

## RELATIONSHIP BETWEEN SUBSIDIZED SCHOOL FUNDING AND COMPLETION RATES IN KENYAN PUBLIC SECONDARY SCHOOLS

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### ABSTRACT

The aim of this study was to determine the relationship between subsidized school funding and completion rates in public secondary schools in Vihiga County, Kenya. The study was founded on the Production Function Theory, which posits that an association exists between educational inputs and outputs. The study adopted a mixed methods approach, whereby the descriptive survey research design was used to execute the quantitative phase, while the oral interviews constituted the qualitative phase. The study was carried out in Vihiga county, Kenya and targeted; all the 5 Sub-County Directors of Education, all the, 5175 form three students in public secondary schools, all the 115 principals and all their 1023 teachers. A sample of 518 students, 102 teachers, 12 principals and 5 Sub-County Directors of Education was selected using saturated sampling technique for the sub county directors of education and simple random sampling for the students, teachers and principals. Raw data were collected by use of questionnaires, interview schedules and document analysis guides. A pilot study was performed three weeks prior to the actual study to assess the validity and reliability of the three instruments, which was done using the Rasch model and test-retest method respectively. Both descriptive and inferential statistics were used to analyze the collected data. These included frequencies, percentages, standard linear regression analysis. Findings indicated that a significant positive linear association exists between subsidized school funding and secondary school completion rates. On the basis of this revelation, it is recommended that the Ministry of Education should increase the funds it allocates annually per child towards subsidized secondary education, as the current Ksh. 10265 is insufficient, hence the low completion rates like this study witnessed in Vihiga County.

**KEYWORDS:** Completion Rate, Subsidized School Funding, Secondary Education, Public School

### INTRODUCTION

In most countries around the world, the goal of secondary school education is to equip learners with knowledge and skills that will help them pursue careers of their choice. Consequently, most countries are continually channeling colossal amounts of their budgetary allocations towards secondary education (UNESCO, 2014).

In the USA, the education budget is usually I trillion dollars, which is funded by the state, local and federal government. The United States spends more per student on secondary education, more than any other country, which has consequently resulted in high completion rates (Goldstein, 2014). In

Europe, Russia is rated as the country with the largest investment in secondary school education. In Asia, many countries are keen to ensure high completion rates among secondary school level by investing heavily towards subsidization of education at this level. In Japan for instance, secondary education is totally free for all its citizens (UNESCO, 2014)

In Kenya, the government rolled out the subsidized secondary education programme in 2008, with the aim of increasing completion rates among secondary school students. (MOEST, 2008). The launch of the funding was meant to address illiteracy, improve quality of education, low transition rate from primary to secondary schools and low completion rates at the secondary level. Establishment of this programme was informed by the sector policy guidelines articulated in sessional paper number 1 of the year 2005 and vision 2030. The Government of Kenya was informed by the conviction that secondary education plays a critical role in providing the link between academic and practical knowledge, skill development and the job market. Those of school going age have no option other than attend school to acquire education that is fully funded by the government (Mbayah, Odebero and Ndiku, 2018); MoEST, 2008).

According to Ndiku and Muhavi, (2013), the implementation of free secondary education in Kenya saw many parents withdraw from paying additional levies to supplement the FSE due to misconception. This compromised internal efficiency in quality of education and encouraged drop-outs. High levels of corruption in government departments as well as some school administration have been accused of misappropriation of funds meant for free education. In the year 2011, the British government, which is one of the major donors in the Kenya Education Sector Support Programme (KESP) hired independent consultants who worked with the Ministry of Education to audit the programme (Mbayah, Odebero and Ndiku, 2018).

In Vihiga County, Kenya the interesting scenario however is there are more students in boarding schools than day school. According to Vihiga County Director of Education, as at the year 2014, the boarding schools have an average of 65 students per stream while day schools have an average of 30 students per stream, against the average national enrolment of 45 students per stream. The Government subsidy stands at Ksh. 10,265 for every student, regardless of the type of school they are enrolled in. Each student in day school pays an extra Ksh. 3,000 a student enrolled in boarding school pays and additional Ksh. 40,000 as at 2015. Despite the big disparity in the fees charged boarding schools as compared to day schools, most Kenyan parents prefer sending their children to the latter, despite them being more expensive (Mbayah, Odebero and Ndiku, 2018)

## **STATEMENT OF THE PROBLEM**

The most important stage in the Kenyan education cycle, which determines the career path that an individual will take, is the secondary school level. To highlight the importance of this stage, the Kenyan government has invested heavily in secondary education, through subsidization of tuition fees at this level for all students who enroll in public secondary schools. It was the hope of the government that through this subsidization initiative, all students will complete their secondary

school and pursue careers of their choice thereafter. However, the current statistics show a worrying scenario, because some regions in the country are recording very low secondary school completion rates. Vihiga country is one such region, which has very many public secondary schools that record high form one students' enrolment but relatively low completion rates four years later. It is against this background that this study was carried out, so as to establish whether the government is getting good returns from the noble initiative of subsidizing secondary education in all public secondary schools.

## **OBJECTIVE OF THE STUDY**

The study aimed at establishing the relationship between subsidized school funding and completion rates in public secondary schools in Vihiga County. One null hypothesis was formulated from the aforementioned objective as follows:

HO: There is no significant relationship between subsidized school funding and completion rates in public secondary schools in Vihiga County

## **LITERATURE REVIEW**

Within countries, there is extensive research on the determinants of students' performance and educational quality. Almost all studies show that student performance has a strong association with individual background characteristics (Hanushek & Laque, 2003; World Bank, 2003). It is common to find that test score variations within schools are much larger than across schools (Lee & Beyk, 1989; Kim, 2006). Exactly why learning among individual students is so variable is much harder to establish.

In the United States, research points to a casual role of family which is characterizes in explaining the differences in performance (Liuthea and Pollack, (2004). Yet another research in the US points to the link between social economic status and quality of school resources including teachers (Peske & Haycook, 2006). That such inputs matter to learning is fairly well established. Lee and Smith, (1997) found that school size mattered. In India a report by World Bank, (2009), analysis of key factors affecting student achievement confirms that school plays a very important role in determining 50% of students' achievement.

Analysis of these key factors and international research more generally indicate some consensus regarding the elements of educational quality, which include quality and availability of teacher, the curricular and pedagogical process applied to master it, the quality and availability of learning materials, learning assessment and examination and quality assurance. As reported in the International Journal on Research Studies in Management in Nigeria results of senior school certificate examination were extremely poor between 2007 and 2010. The poor performance of students was largely attributed to inadequate Student: textbook (Earthman, 2002).

According to Fafunwa, (2010), there is a big gap in quality resulting from large number of students in crowded classrooms, using inadequate and absolute equipment and with disillusioned teacher.

Basing on research carried out in Adjumani district in Uganda, many schools in the district lack basic resources to foster good academic performance at secondary school level. It was also noted in the same research that inadequate finances need to be properly managed for effective performance.

In Kenya, the quality of education tends to be evaluated in terms of the number of students passing national examinations (Eshiwani, 1993). The expectation of parents is that their children perform well in national examinations in any secondary school they attend as long as the criteria for admission in these schools are the same. This is not however the case as the perception among many parents is that some schools although of the same category, seemingly perform better than others.

According to a report by Review of the Progress, Challenges and Potential Solutions on access and quality in the Kenya education systems overall student performance in KCSE was poor in 2008. The performance was weakest in district schools where only 11% of the students scored at least a C+ compared to 43% in provincial schools and 90% in national schools. The difference in performance across their types of schools partly reflects the different levels of academic preparation of students admitted to these schools and the outcome of the process.

The KNEC annual report of the year 2010 titled "Education" stated that K.C.S.E 2010 had 213,438 out of 337,488 candidates, scoring C- and below i.e. 60% those who sat for the exam. Only 27% obtained a mean grade of C+ and above which was considered the minimum university entry benchmark. Only 8,131 students obtained the A and A- mean grades nationally. This was due to lack of equipped laboratories and where such facilities were found they were not adequately used. About 55% of schools had no libraries and where it existed, it had inadequate books, Mwangi and Nyaga (2010). Has subsidized secondary education fund had any relationship with KCSE performance in Vihiga County public schools?

Asena, Simiyu and Riechi, (2016) carried out a study to establish the factors affecting subsidized free day secondary education in enhancing learners' retention in secondary schools in Kenya. Their specific objective was to determine the effects of adequacy of school finances and teaching/learning resources in enhancing learners' retention in secondary schools in Kenya. The target population of the study comprised of 3,993 stakeholders in the education sector in Bungoma County, Kenya. A sample size of 340 respondents was selected purposively for the study. Cross-sectional survey research and proportional stratified sampling were adopted to obtain the Educational Officers, Principals, Board Of Governors (BOG) chairpersons, Parents and Teachers Association (PTA) chairpersons and Parents from each Sub County in Bungoma County.

Questionnaires and interview schedules were used to collect data from the respondents. Qualitative data collected were analyzed using content analysis while quantitative data analyzed using descriptive statistics. Their results indicated that enrollment and transition rates of learners had increased since the introduction of Subsidized Free Day Secondary Education (SFDSE) by the government of Kenya in the year 2008. The study also revealed that there was an acute shortage of

teachers despite the expansion of various secondary schools in Bungoma County to three streams per class.

Kinano, (2015) conducted a study to establish the influence of free day secondary education in enhancing internal efficiency, particularly the completion rates in public secondary schools in Mvita Sub county, Mombasa. The factors investigated included cost of education (direct and indirect), parents economic activities, school characteristics including physical facilities, teacher resource, discipline, school type and category, family background which included parents' standard of living, and finally the parents' level of education in enhancing students' completion rates in public secondary in Mvita Sub county. The study adopted a descriptive research design. The theoretical framework was based on systems theory of management.

The sample size of this study was 12 head teachers, 64 teachers and 189 students. The study utilized questionnaires for the respondents to collect data. Reliability of the instrument was done by performing Spearman's rank order correlation. The validity was done by conducting a pilot study on two schools that were not included in the study. Both qualitative and quantitative techniques were used to analyze data. The Statistical Packages for Social Scientists (SPSS) software package were utilized in analyzing data. The analyzed data was presented in frequency tables. Findings showed that there was a high enrolment rate into secondary schools, which was not consistent with completion rates. Reasons were that the physical facilities in the schools were not adequate to allow smooth learning sessions.

The schools were also not very well developed to meet the increasing demand by the learners pursuing secondary education. Additionally, the schools did not have adequate instructional materials, which affected the educational outcomes. Furthermore, the school funds were a major challenge as the research found out, because parents were still expected to meet educational costs, in spite of the subsidized education by free day secondary education by the government (Kinano, 2015).

## **RESEARCH METHODOLOGY**

The study was carried out in Vihiga County, Kenya because this area has the lowest secondary school completion rate when compared to other counties in western Kenya. The study adopted a mixed methods approach, which involved collection of both quantitative and qualitative data in sequential fashion. The quantitative phase was executed using the descriptive survey research design while the qualitative phase involved the use of oral interviews to collect data. Descriptive survey design was preferred because it allows researchers to gather, summarize, present and interpret information for the purpose of clarification (Orodho, 2005).

The target population for the study included; all the 5 sub-county directors of education from the research area, together with all the 115 principals, 1023 teachers and 5,175 Form 3 students, a total of 6318 respondents. 10% of the principals, teachers and students were selected to be the sample, together with all the 5 sub county directors of education. The principals, teachers and students were

all selected using simple random sampling technique, while the sub county directors were selected using saturated sampling as they were few and all accessible. The 637 sample was sufficient to represent a population of 6318 respondents, as it was above the 10% threshold as recommended by Kerlinger, (2003).

Data collection instruments included questionnaires for teachers and students, interview schedules for principals and sub county directors and document analysis guides for scrutinizing financial documents in the selected schools. The questionnaire was both open and close ended, designed by the researchers and sought information about secondary school completion rates in Vihiga County. The oral interview guide was sought information from principals and sub county directors of education on the same subject, to supplement data collected from students and teachers. The document analysis guide was filled by the researchers and it sought information about the status of funds sent to all selected schools for purposes of subsidizing secondary school education. The documents analyzed included the class registers, fees register, cash books and bank statements.

The instruments were piloted three weeks to the actual study, in 5 secondary schools in Vihiga County, Kenya. Data from the pilot study were used to assess the validity and reliability of the instruments. Validity was determined using the RASCH Model, where three educational research experts were used to give their expert advice, while the test retest method was used to assess reliability. Both measures yielded values above the 0.7 Cronbach alpha coefficients as recommended by George and Mallery, (2003). Data for both the pilot and actual studies were analyzed both qualitatively and quantitatively. Qualitative data were analyzed in themes as each emerged while quantitative data were analyzed both descriptively and inferentially. Descriptive statistics included frequencies, mean and percentages. Simple Linear Regression (SLR) at 0.05 alpha level was the inferential statistics procedure used to test the null hypothesis. The SLR was preferred for hypothesis testing as it is robust for determination of the strength and direction of association between the dependent and independent variable (George and Mallery, 2003). Using this parametric test, it was also possible to determine whether the independent variable could be used to predict the dependent variable. Several ethical considerations were put in place to protect the rights of both the respondents and the researcher. These included; assurance of anonymity, maintaining confidentiality and seeking informed consent beforehand.

## RESULTS AND DISCUSSION

The objective of this study was to establish the relationship between subsidized school funding and completion rates in public secondary schools in Vihiga County. Completion rates were computed with help of SPSS, using the formula;

$$\text{Completion Rate} = \frac{\text{no.of students who sat for KCSE in a given year}}{\text{no.of students who enrolled in form one in the same school}} \times 100$$



This study established the SSE completion rate as from the years 2008 to 2014 with respect to the number of students that enrolled in form one in the same schools from the years 2005 to 2011, repeaters and new comers excluded, and the results were as presented in Table 1

**Table 1: Completion Rates as from 2008 to 2014**

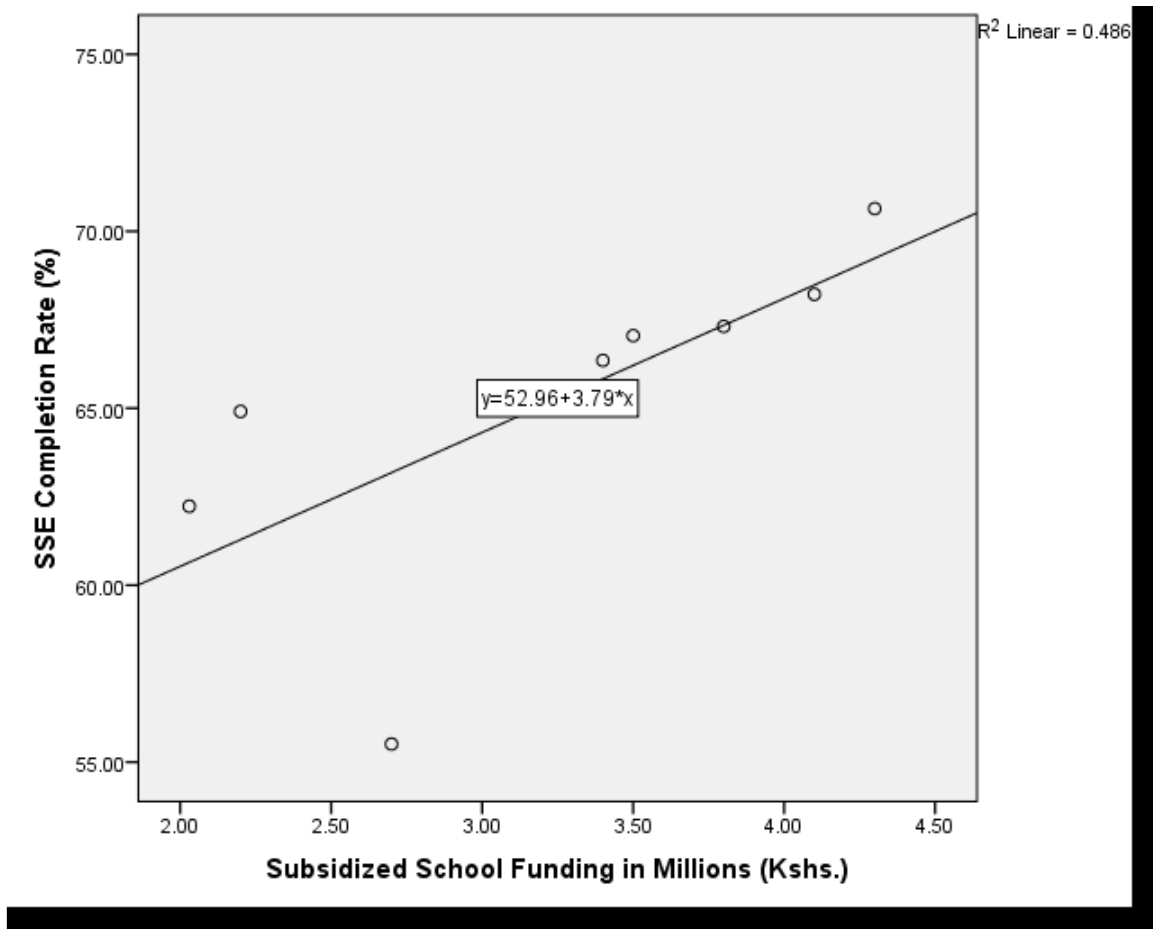
Year of Form 4 Completion	2008	2009	2010	2011	2012	2013	2014
No. that Completed Form 4	4,308	4,501	3,607	5,411	6,415	8064	9,972
Year of Form 1 Enrolment	2005	2006	2007	2008	2009	2010	2011
No. that Joined Form 1	6,637	6,862	5,436	8,070	9,531	11,821	14,116
SSE Completion Rate (%)	64.91	65.59	66.35	67.05	67.31	68.22	70.64

Data in Table 1 indicates that 64.91% of the students who had joined Form one in 2005 were able to complete Form 4 in the year 2008 while 65.59% of those who had joined Form one the following year, completed Form 4. At the same time, 66.35% of the students who had joined Form one completed Form 4. In the year 2010 the completion rate was 66.35% while in the year 2011, Vihiga County registered a completion rate of 67.05%.

Furthermore, the county registered a completion rate of 67.31% in the year 2012 and 68.22% was registered in the year 2013. In 2014 the completion rate was 70.64%. These findings show that there was a steady improvement in the completion rate of the County as from 2008 to 2014. It implies that factors of wastage in education such as drop out have been reduced to enable the students' progress with their education and finally complete their secondary education. This may be attributed to subsidized school funding which was launched in the year 2008. Since the Government pays a fraction of the fees for the students, the parents must have gotten relief and thus enable the students to complete.

However, it is worth noting that the rate at which the completion rate increased is very slow for instance, the deviation in the completion rate as from 2008 to 2014 (64.91% to 70.64%) is 5.73% only. At the same time, the fact that County completion rate is at 70.64% is not something to celebrate since about 30.0% of the students are wasted by the system and yet the hope of every education stakeholder including the subsidized school funding policy is that all students who join Form one should be able to complete Form 4.

This study further determined the association between subsidized school funding and completion rates using simple linear regression analysis and the results were as presented in Figure 1



**Figure 1: Associations between SSF and Completion Rate from 2008-2015**

As Figure 1 clearly shows, there was a significant positive linear association between completion rate in public secondary schools in Vihiga County and subsidized school funding. The Figure further tells us that the completion rate could be predicted using the equation;

$$y = 52.96 + 3.79x$$

Where x is the amount of SSE funds in millions and y is the SSE completion rate.

This means an increase in the amount of SS funds would also lead to an increase in SSE completion rates. If the governments invested, say 1 million in SSE, the SSE completion rate would be;

$$\text{Completion rate} = 52.96 + 3.79 \times 1 = 56.75\%$$

If however the funds were increased to say 5 million, the completion rate would be 71.91% using the same equation as shown;

$$\text{Completion rate} = 52.96 + 3.79 \times 5 = 71.91\%$$



These calculations clearly provide empirical evidence that indeed a significant linear association exists between SSF and SSE completion rates. The null hypothesis was therefore rejected because it purported otherwise.

Furthermore, this study sought the opinion of the principals on subsidized school funding and completion rate and the findings were as indicated in Table 2.

**Table 2: Principals’ Opinion on Subsidized School Funding and Completion Rate**

Opinion	Frequency Ratings (n = 12)					Mean Ratings	Rating Status
	5	4	3	2	1		
Those who join Form 1 finish secondary schooling cycle successfully.	1	9	1	1	0	3.83	Good
Irregular attendance of students has gone down since the introduction of the funding.	5	1	3	3	0	3.67	Good
Few students drop out of school due to fees balances.	4	5	1	2	0	3.92	Good
Parents meet their obligation of providing for their children on hidden costs.	2	6	1	0	3	3.33	Fair
There is less stress among students	0	5	2	3	2	2.83	Fair

Results in Table 2 indicate that principals rated the fact that those who join Form one finish secondary schooling cycle successfully as good with a mean rating of 3.83. This means that majority of the principals were in agreement to that fact. At the same time, principals were in agreement to the fact that since the introduction of the subsidized school funding, irregular attendance of students had gone down and rated as good with a mean rating of 3.67.

In addition, principals indicated that parents meet their obligation of providing for their children on hidden costs as fair at a mean rating of 3.33. This clearly means that principals were of the feeling that since the introduction of the subsidized programme, some parents were unable to meet their obligation of other costs. Furthermore, principals were of the feeling that the subsidized school funding reduced stress among students at a fair mean-rating of 2.83. This implies that stress among students was still experienced and majority of the principals disagreed to the fact that subsidized school funding programme had reduced stress among students.

**Table 3: Students’ Opinion on Subsidized School Funding and Completion Rate**

Opinion	Frequency Ratings (n =518)					Mean Ratings	Rating Status
	5	4	3	2	1		
Those who join form 1 finish secondary schooling cycle successfully.	83	124	35	154	122	<b>2.79</b>	<b>Fair</b>
Irregular attendance of students has gone down since the introduction of the funding.	95	208	40	126	49	<b>3.34</b>	<b>Fair</b>
Few students drop out of school due to fees balances.	137	206	30	75	70	<b>3.51</b>	<b>Good</b>
Parents meet their obligation of providing for their children on hidden costs.	119	189	45	85	70	<b>3.33</b>	<b>Fair</b>

Data in Table 3 indicates that students rated the fact that those who join Form one finish secondary schooling cycle successfully as fair with a mean rating of 2.79. This means that majority of the students were in disagreement to that fact. Furthermore, majority of students disagreed and were undecided to the fact that since the introduction of the subsidized school funding, irregular attendance of students had gone down and rated as fair with a mean rating of 3.34.

At the same time, majority of the students agreed to the fact that due to subsidized school funding, few students drop out of school due to fees balances and rated it as good at a mean rating of 3.51. This implies that students were of the view that the subsidized school funding programme had reduced the school burden for the parents and thus reduced the number of students that dropped out due to lack of school fees. In addition, students indicated that parents meet their obligation of providing for their children on hidden costs as fair at a mean rating of 3.33. This clearly means that students were of the feeling that since the introduction of the subsidized programme, some parents were unable to meet their obligation of other costs.

**Table 4: Students’ Opinion on Effects of Subsidized School Funding**

Opinion (n = 518)	Yes		No	
	F	%	F	%
Lower dropout rate among students	385	74.4	133	25.6
Less stress among students	325	62.8	193	37.2
Higher completion rate	389	75.1	129	24.9

Results in Table 4 indicate that 385 (74.4%) of the students revealed that subsidized school funding had led to lower dropout rate among students while another 133 (25.6%) of them indicated that subsidized school funding had not reduced dropout rate among students. This means that it is clear to the students that most of them do not drop out due to the subsidized school funding programme that support them. At the same time, 325 (62.8%) of the students reported that subsidized school funding had led to reduced stress among students with another 193 (37.2%) of them indicating that the funding had not reduced stress among the students. These findings show that majority of students believed that stress among them had reduced due to the subsidized school funding that they received.

At the same time, 389 (75.1%) of the students indicated that there was higher completion rate due to the subsidized school funding programme while 129 (24.9%) of them indicated that the subsidized school funding had not raised the completion rate. These findings make it clear that the students appreciated the benefits of subsidized school funding and its relationship with completion rate. The results indicate that drop-out rates and wastage in secondary education reduced, 30% however remains high and ought to be addressed. At the same time, the completion rate deviation between 2008 and 2014 is small. This in comparison to the high enrolment rate is still wanting and must be looked into by all education stakeholders.

The study findings revealed a significant positive linear association between subsidized school funding and school completion rates. It was found out in this study that the completion rates among students in public secondary schools is still relatively low, despite the government's efforts to subsidize secondary education in all public secondary schools across the country. However, these findings contradict the MOEST, (2008) that indicate that the aim of SSF was to enhance completion rate to over 70% and the Kenya Vision 2030 that puts that in partnership with the private sector, Kenya will increase funding to support the schools in the increasing students enrolment and retention of learners. The findings are in agreement with World Bank, (2009) that revealed that the completion rate was lower than expected because of poverty levels in developing countries. The findings also concur with Fafunwa, (2010) who reported that completion rate was like stagnant and required intervention to boost it.

Similar to findings of this study are those of a study by Kinaro, (2015) who conducted a study to establish the influence of free day secondary education in enhancing internal efficiency, particularly the completion rates in public secondary schools in Mvita Sub county, Mombasa. However unlike the present study, Kinaro, (2015) looked at cost of education (direct and indirect), parents economic activities, school characteristics including physical facilities, teacher resource, discipline, school type and category, family background which included parents' standard of living, and finally the parents' level of education in enhancing students' completion rates in public secondary in Mvita Sub county.

The study adopted a descriptive research design. The theoretical framework was based on systems theory of management. The sample size of this study was 12 head teachers, 64 teachers and 189 students. The study utilized questionnaires for the respondents to collect data. Reliability of the

instrument was done by performing Spearman's rank order correlation. The validity was done by conducting a pilot study on two schools that were not included in the study. Both qualitative and quantitative techniques were used to analyze data. The Statistical Packages for Social Scientists (SPSS) software package were utilized in analyzing data. The analyzed data were presented in frequency tables.

Findings showed that there was a high enrolment rate into secondary schools, which was not consistent with completion rates. Reasons were that the physical facilities in the schools were not adequate to allow smooth learning sessions. The schools were also not very well developed to meet the increasing demand by the learners pursuing secondary education. Additionally, the schools did not have adequate instructional materials, which affected the educational outcomes. Furthermore, the school funds were a major challenge as the research found out, because parents were still expected to meet educational costs, in spite of the subsidized education by free day secondary education by the government (Kinaro, 2015).

## CONCLUSION

The study established a significant positive association between SSF and completion rate. To ensure a 100% completion rate among secondary school students, the government should invest an average of Ksh. 12.41 Millions for this purpose. This value is derived from the study's regression model, using the linear equation that was obtained i.e.

$$y = 52.96 + 3.79x$$

Using 100%, the maximum possible value of completion rate as the value of y in the linear equation, 12.41 is obtained as the required amount of funds in government subsidy that should be wired to each school on average, so as to ensure all students who enroll in secondary school are able to complete their studies after four years of secondary education. It can therefore be concluded that the higher the government subsidy, the higher the completion rate among students in public secondary schools.

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