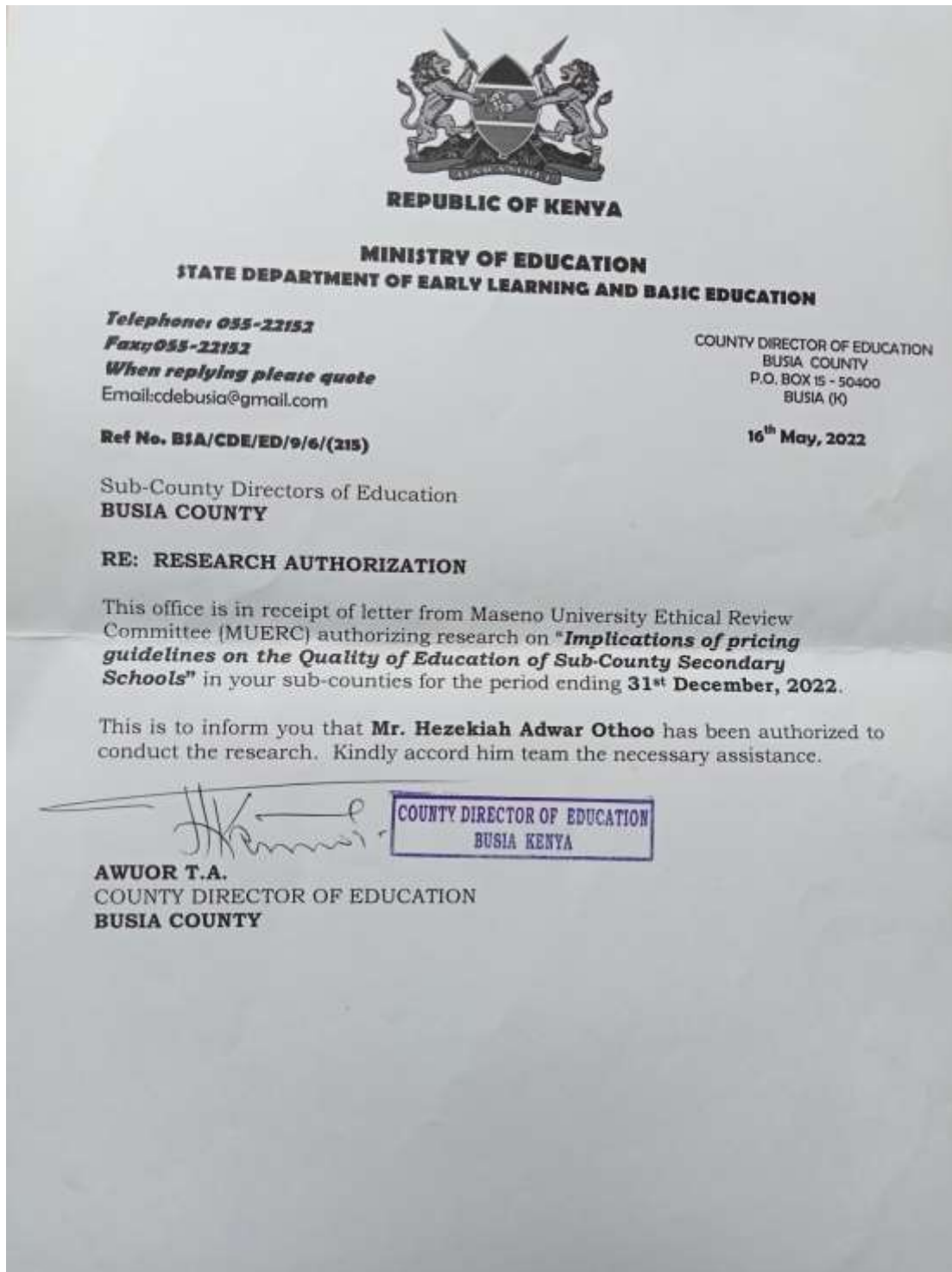NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION

Verification QR Code

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

See overleaf for conditions

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APPENDIX XVII: LETTER FROM THE COUNTY DIRECTOR OF EDUCATION

REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

Telephone: 055-22152
Fax: 055-22152
When replying please quote
Email: cdebusia@gmail.com

COUNTY DIRECTOR OF EDUCATION
BUSIA COUNTY
P.O. BOX 15 - 50400
BUSIA (K)

Ref No. BSA/CDE/ED/9/6/(215)

16th May, 2022

Sub-County Directors of Education
BUSIA COUNTY

RE: RESEARCH AUTHORIZATION

This office is in receipt of letter from Maseno University Ethical Review Committee (MUERC) authorizing research on *"Implications of pricing guidelines on the Quality of Education of Sub-County Secondary Schools"* in your sub-counties for the period ending **31st December, 2022**.

This is to inform you that **Mr. Hezekiah Adwar Othoo** has been authorized to conduct the research. Kindly accord him team the necessary assistance.

COUNTY DIRECTOR OF EDUCATION
BUSIA KENYA

AWUOR T.A.
COUNTY DIRECTOR OF EDUCATION
BUSIA COUNTY

APPENDIX XVIII: MAP OF BUSIA COUNTY