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Influence of Free Secondary Education Policy on Educational Wastage Rate in Kericho County, Kenya

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ABSTRACT

In pursuance of provision of Education for All, Free Secondary Education (FSE) policy was adopted in 2008 to enhance access, improve quality, equity, relevance and Gender Parity in the provision of Secondary School Education in Kenya. The first cycle of students who benefitted from FSE policy graduated in 2011. The national mean Gender Parity Index (GPI) for 2004 to 2007 was 0.88 while in Kericho County it was 0.69 lower than national. The form to form transition fluctuated as between 9,103 and 9,333 in Kericho County. The influence of FSE policy on Educational wastage rate in was not known. Therefore, the purpose of this study was to establish influence of FSE Policy on wastage in Kericho County. Objectives of the study were to; determine the influence of FSE policy on wastage rate in Kericho County. The study was based on the concept of investment choices and consequently a conceptual framework was formulated. The independent variable was FSE policy and dependent variable was educational wastage rates. Descriptive, ex-post factos and correlational research designs were adopted. The study population was 4,457 Principals, Sub County Quality Assurance and Standard Officers, Directors of Studies and form IV students of 2011. The sample size was 485. Snowball and saturated sampling techniques were used to select respondents. Questionnaire, interview schedules, Focus Group Discussion, interview guide and document analysis guide were used to collect data. Reliability coefficient of the principals' questionnaire was 0.80 at set p-value of 0.05. Quantitative data was analyzed using Cohort Analysis, descriptive and inferential statistics. Qualitative data was transcribed and analyzed in emergent themes and sub themes. The study established that there was a weak negative relationship between FSE policy and educational wastage rate with a coefficient of -0.22 at a p-value of 0.05, meaning it accounted for 5% of the variation. The study concluded that FSE policy reduced wastage rates. The study recommended that FSE fund should be reviewed upward to reduce educational wastage rates. The findings of this study are significant to stakeholders in education as it informs them on the need to review the policy with a view to improving secondary school education so as to achieve the objectives of FSE policy.

INTRODUCTION

Wastage in education is of great concern worldwide. It concerns the stakeholders in education because students take too long to complete their education while others drop out from the system early having not acquired the relevant required skills. This led to wastage of resources in terms of finances, time and human resource efforts and many hours. The National Centre for Policy Analysis (2008) indicated that the graduation rate in the US was 85%; it further revealed that only about 7 in 10 students are actually successfully finishing high school in four years meaning the 30% complete after four years or dropout, leading to more student years. In the US's 50 largest cities, the graduation rate was 52% implying that the 48% took long to graduate or dropped out. McGregor (2012) states that since the 1990s, the South African government has made a requirement that people go to school from 7 to 15 years. In December 2011, the South African government announced that 70% of students passed their final examination to finish high school while in 2008 the rate of those who completed was 63% of the total enrolment.

According to Owalabi, (2006) it is basically dropout and repetition that contribute to wastage rate. This is the ratio of the number of students who dropout and those who repeat a class in a given year to the enrolment in the previous class in the previous year. Every year a student spends in school requires inputs, that is, classrooms, desks, chairs, textbooks, stationery, sports, equipment, laboratory equipment and materials, transport facilities, charts, chalkboard, water, electricity and human inputs' in form of teaching effort, ancillary services of administrative and technical craft as well as student time and effort. All these inputs which can be expressed in money have to be supplied every year. The expenditure therefore translates to student-year. From this point of view education inputs used up in the process of education are measured in terms of student-years. It is expected that students complete their education as stipulated; which then constitutes to education output of whether he passes the end of examination cycle or not.

To address the issue of educational wastage worldwide, basic education has been made free by most countries to enable children access education and reduce educational wastage. This includes secondary education. In Kenya Free Secondary Education policy was put in place to enhance transition from primary to secondary school by making secondary school education affordable (MOE, 2007). The objectives of FSE policy were to enhance access to secondary education, improve quality, equity, relevance and gender parity in the provision of secondary school education (MOE, 2007). To achieve these objectives the government provided a guideline (Table 1).

Table 1: Costs incurred by the Government for each Student per Year after the Introduction of FSE Policy in 2008

Vote head	Day Schools (Kshs.)	Boarding Schools (Kshs.)	
	GOK Subsidy (FSE)	GOK Subsidy (FSE)	Parent Fees
Tuition	3,600	3,600	0
Boarding, Equipment and Stores	0	0	13,034
Repair, Maintenance and Improvement	400	400	400
Local Travel and Transport	400	400	500
Administration Costs	500	500	350
Electricity, water and Conservancy	500	500	1500
Activity Fees	600	600	0
Personal Emolument	3,965	3,935	2,743
Medical	300	300	100
Total School Fees	**10,265**	**10,265**	**18,635**

Source: Ministry of Education (2009)

According to the Ministry of Education (2009) FSE is meant to cater for the following items in secondary education: Tuition Kshs. 3,600/=, to cater for the students learning materials for instance textbooks, reams of paper, exercise books and other learning materials, Kshs. 400/= for Repair, Maintenance and Improvement (RMI), Kshs. 500/= for Electricity, water supply and conservancy (EW&C). Kshs. 400/= for Local Transport and Travel (LTT), Kshs.500/= Administrative Costs (AC), Kshs.3, 965/=, Personal Emolument (PE). Kshs. 600/= and Kshs. 300/= Co-curricular activities and medical care.

The day schools parents were to cater for Lunch, Uniforms, personal effects and other projects for example expansion of infrastructure upon approval by the District Education Board (DEB) in consultation with the Boards of Governors (BOGs) and Parents Teachers Association (PTAs). Clear the fee balance for continuing students for the academic year 2008 (MOE, 2009). The boarding schools on the other hand parents should cater for boarding, Equipments and store Kshs. 13,034/=, RMI Kshs. 400/=, EW&C Kshs. 1,500/= LTT Kshs. 500/= personal Emolument Kshs. 2,743/= and medical care

Kshs. 100/= respectively. Making a total of Kshs. 18,635 (MOE, 2009).

Table 2: Gross Enrolment in Terms of Form to Form Transition of Secondary School Students in Kericho County 2004 - 2007

Years	Form I	Form II	Form III	Form IV
2004	9,103	9,444	8,620	8,102
2005	**9,434**	9,333	8,990	8,611
2006	10,516	**9,329**	9,217	8,849
2007	10,310	10,637	**9,237**	9,281

Source: County Director of Education Office, Kericho (2011)

From Table 2 it can be observed that transition of the three cohorts were as follows: 2004 cohort transited as follows 9,103; 9,333; 9,217 and 9,281, the 2005 cohort transited as follows: 9,434; 9,329 and 9,237 and the 2006 cohort transited as follows: 10,516 and 10,637. The fluctuations could be attributed to repetitions and dropout leading to education wastage because on the whole a general decline can be observed as students transited from form one to form four for the 2004 cohort. This trend was of concern because with introduction of FSE policy the participation rates were expected to increase and be sustained. FSE policy was introduced to enhance transition of pupils from primary schools to secondary schools and reduce wastage.

Research Objective

Establish the influence of Free Secondary Education Policy on Educational wastage rate in Kericho County.

SYNTHESIS OF THE LITERATURE ON STUDENTS' ACADEMIC ACHIEVEMENT

Wastage rate in education has been a problem in many countries for decades. Severally studies have been done to establish the wastage rate since when it is high it has a negative effect on resources. Studies done in some developing countries worldwide in 1980 on wastage rates varied from in different nations as indicated in Table 3 (World Bank,1980).

Table 3: Wastage Rates in some Developing Countries

Income in Group $	Country	Medium Rate	Country	High Wastage Rate
Less than $265	Kenya	1.989	Burundi	5.16
265-520	Jordan	1.67	Thailand	2.03
521-1075	Korea	1.48	Dominican Rep.	2.50
1076-2500	Singapore	1.30	Gabon	2.38

Source: World Bank, 1980

Table 3 showing wastage rates in some developing countries in the world indicates that Kenya had a wastage rate of 1.989, Jordan 1.67, Korea 1.48 and Singapore 1.30 had medium rate. Countries with high wastage rate were Burundi 5.16, Thailand 2.03, Dominican Republic 2.50 and Gabon 2.38. UNESCO (2006 b) carried out a study in Nigeria on the Situation and Policy Analysis Survey and it revealed that there was a 17% wastage rate and average of 46.6% of primary school pupils who dropped out from schools were girls.

A study carried out in Nigeria by Mallum (1981) on educational wastage and need for guidance in Nigerian schools shows that there are several patterns of wastage in different systems. The main factor leading to wastage was eliminating exams and lack of space in the next grade or level leading to repeaters, drop outs and premature withdrawal by students in schools. This study was done so many years ago and it has been affected by time. A study carried out by Mundia (nd) in Zambia on secondary school wastage, continuing Education and Youth Employment in Zambia, indicated clearly that wastage was rampant due to factors like lack of space in the next grade or level, poverty and the factor that boys are given a priority when it comes to education leading to the girls dropping out of schools at a very tender age.

Bii and Nzevi (2013) carried out a study on internal efficiency assessment of secondary education in Bureti district, Kenya and they found that secondary schools that had low wastage rates were single schools that were church sponsored and they perform better compared to schools with high wastage. They further found that schools with high wastage rates were public, mixed and day secondary schools and they were plugged by high pregnancy rates for girls and absenteeism. Two sets of questionnaires were used to collect data. Data was collected using one type of instruments and it has its own weakness. This study did not determine the influence of FSE policy on wastage rates though the study was done after the introduction of FSE policy.

A study carried out in Nigeria by Adeyemi, (2012) on school variables and internally efficiency of secondary schools in Ondo state revealed that wastage rate index was 1.17 indicating that students spend 7.02 student years to complete against an ideal student years of 6 years. The coefficient of efficiency of 85.5% shows that the secondary schools in Ondo State, Nigeria

are 85.5% internally efficient. The study employed document analysis in collecting data from 32 secondary schools. It further revealed that Teacher qualification best predicts school internal efficiency, followed by teachers teaching experience, class size, student teacher ratio, school location and school size. They used only document analysis and should have employed more instruments to get varied results through interview. This study did not establish the influence of FSE policy wastage rates.

Musyimi (2011) did a study on the impact of FSE policy on wastage rates in secondary schools in Kathonzweni District, Makueni County. The study was conducted using a descriptive survey design. The sample size was 18 secondary Schools in the District, and since the study involved a complete enumeration of all schools in the District, it was a census inquiry. Data was collected from the DEO's office using a proforma. Quantitative data was analysed using the Statistical Package For Social Sciences. Findings indicated that cohort wastage rates were decreasing, from a high of 44% in the 2006 cohort to 19% in the 2007 cohort. The actual cohort wastage rate was not computed in this study since the data was not from the schools. Inferential statistics was not done to determine the impact of FSE policy on wastage rate.

A study carried out in Western Kenya by Achoka (2007) found that some of the reasons leading to school dropouts in western Kenya were poverty, early pregnancies, early marriages, HIV/AIDS, drug Abuse and low Self Esteem. Studies by Juma (2004) indicated the major factor influencing dropout rate in secondary schools was lack of school fees and other levies. Education is quite expensive compared to other things like demands which are required. Mwebi and Simatwa (2013) did an analytical study on Expansion of private universities in Kenya and its implication on quality and completion rate found that educational wastage was 3.2% and the completion rate for the said period was 96.8%. The study recommended that Private Universities should improve on provision of physical facilities, teaching and learning materials and administrative services. This study was done in private universities and the wastage rate was not computed as per the student years.

In Kenya expenditure on education has remained high since independence in 1963. Thus the cost of secondary education was found to be a major factor contributing to non-attendance of school (MOE, 2007). According to Basic report on Kenya integrated household budget survey 2005/2006 (MOE, 2007) about 38% of the out of school secondary school age youth were not enrolled in school because parents did not allow them. 25.6% were not in school due to the school costs. Other reasons included indirect costs of schooling (27.6%) as some youth had to work and/or help at home, lack of interest in schooling (11.3%), distance from school (7.1%) and school conflicts with beliefs (7.8%). The youth were out of school because they have either dropout or were non-starters.

Free Secondary Education policy in Kenya was launched in 2008 to address issues and challenges in making secondary education affordable and accessible by addressing factors that hinder both entry into and completion of secondary education by all gender (MOE, 2007). The Task Force made bold recommendations that were incorporated in the implementation of FSE policy, that were viewed as ones that would increase participation by minimizing dropout and repetition beside attracting the non-starters to secondary education (MOE, 2007).

The recommendations included:

Introduction of selective reforms to address secondary education inputs, that is, curriculum, textbooks, staffing, teachers, students and facilities; Promote all day schools in terms of facilities and learning environment to the level of provincial schools; Develop mechanisms for flexible delivery of curriculum to cater for children with special talents and abilities; Improve on lifespan of textbooks, review pupil-textbook ratios; Permit secondary schools to hire temporary teachers to take place of those who are sick or on maternity leave; Review staffing norms on regular basis to enhance appropriate development and utilization of teachers; Promote measures to ensure that enrolled children complete secondary education; Make uniforms affordable and durable; Abolish school levies, like PTA project fees and Enhance provision of special needs education among others.

A study done by Gachugi (2011) in Nyeri Municipality found that a number of factors contributed to wastage in secondary schools. Lack of fees was a major contributing factor to non-enrolment and dropout in schools. Lack of proper discipline in school led to students being sent home. Teenage pregnancy also contributed significantly to dropout. Repetition was attributed to increased chances in acquiring better grades in the KCSE examination and parental requests after student's transfer from other schools to help them gain academic momentum. This study focused on the factors that contribute to wastage rates in Nyeri secondary schools. This study did not determine the influence of FSE policy on education wastage.

Adeyemi (2012) and Musyimi (2011) studies addressed the issue of educational wastage in Nigeria and Kenya using specific regions as sites for their studies. However those sites were not made. Adeyemi (2012) used schools as unit of analysis and so did Musyimi (2011). However, Adeyemi (2012) collected data from schools, which was primary data, but Musyimi (2011) used secondary data from DEOs office. Adeyemi (2012) focused on internal efficiency and addressed wastage as an indicator of internal efficiency indirectly while Musyimi (2011) dealt directly with wastage. These studies did not address the influence of FSE policy on Educational wastage rates. This is the knowledge gap

this study sought to fill using Kericho County as a site for the study.

CONCEPTUAL FRAMEWORK

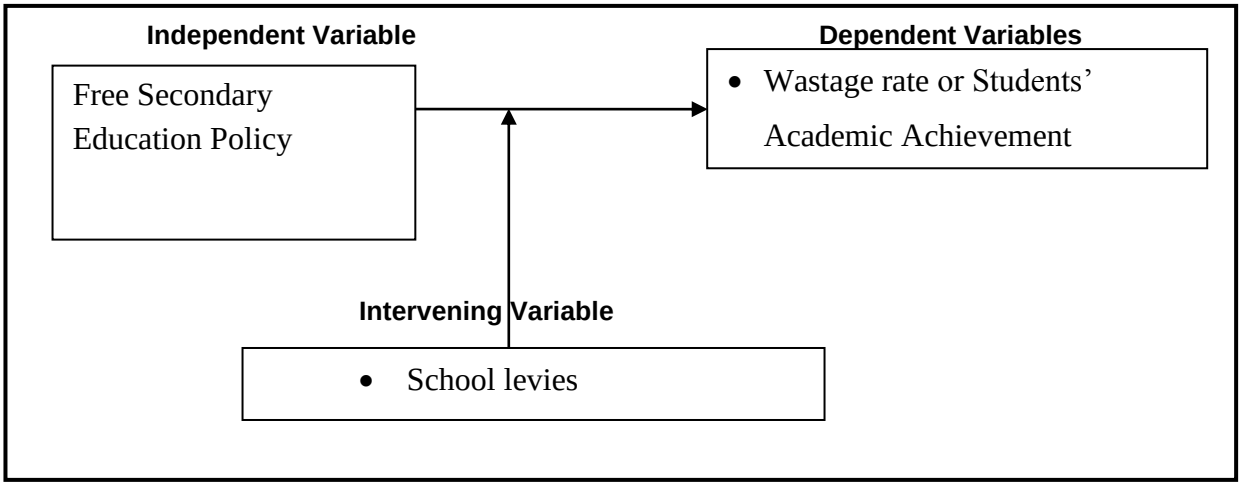

Figure 1: Conceptual Framework Showing the Influence of the FSE Policy on Educational Wastage rate in Kericho County

This conceptual framework was adapted to focus on independent and dependent variables. Independent variable was FSE policy while dependent variables was Educational wastage rate. The school levies was an intervening variable. This variable was taken care of by including it in correlations to establish its influence. Educational Wastage rates was computed in Kericho County secondary schools before and after FSE policy. Pearson Product Moment Correlation Coefficients and coefficient of determination was used to establish the influence of FSE funds on wastage rate in Kericho County.

RESEARCH METHODOLOGY

Ex post facto, descriptive survey and correlational research designs were used in this study.
The study population consisted of 45 secondary school principals, 45 Director of Studies (DOS), 5 District Quality Assurance Standards Officer (DQASOs) and 4,362 form four 2011 students drawn from 45 secondary schools in Kericho County. The sample size for the students was determined using the formula by Israel (1992) .Thus:

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

Where: n is the sample size, **N** is the population size, and **e** is the level of precision.

This formula was applied in this study to determine the students sample size. The students study population was 4,362 form IV students.

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

$$n = \frac{4362}{1+4362(0.05)^2} = 366$$

Saturated sampling technique was used to select the 5 DQASOs, 40 Director of Studies and the 40 School Principals. Saturated sampling is whereby the whole population is used because it is too small to be sampled (Mugenda & Mugenda, 2003). This was adopted in this study to select the DQASOs, Director of Studies and school principals as their populations were too small to be sampled. Questionnaire, interview schedule, Observation Guide, Focus Group Discussion Guide and document analysis guide was used in this study. Reliability was determined by administering the instrument on the same respondent twice at an interval of two weeks inon 5(10%) of the principals and Pearson Product Moment Correlation Coefficients was used to compute the correlation coefficient. The correlation coefficient was 0.8 at a set p-value of 0.05. This means the instrument was reliable as the calculated coefficient was greater than 0.7.

Quantitative data was analyzed using descriptive and inferential statistics Descriptive statistics in form of frequency counts, percentages, gender parity index, cohort analysis and Inferential Statistics; in form of

Pearson Product Moment Correlation Coefficients. Wastage rate was computed in Kericho County. Owolabi (2006) indicates that wastage rate is the number of student-years they have spent in total is calculated and compared with what is theoretically possible. The cohort analysis method is used where it is reconstructed using successive class data on enrolment and repeaters. A chart is constructed on the basis of promotion, repetition and dropout rates to show the flow of students. The following four assumptions are made using this method.

(a) Promotion and repetition rates are held constant throughout the period.
(b) All the students have the same likelihood of repeating, dropping out or being promoted;
(c) A class can be repeated 2 times;
(d) There are no other entrants to the system apart from the original entrance.

The following formula was used; For example where the optimum input-output ratio in a cycle of 6 years is 6:1 (Owolabi, 2006).

$$\text{Ideal = input- output ratio } = \frac{\text{input}}{\text{output}} = \frac{6}{1} = 6$$

$$\text{Actual = input - output ratio } = \frac{total\ no.of\ student\ years}{total\ no\ of\ graduates}$$

$$\text{Wastage rate } = \frac{Actual\ Input{-}Output\ Ratio}{Ideal\ Input{-}Output\ Ratio}$$

In ideal situation the wastage rate is equal to 1. This formula was applicable in this study in calculating the wastage rates where the cycle takes 4 years to complete. Pearson Correlation (r) was then done to determine the influence FSE policy has on wastage rate in Kericho County.

Correlation coefficients (r) were therefore interpreted to determine the influence of FSE policy on the dependent variables in terms of direction and strength of relationship Elifson, Runyon and Haber, 1990; Leedy and Ormrod, 2005) interpretation guidelines was used as shown in Table 4. This was adopted in the interpretation of Pearson's (*r)* and coefficient of determination R^2 in this study.

Table 4: Interpretation of Pearson Correlation Coefficients (r)

Strength of the relationship	Positive (+)	Negative (-)
Weak/low/small	0.01 – 0.30	0.01 – 0.30
Moderate/ medium	0.31 – 0.70	0.31 – 0.70
Strong/high	0.71 – 0.99	0.71 – 0.99
Perfect relationship	1.00	1.00
No relationship	0.00	0.00

Source: Adapted from Elifson, Runyon and Haber (1990); Leedy and Ormrod (2005)

RESULTS

Demographic Characteristics of the Respondents

The respondents in this study included school Principals, Director of Studies, DQASO and students. Their demographic characteristics were as shown in Tables 5

Table 5: Principals' Gender and Headship Experience (n=40)

Demographic characteristics	Frequency (f)	Percentage (%)
Gender		
Male	30	75.00
Female	10	25.00
Total	**40**	**100.00**
Headship Experience in years		
5	1	02.50
6-10	12	30.00
11-15	17	42.50
16-20	10	25.00
Total	**40**	**100.00**

Table 5 indicates that out of all the 40 (100%) school Principals involved in the study 30 (75%) were male while 10 (25%) were female. This shows that very few female teachers are appointed as school Principals in Kericho County. This is in agreement with the study carried out in a sampled number of schools in Kenya by Bosire *et al* (2009) where it was indicated that out of the 28 sampled school Principals 22(79%) were male while 6 (21%) were female. The school principals' leadership experience was also indicated and one (2.50%) had headship experience between 5 years, 12 (30.00%) had an experience of 6-10years, 17 (42.50%) has an experience of 11-15 years while 10 (25.00%) had an experience of 16-20 years.

From the findings in Table 5, most school principals had headship experience of 6 years and above. This shows that they had enough experience in school management and they were able to give the relevant information on students' academic achievement in Kericho County. Principals with experience can be relied on for the authenticity of data collected. They were also better placed given that the data required dated back to the year 2004 that required experience in school administration.

Table 6: Teaching experience before being Appointed as School Principals (n=40)

Years	Frequency (f)	Percentage (%)
5-10	2	5.00
11-15	5	12.50
16- 20	24	60.00
21-25	9	22.50

Table 6 indicates the school Principals teaching experience before they reached the level of school principal. Those principals with a teaching experience of between 5 -10 years were 2(5%) between 11-15 years were 5 (12.50%), while 24(60%) had a teaching experience between 16-20 and 9 (22.50%) had a teaching experience of between 21-25 years. This shows that these School Principals had gone through all the ranks in the teaching profession and had experience to be appointed as the school Principals. It shows that the principals were able to answer questions on students' academic achievement in Kericho County. This is vital in determining the validity of data that was generated in this study.

Table 7: School Principals' Highest Professional Qualifications (n=40)

Highest Qualification	Frequency (f)	Percentage (%)
BED, BSC +PGDE, BA + PGDE, B.COMM + PGDE	15	37.50
M.ED	25	62.50
Total	**40**	**100.00**

Table 7 indicates the education level of the school principals. Fifteen (37.50%) had a Bachelor's degree while 25 (62.50%) had Master Degree. Based on the findings in Table 7 it is clear that all the Principals had the required level of education. Education Portal (2014) shows that in the US the requirement to be a School Principals is a Bachelor of Education degree. This is also applicable in this study and in agreement with The Basic Education Act 2013 (Republic of Kenya, 2013). These principals were in a position to understand and give the relevant information about wastage rate in Kericho County, given their academic credentials.

Table 8: FSE Fund and School Levies incurred in four years on average for 2008 Cohort after introduction of FSE policy (n=40)

Type of School	FSE in 4 year (Kshs.)	Percentage (%)	Costs incurred by parents in 4 years (Kshs.)	Percentage (%)	Totals in Kshs.
Days scholars in mixed schools	41,060	40.43	60,509.65	59.57	**101,569.65**
Boarders in mixed schools	41,060	27.40	108,803.85	72.60	**149,863.85**
Girls boarding	41,060	25.62	119,178.57	74.38	**160,238.57**
Boys boarding	41,060	24.88	123,964.43	75.12	**165,024.43**

Table 8 indicates the costs incurred by the government and the parents after FSE policy in Kericho County. The government spent Kshs.41, 060 for four years while the parents spent Kshs.60, 509.65 on average for four years in mixed day schools, and for boarders in mixed schools they spent Kshs.108, 803.85. In girls boarding and boys boarding they spent Kshs.119, 178.57 and Kshs.123, 964.43 respectively. Day school students were not given any guideline on the amount of levies the parents were to pay while parents in boarding schools were to pay Kshs.18,627 per year which would add up to Kshs.74,508 in four years. Table 8 shows how much the parents paid and it was more than the given figure and parents in day schools paid yet there was no guideline for them. This data was relevant in this study because it helped in establishing the influence of FSE policy on wastage rate.

Research Question

What is the influence of FSE policy on wastage rate in Kericho County?

To establish the influence of FSE policy on wastage rate in Kericho County, the following key inputs that determine wastage rate were examined before and after the introduction of FSE policy. KCSE mean scores were established to determine the influence of FSE funds on wastage rate in Kericho County.

Influence of FSE Policy on Wastage Rates in Secondary Schools in Kericho County

The research question responded to was: What is the influence of FSE policy on secondary school education wastage rates in Kericho County?

The formula by Owalabi, (2007) was used to compute educational wastage rates in Kericho County. Two cohorts were taken before and after FSE policy so as to trace the repeaters back. The repeaters for 2004 and 2007 cohort was further traced to confirm those who repeated twice, this was traced using the admission numbers to get those students belonging to 2004 and 2007 cohorts only. This was computed and presented in Table 9.

Table 9: Students Enrolment and Wastage in Kericho County before Introduction of FSE policy (n=40)

Years		Form I	Form II	Form III	Form IV
2004	**E**	**3603**			
	R	**13**			
	N	**0**			
2005	**E**	3632	**3304**		
	R	14	**27**		
	N	0	**352**		
2006	**E**		2926	**2800**	
	R		30	**98**	
	N		352	**619**	
2007	**E**			2829	**2308**
	R			89	**96**
	N			621	**647**
2008	**E**			-	2341
	R			6	113
	N				509
2009	**R**				6

Key: R; Repeaters N; New Students E; Enrolment

Table 9 shows the students enrolments in Kericho County before FSE policy. The students were traced to the third cohort to establish those students who repeated twice. This was to determine the no. of students who repeated and those who dropped out. The flow was then used to compute the student years and those students who completed so as to compute the wastage rate.

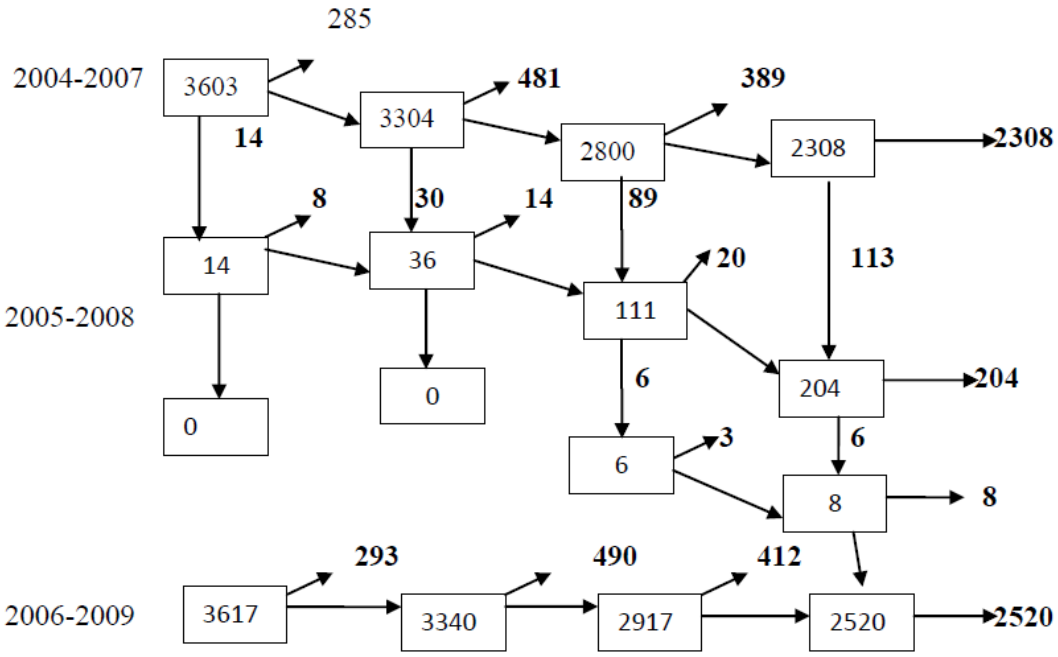

Figure 2: Evolution of the students' cohort before FSE policy

The evolution of these students was presented in Figure 2 to show the flow of the students.

From Figure 2, the total inputs as well as the total outputs were calculated. The figures in the boxes are the student inputs in years. All the inputs are therefore summed up. Thus:

Form one	3,603 + 14	= 3617 student years
Form two	3304 + 36	= 3340 students years
Form three	2800 + 111+ 6	= 2917 student years
Form four	2308 + 204 + 8	= 2,520 student years
Totals		= 12,394 students years

The output = 2308 + 204 + 8 = 2,520 successful completers.

The cohort flowed through a total of 12394 student years and graduated a total of 2520 students.

Actual = input- output ratio $= \frac{\text{Total No.of student years}}{\text{Total No.of graduates}} = \frac{12394}{2520} = 4.92$

Ideal = input- output ratio $= \frac{\text{Total No.of student years}}{\text{Total No.of graduates}} = \frac{3603 \text{ x } 4}{3603} = 4$

Wastage rate $= \frac{\text{Actual Input–Output Ratio}}{\text{Ideal Input–Output Ratio}} = \frac{4.92}{4} = 1.23$

The wastage rate for the students before FSE policy was 1.23 this is an indication that the students took more than four years to graduate.

Table 10: Students Enrolment and Wastage in Kericho County after Introduction of FSE policy (n=40)

Years		Form I	Form II	Form III	Form IV
2008	**E**	**4615**			
	R	**13**			
	N	**0**			
2009	**E**	4614	**4097**		
	R	12	**106**		
	N	0	**230**		
2010	**E**		4098	**3420**	
	R		123	**114**	
	N		352	**735**	
2011	**E**		-	3252	**2739**
	R		3	111	**134**
	N			423	**830**
2012	**E**			-	2725
	R			6	136
	N				822
2013	**R**				4

Key: R; Repeaters N; New Students E; Enrolment

Table 10 shows the students enrolled after FSE policy. These students were further traced to the third cohort using their admission numbers to establish those who repeater twice. This was to determine the students who repeated and those who dropped out of the system. The students' years were then computed and the students' years were also computed to get the wastage rate.

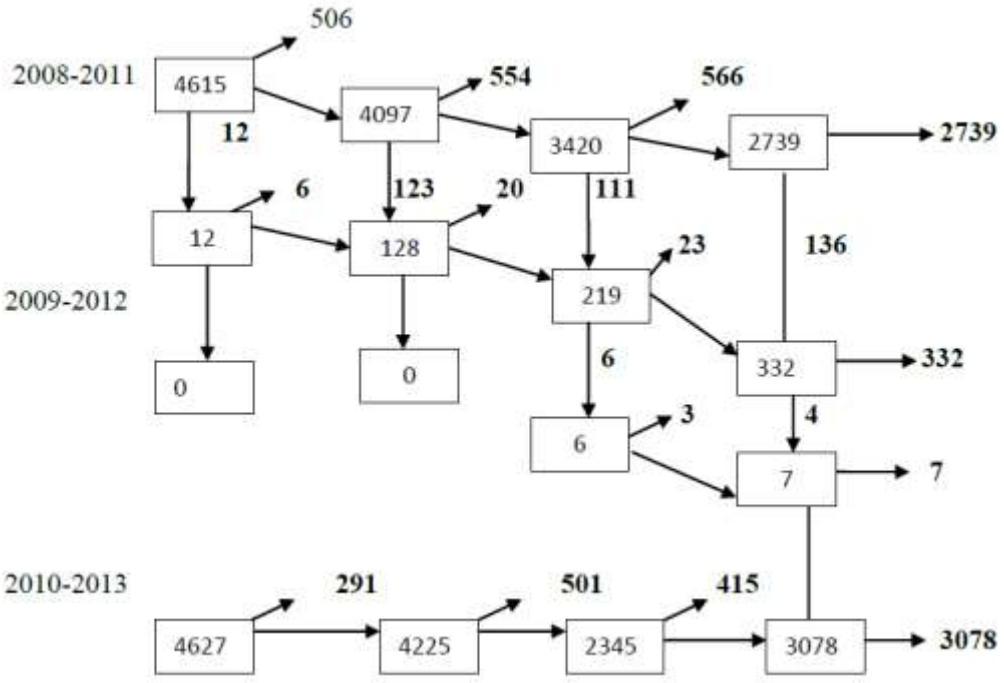

Figure 3: Evolution of the Students' Cohort after FSE policy (Figure 2)

The evolution of the cohort was then presented in Figure 3 to indicate to show the flow of the students. The total inputs as well as the total outputs were calculated. The figures in the boxes are the student inputs in years. All the inputs are therefore summed up. Thus:

Form one	4615 + 12	= 4627 student years
Form two	4097 + 128	= 4225 students years
Form three	3420 + 219+ 6	= 3645 student years
Form four	2739 + 332 + 7	= 3078 student years
Totals		= 15,575 students years

The output = 2739 + 332 + 7 = 3078 successful completers

The cohort flowed through a total of 15,575 student years and graduated a total of 3078 students.

Actual = input- output ratio $= \frac{\text{Total No.of student years}}{\text{Total No.of graduates}} = \frac{15575}{3078} = 5.06$

Ideal = input- output ratio $= \frac{\text{Total No.of student years}}{\text{Total No.of graduates}} = \frac{4615 \text{ x } 4}{4615} = 4$

Wastage rate $= \frac{\text{Actual Input}-\text{Output Ratio}}{\text{Ideal Input}-\text{Output Ratio}} = \frac{5.06}{4} = 1.27$

The wastage rate for the students before FSE policy was 1.27 this is an indication that the students took more than four years to graduate.

Table 11:Wastage Rate in Kericho County Secondary Schools Before and after Introduction of FSE policy (n=40)

Cohort	Wastage Rate
Before FSE policy	1.23
After FSE policy	1.27

Table 11 indicates the wastage rate in Kericho County before and after FSE policy. Before FSE policy the wastage rate was 1.23 while after it was 1.27. This shows that after FSE policy wastage rate was slightly more by 0.05. This reveals that FSE fund had not reduced wastage rates in the county. According to World Bank (1980) interpretation this is medium wastage rate and it is a waste of government and individual resources because the students took longer to complete their four cycles and others dropped out without completing. This findings concur with the study done in Nigeria by Adeyemi, (2012) on school variables and internal efficiency of secondary schools in Ondo state where it revealed that wastage rate was 1.17 indicating that students take 7.02 student years to complete against an ideal student years of 6 years. In Kericho County the wastage rate after FSE policy was 1.27 which was worst than before FSE policy, students took 5.06 student years to complete the cycle against the ideal 4 student years. FSE policy objective is to ensure the students entry and successful completion.

From the available data it is clear that FSE policy had little influence on educational wastage against the expectation that it would greatly lower the wastage rate. This is attributed to the fact that students only benefited from the FSE policy, the government subsidy only after meeting the requisite conditions to be in school. That is, personal effects, motivation levies; KCSE examination fees, mock fees, uniform fees, supplementary books levies, PTA projects levies and boarding fees for boarding schools. These study findings concur with the study done in the US by the UNESCO (2008) where it revealed that only about seven in 10 students are actually successfully finishing high school in four years meaning that 70% complete on time while the wastage rate is 30%. It also agrees with the studies done in the US's 50 largest cities where the graduation rate was 52% implying that the wastage rate was 48%. This study also concur with the studies by OECD (2011) where it revealed that Britain had more teenage drop-outs than in most other developed nations when it revealed that almost one-in-five pupils (20%) currently leave school at 16 before taking A-level style qualifications. This shows that FSE policy has not been able to reduce wastage rate in Kericho County.

In order to establish the influence of FSE policy on wastage rate for 2008 cohort, data on FSE fund, school levies and wastage rates were computed per school and the results were as shown in Tables 8 and 12 respectively.

Table 12: Wastage Rates in Kericho County after Introduction of FSE policy, the 2008 cohort (n=40)

Wastage rate	Frequency of schools (f)	Percentages (%)
1.00-1.49	31	77.5
1.50-1.99	6	15
2.00-2.49	2	5
2.50-2.99	0	0
3.00 -3.49	1	2.5

Table 12 indicates the wastage rates in Kericho County after the introduction of FSE policy per school. Thirty one (77.5%) of the schools had their wastage rate below 1.49, six (15%) had wastage rate ranging from 1.50 to 1.99, two (5%) had wastage rate ranging from 2.00 to 2.49. while one (2.5%) of the schools had wastage above 3.00. The repeater rates per school, FSE fund, school levies and combination of school levies and FSE fund in (Table 8 and 12) was used to correlate. Interpretation was done using Table 4.

Table 13: Pearson Product Moment Correlation (r) Matrix for FSE fund, school levies and Wastage Rate in Kericho County

		Wastage rate
FSE fund	Pearson Correlation	-.22
	Sig. (2-tailed)	.18
	N	40
School levies	Pearson Correlation	-.20
	Sig. (2-tailed)	.23
	N	40
FSE fund & School levies	Pearson Correlation	-.22
	Sig. (2-tailed)	.17
	N	40

Table 13 indicates that the relationship between FSE policy and wastage rates was weak and negative with a coefficient of -.22. This relationship was not statistically significant at a set p-value of 0.05. According to Elifson, Runyon and Haber (1990) Leedy & Ormrod, 2005) guideline Correlation coefficients (r) interpretation indicated that this is a weak negative influence. This means that FSE funding accounted for an increase in wastage rates fro, 1.23 to 1.27 (Table 12) though the influence was not significant. Coefficient of determination R^2 is the square of Pearson's *r* which tells how much of the variance is accounted for by the correlation which is expressed in percentages (Leedy & Ormrod, 2005). To account for the influence of FSE on wastage rate Pearson's *r* was therefore squared. The coefficient of determination R^2 = 0.05 meant that FSE accounted for 5% of the variation in wastage rate which was not statistically significant. School levies which were also an intervening variable had a negative weak of -0.20. Coefficient of determination R^2 = 0.04 which meant that FSE accounted for 4% of the variation in students wastage rates. When school levies were combined together with FSE fund, it had a weak negative influence of -0.22. Coefficient of determination R^2 = 0.05 which meant that school levies and FSE fund accounted for 5% of the variation in students wastage rate. This means that the mediating effect of school levies on the influence of FSE policy on wastage rate was zero percentage. Therefore the 5% was the real percentage that FSE policy accounted for in the variation of wastage rate and 95% was accounted by other factors. This means that FSE funding had very little influence on wastage rates. Therefore other factors that were responsible for wastage rates were revealed during interviews and focus group discussion.

DISCUSSION

Interviews and focus group discussions were done on the DQASOs, Director of Studies and Students focus groups in 40 schools. It was clear that wastage rates in Kericho County is still a problem and resources are not utilized well. The Director Quality Assurance Standard Officer said,

"FSE policy was introduced in Kenya to reduce wastage rates and improve on equity and access. Unfortunately wastage is still a problem in the county because when we do or receive statistics from schools the students who enroll in Form one either repeat or drop out without completing especially the boys because of indiscipline. The money the government has spent on these students goes to waste and it also makes our education inefficient since the learners begin and don't

complete the system". This was an indication that despite FSE policy there are other factors that could have militated against the influence of FSE policy on wastage in the county and the study revealed the following factors. The factor that was mentioned clearly by all the DQASO and Directors of Studies in the 40 schools when they were interviewed were;

Motor bike business as one of the factor that has really influenced wastage rate in Kericho County especially among the boys more so in day schools. This is so because FSE policy was started when the motorbike transport came in place. This had a lot of influence in education wastage in Kericho County being the current trend in transport. Motorbike business is a means of transport common in Kenyan towns and villages.

The DQASO said, "The motorbike business has led the students to take longer to complete school in the required time, it also contributed to students dropping out of school to do business especially the boys. The girls are also misled by these motorbike men and some of them get pregnant and others have gotten married early". Due to poverty just like the boys who are employed as riders to earn income. The girls on the other hand are given money by the motorbike riders in exchange for sexual favours.

School levies was also mentioned as contributing to wastage in education in the county. This was suggested to have really affected the students in terms of class attendance and performance leading to repetition and finally to drop out. This was mentioned largely by all the Directors of Studies, DQASOs and the students during focus group discussion and interviews in the 40 schools. Director of Studies in one of the schools said: "FSE fund should be doubled from 10,265/= to 20,530/= this will help reduce the parents' expenses and they will only concentrate in providing the personal effects for the children. This will help to reduce drop out and repetition rates in secondary schools".

In fact one of the students stated, "Education is not free the way it is said. We are always sent home to get school fees and to buy books especially literature books. Unfortunately some of our friends parents don't have money making them stay longer at home or some of them drop out because they have lost hope". This is an indication that much as the government is paying for tuition to ensure that all the children get access to education there are other levies the parents cater for and they are much higher compared to what the government is paying. In fact in this respect another student said, "I am one student who took eight years to complete secondary education. This is because my parents could not afford to pay for my school fees. I dropped out in form two to work in the tea farms for three years to pay my school fees. When I came back I repeated form two so as to be relevant with my studies. Some of my classmates have cleared colleges".

This is an indication that school levies is still a problem despite FSE policy being in place. The amount the parents are expected to pay is high since they have other personal effects to take care of. This makes it difficult for these parents to sustain these children in school. This was in agreement with the study done by Gachugi (2011) in Nyeri Municipality that school fees was one the factors contributed to wastage in secondary schools.

Cattle rustling were also mentioned by all the DQASOs and Directors of Studies in the 40 schools during interview. They clearly indicated that it had highly contributed to wastage rate in the county since the students' dropout and due to poor performance they repeat classes. In fact one of the DQASOs indicated clearly; Cattle rustling has influenced education wastage because these boys who are engaged in it in the boarders drop out of school and some when they come back to schools they repeat and some of them repeat twice before they complete their studies. This contributes to waste of resources greatly. These findings concur with that of the study done in Western Kenya by Achoka (2007) in western Kenya were poverty, early pregnancies, early marriages, HIV/AIDS, drug Abuse and low Self Esteem.

CONCLUSION

From this finding it is clear that FSE policy had not influenced wastage rate in Kericho County positively. Wastage rate was influenced mainly in this county by the dropout rates and repetition rates due to the influence of other factors that had clearly been mentioned by the DQASOs, Directors of studies and students during Focus group discussion and interviews. The emergence of motorbike business and also the economic situation in the county has contributed to these that is why the school levies paid by the parents is almost similar to what they paid before FSE policy.

RECOMMENDATION

The study recommends that, the government should increase FSE funding to cover 70% students' requirements in both day and boarding schools as this would reduce cases of child labour, motorbike businesses, early marriages, repetition and drop out thereby minimizing wastage rates.

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