

Implications of Funding Practices on Adequacy of Physical Facilities and Learners' Academic Achievement in Public Secondary Schools

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Abstract

Education is a human activity that fashions and models man for the society. This is only possible with quality education. Funding has implications on the quality of education of which schools physical facilities are an integral part. The study employed survey design on a target population of 252 public secondary schools from which 36 made up the study population. The principals, heads of academic departments and school bursars from the 36 schools in addition to the County Director of Education were respondents. The study found out that funding practices had an association with the provision of adequate physical facilities. It also established that utilization of the physical facilities had an association with learners' academic achievement. However allocation of funds had no direct association with learners' academic achievement. The study concluded that funding practices have an indirect association with learners' academic achievement. The implication of this being that funding practices have to ensure provision of adequate physical facilities which have to be utilised in the teaching learning process in order to realise positive learners' academic achievement.

Keywords: Adequacy physical facilities, Funding Practices, Learners' academic achievement, Utilisation of physical facilities

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1. Introduction

The aspect of quality education has been the guiding principle of the Kenyan Government. Government participation in the funding of education is aimed at increasing the quality of education. According to UNICEF (2000), some of the indicators of quality education include performance which could be in terms of test scores posted by students and an environment that provides adequate learning resources and facilities. Funding is a key element among educational resources because they determine the acquisition of other resources such as physical resources, human resources and instructional materials in a school. Schools make a difference when their economic resources are allocated to create a conducive social environment (Ayoti, Koteng & Odhiambo, 2016; Wenglinisky, 1997). Studies conducted in several countries have shown that resource allocation affects students' academic achievement in public schools, (Lumuli, 2009). World Bank (2012) concurs that depending on the context and under the right conditions, increasing inputs that are in scarce supply can lead to a high marginal return on the learning process.

Research has shown that funding has a positive impact on academic performance (Sherlock, 2011). These findings were validated by a later research conducted in Mumias region in Kenya in 2014 by Sisungu, Kaberia and Buhere which showed that there is a significant positive correlation between school level of funding and performance in KCSE examinations. Provision of good quality education requires adequate physical facilities such as classrooms, laboratories and libraries which are acquired through the available funds in schools. This makes funding a key aspect in the provision of education, (Mbatu, 2004). A study conducted in public secondary schools in the former Bungoma South District in Kenya by Bakari, Likoko and Ndinyo in 2012, revealed that schools with adequate physical facilities had a superior academic advantage over those with less physical facilities.

According to Lucas and Mbiti (2014), National schools which admit top performing primary school candidates across the nation have better facilities as compared with provincial and district schools. Ndiku and Muhavi (2013) argues that the old well established schools have relatively higher levels of efficiency than the upcoming day secondary schools and district schools because they have much of the required infrastructure.

Schools in Kenya are under pressure to improve academic performance (MOEST, 2005). According to Lips et al (2008), many people are of the view that spending more on education corresponds to academic achievement. World Bank report on education recommends for the investment in outputs that most effectively affect student learning achievement (World Bank, 2008). Julia Gillards who is the chair the Global Partnership for education affirms that if spending on education was efficient, then the world it would mitigate on low learning outcomes (World Bank, 2018).

A research on the relationship between funding and academic achievement as reported in the Asian Journal

of Educational Research (2010) showed that schools with a higher revenue base performed better than those whose income was low. World Bank (2018) asserts that, as much as educational resources are necessary, they may not be sufficient to produce higher levels of student learning especially in excessive large classes of more than 60 students.

1.1 Funding and availability of physical facilities

Condron and Roscigno (2003), argue that spending on school buildings may also shape achievements since better physical facilities create a more conducive environment for learning. Munda and Odebero (2014), argues that the attainment of education related millennium goals in Kenya are mainly dependent on the availability and the correct use of funds to acquire supportive inputs for the education process.

Wamulla (2013) from his studies states that the availability of physical and teaching facilities have a positive influence on learners' academic performance. There is actually a general belief that the condition of school's learning environment, especially infrastructure has an important impact on students' academic performance and effectiveness. The facilities that are needed to facilitate effective learning in an educational institution include adequate power and water supply, adequate classrooms, libraries, laboratories as well as furniture and sporting equipment among others. The quality of infrastructure has strong influence on the academic standard which is an index of quality assurance in the school (Sunday, 2012). Unavailability of critical facilities such as laboratories may affect delivery of science oriented subjects since this is where the learners practice the taught concepts. Laboratories therefore need to be installed and equipped with required apparatus and chemicals. In the case of the library, it needs to be equipped with sufficient books. School facilities such as buildings that are used for academic and non-academic purpose, equipment, classroom facilities, furniture, toilets, ICT, library and laboratory materials and others play a pivotal role in the teaching and learning process (Hailu & Biyabeyen, 2014). According to Schneider (2002) school facilities have a direct effect on teaching and learning and as such unattractive physical structures could de-motivate learners academically. Generally, a favourable school climate gives room for students to work hard and enhance their academic achievement (Sunday, 2012). Redan, Marlina and Betaubun (2014) in their research findings state that unavailability of adequate school physical facilities and infrastructures directly influenced the teaching learning process in the classrooms and, in turn, affected the learners' academic achievement in schools.

A research conducted in Makueni county Kenya showed a strong correlation between availability of learning resources and performance (Kimeu, Tanui and Ronoh, 2015). A related research which had been conducted earlier in the former Rift Valley province had also shown that schools equipped with adequate and relevant resources performed better in National examinations than schools with inadequate learning resources (Kurgat, 2014). According to the Organization for Economic Cooperation and Development (OECD), resource shortages hinder instruction and therefore lower student performance. Facilities such as effective school Libraries provide additional reading opportunities for students which in turn improve reading skills, comprehension, writing and clarity of expression hence support student performance in all other curriculum subjects. This research therefore explored into the issue of allocation of funds in relation to availability of physical resources and its impact on learner academic achievement in secondary schools Bungoma County, Kenya.

2. Methodology

The study employed the descriptive survey design. The target population consisted of 252 public secondary schools of which 36 constituted the study population. Stratified sampling was employed to ensure representation of all sub-counties in the county and all categories of public secondary schools. Of the selected schools, the principals, bursars and heads of academic departments (HoDs) were respondents in this study. The County Director of Education was also a respondent in this study. The study employed questionnaires, structured interview schedules and document analysis as instruments of data collection. The SPSS Package was used in the analysis of quantitative data. Descriptive statistics using mean and standard deviation were used to organise, analyse, present and describe the data from respondents using tables and figures, while inferential statistics were used to make generalisation based on findings from the sampled schools. A Pearson correlation was used to determine the possibility of existence of any relationship between variables of the study.

3.0 Results

3.1 Funding practices and adequate provision of physical facilities

The study sought to evaluate the effects of funding practices on the adequacy of physical infrastructure in secondary schools in Bungoma County. The study did this by looking at the adequacy of physical resources that support education. School physical facilities are fundamental for better learning environment and achievements, hence the outcome of the students (Saeed & Wain, 2011). Other studies have shown that availability of the physical facilities like drinking water, technology, toilets, furniture, playgrounds, and libraries have a significant positive role on the performance of the students and their academic achievement (Bijaya & Maharjan, 2015).

Respondents were asked to indicate the extent to which they agreed with a list of statements concerning adequacy of provision of physical facilities within the schools on a five points scale with 1 being the lowest corresponding to strongly disagree, 3 neutral and 5 the highest corresponding to strongly agree after coding. The physical facilities listed were furniture in the staffroom/offices, furniture in the classrooms, library facilities, science laboratory facilities, home science / agriculture room facilities, latrines / toilets, offices allocated to departments, dining hall facilities, play fields, availability and reliability of clean water, and availability and reliability of power.

The comparison of the degree to which respondents agreed to the adequacy of the physical facilities was as presented in figure 1.

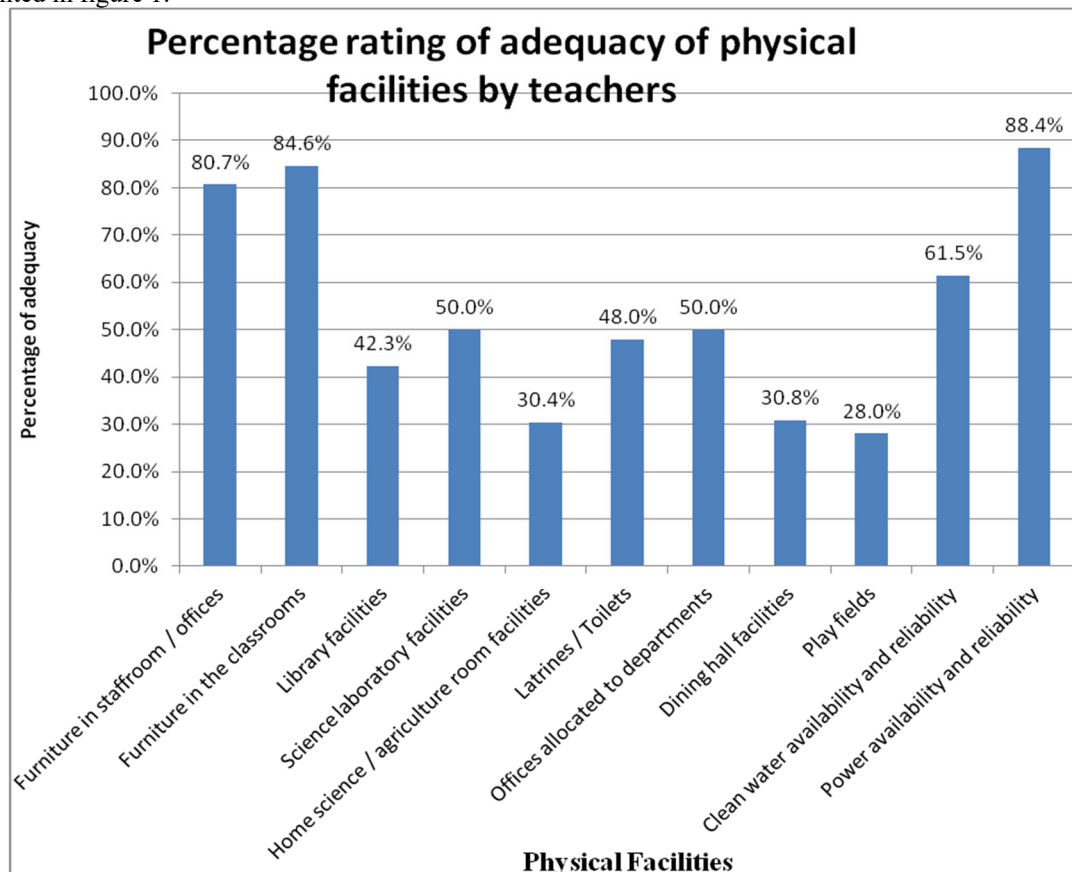


Figure 1: Level of physical facilities provision

Considering 60% as the pass level for adequate provision, it would be observed from figure 1 that power supply (88.4%), furniture in the classrooms (84.6%), furniture in the staffroom (80.7%) and clean water supply (61.5%) meet the threshold. The rest of the facilities were below threshold. However those facilities moderately provided for were inclusive of science laboratories and offices allocated to departments at 50%, toilets / latrines (48%) and library facilities (42.3%). The play grounds (28%), capacity and equipment for home science /Agriculture (30.4%) and dining hall facilities (30.8%) were the worst in terms of provision.

The summary of the level of provision of the physical facilities when ranked from the better provide for is summaries in table 1.

Table 1: Ranking of adequacy of physical facilities

Serial	Physical facility and teaching learning resource	% of adequate response
1.	Power supply	88.4%
2.	Furniture in classrooms	84.6%
3.	Furniture in the staffroom/offices	80.8%
4.	Clean water supply	61.5%
5.	Books' and equipments' storage facilities	57.7%
6.	science laboratory facilities	50.0%
7.	Number of offices allocated to departments	50.0%
8.	Number of latrines / toilets	48.0%
9.	Library facilities	42.3%
10.	Dining hall facilities	30.8%
11.	Home science / Agriculture room facilities	30.4%
12.	Play fields	28.0%

From table 1, physical facilities on the overall were fairly provided for however it is observable that they were not equally provided for across the board. Such insufficient provision of the physical facilities leads to a strained learning environment and may easily affect educational service provision as students overstretch the physical facilities (Bizimana and Aluko, 2014).

An interview with the County Director of Education, Bungoma County revealed that the general status of schools infrastructure across the county was below average and there was need to sensitize stakeholders to understand where the county was and make improvement. Most of the principals interviewed indicated that there was an assumption by the government that schools have adequate infrastructure. Most schools prioritized the area of staffing instead of infrastructure. The school principals acknowledged that operational money was used to pay teachers instead of developing the infrastructure of the schools.

3.2 Association between determinants of funds allocation and adequate provision of physical facilities


Pearson Product Moment Correlation was applied on the findings to determine whether there was any association between the determinants of funds allocation and the provision of physical resource. The findings are presented in table 2. According to Asuoro, Sayago and Gonzalez (2006), Pearson Product Moment Correlation coefficients of 0.00 to 0.29 implies little if any association, 0.3 to 0.49 implies low association, 0.5 to 0.69 implies moderate association, 0.7 to 0.899 implies high association and 0.9 to 1.00 implies very high association. The association normally will have either a positive or negative direction as indicated by the sign on the coefficient value.


Table 2: Correlation of determinants of funds allocation with adequacy of physical facilities

Determinants of funds allocation		Furniture / desks in staffroom /offices	Furniture / desks in the classrooms	Library facilities	Science laboratory facilities	Home science / agriculture rooms facilities	Latrines / Toilets	Offices allocated to departments	Dining hall facilities	Play fields	Availability and reliability of clean water	Power availability and reliability
School's strategic plan	Pearson Correlation	.557(**)	.273(**)	.413(**)	.575(**)	.667(**)	.737(**)	.719(**)	.557(**)	.639(**)	.739(**)	.578(**)
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	182	182	182	182	161	175	182	182	175	182	182
Departmental budget	Pearson Correlation	.554(**)	.208(**)	.530(**)	.716(**)	.733(**)	.777(**)	.853(**)	.601(**)	.680(**)	.783(**)	.555(**)
	Sig. (2-tailed)	.000	.005	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	182	182	182	182	161	175	182	182	175	182	182
The school's priorities	Pearson Correlation	.332(**)	.192(*)	.337(**)	.304(**)	.214(**)	.397(**)	.489(**)	.313(**)	.465(**)	.498(**)	.348(**)
	Sig. (2-tailed)	.000	.012	.000	.000	.009	.000	.000	.000	.000	.000	.000
	N	168	168	168	168	147	163	168	168	164	168	168
The school's characteristics	Pearson Correlation	.513(**)	.283(**)	.503(**)	.636(**)	.619(**)	.675(**)	.812(**)	.483(**)	.660(**)	.773(**)	.629(**)
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	182	182	182	182	161	175	182	182	175	182	182
The type of school	Pearson Correlation	.634(**)	.207(**)	.513(**)	.566(**)	.522(**)	.685(**)	.790(**)	.480(**)	.602(**)	.745(**)	.518(**)
	Sig. (2-tailed)	.000	.005	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	182	182	182	182	161	175	182	182	175	182	182
The school's unique needs	Pearson Correlation	.551(**)	.291(**)	.474(**)	.620(**)	.643(**)	.692(**)	.793(**)	.505(**)	.644(**)	.787(**)	.581(**)
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	182	182	182	182	161	175	182	182	175	182	182
The school's staffing needs	Pearson Correlation	.584(**)	.220(**)	.513(**)	.723(**)	.786(**)	.840(**)	.723(**)	.631(**)	.748(**)	.603(**)	.518(**)
	Sig. (2-tailed)	.000	.003	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	182	182	182	182	161	175	182	182	175	182	182

The laws and Regulations on funds allocation	Pearson Correlation	.573(**)	.273(**)	.447(**)	.564(**)	.607(**)	.676(**)	.782(**)	.492(**)	.638(**)	.813(**)	.628(**)
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	182	182	182	182	161	175	182	182	175	182	182
Ministry of Education goals and priorities	Pearson Correlation	.607(**)	.287(**)	.401(**)	.603(**)	.696(**)	.745(**)	.716(**)	.571(**)	.635(**)	.709(**)	.620(**)
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	182	182	182	182	161	175	182	182	175	182	182
Fairness and equity	Pearson Correlation	.595(**)	.213(**)	.458(**)	.689(**)	.742(**)	.781(**)	.750(**)	.588(**)	.699(**)	.714(**)	.509(**)
	Sig. (2-tailed)	.000	.004	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	182	182	182	182	161	175	182	182	175	182	182
Adherence to the National Financing policy	Pearson Correlation	.357(**)	.099	.333(**)	.340(**)	.497(**)	.474(**)	.612(**)	.365(**)	.449(**)	.674(**)	.591(**)
	Sig. (2-tailed)	.000	.183	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	182	182	182	182	161	175	182	182	175	182	182

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

 High association at 0% degree of confidence

 Moderate association at 0% degree of confidence

From table 2 in can be observed that the use of the School's strategic plan had high association with provision of latrines / toilets (0.737 at 0.000 two tailed significant level), office allocation to departments (0.719 at 0.000 two tailed significant level) and availability and reliability of clean water (0.739 at 0.000 two tailed significant level) while having a moderate association with furniture / desks in staffroom/ offices (0.557 at 0.000 two tailed significant level), science laboratory facilities (0.575 at 0.000 two tailed significant level), home science / agriculture rooms facilities (0.557 at 0.000 two tailed significant level), dining hall facilities (0.737 at 0.000 two tailed significant level), play fields (0.639 at 0.000 two tailed significant level) and power availability and reliability (0.578 at 0.000 two tailed significant level). Finally, School's strategic plan had low or no association with furniture / desks in the classrooms (0.273 at 0.000 two tailed significant level) and library facilities (0.413 at 0.000 two tailed significant level).

According to the findings on table 2, departmental budget had high association with provision of science laboratory facilities (0.716 at 0.000 two tailed significant level), home science / agriculture rooms facilities (0.733 at 0.000 two tailed significant level), latrines / toilets (0.777 at 0.000 two tailed significant level), office allocation to departments (0.853 at 0.000 two tailed significant level) and availability and reliability of clean water (0.783 at 0.000 two tailed significant level) while having a moderate association with furniture / desks in staffroom/ offices (0.554 at 0.000 two tailed significant level), library facilities (0.530 at 0.000 two tailed significant level), dining hall facilities (0.601 at 0.000 two tailed significant level), play fields (0.680 at 0.000 two tailed significant level) and power availability and reliability (0.555 at 0.000 two tailed significant level). Finally, it had low or no association with furniture / desks in the classrooms (0.208 at 0.000 two tailed significant level) only.

Based on findings of table 2, the School's priorities had low or no association with provision of latrines / toilets (0.397 at 0.000 two tailed significant level), office allocation to departments (0.489 at 0.000 two tailed significant level), availability and reliability of clean water (0.498 at 0.000 two tailed significant level), furniture / desks in staffroom/ offices (0.332 at 0.000 two tailed significant level), science laboratory facilities (0.304 at 0.000 two tailed significant level), home science / agriculture rooms facilities (0.214 at 0.000 two tailed significant level), dining hall facilities (0.313 at 0.000 two tailed significant level), play fields (0.465 at 0.000 two tailed significant level), power availability and reliability (0.348 at 0.000 two tailed significant level), furniture / desks in the classrooms (0.192 at 0.000 two tailed significant level) and library facilities (0.337 at 0.000 two tailed significant level).

From table 2 in can be observed that the use of the School's characteristics had high association with provision of office allocation to departments (0.812 at 0.000 two tailed significant level) and availability and reliability of clean water (0.773 at 0.000 two tailed significant level) while having a moderate association with latrines / toilets (0.675 at 0.000 two tailed significant level), library facilities (0.503 at 0.000 two tailed significant level), furniture / desks in staffroom/ offices (0.513 at 0.000 two tailed significant level), science laboratory facilities (0.636 at 0.000 two tailed significant level), home science / agriculture rooms facilities (0.619 at 0.000 two tailed significant level), play fields (0.660 at 0.000 two tailed significant level) and power availability and reliability (0.629 at 0.000 two tailed significant level). Finally, School's characteristics had low or no association with furniture / desks in the classrooms (0.283 at 0.000 two tailed significant level) and dining hall facilities (0.483 at 0.000 two tailed significant level).

The school type, according to findings on table 2 had high association with provision of office allocation to departments (0.790 at 0.000 two tailed significant level) and availability and reliability of clean water (0.745 at 0.000 two tailed significant level) while having a moderate association with latrines / toilets (0.685 at 0.000 two tailed significant level), library facilities (0.513 at 0.000 two tailed significant level), furniture / desks in staffroom/ offices (0.634 at 0.000 two tailed significant level), science laboratory facilities (0.566 at 0.000 two tailed significant level), home science / agriculture rooms facilities (0.522 at 0.000 two tailed significant level), play fields (0.602 at 0.000 two tailed significant level) and power availability and reliability (0.518 at 0.000 two tailed significant level).

significant level). Finally, School's characteristics had low or no association with furniture / desks in the classrooms (0.207 at 0.000 two tailed significant level) and dining hall facilities (0.480 at 0.000 two tailed significant level).

As per the findings of table 2, the School's unique needs had high association with provision of office allocation to departments (0.793 at 0.000 two tailed significant level) and availability and reliability of clean water (0.787 at 0.000 two tailed significant level) while having a moderate association with latrines / toilets (0.692 at 0.000 two tailed significant level), furniture / desks in staffroom/ offices (0.551 at 0.000 two tailed significant level), science laboratory facilities (0.620 at 0.000 two tailed significant level), home science / agriculture rooms facilities (0.643 at 0.000 two tailed significant level), play fields (0.644 at 0.000 two tailed significant level), dining hall facilities (0.505 at 0.000 two tailed significant level) and power availability and reliability (0.581 at 0.000 two tailed significant level). Finally, School's unique needs had low or no association with furniture / desks in the classrooms (0.291 at 0.000 two tailed significant level), and library facilities (0.474 at 0.000 two tailed significant level).

From table 2 in can be observed that the use of the School's staffing needs had high association with provision of science laboratory facilities (0.723 at 0.000 two tailed significant level), home science / agriculture rooms facilities (0.786 at 0.000 two tailed significant level), latrines / toilets (0.840 at 0.000 two tailed significant level), office allocation to departments (0.723 at 0.000 two tailed significant level) and play fields (0.748 at 0.000 two tailed significant level), while having a moderate association with furniture / desks in staffroom/ offices (0.584 at 0.000 two tailed significant level), library facilities (0.513 at 0.000 two tailed significant level), dining hall facilities (0.631 at 0.000 two tailed significant level), availability and reliability of clean water (0.603 at 0.000 two tailed significant level) and power availability and reliability (0.518 at 0.000 two tailed significant level). Finally, it had low or no association with furniture / desks in the classrooms (0.220 at 0.000 two tailed significant level).

The laws and regulations on allocation of funds based on findings of table 2 had high association with provision of office allocation to departments (0.782 at 0.000 two tailed significant level) and availability and reliability of clean water (0.813 at 0.000 two tailed significant level) while having a moderate association with furniture / desks in staffroom/ offices (0.573 at 0.000 two tailed significant level), science laboratory facilities (0.564 at 0.000 two tailed significant level), home science / agriculture rooms facilities (0.607 at 0.000 two tailed significant level), latrines / toilets (0.676 at 0.000 two tailed significant level), play fields (0.638 at 0.000 two tailed significant level) and power availability and reliability (0.628 at 0.000 two tailed significant level). Finally, they had low or no association with dining hall facilities (0.492 at 0.000 two tailed significant level), furniture / desks in the classrooms (0.273 at 0.000 two tailed significant level) and library facilities (0.447 at 0.000 two tailed significant level).

From table 2 in can be observed that the use of the ministry of Education goals and priorities had high association with provision of latrines / toilets (0.745 at 0.000 two tailed significant level), office allocation to departments (0.716 at 0.000 two tailed significant level) and availability and reliability of clean water (0.709 at 0.000 two tailed significant level) while having a moderate association with furniture / desks in staffroom/ offices (0.607 at 0.000 two tailed significant level), science laboratory facilities (0.603 at 0.000 two tailed significant level), home science / agriculture rooms facilities (0.696 at 0.000 two tailed significant level), dining hall facilities (0.571 at 0.000 two tailed significant level), play fields (0.635 at 0.000 two tailed significant level) and power availability and reliability (0.620 at 0.000 two tailed significant level). Finally, it had low or no association with furniture / desks in the classrooms (0.287 at 0.000 two tailed significant level) and library facilities (0.401 at 0.000 two tailed significant level).

Based on findings of table 2, fairness and equity had high association with provision of home science / agriculture rooms facilities (0.742 at 0.000 two tailed significant level), latrines / toilets (0.781 at 0.000 two tailed significant level), office allocation to departments (0.750 at 0.000 two tailed significant level) and availability and reliability of clean water (0.714 at 0.000 two tailed significant level) while having a moderate association with furniture / desks in staffroom/ offices (0.595 at 0.000 two tailed significant level), science laboratory facilities (0.689 at 0.000 two tailed significant level), dining hall facilities (0.588 at 0.000 two tailed significant level), play fields (0.699 at 0.000 two tailed significant level) and power availability and reliability (0.509 at 0.000 two tailed significant level). Finally, it had low or no association with furniture / desks in the classrooms (0.213 at 0.000 two tailed significant level) and library facilities (0.458 at 0.000 two tailed significant level).

From table 2 in can be observed that adherence to national financing policy had moderate association with provision of office allocation to departments (0.612 at 0.000 two tailed significant level), power availability and reliability (0.674 at 0.000 two tailed significant level) and availability and reliability of clean water (0.591 at 0.000 two tailed significant level). Finally, it had low or no association with furniture / desks in staffroom/ offices (0.357 at 0.000 two tailed significant level), furniture / desks in the classrooms (0.099 at 0.000 two tailed significant level), library facilities (0.333 at 0.000 two tailed significant level), science laboratory facilities (0.340 at 0.000 two tailed significant level), home science / agriculture rooms facilities (0.497 at 0.000 two tailed significant level), latrines / toilets (0.474 at 0.000 two tailed significant level), dining hall facilities (0.365 at 0.000 two tailed significant

level) and play fields (0.449 at 0.000 two tailed significant level).

From the findings in table 2, it is notable that the school's priorities had no moderate or high association to the provision of any of the physical facilities. Equally, furniture / desks in classrooms had none of the funds allocation determinants having a moderate or high association with it. At the same time adherence to national financing policy had moderate association with provision of only three physical facilities.

The determinants of funds allocation ranked from those having most high and moderate association with provision of physical facilities in the descending order are School's staffing needs, departmental budget, fairness and equity, school's strategic plan, Ministry of Education goals and priorities, the school's characteristics, the school's unique needs, the type of school, the laws and Regulations on funds allocation, adherence to the National Financing policy and finally the school's priorities.

3.3 Association between perceived funding and adequate provision of physical facilities

After establishing the relationship between the funds allocation practices and provision of physical facilities provision, the study also sought to understand the association between the perceived funding level and the perceived adequacy of the physical facilities. The findings are as presented in table 3.

Table 3: Correlation of perceived funding level with adequacy of physical facilities

Facility		Perceived Funding level
Furniture in staffroom / offices	Pearson Correlation	.211(**)
	Sig. (2-tailed)	.002
	N	182
Furniture in the classrooms	Pearson Correlation	.203(**)
	Sig. (2-tailed)	.003
	N	182
Library facilities	Pearson Correlation	.494(**)
	Sig. (2-tailed)	.000
	N	182
Science laboratory facilities	Pearson Correlation	.493(**)
	Sig. (2-tailed)	.000
	N	182
Home science / agriculture rooms facilities	Pearson Correlation	.246(**)
	Sig. (2-tailed)	.001
	N	161
Latrines / Toilets	Pearson Correlation	.319(**)
	Sig. (2-tailed)	.000
	N	175
Offices allocated to departments	Pearson Correlation	.491(**)
	Sig. (2-tailed)	.000
	N	182
Dining hall facilities	Pearson Correlation	.239(**)
	Sig. (2-tailed)	.001
	N	182
Play fields	Pearson Correlation	.419(**)
	Sig. (2-tailed)	.000
	N	175
Availability and reliability of clean water	Pearson Correlation	.389(**)
	Sig. (2-tailed)	.000
	N	182
Power availability and reliability	Pearson Correlation	.345(**)
	Sig. (2-tailed)	.000
	N	182

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

From findings presented in table 3, it was found that there was a weak (0.211 at 0.002 significance level: two tailed) positive association between perceived funding level and adequate provision of furniture in the staff rooms / offices in public secondary schools in Bungoma county. It was also found that there was a weak (0.203 at 0.003 significance level: two tailed) positive association between perceived funding level and adequate provision of furniture in the class rooms in public secondary schools in Bungoma county. From findings presented in table 3, there was a low (0.494 at 0.000 significance level: two tailed) positive association between perceived funding level and adequate provision of library facilities and a low (0.493 at 0.000 significance level: two tailed) positive association between perceived funding level and adequate provision of science laboratory facilities in public

secondary schools in Bungoma county. It is also observable that there was a weak (0.246 at 0.001 significance level: two tailed) positive association between perceived funding level and adequate provision of home science / agriculture rooms facilities in public secondary schools in Bungoma county. An analysis of findings presented in table 3 reveals that there was a weak (0.319 at 0.000 significance level: two tailed) positive association between perceived funding level and adequate provision of latrines and toilets in public secondary schools in Bungoma county.

From findings presented in table 3, it is also observable that there was a weak (0.491 at 0.000 significance level: two tailed) positive association between perceived funding level and adequate provision of departmental offices in public secondary schools in Bungoma county. In addition, it is also observable that there was a weak (0.239 at 0.001 significance level: two tailed) positive association between perceived funding level and adequate provision of dining hall facilities and a weak (0.419 at 0.000 significance level: two tailed) positive association between perceived funding level and adequate provision of play fields in public secondary schools in Bungoma county. From findings presented in table 3, there was a low (0.389 at 0.000 significance level: two tailed) positive association between perceived funding level and adequate provision of clean and reliable water in public secondary schools in Bungoma county. Finally, it is also observable that there was a low (0.345 at 0.000 significance level: two tailed) positive association between perceived funding level and adequate provision of reliable power in Bungoma county public secondary schools.

It is observable that in general, the perceived funding level had either low or hardly any association with adequate provision with all physical facilities. These points to a likelihood of there being a discrepancy between the allocations of funds based on determinants of funds allocation and the actual provision of the physical facilities. This may have arisen from what the bursars explained in interviews that schools hardly stuck the budgets they make as they often vire funds from one vote heads to another.

3.4 Association between utilisation of physical facilities and learners' academic achievement

In order to get a clear understanding of the nature of association between perceived funding level for resources and learner's achievement at KCSE, the study employed Pearson's Correlation. The findings are presented in table 5.

Table 5: Correlation between utilisation of physical facilities and learners academic achievement

Utilised facility in the teaching learning process		learner's academic achievement
1	Library facilities	Pearson Correlation .548(**)
		Sig. (2-tailed) .100
		N 182
2	Facilities in the science laboratories	Pearson Correlation .754(**)
		Sig. (2-tailed) .000
		N 182
3	Home science / agriculture room facilities	Pearson Correlation .722(**)
		Sig. (2-tailed) .010
		N 182

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

From table 5, it can also be observed that the utilisation of library facilities in public secondary schools in Bungoma county had a strong significant statistical association (0.548 at 0.100 two tailed significant level) with learners academic achievement. The utilisation of facilities in the science laboratories in public secondary schools in Bungoma county had a strong significant statistical association (0.754 at 0.000 two tailed significant level) with learners academic achievement. At the same time utilisation of home science / agriculture room facilities in public secondary schools in Bungoma county had a strong significant statistical association (0.722 at 0.010 two tailed significant level) with learners academic achievement.

It is noted that the utilisation of library facilities, facilities in the science laboratories and home science / agriculture room facilities had impact on academic achievement of learners. It is therefore important to ensure utilisation of the physical facilities for teaching learning process in order to influence the learners' academic achievement. According to Okongo, Ngao, Rop and Nyongesa (2015), learning is fruitful when there are adequate physical resources and where they lack; it translates to poor academic performance by learners.

3.5 Association between perceived funds allocation and learners' academic achievement

The study further established the nature of association between perceived funds allocation and learner's achievement through the use of Pearson's Correlation. The findings were as presented in table 6.

Table 6: Correlation between perceived funds allocation and learners achievement

Perceived funds allocation	learner's academic achievement	
Allocation funds for resources	Pearson Correlation	.281
	Sig. (2-tailed)	.100
	N	182

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

From the findings in table 6, the perceived allocation of funds for resources in public secondary schools in Bungoma county does not have any significant statistical association (0.281 at 0.100 two tailed significant level) with learners academic achievement.

However, from table 5, it was noted that the utilisation of physical facilities had significant statistical association with academic achievement of learners. Clearly for physical facilities to be utilised, they must have been procured. And to procure them, funds must have allocated towards them. Therefore, though the allocation of funds does not have a significant relationship to learners' academic achievement, it has an indirect impact on learners' academic achievement.

4.0 Conclusion

The well provided for physical facilities included power supply, furniture in the classrooms, furniture in the staffroom and clean water supply while the rest were either moderately or lowly provided for in the order of science laboratories, offices allocated to departments, toilets / latrines, library facilities, play grounds, capacity and equipment for home science /Agriculture and dining hall facilities. According to Conboy (2006) and Okongo et al (2015) physical conditions and organisation of the school can either facilitated or inhibit construction of the culture of success that results in academic achievement by learners. Lack of physical resources would render the schooling experiences ineffective (Bizimana and Orodho, 2014) hence resulting in poor learners academic achievement.

The allocation of funds determinants had high or moderate association on provision of physical facilities in the descending order as follows:- School's staffing needs, departmental budget, fairness and equity, school's strategic plan, Ministry of Education goals and priorities, the school's characteristics, the school's unique needs, the type of school the laws and Regulations on funds allocation and moderate only to a small scale on adherence to the National Financing policy while low or hardly any on the school's priorities.

It was generally observed that the perceived funding level had either low or hardly any association with adequate provision with all physical facilities. It was also established that the utilisation of physical facilities in the teaching learning process had moderate and high association with on academic achievement of learners. Finally, perceived allocation of funds for physical facilities in public secondary schools in Bungoma County hardly had any significant statistical association with learners' academic achievement.

5.0 Recommendations

The paper recommends that public secondary schools review the determinants used in funds allocation in order ensure they employ only those that strongly contribute towards provision of adequate physical facilities. They ought also to ensure they stick to the budget to ensure acquisition of the physical facilities and utilize them towards provision of educational services. This is the only way to realise the meaningful learners' academic achievement out of the provision of physical facilities.

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