INFLUENCE OF PHYSICAL FACILITIES AS A COMPONENT OF INSTITUTIONAL CAPACITY ON ACADEMIC PERFORMANCE OF STUDENTS IN PUBLIC SECONDARY SCHOOLS IN USIGU DIVISION-BONDO DISTRICT, KENYA

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ABSTRACT

Disparities in performance have continued to be noticed as one of the many challenges facing education and had raised a lot of concern. The KCSE results had been poor in the recent years and as a result many students who went through public secondary schools in Usigu division could not compete favorably for national opportunities. This research aimed at investigating influences academic performance of students in public secondary schools, to establish the extent to which physical facilities as a component of institutional capacity influence academic performance of students in public secondary schools, The study was anchored on the theory of Educational Production Function and conceptual framework that showed the interrelatedness of various aspects of institutional capacity that influence academic performance in public secondary schools.

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INTRODUCTION

Globally, the concept of institutional capacity has been studied by many scholars, in two facets of literature namely state capacity and institutional analysis. However, there has been lack of consensus on the meaning and measurement of institutional capacity both in research and practice (Honadle, 1981). Even so, behavioral approach has been widely adopted. According to Sokolow (1979), state capacity is defined as the ability of states to implement official goals, regardless of the position of powerful social groups or in the face of difficult economic circumstances. Howitt (1977) on the other hand describes management capacity as the ability to identify problems, develop and evaluate policy alternatives for dealing with them, and operate organizational programs. The above definitions assume institutional capacity is the ability to carry out certain functions (Lindley, 1975). From this delineation, it is clear that the following three factors matter for institutional capacity. (1) What end (s) to pursue, (2) intention to act, and (3) ability to act. Institutional capacity is of central importance to performance. Generally, it is the desire to change performance that drives people to engage in institutional educations. Performance can be conceived as the tip of the iceberg, the fruit of institutional capacity made visible to the outside world.

OBJECTIVE OF THE STUDY

The study would be guided by the following objective: To establish the extent to which physical facilities as a component of institutional capacity influence academic performance of students in public secondary schools in Usigu division.

LITERATURE REVIEW

There is a large and controversial literature analyzing the relationship between school resource levels and pupils' achievement, dating back to the pioneering work by Coleman *et al* (1966). Early work on this issue using US data suggested a weak and somewhat inconsistent relationship between school resources and pupils' achievement (Burtless, 1996 and Hanushek 1979, 1986 &1997). International research confirms this view (Wosmann, 2003). However, this view was disputed by some, including Laine *et al.* (1996), Card and Krueger (1992) and Krueger (2003). A

recent and comprehensive summary of a range of evidence on the effect of sizes of class is Averett and McLennan (2004). They found the evidence base to be mixed, in terms of methodologies and results, and could not reach a definite conclusion about the effect of smaller classes on pupils' achievement.

In the UK, schools with higher concentrations of lower attaining pupils receive more funding per pupil. If this feature of the allocation of resources is ignored, a true positive effect of increasing resources will be understated. It is fair to say, however, that the vast majority of school resource effect studies have not been able to address the endogeneity problem. This is certainly so in the UK (Levaˇci´c and Vignoles, 2002). UK studies that have made some attempt to address endogeneity have generally found small but statistically significant positive effects from school resource variables on educational outcomes (Dearden *et al.*, 2001; Dolton and Vignoles, 2000; Dustmann *et al.*, 2003; Iacovou, 2002). Endogeneity issues are not the only methodological difficulty in this literature. For example, much of the work on resourcing has had to rely on quite aggregated data, rather than data at the level of the individual pupil. Aggregation bias is therefore a problem for some of the studies in this field (Hanushek *et al.*, 1996). Only recently in the UK has large scale nationally representative pupil level data become available with which we can address the resourcing issue.

In Nigeria, a lot of studies have been conducted by various researchers on the relationship between educational resources and students academic performance. Idiagbe, (2004) concluded that teachers qualification and adequate facilities were determinants of assessing academic performance of students in secondary schools. Hence the availability or non-availability of facilities in schools affects the academic performance of students in Delta State. This is in agreement with Nwangwu (1997) who believed that teaching materials facilitate teaching and learning activities, which result in effective teaching and improved academic performance. For efficient educational management, facilities help the school to determine the number of pupils to be accommodated, number of teachers and non-teaching personnel to be employed and the cost determination for the efficient management of the system (Osagie, 2001). The school climate is determined by the resources, especially class rooms under which the teachers and pupils operates which influences attitude in teaching and learning. Un-conducive class room creates stress on teachers and pupils resulting negative attitude toward school and learning by pupils. Facilities below approved standard could also lead to reduction in quality of teaching and learning in

schools resulting to poor pupils' academic performance (Uwheraka, 2005). The school environment affects academic achievement of pupils. Facilities such as, desks, seats, chalkboard, teaching aids, and cupboard are ingredients for effective teaching and learning. In the same vein the Nigeria Education Research Council of 1998 also emphasized that, for a good education policy or programmed to guarantee quality outputs, it must be adequately supplied with necessary facilities and equipment.

In Kenya a number of studies have been conducted to assess the level of availability and adequacy of teaching and learning facilities in the schools. The school infrastructure which includes: buildings, science laboratories, play grounds, and school compound were found to play an important role in facilitating academic achievement in schools. An evaluation which was conducted by KIE in the year 2007 to investigate how much prepared schools were for the new curriculum showed most of the sampled schools had inadequate infrastructure for teaching and learning. Other important resources in teaching and learning were found to be textbooks, charts, posters, library and computers. The most commonly used resource was found to be the textbooks some of which, according to a monitoring report, have shallow content, contradictory information, and too much unnecessary content and factual errors.

RESULTS AND DISCUSSIONS

In this study, the physical facilities considered included classrooms, laboratory and library as well as the resources in them, and their influence on academic performance was determined. The results of the study were presented as follows:

Adequacy of class rooms

When respondents were asked to comment about the adequacy of classrooms, they had varying responses as indicated in table 4.7 below.

Table 4.7: Adequacy of classrooms

Adequacy of classrooms	*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Agree	38	42.7	42.7	42.7
Disagree	28	31.5	31.5	74.2

Neutral	6	6.7	6.7	80.9
Strongly agree	15	16.9	16.9	97.8
Strongly disagree	2	2.2	2.2	100.0
Total	**89**	**100.0**	**100.0**	

From the above findings, 38(42.7%) of the respondents were of the opinion that the classrooms available were adequate. However, 28(31.5%) of the respondents disagreed. 6(6.7%) of the respondents were neutral and undecided on whether to agree or disagree, while 15(16.9%) strongly agreed that the classrooms were adequate. Only 2(2.2%) strongly disagreed. These results therefore indicate that most schools in the division had adequate classrooms. To determine whether the adequate classrooms had any influence on the academic performance, a correlation analysis was run and the results tabulated in table 4.8 as follows:

Table 4.8: Pearson's correlation between adequacy of classrooms and academic performance.

		Average school mean covering the years 2007, 2008, and 2009	Adequacy of classrooms
Average school mean covering the years 2007, 2008, and 2009	Pearson Correlation	1	-.034
	Sig. (2-tailed)	.	.749
	N	89	89
adequacy of classrooms	Pearson Correlation	-.034	1
	Sig. (2-tailed)	.749	.
	N	89	89

The results of the correlation test revealed that there was no significant relationship between adequacy of classrooms and the academic performance of students in public secondary schools.

This finding agreed with those of Wosmann (2003). Burtless (1996) and Hanushek (1979, 1986 &1997) who argued that there is a weak and somewhat inconsistent relationship between school resources and pupils' achievement. However, it deviates from the argument advanced by Idiagbe, (2004) who concluded that adequate facilities was a determinant of assessing academic performance of students in secondary schools.

Adequacy of laboratories

When respondents were asked about the status of laboratories, they had varying opinions. The results were tabulated in table 4.9 as follows:

Table 4.9: Adequacy of laboratories

Adequacy of laboratories	*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Agree	16	18.0	18.0	18.0
Disagree	47	52.8	52.8	70.8
Neutral	11	12.4	12.4	83.1
Strongly agree	3	3.4	3.4	86.5
Strongly disagree	12	13.5	13.5	100.0
Total	**89**	**100.0**	**100.0**	

From the above responses, 16(18%) agreed that the laboratories were adequate. However, 47(52%) which forms the majority disagreed. 11(12.4%) of the respondents were neutral while only 3(3.4%) strongly agreed.12 (13.5%) felt that the laboratories were seriously inadequate, by giving 'strongly disagree' as their response. These results indicate that public secondary schools in Usigu division did not have adequate laboratories. This may explain the low academic performance experienced in the division. To determine whether there was any influence of inadequate laboratories on the academic performance of the students, a correlation test was run and the results presented in a table 4.10 as follows:

Table4.10: Pearson's Correlation between adequacy of laboratories and academic performance.

		adequacy of laboratories	average school mean covering the years 2007, 2008, and 2009
adequacy of laboratories	Pearson Correlation	1	.311(**)
	Sig. (2-tailed)	.	.003
	N	89	89
average school mean covering the years 2007, 2008, and 2009	Pearson Correlation	.311(**)	1
	Sig. (2-tailed)	.003	.
	N	89	89

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

Pearson's correlation revealed a weak but positive correlation between adequacy of laboratories and academic performance of 0.311(**) at 0.01level of significance (2-tailed). This meant that the more the laboratories tended to be adequate, the better the performance of the students was likely to be. This finding agreed with that of the Dearden *et al* (2001), who generally found small but statistically significant positive effects from school resource variables on educational outcomes. However, it is a departure from the findings of Hanushek (1979, 1986 &1997) who argued that there was a weak and somewhat inconsistent relationship between school resources and pupils' achievement. The inadequacy of laboratories in most public secondary schools in Usigu division therefore explained the poor academic performance of students in the division.

Adequacy of libraries

The researcher conducted a survey to determine the adequacy of libraries in the public secondary schools in Usigu division and obtained the following responses through the administration of a questionnaire.

Table 4.11: Adequacy of libraries.

Adequacy of libraries	*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Agree	23	25.8	25.8	25.8
Disagree	35	39.3	39.3	65.2
Neutral	11	12.4	12.4	77.5
Strongly agree	7	7.9	7.9	85.4
Strongly disagree	13	14.6	14.6	100.0
Total	**89**	**100.0**	**100.0**	

In this table, those who agreed to adequacy of libraries were 23(25.8%) of the respondents. The individuals who felt that the libraries were not adequate formed the majority at 35(39%). 11(12.4%) of the respondents however were neither agreeing nor disagreeing. While 13 (14.6%) of the respondents strongly disagreed, only 7(7.9%) strongly agreed that the libraries were adequate. From the above table, most public secondary schools in Usigu division did not have adequate libraries. Influence of adequacy of libraries on academic performance of students was determined by running a correlation test and the findings were as follows:

Table 4.12: Pearson's Correlation between adequacy of libraries and academic performance.

		adequacy of library	average school mean covering the years 2007, 2008, and 2009
adequacy of library	Pearson Correlation	1	.225(*)
	Sig. (2-tailed)	.	.034
	N	89	89
average school mean covering the years 2007, 2008, and 2009	Pearson Correlation	.225(*)	1
	Sig. (2-tailed)	.034	.
	N	89	89

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

This yielded a correlation coefficient of 0.225(*)at 0.05 (2-tailed) level of significance. The results above revealed the existence of a weak positive correlation between adequacy of libraries and academic performance of students in public secondary schools. This was further interpreted to mean; as libraries became more and more adequate, the academic performance of students became better. This was found to be in the same line of argument as Dolton and Vignoles (2000) who maintained that there was a small but statistically significant positive effect from school resource variables on educational outcomes. However, this was inconsistent with the findings of Burtless (1996) who argued that there was often a weak and somewhat inconsistent relationship between physical facilities and academic performance. Since most secondary schools in Usigu did not have adequate libraries, and given the vital role of the libraries in providing conducive environment for studying, this explained the poor academic performance of students in the division.

Adequacy of science equipment, text books, lockers and chairs, and instructional resources.

The respondents were asked about the status of various school resources that were utilized alongside the physical facilities. These included science equipment, text books, lockers and chairs, as well as the other general instructional materials. The responses were then tabulated as follows:

Table 4.13: Summary of adequacy of science equipment, text books, locker and chairs, and instructional resources.

	Science equipment		*Text books*		*Lockers and chairs*		*Instructional resources*	
	Freq.	*(%)*	*Freq.*	*(%)*	*Freq.*	*(%)*	*Freq.*	*(%)*
Agree	16	18	29	32.6	45	50.6	34	38.2
Disagree	41	46.1	27	30.3	12	13.5	34	38.2
Neutral	15	16.9	21	23.6	14	15.7	12	13.5
Strongly agree	9	10.1	10	11.2	16	16.0	7	7.9
Strongly disagree	8	9.0	2	2.2	2	2.2	2	2.2
Total	**89**	**100.0**	**89**	**100.0**	**89**	**100.0**	**89**	**100.0**

From the results in the table 4.4.13 above, it is revealed that 41(46.1%) of respondents were in agreement that the science equipment were inadequate. Majority, 29(32%) and 45(50.6%) agreed that text books and lockers and chairs respectively were adequate. However, they were divided in opinion concerning the adequacy of the instructional materials, with 34(38.2%) accepting adequacy and a similar number, 34(38.2%) denying the same. The inadequacy of most of the school resources could explain the low achievement of students in the secondary schools (Dustmann *et al.*, 2003)

CONCLUSIONS

Most of the public secondary schools in Usigu division were found to have adequate class rooms. However, there was no significant relationship between adequacy of classrooms and the academic performance of students in public secondary schools. These schools however did not have adequate laboratories. Unfortunately, there was a weak but positive relationship between adequacy of laboratories and academic performance of students. This therefore meant that, inadequacy of laboratories contributed to the poor academic performance of students in the division. From the findings on libraries, most public secondary schools in Usigu division did not have adequate libraries. There was a weak positive correlation between adequacy of libraries and academic performance of students in public secondary schools. Since most secondary schools in Usigu did not have adequate libraries, this explained the poor academic performance of students in the division. School resources that were utilized alongside the physical facilities such as science equipment, text books, lockers and chairs were found to be inadequate. The inadequacy of most of the school resources could explain the low achievement of students in the secondary schools in Usigu division.

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