

## **Effect of Revenue Generation Strategies on Operation Efficiency in Public Secondary Schools in Londiani Sub-County**

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### **Abstract**

*Secondary education plays a central role in the socioeconomic development of a country by building its human capital. This role can only be fulfilled if secondary schools in the country are able to run their operations efficiently. It is in this regard that this study sought to examine the effect of revenue generation strategies on the operational efficiency of secondary schools in Londiani Sub-County. It made use of the correlation research design and targeted 88 individuals comprising of school principals, deputy principals, bursars, and BOM chairpersons of 22 public secondary schools in Londiani Sub-County. The census approach was used where all the 88 individuals that formed the target population were involved in the study. Data was gathered using semi-structured questionnaire, which were piloted in one of the public secondary schools in Londiani. Validity of the questionnaire was enhanced by consulting subject matter experts at St. Paul University while reliability was assessed by analysing pilot test data using the Cronbach alpha method. Quantitative data was analysed using descriptive statistics such as percentages and mean as well as the simple linear regression method with the aid of Statistical Packages for Social Sciences (SPSS) version 25. Qualitative data was assessed using thematic content analysis technique. Results showed that revenue generation strategies ( $r^2 = .382$ ,  $\beta = .625$ ,  $t = 6.793$ ,  $p < .000$ ) have a positive and statistically significant effect on the operational efficiency of the public secondary school. Schools that have diverse and reliable sources of revenue are likely to operate more efficiently than those with limited sources. Based on the findings, the study recommends that school administrators should diversify their sources of revenues to reduce their dependency on school fees and FDSE funds leading to greater operational efficiency.*

**Keywords:** *Revenue generation, operational efficiency, secondary schools, financial management.*

## **Introduction**

Secondary education is vital to the socioeconomic development of a country as it improves the human capital of a country leading to greater productivity (Johnes, Portela & Thanassoulis, 2016). Secondary education also improves people knowledge on various life issues such as nutrition, healthy living, and peaceful coexistence that reduces adverse events such as diseases, drug abuse, and violence. Due to its importance, secondary education in many countries is financed through public coffers. Given that governments have competing demand for public resources, there is increase pressure for education institutions to utilize the resources allocated to them as efficiently as possible (OECD, 2017). Operational efficiency has therefore become an important subject in the education sector.

Operational efficiency is generally the relationship between an organization input and output (Aleksander & Alka, 2014). It is a measure of how well an organization is utilizing its input to deliver the desired outputs. It can also be described as the ability to deliver services or products while incurring the least cost without compromising on quality (Lee & Johnson, 2012). In the education setup, an institution is considered to be efficient when its outputs such as students' performance in national examinations are generated using the least amount of input such as teachers, physical facilities, and materials (Johnes *et al.*, 2016). Inefficiency occurs when the resources being expended by an education institute does not generate proportionate results.

Studies from various parts of the world show that the operational efficiency of education institutions is strongly linked with financial management. Wairima and Nasieku (2019) defined financial management as the art of mobilizing, allocating, and controlling financial resources in order to achieve desired objectives. Since financial resources determine the acquisition of inputs, the strategies used to acquire, allocate, and control financial resources is bound to have a major impact on the efficiency of learning institutions. In the United States of America (USA), it was noted that the formula for financing education institution was associated with operational efficiency. The OECD (2017) asserts that for a school to effectively deliver on their mandate, it must develop effective strategies for raising and distributing funds as well as for monitoring and reporting the use of funds. Fundraising strategies should ensure that the school has adequate and sustainable flow of funds.

In Kenya, the education sector receives the lion's share of government expenditure. In the 2019/20 National Budget, this sector received Kshs 473.3 billion out of the government total expenditure of 3.02 trillion (Okuoro & Sinide, 2019). This figure means that the education sector received 15.7% of the total budgetary allocation. Schools also get additional funds from parents in the form of school fees, as well as, from donors such as religious organizations and non-government organizations. In the secondary education set-up, the government allocates at least Kshs. 22,244 for every student each year (Ministry of Education, 2019). Schools also charge fees that can go as high as Kshs. 69,402 for national and extra county boarding schools located in urban areas (Wanzala, 2020).

Despite investment of colossal sums of money into the education sector, there are persistent challenges that signify low level of efficiency in sector. For instance, only 42% of children who enrolled in Standard One in 2004 were able to sit for the KCSE examination in 2016 with the majority (58%) dropping out of school along the way (Ng'ethe, 2016). In addition, the study by Mungai, and Muturi (2014) observed that secondary schools in Kenya experience difficulties in paying suppliers while Moranga (2013) observed that many schools

struggle with infrastructure deficiency. It is in this regard that the current study sought to examine the revenue generation strategies of public secondary schools and how they affect their operational efficiency.

## **Literature Review**

To achieve financial viability, schools have to broaden their sources of revenue. Meeting financial needs has become challenging in virtually all learning institutions (Zakiriza *et al.*, 2015). The cost of running schools has gone high and government support is becoming insufficient. It is a big challenge for most institutions to come up with supplementary sources of cash. Some of the sources explored by scholarly works are revenue generating activities such as farming and establishing strategic relationships with private and nongovernment organizations.

The study by Pruvot (2017) analysed the efficiency and funding of educational institutions in Netherlands. It was established that most education institutions in Netherland are financed through the block grant model that are anchored on the institutions performance since 2017. The grant model worked effectively as operation, financial, and operational efficiency improved significantly by co-efficiency greater than 1. Other systems included in the study were the Hesse and Brandenburg systems and were found to have a 5% and 2% block grant effect on efficiency, respectively.

In Nigeria, Dabo and Dashol (2011) noted that the responsibility of financing secondary education has been left to the government. This is not sustainable as the government has countless of activities to finance and country's resources are declining. In fact, Obadara and Alaka (2010) established that that the amount of funds allocated to secondary schools by the Nigerian government was far from the UNESCO recommendation of 25% fund allocation. Total expenditure on education in the country never reached even 15% of the government's total budget. These studies highlight an urgent need for secondary schools to diversify their sources of funds.

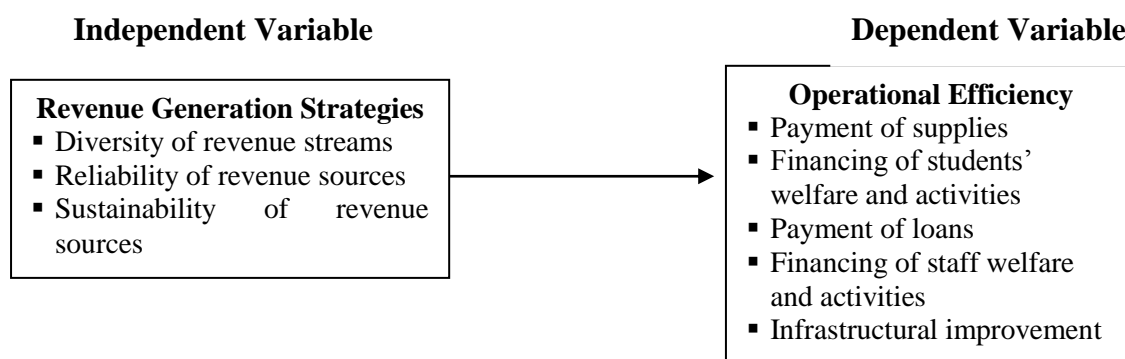
In Kenya, Wanjala and Ali (2017) found that operations of secondary schools were hampered by delays in the disbursement of funds by the government. About 93% of the respondents who comprised of school principals, boards of management (BOM) chairpersons, and secondary school teachers reported that they experienced late disbursement of funds that affected the quality of learning in their institutions. In addition, 81.3% of the respondents held the view that the fund disbursed to their schools were inadequate. The findings by Wanjala and Ali (2017) raise queries regarding the reliability of the funds provided to public secondary schools by the government.

The study by Waweru and Muturi (2015) observed that although secondary schools in Trans-Nzoia East Sub-County in Kenya have developed alternative sources of financing, these sources provide irregular revenue stream and are grossly inadequate. These alternative sources included income generating activities accounting for 1.5% of school revenues in 2014, sponsors (0.1%), CDF (2%), and NGOs (0.3%). The main source of revenue was school fees paid by parents, which made up 54.8% of the schools' total revenues. The second major source was the government accounting for 41.3% of the schools' revenues. Results further showed while revenues from the two major sources had increased in the five years prior to the study; revenue from the other sources remained the same. In addition, the authors

observed that, although inadequate and irregular, the alternative sources of revenues helped the schools to construct laboratories, buy buses, and construct classrooms and dining halls.

### **Conceptual Framework**

The conceptual framework illustrating the presumed relationship between revenue generation strategies and operational efficiency of public secondary schools in Londiani Sub-County is presented in Figure 1



**Figure 1: Conceptual Framework for Examining effect of Revenue Generation Strategies on Operational Efficiency of Public Secondary Schools**

Figure 1 illustrates that the independent variable of the study was revenue generation strategies. Three issues were assessed namely: the diversity of revenue streams in the schools, reliability of revenues sources, and sustainability of revenue sources. The study presumed that these three elements shape the operational efficiency of schools that was measured in terms of payment of suppliers, financing of students welfare and activities, payment of loans, financing of staff welfare, and infrastructural improvement.

### **Research Methodology**

The study made use of the correlational research design. It targeted 88 individuals comprising of school principals, deputy principals, bursars, and BOM chairpersons of all the 22 public secondary schools located in Londiani Sub-County. The study made use of the census approach instead of sampling because the size of the population was small. Data was collected using semi-structured questionnaires that contained close-ended and open-ended questions. The content, construct, and face validity of the questionnaire was assessed by consulting subject matter experts at St. Paul's University including the university research supervisors. The research supervisors gave their input on how to improve the relevance and comprehensiveness of the items included in the questionnaire. In addition, a pilot study was conducted in 2 public secondary schools from the neighbouring Kipkerion Sub-County to assess the validity and reliability of the questionnaire. The data pilot data ascertain that the instrument was valid and reliable and; thus, the research proceeded to the main data collection exercise. After data collection, the questionnaires were sorted and assessed for completeness. The responses to the closed-ended questions were coded and entered into the SPSS programme. Descriptive statistics such as percentages and means were used to summarize respondents' views regarding strategies used to generate revenues, allocate funds, control the use of funds, and manage risks in the secondary schools. The simple linear

regression method was used to assess the relationship between the financial management strategy and operational efficiency. Qualitative data collected through the open-ended questions was analysed using the thematic content analysis technique.

## **Results and Discussion**

Out of the 88 questionnaires that were distributed, 74 were duly completed and returned to the researcher. This figure marks a response rate of 84.1%. This response is higher than the average response for studies using drop-off and pick-up methods of distributing questionnaires. Smith et al. (2016) established that the average response rate for studies using this method is 63.2%. According to Bryman (2016), a high response rate reduces non-response bias, which is the error that emanate from having individuals with unique characteristics refusing to participate in the study. There were no missing data.

### **Revenue Generation Strategies in the Secondary Schools**

Revenue generation strategies in the secondary school were assessed using a Likert scale containing eight items. Respondents were asked to indicate the extent to which they agreed with each item of a five-point scale (5 = Very large extent, 4= Large extent, 3=Moderate extent, 2= little extent and 1= No extent). Table 1 presents the findings.

**Table 1: Respondents Views on Revenue Generation Strategies**

<b>S/N</b>	<b>Statement</b>	<b>N</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>	<b>S.D</b>
G1	My school has diverse sources of funds that have smoothen the operations of the school.	74	10.8	31.1	39.2	6.8	10.8	2.78	1.126
G2	The school has developed partnerships with private entities that supplement the funds provided by the government leading to greater operational efficiency	74	27.0	37.8	23.0	8.1	4.1	2.24	1.070
G3	The school has started various income generating avenues that supplement the funds provided by the government leading to improved operational efficiency	74	23.0	40.5	27.0	4.1	5.4	2.28	1.041
G4	The school has found a way of mobilizing and organizing its alumni as a strategy for raising addition funds leading to improved operational efficiency	74	63.5	13.5	21.6	1.4	0.0	1.61	.873
G5	The sources of fund that the school rely on ensures that money for school activities are obtained in timely manner leading to operational efficiency	74	13.5	28.4	27.0	12.2	18.9	2.95	1.313
G6	The revenue generation strategies have enabled the school to secure adequate funds to finance most of its activities leading to operational efficiency	74	10.8	36.5	36.5	10.8	5.4	2.64	1.001
G7	The avenues that the school uses to	74	13.5	36.5	21.6	10.8	17.6	2.82	1.307

raise funds are very reliable and leads to operational efficiency								
G8 The revenue generation strategies that the school has put in place guarantee long-term access to funds for the school leading to operational efficiency	74	16.2	44.6	9.5	18.9	10.8	2.64	1.267
<b>Resource Generation Aggregate score</b>	<b>74</b>						<b>2.76</b>	<b>.948</b>

Results indicate that 39.2% of the respondents moderately agreed that their school has diverse sources of revenues as opposed to 31.1% who agreed to a little extent 10.8% who agreed to a very large extent, 10.8 who did not agree at all, and 6.8% who agreed to a large extent. These findings imply that there were major variations in the level of diversity of revenues sources among the secondary schools. This position is supported by qualitative data that was collected using open-ended questions. The data showed that there were some schools that were highly dependent on money disbursed by the government through the FDSE programme and only charged parents minimal fees for lunch. On the other hand, there were schools that had multiple sources of funds including the FDSE programme, government infrastructure grants, fees paid by parents, bursary from CDF and Kericho County, income from school farm, and income from hiring out school buses.

Results in Table 1 further shows that 37.8% of the respondents agreed to little extent with the statement while 27% did not agree at all that most secondary schools in Londiani Sub-County have not developed such partnerships. The findings are consistent with Mabeya et al. (2010), who observed that church sponsorship of public secondary schools in the country had declined over the years. The authors noted that most churches now opt to establish private secondary schools rather than sponsor public secondary schools in order to have control over the management of the institutions. Few private entities have emerged to replace the church in sponsoring public secondary schools. The findings are also consistent with the study by Waweru and Muturi (2015), who observed that sponsors accounted for 0.1% of total revenues for public secondary schools in Trans-Nzoia County while NGOs accounted for 0.3% of total revenues.

Respondents also had little agreement (mean =2.28) with item G3, which stated that school has started various income generating avenues that supplement the funds provided by the government leading to improved operational efficiency. In particular, 40.5% of the respondents agreed with the claim to a little extent while 23% did not agree at all. In addition, respondents’ agreement (mean= 1.61) with item G4, which specified that the school has found a way of mobilizing and organizing its alumni as a strategy for raising addition funds leading to improved operational efficiency. Expressly, 63.5% of the respondents did not agree with this statement at all. This finding suggests that alumni are not a source of revenue in most school. These findings suggest that most secondary schools in Londiani Sub-County have not started income generating activities, but there are a few that have done so. This position is confirmed by the qualitative data, which should that some schools were getting supplementary income through maize farming and hiring out school buses.

Respondents moderately agreed with items G5 (mean= 2.95), G6 (mean= 2.64), G7 (mean= 2.82), and G8 (mean= 2.64). These items sought to interrogate the proficiency of the sources of revenues used in the secondary schools in terms of timely provision of funds, adequacy of funds provided, and reliability of the flow of funds. The findings suggest that the sources of

funds are moderately proficient. In particular, 27%, 36.5%, 21.6%, and 9.5% of the respondents agreed with these statements to a moderate extent. The findings are consistent with Wanjala and Ali (2017), who found that operations of secondary schools were hampered by delays in the disbursement of funds by the government. Delay in fund disbursement lowers the proficiency of the FDSE programme, which is the most common source of funding for the secondary schools in Londiani.

### **Operational Efficiency in the Secondary Schools**

Operational efficiency was assessed using 12 items that were rated on five-point scale. Table 2 summarizes the results. Results in Table 2 show that the majority of the respondents (54.1%) agreed to a very large extent that item OE1, which alleged that due to efficiency of operations, all suppliers who supply good and services to the school are paid on time.

**Table 2: Respondents views on Operational Efficiency of the Schools**

S/N	Statement	N	1	2	3	4	5	Mean	S.D.
OE1	Due to efficiency of operations, all suppliers who supply good and services to the school are paid on time	74	0.0	12.2	10.8	23.0	54.1	4.19	1.056
OE2	Due to greater operational efficiency, the school has resources to procure high quality goods and services	74	0.0	6.8	17.6	41.9	33.8	4.03	.891
OE3	Greater operation efficiency also enables the schools to pay supplier reasonable rates for their goods and services	74	0.0	4.1	21.6	50.0	24.3	3.95	.792
OE4	Greater operational efficiency has enabled the school to adequately finance students' welfare issues such as meals	74	0.0	8.1	25.7	37.8	28.4	3.86	.926
OE5	Due to greater operational efficiency, the school can adequately finance learning activities reading and practicums.	74	4.1	0.0	39.2	23.0	33.8	3.95	.719
OE6	The school is also able to adequately finance extra-curriculum activities such as sports and arts due to greater operational efficiency	74	17.6	6.8	18.9	25.7	31.1	3.82	1.038
OE7	The school is able to pay its non-teaching staff on time due to greater operational efficiency	74	0.0	1.4	21.6	16.2	60.8	4.36	.869
OE8	Greater operational efficiency has enabled the school to hire BOM teachers whenever there is a shortage in the teaching workforce	74	0.0	9.5	23.0	18.9	48.6	4.07	1.051
OE9	Greater operational efficiency enables the schools to offer reasonable pay to non-teaching and BOM teachers	74	0.0	9.5	12.2	44.6	33.8	4.03	.921

OE10	The school is able to finance welfare issue for staff such as provision of working equipment due to greater operational efficient	74	0.0	16.2	18.9	36.5	28.4	3.77	1.041
OE11	Due to greater operational efficiency, the school has been able to develop key infrastructure such as classroom, laboratories, libraries, and dormitories.	74	0.0	2.7	10.8	29.7	56.8	4.41	.792
OE12	Due to greater operational efficiency, the school is able to adequately maintain key infrastructure such as classrooms and dormitories	74	0.0	5.4	14.9	33.8	45.9	4.20	.891
<b>Operation Efficiency score</b>		<b>74</b>						<b>3.93</b>	<b>.779</b>

In addition, 41.9% of Respondents agreed to large extent and another 33.8 agreed to a very large extent with item OE2, which claimed that due to greater operational efficiency, the school has resources to procure high quality goods and services. Fifty percent of the respondents further agreed to a large extent with item OE3, which asserts that greater operation efficiency also enabled the schools to pay supplier reasonable rates for their goods and services. The three items focused on interrogate the efficiency of the procurement operations of the schools. Findings suggest that the secondary schools in Londiani Sub-County have efficient procurement operations marked by timely payment of suppliers, procurement of high quality goods and services, and payment of reasonable rates to suppliers. The findings are consistent with the study by Mungai, and Muturi (2014), who observed that public secondary schools in Nyaribari Chache constituency had efficient procurement of foodstuff marked by acquisition of high-quality foodstuff and reduction in cost.

In addition, 37.8% of the respondents agreed to a large extent and another 28.4% agreed to a very large extent with item OE4, which alleges that greater operational efficiency has enabled the school to adequately finance students' welfare issues such as meals. Twenty three percent of the respondents agreed largely and another 33.8% agreed to very largely to statement OE5, which read that due to greater operational efficiency, the school can adequately finance learning activities reading and practicums. Similarly, 25.7% respondents agreed to a large extent and another 31.1% agreed to very large extent with OE6, which asserts that their school is also able to adequately finance extra-curriculum activities such as sports and arts due to greater operational efficiency. These items assessed the efficiency of the schools in executing students' activities such learning and extra-curriculum activities. The findings suggest that most schools in the study area have been efficient in implementing these activities.

Furthermore, 60.8 percent of the respondents agreed very largely with item OE7, which claimed that the school is able to pay its non-teaching staff on time due to greater operational efficiency. Similarly, 48.6% agreed very largely and another 18.9% agreed just largely with item OE8, which alleged that that greater operational efficiency has enabled their school to hire BOM teachers whenever there is a shortage in the teaching workforce. Likewise, 44.6% agreed largely and another 33.8% agreed very largely with item OE9, which supposed that greater operational efficiency enables the schools to offer reasonable pay to non-teaching and BOM teachers.



In addition, 36.5% largely agreed and another 28.4% agreed very largely with item OE10, which purported that their school is able to finance welfare issue for staff such as provision of working equipment due to greater operational efficient. These items sought to interrogate the schools' efficiency in recruiting and motivating BOM teachers and non-teaching staff. The findings suggest that most schools in the study area have performed these tasks efficiently.

Lastly, 56.8% of the respondents agreed to a very large extent with item OE11, that greater efficiency in their school has enabled the development of key infrastructure such as classroom, laboratories, libraries, and dormitories. On the same note, 45.9% agreed very largely and another 33.8% agreed largely with item OE12, which advanced that greater operational efficiency has enabled their school to adequately maintain key infrastructure such as classrooms and dormitories. The two last items interrogated the efficiency of the schools in developing new infrastructure and maintaining existing infrastructure. Results indicate that schools in Londiani Sub-County have fulfilled these roles efficiently.

### Revenue Generation Strategies and Operational Efficiency

A model comprising of revenue generation as the predictor variable and operational efficiency as the dependent variable was formulated to test the relationship between the two variables in line with objective 1. Table 3 presents a summary of the predictive power of the model.

**Table 3: Model 1 Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.625 <sup>a</sup>	.391	.382	.61258
a. Predictors: (Constant), Revenue generation strategies				

Table 3 shows that the model had an r value of 0.625 indicating a high level of correlation between the independent and dependent variables. This r- value is also consistent with the correlation coefficient obtained presented in Table 4.8. The model had an adjusted r-square value of 0.382, which indicate that the revenue generation strategies predict 39.1% of the variances in the operational efficiency of the secondary schools. According to Moore *et al.* (2013), an r-square value of less than 0.3 signifies low effect size, 0.3-0.699 denotes moderate effect size, and 0.7 and above denotes strong effect size. Therefore, current findings imply that financial management strategies have moderate predictive power on the operational efficiency of the secondary schools in Londuani Sub-County. The significance of the relationship between the financial management variables and operational efficiency is scrutinised further using the ANOVA statistics presented in Table 4.

**Table 4: Model 1 ANOVA Results**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.314	1	17.314	46.140	.000 <sup>b</sup>
	Residual	27.018	72	.375		
	Total	44.332	73			

a. Dependent Variable: Operational Efficiency score
b. Predictors: (Constant), Revenue generation strategies

The ANOVA results in Table 4 shows that there is a statistically significant relationship between the risk management strategies and operational efficiency of the schools;  $F(1, 72) = 46.140, p < .001$ . This is because the significance value is less than the 0.05 level of significance that was set for this study. The findings imply that the model is statistically significant to predict the relationship between revenue generation and operational efficiency. The magnitude of the effect of revenue generation strategies on operational efficiency is examined using the regression beta coefficients presented in Table 5.

**Table 5: Model 1 Regression Beta Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.507	.221		11.355	.000
	Revenue Generation	.514	.076	.625	6.793	.000

Table 5 illustrates that revenue generation strategies had a standardized beta coefficient of 0.625. This coefficient implies that these strategies have a positive effect on the operational efficiency of the schools. In particular, the coefficient means that if revenue generation strategies are improved by one unit, the operational efficiency of the schools would increase by 0.625 units. The t-test yield a p-value that is less than the 0.05 level of significance ( $t = 6.793, p < .000$ ), which indicates that the effect of revenue generation strategies on operational efficiency is statistically significant.

These findings are congruent with the study by Waweru and Muturi (2015) who found that alternative sources of revenue among public secondary schools in Trans-Nzoia East Sub-County were useful in helping these schools to develop teaching and learning resources such as building laboratories and classrooms or purchasing buses. Provision of teaching and learning infrastructure is one of the indicators that the current study has used to assess the operational efficiency of public secondary schools in Londiani Sub-County. These infrastructures enable schools to execute learning operations more efficiently. Current findings support the conclusion that the revenue generation strategies used by the schools affect the development of these infrastructures and; consequently, the operational efficiency of the schools.

### **Conclusion**

Based on findings, the study concludes that revenue generation strategies have a positive and statistically significant effect on the operational efficiency of public secondary schools in Kenya. Schools that have diverse sources of revenue are likely to operate more efficiently than those with limited sources. Similarly, schools whose sources of revenues ensure reliable flow of fund, access to adequate fund, and access to fund in a timely manner are likely to have more efficient operations than those whose sources of revenues do not have these features.

To improve operational efficiency, schools administrators should diversify their sources of revenues in order to reduce their dependency on school fees and FDSE funds. Mobilizing alumni and forming a strong alumni network is one of the strategies that the school can use to diversify the revenue sources. Another avenue that secondary school administrators should explore entails developing partnerships with private entities such as businesses and NGOs in their area. Private sponsorship can provide additional revenue for supplementing schools fees and government funds.

School administrators should strengthen the amount of revenues that their school get from income generating projects. Finding revealed that maize farming and hiring out school buses are the main income generating activities that school in the study area engage in. Administrators should explore other activities such as dairy farming.

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