



RELATIONSHIP BETWEEN FUNDING AND LEARNERS ACADEMIC ACHIEVEMENT IN PUBLIC SECONDARY SCHOOLS IN BUNGOMA COUNTY, KENYA

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ABSTRACT :

The quality of education in public secondary schools is closely linked to the adequacy and efficiency of funding. In Bungoma County, Kenya, disparities in academic performance among public secondary schools have raised critical questions about the role of financial resources in shaping learner outcomes. This study investigates the relationship between funding levels and learners' academic achievement in public secondary schools within the county. Using a mixed-methods approach, the research examines the adequacy of government capitation, availability of learning and teaching resources, infrastructure quality, and how these factors correlate with students' performance in national examinations. Data were collected through questionnaires, interviews, and analysis of school financial records and academic results over a five-year period. The findings reveal a positive correlation between adequate funding and improved academic outcomes, with underfunded schools facing greater challenges in resource provision, teacher motivation, and student support services. The study recommends policy interventions to enhance equitable resource distribution, improve financial accountability, and promote alternative funding models to bridge the performance gap among schools in the region.

Keywords: Academic Achievement, Efficiency, Funding, Resources Allocation

INTRODUCTION

The Government of Kenya has consistently emphasized the need for public resources to be utilized effectively, economically, and for their intended purposes (Ngigi & Tanui, 2019; Abdulla, 2009). Funding for public secondary schools is primarily channeled through the Free Day Secondary Education (FDSE) program, the Constituency Development Fund (CDF), County Development Funds, and other government grants. While the state covers tuition-related expenses, parents remain responsible for boarding fees, uniforms, and meals, necessitating high levels of accountability and transparency in financial management. The Constitution of Kenya underscores the importance of prudent and responsible use of public funds, a principle that binds all public officers, including school principals, who are entrusted with mobilizing, allocating, and utilizing financial resources in a manner that supports educational goals (GOK, 2010). As Oboegbulem and Kalu (2013) assert, financial management in educational institutions is particularly sensitive, attracting scrutiny from both the government and the public. Stakeholders are keen to understand how funds are planned, controlled, and expended to ensure alignment with institutional objectives. In this context, budgeting emerges as a vital component of effective financial management, directly influencing the achievement of learner outcomes and overall school performance (Waweru & Orodho, 2013).

POLICY ON FUNDING SECONDARY EDUCATION IN KENYA

The objective of the study sought to investigate the relationship between funding practices on educational resources and learners' academic achievement. Studies undertaken by scholars in the recent past with regard to the relationship between teaching learning resources and performance found out higher performing schools had higher teaching learning resources than low performing schools and at the same time established that there is a significant difference between resource availability in low performing schools and higher performing schools (Likoko, Mutsotso & Nasongo, 2013; Mbaria, 2006). These resources have to be provided from school finances. Teaching learning resources comprise basically material resources, physical facilities and human resources (DFID, 2007). Availability of teaching learning resources therefore enhances the effectiveness of schools as they are the basic resources that bring about good academic performance among the students. Lyons (2012) asserts that learning constitutes a complex activity that interplays physical facilities, skills of teaching and curriculum demands, a students' motivation, and teaching resources. The human resource such as teachers and support staff, material resources, physical facilities such as laboratories, libraries and classrooms are prerequisite resources for teaching and learning. When the data was analyzed in terms of the respondents per school category, the findings are as presented in Table 1.

Table 1: Response on funds allocation towards support for the teaching learning environment per school category

Category of school		Use of resource persons	Use of field trips / excursions	Use of computers	Provision of teaching learning resources	Provision of the physical facilities	Allocation funds influences KCSE achievement
Special needs	Mean	4.17	4.00	4.00	2.00	2.00	2.00
	N	6	6	6	6	6	6
	Std. Deviation	.408	.632	.632	.000	.000	.000
National school	Mean	4.09	3.82	3.91	2.00	1.82	2.00
	N	11	11	11	11	11	11
	Std. Deviation	.539	.874	.701	.000	.405	.000
Extra county school	Mean	4.00	3.48	3.16	1.88	1.76	1.98
	N	50	50	50	50	50	50
	Std. Deviation	.404	.814	.681	.328	.431	.141
County and sub-county school	Mean	3.43	3.18	2.89	1.73	1.63	1.94
	N	115	115	115	115	115	115
	Std. Deviation	.796	.970	.944	.446	.486	.240

According to Table 1, respondents from special needs schools were in agreement to allocation of funds towards support for use of resource persons with a mean score of 4.17, support for use of field trips / excursions at a mean score of 4.00 and support for use of computers at a mean score of 4.00 all of which are in the agreement range. They were however of disagreement response that allocation of funds had influence on provision of teaching learning resources at a mean score of 2.00 and provision of physical facilities also at a mean score of 2.00.

Based on the findings presented in Table 1, respondents from National school were in agreement that allocation of funds had influence on the use of resource persons with a mean score of 4.09, use of field trips / excursions with a mean score of 3.82 and use of computers with a mean score of 3.91. They were however of the disagreement response that allocation of funds had influence on provision of teaching learning resources at a mean score of 2.00 and provision of physical facilities a mean score of 1.82.

Based on findings of Table 1, respondents from Extra County schools were in agreement that allocation of funds had influence on the use of resource persons with a mean score of 4.00 and support for use of field trips / excursions with a mean score of 3.48 all of which are in the agreement range. They were neither agreeing nor disagreeing in response with regard to support for use of computers where the mean response value was 3.16 which was in the neutral range. They however disagreed that allocation of funds had influence on provision of teaching learning resources with a mean score of 1.88 and provision of physical facilities at a mean score of 1.76 all of which are in the disagreement range.

It is critical to observe that all respondents from all categories of schools as presented in Table 1 disagreed to the response that allocation of funds had influence on KCSE achievement by learners. Respondents from special schools had a mean value of 2.00, national school a mean score of 2.00, Extra County schools a mean score of 1.98 and county and sub-county schools a mean score of 1.94. All the mean values were in the disagree range. This response corresponds with the outcome of the interview with the County Director of Education who pointed out that funding level had no direct relationship with KCSE performance. He alluded to the fact that as much as the government had increased capitation overtime, there was no

correspondence in improvement of learner achievement.

The overall response analysis of teacher respondents in line with the statement that allocation of funds leads to support of the teaching learning environment such as provision of resource persons, field trips / excursions, computers, provision of teaching learning resources, provision of the physical resources, and that allocation of funds influences KCSE performance was as presented in Table 2.

Table 2: Response on funds allocation towards the teaching learning environment

			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total	Mean	Std. Deviation
Item allocate funds										
1	Use of resource persons	Count	0	18	38	115	11	182	3.654	0.740
		%	0%	9.9%	20.9%	63.2%	6.0%	100%		
2	Use of field trips / excursions	Count	0	49	34	89	10	182	3.330	0.935
		%	0%	26.9%	18.7%	48.9%	5.5%	100%		
3	Use of computers	Count	10	32	84	49	7	182	3.060	0.905
		%	5.5%	17.6%	46.2%	26.9%	3.8%	100%		
4	Provision of teaching learning resources	Count	37	145	0	0	0	182	1.797	0.404
		%	20.3%	79.7%	0%	0%	0%	100%		
5	Provision of the physical facilities	Count	57	125	0	0	0	182	1.687	0.465
		%	31.3%	68.7%	0%	0%	0%	100%		
6	Allocation finances influences KCSE achievement	Count	8	174	0	0	0	182	1.956	0.206
		%	4.4%	95.6%	0%	0%	0%	100%		

According to Table 2, with regard to adequacy of making use of resource persons in teaching, 6.0% of the respondents strongly agreed to them being adequately utilized, 63.2% agreed, 19.2% neither agreed nor disagreed, 11.5% disagreed and 0% strongly disagreed. In general, therefore only 11.5% disagreed and 69.2% agreed to adequate use of resource persons in the teaching process.

When it came to allocation of funds for field trips/excursions the findings as indicated in Table 2, show that, 5.5% of the respondents strongly agreed to them being adequate, 48.9% agreed, 18.7% neither agreed nor disagreed, 26.9% disagreed and 0% strongly disagreed. In general, therefore only 26.9% disagreed and 54.4% agreed that there was frequent use of field trips/excursions in teaching.

According to Table 2, with regard to use of computers in teaching and learning, 3.8% of the respondents strongly agreed to them being adequate, 26.9% agreed, 46.2% neither agreed nor disagreed, 17.6% disagreed and 5.5% strongly disagreed. In general, therefore 23.1% disagreed and only 30.7% agreed that the use of computers in teaching and learning was adequate.

The study then went on to ascertaining if the school funds allocation did lead to an increase in the provision of teaching learning facilities. In Table 2, a majority of the respondents 145 (79.7%) indicated that allocation of school funds did not contributed to increase in the provision of the teaching learning resources. 37 (20.3%) of the respondents strongly indicated that school funds allocation had not contributed to increase in provision of teaching learning resources. This seems to imply that though allocation of funds is done for acquisition of the teaching learning resource, the actual procure could be missing. The findings here are in agreement with observations made from Table 2 findings that there is a significantly low positive association between allocation of funds and provision of student's textbooks, teacher's guides and teaching learning resources. This is supported by the findings from

interviews with bursars who indicated that though allocations are done, most of the time funds are transferred to do other functions which management perceive to be more urgent and critical. Most principals interviewed acknowledged that although budgeting was done, it was more of a routine since funds were not always adequate.

The study sought to establish whether school funds allocation contributes to provision of physical facilities. From Table 2, it is clear that most respondents 125 (68.7%) indicated that school funds allocation did not contribute to the provision of adequate physical facilities for educational service provision. 57 (31.3%) of the respondents strongly indicated that school funds allocation did not contribute to the provision of adequate physical facilities.

The study sought to establish the nature of class size by requiring the teacher respondents to give the average class in the school. When responses were organized and analyzed the findings are presented in Table 3.

Table 3: Average Number of students per Class stream per school category

Student numbers per class stream	Category of school	Frequency	Percent within the school category
30-50	Special	6	100.00
	National	5	45.45
	Extra County	6	11.76
	County and Sub-County	24	21.05
	Sub-total	41	22.53
51-65	Special	0	0.00
	National	6	54.55
	Extra County	36	70.59
	County and Sub-County	60	52.63
	Sub-total	102	56.04
Above 65	Special	0	0.00
	National	0	0.00
	Extra County	9	17.65
	County and Sub-County	30	26.32
	Sub-total	39	21.43
Grant Total		182	100

As gathered from interviews with principals, most of the classrooms in schools were constructed to accommodate a population of about 40 students. However the findings of the study indicated that only 41 (22.53%) of the respondents had their average number of students per class of between 30 to 50 as seen from Table 3. 102 (56.04%) of the respondents indicated that their school's average class size was between 51 to 65 while 39 (21.43%) of the respondents indicated an average class size of above 65 students. It can be observed that the average class size in the majority of schools was beyond the recommended average of 40 students. This has negatively impacted on the classroom learning environment that is in agreement to findings of a study by Nderitu *et al* (2017). Smaller class sizes in terms of population leads to more access to learning resources that result in better academic performance and achievement (Crosnoe et al., 2004 & Eamon2005).

From Table 3, it is observable that 6 (100%) of the respondents in the category of special schools indicated that they had a class stream size of between 30 to 50 learners. Of the respondents from National schools based on the findings in Table 3, 5 (45.45%) indicated their class stream size of between 30 to 50 learners while 6 (54.55%) indicated their class stream size of between 61 to 65 learners. Of the respondents from extra county schools based on the

findings in Table 3, 6 (11.76%) indicated their class stream size of between 30 to 50 learners, 36 (70.59%) indicated their class stream size of between 51 to 65 learners, while 9 (17.65%) indicated their class stream size of between 61 to 65 learners. Of the respondents from county and sub-county schools based on the findings in Table 3, 24 (21.05%) indicated their class stream size of between 30 to 50 learners, 60 (52.63%) indicated their class stream size of between 51 to 65 learners, while 30 (26.32%) indicated that their class stream size was between 61 to 65 learners. From the findings, it can be observed that special schools respondents indicated that their class size were of between 30 and 50 learners which is the size for which most classrooms were built for. It was only the extra county, county and Sub-county schools that had respondents indicating that the class sizes were over 65 learners with a percentage of 17.65% and 26.32% respectively. The class sizes of special schools and National schools being below 65 learners may be as a result of the support provided by the government. Special schools receive higher funding per child while the National schools received additional funding on being upgraded to national school status.

The study asked teacher respondents to indicate the extent to which they agreed to having a workload of between 25 and 30 lessons per week (considered to be a normal workload) within the schools on a five point Likert scale with 1 being the lowest corresponding to strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 the highest corresponding to strongly agree after coding. The findings are presented on Table 4..

Table 4: Number of Lesson for a teacher per week of between 25 and 30

	Frequency	Percent	Cumulative Percent
Strongly agree	5	2.7	2.7
Agree	16	8.8	11.5
Neutral	112	61.5	73.1
Disagree	40	22.0	95.1
Strongly Disagree	9	4.9	100.0
Total	182	100.0	

The findings in Table 4, indicate that 5 (2.7%) of the respondents strongly agreed that the teacher's lessons per week were between 25 and 30, 16 (8.8%) of the respondents agreed that the teacher's lessons per week were between 25 and 30, 112 (61.5%) of the respondents neither agreed nor disagreed with regard to the teacher's lessons per week being between 25 and 30, 40 (22.0%) of the respondents disagreed that the teacher's lessons per week were between 25 and 30 and 9 (4.9%) of the respondents strongly disagreed that the teacher's lessons per week were between 25 and 30. According to a World Bank report (1987), students in classes where the student teacher ratio is high, learn less and therefore achieve less while those in schools where the student teacher ratio is low, learn more hence achieve more due to less crowding that results in better interaction between the learners and their teachers.

In order to get a clear understanding on the utilization of resources and learner's achievement at KCSE, the study employed Spearman's correlation. The findings are on Table 4 . For the purpose of this study, the spearman's rho correlation coefficients testing was done at 0.05 confidence level which automatically takes care of the 0.01 also provided in the tables.

Table 4: Correlation between utilization of selected resources and learners achievement

Utilized resource in the teaching learning process		Learners' academic achievement
1	Resource persons	Correlation Coefficient .868(**)
		Sig. (2-tailed) .000
		N 182
2	Field trips / excursions	Correlation Coefficient .689(**)
		Sig. (2-tailed) .010
		N 182
3	Textbooks	Correlation Coefficient .789(**)
		Sig. (2-tailed) .000
		N 182
4	Computers	Correlation Coefficient .627(**)
		Sig. (2-tailed) .000
		N 182
5	Teaching learning resources	Correlation Coefficient .889(**)
		Sig. (2-tailed) .000
		N 182
6	Library facilities	Correlation Coefficient .648(**)
		Sig. (2-tailed) .100
		N 182
7	Facilities in the science laboratories	Correlation Coefficient .854(**)
		Sig. (2-tailed) .000
		N 182
8	Home science / agriculture room facilities	Correlation Coefficient .772(**)
		Sig. (2-tailed) .010
		N 182

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

From Table 4 it can be observed that the resource persons utilization in Bungoma County public secondary schools had a high positive association (Rho value of 0.868) with learners' academic achievement. Field trips / excursions in the county's secondary schools had a moderate positive association (Rho value of 0.689) with learners' academic achievement. It is also observable that utilization of textbooks in the county's secondary schools had a high positive association (Rho value of 0.789) with learners' academic achievement. The utilization of Computers in the county's secondary schools had a moderate positive association (Rho value of 0.627) with learners' academic achievement. Utilization of teaching learning resources in the county's secondary schools had a high positive association (Rho value of 0.889) with learners' academic achievement.

From Table 4, it can also be observed that the utilization of library facilities in the county's secondary schools had a moderate positive association (Rho value of 0.648) with learners' academic achievement. The utilization of facilities in the science laboratories in Bungoma County public secondary schools had a high positive association (Rho value of 0.854) with learners' academic achievement. At the same time utilization of home science / agriculture room facilities in the county's secondary schools had high positive association (Rho value of 0.772) with learners' academic achievement.

It is noted that the utilization of resource persons, field trips / excursions, textbooks, Computers, teaching learning resources, library facilities, facilities in the science laboratories and home science / agriculture room facilities had positive association on academic achievement of learners. For them to be utilized they must have been procured. And to procure them, funds must have been allocated towards them. Therefore, though the allocation of funds does not have a direct significant relationship to learners' academic achievement, it has an indirect impact on learners' academic achievement. It is

therefore important to ensure utilization of resources procured for teaching learning process in order to influence the learners' academic achievement.

In order to get a better understanding of whether allocation of funds has influence on learner's academic achievement; the study made use of a scatter graph of mean percentage KCSE score and the perceived funding level. The data used to plot the scatter graph on KCSE is found at appendix 12. The corresponding data from the 36 schools that were involved in the study was grouped according to the category of the schools and plotted. The special school category was labeled starting with S_A, national school with N_C and N_D, extra county school with E_E up to E_O and county and sub county school with C_B up to C_AJ. Each schools average funding over the years was plotted against average percentage KCSE mean score. The letters were used to conceal the identity of schools. Findings are presented on figure 1.

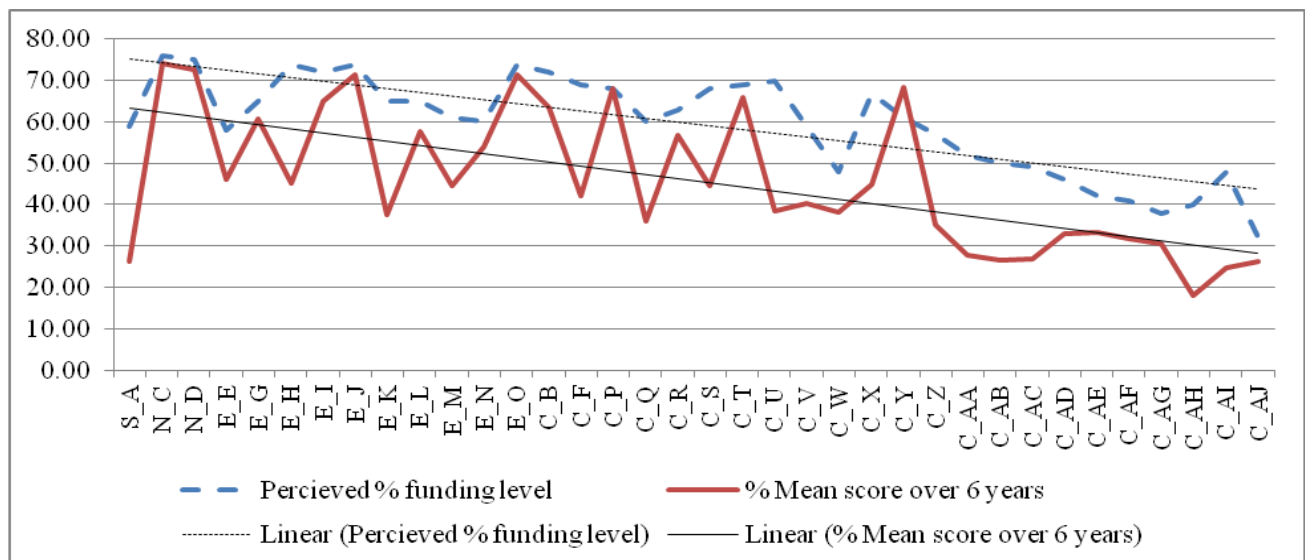


Figure 1: Association of funding level and percentage KCSE mean score

From figure 1, it can be observed that schools of the same category assumed to be funded to the same level had very different learner's achievement in terms of the KCSE mean score. From figure 1, it can be observed that the schools labeled starting with letter C_ (county and sub county schools) had very different scores over their range hence the curve not being the same. The extra county schools with labels starting with letter E_ also had very different scores over their range. These schools equally have different scores for learner's KCSE achievement. It is the same story with the two National schools that also have different scores for learner's achievement at KCSE yet they are presumed to be having same funding level. From figure 1, the lines for perceived percentage funding and mean score are not straight, the trend lines from them are straight and with a clear pattern in terms of their gradient. Both trend lines are straight and tend to be falling downwards as they move from the left to the right. From figure 1, it can be observed that special schools and National schools recorded higher perceived funding levels as compared to Extra County and County and Sub County schools with the last recording the lower most perceived funding levels. In general, the KCSE performance tended to have a direct linear relationship with the perceived funding level.

The researcher interviewed the principals of the schools that participated in the study with regard to their response in line with how the level of funding of a given school influenced the academic achievement of learners. Most of them indicated that the level of funding in line with the student population does influence the provision of teaching learning resources as well as providing for the teaching learning environment.

In order to get a clear understanding of the nature of association between educational resources and learner's academic achievement, the study utilized Spearman's correlation. The findings are on Table 5.

Table 5: Correlation between educational resources and learners' academic achievement

Educational resources		Learner's Academic achievement
Provision of teaching learning resources	Correlation Coefficient	.738(**)
	Sig. (2-tailed)	.000
	N	182
Provision of the physical facilities	Correlation Coefficient	.680(**)
	Sig. (2-tailed)	.001
	N	182
Staffing and training	Correlation Coefficient	.880(**)
	Sig. (2-tailed)	.000
	N	182

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

From Table 5 it can be observed that provision of teaching learning resources in Bungoma County public secondary schools had a high positive association ($P = 0.738$) with learners' academic achievement. It was also noted that that provision of physical infrastructure in Bungoma County public secondary schools had a moderate positive association ($P = 0.680$) with learners academic achievement while staffing and training had a high positive association ($P = 0.880$) with learners academic achievement.

From the findings of Table 5 can be observed that higher learners academic achievement may be obtained more by investing in staffing and training then followed by provision of teaching learning resources and lastly in providing physical infrastructure. From the findings on Table 4.23 it can be noted that all educational resources had either moderate or high positive association with learners' academic achievement. Therefore following these findings, the study failed to accept the hypothesis, H_{03} : There is no statistical significant association between funding practices on educational resources provision and academic achievement in public secondary schools Bungoma County. The study established that there was positive association between staffing and training, provision of teaching learning resources and provision of physical facilities with learners' academic achievement. All this point to the contra of the hypothesis statement there is no statistical significant association between funding practices on educational resources provision and academic achievement in public secondary schools.

Based on coefficients of association of influence on academic achievement amongst educational resources on Table 5 where staffing and training (ST) was 0.880, provision of teaching learning resources (TL) at 0.738 and provision of physical facilities (PF) at 0.680, the study recommends sharing of available funds for Bungoma County public secondary schools using the formula of Total funds to be allocated (TF) = $0.38(ST) + 0.32(TL) + 0.30(PF)$. The ratios were obtained by adding all coefficients then dividing the corresponding coefficient by the sum of the coefficients. For example ST coefficient is obtained by $0.880 / (0.880+0.738+0.680) = 0.38$ (2dp). Therefore given the total funds as 6,000,000 available for use in the school, amount to allocate TL,

$$TL = 0.32 \times TF = 0.32 \times 6,000,000 = 1,920,000.$$

Conclusion

There is a statistical significant association between funding practices and academic achievement in public secondary schools Bungoma County.

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