

Influence of School Size on Cost Efficiency of Public Secondary Schools in Bomet County, Kenya.

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Abstract

Kenyan public secondary schools are supposed to run at a cost that is both affordable and sustainable. Despite this, the cost of education in most public secondary schools in Bomet County remains high in relative terms. This could be an indication that public schools are operating inefficiently. The purpose of this study was to investigate the influence of selected school size on cost efficiency of public secondary schools in Bomet County. Predictive correlational research design was used in the study. The target population was two hundred and seventy principals of public secondary schools and all the five Sub-county Directors of Education in Bomet County. A sample of one hundred and seventy-five principals was selected using stratified and simple random sampling techniques. A semi-structured questionnaire was used to gather data from the principals and an interview schedule was used to solicit data from the Sub-county Directors of Education. Examination of validity using Content Validity Index revealed that all variables had achieved S-CVI of above 0.9 meaning that they were all valid and could thus be utilized in the study. The study results revealed that the Cronbach alpha coefficients of above 0.7 achieved for all variables imply that the variables had sufficient internal reliability to enable their usage in the study. The descriptive statistics including frequencies, means and standard deviations were used to analyze and summarize data. The simple linear regression analysis in inferential statistics was used to test the hypotheses in order to determine the extent to which cost efficiency could be predicted by school size. Statistical Packages for Social Sciences (SPSS) statistics software was used to perform only statistical operations on data analysis. The study found that there was a statistically significant positive influence of school size on the cost efficiency attributable to economies of scale that lowers the cost per student as the school increase in size. The study concluded that there was statistically significant influence of school size on the cost efficiency of public secondary schools. The study recommends that schools in Bomet County should leverage on economies of scales associated to large school sizes through bulk procurement of goods and services while incurring lower unit costs of diverse utility services provision. The findings of the study could be useful to the educational management researchers and academicians in filling the gap in literature and serve as a useful reference material for studying the dynamics of cost efficiency in education. The findings could also be useful to the ministry of education in formulating effective policies aimed at leveraging on large school sizes in order to sustain cost efficiency in school management.

Keywords: Cost Efficiency, Public Secondary Schools, School Size

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I. Introduction

The cost efficiency concept is dominant in economics and is applied largely in education. Cost efficiency originates from engineering relations where a technical process is considered efficient when the desired mix of output is maximized for a given level of inputs or when inputs are minimized for a desired mix of outputs (Kosor, Perovic & Golem, 2019). When transposed to the field of education, it seems there is no general consensus about how to define and measure cost efficiency (Barra & Zotti, 2016). Research studies have indicated that cost efficiency is attained by an educational institution when it achieves the desired educational objectives by using the lowest possible value of inputs (Tellis, 2017; Kaur, 2017; Wirtz & Zeithaml, 2018;

Olatunji, Olawumi & Awodele, 2017). Some studies have also shown that cost efficiency is experienced by a school making optimal utilization of available resources (Perry, Steduto & Karajeh, 2017; Chalkidou, 2016; Dangara, 2016; Serdyukov, 2017). Thus, the concept of cost efficiency is often connected to a moral imperative to obtain the desired results from fewer resources or lowest possible cost.

Attempts to link cost efficiency to school size are pervasive in the existing literature. In view of cost efficiency, school sizes are an important choice criterion informing parents and other stakeholders where to take their children (Ruijs, 2017; Hernandez-Chanto, 2018; Lufade, 2018; Agarwal & Somaini, 2018). Parental preferences are unlikely to be one dimensional. Parents may value characteristics of schools such as the teaching philosophy, religious affiliation or geographical proximity (Lydia, Jonathan, Gustavo & Martin, 2018). According to a study conducted by Taie and Goldring (2017), school characteristics such as special staff size, pupil teacher ratio, size of average class, number of pupils and instructional support per pupil are attributes of a school size which parents consider for their children. The study focused on characteristics of elementary and secondary school teachers in the United States. This study focused on school size in analyzing cost efficiency of public schools in Bomet County.

Extant literature has consistently shown that school size affects cost efficiency as the larger the school is, the higher the rate of efficiency (Titus & Aagan 2016). The size of a school significantly affects school efficiency (Masci, De White & Agasisti, 2016). This view is contradicted by a study conducted by Egalite and Kisida (2016) that reveals that students' academic performance in maths and reading declines as school sizes increase in USA. The size of the school can affect the way in which school resources are organized and coordinated.

Efficiency variance analyzes the effectiveness with respect to staff, educational materials, machine time and other production factors. Efficiency variance is the difference between the theoretical amount of inputs required to produce a unit of output and the actual number of inputs used to produce the unit of output (Messer, 2016). The expected inputs to produce the unit of output mimic models or experience. The difference between expected required inputs can be due to inefficiencies in labour or use of resources, or errors in the assumptions used to set input expectations. In education, efficiency variance analyses the effectiveness with respect to labour, materials, machine time and other production factors. Table 1 shows the average education unit costs for the years 2014- 2017 in Bomet County.

Table 1

The Average Unit Costs for the Years 2016-2019 in Kenya Shillings

School size	Expected	Actual	Variance	Variance (%)
Single stream	45,691.50	49,398.90	3,707.50	8.1
Two streams	67,779.00	70,262.80	2,483.80	3.7
More than two streams	75,798.00	77,747.50	1,949.50	2.6

Source: Ministry of Education Science and Technology, 2018

The existing variance between the expected unit costs and the actual unit cost incurred as depicted in Table 1 may be an indicator of cost inefficiency. The percentages expressed the variance in costs. The cost efficiency levels vary according to the school size.

II. Research Objective

To examine the influence of school size on cost efficiency of public secondary schools in Bomet county, Kenya.

III. Empirical Literature

Diverse scholars have reviewed studies exploring class size adjustment as a possible way of fixing high costs of operations in public secondary schools in developed countries. A study conducted by Taylor, Grosskopf and Hayes (2016) using annual time series data shows that small school sizes are more likely to overuse teachers than administrators and that there is no correlation between the size of the school and cost efficiency in USA. The study established that school size increases are correlated to technical efficiency increases and allocative efficiency decreases. Results of the study reveal that schools with a higher operating costs tend to be technically efficient than allocatively efficient. The current study varies from the reviewed report in using a principal's questionnaire and a SCDE interview guide to investigate the influence of school size on cost efficiency of public secondary schools in Kenya. In agreement with the results of the study, Mathis (2016) noted that class size reduction would result in higher costs in developing countries. The governments face increasing financial difficulties of meeting the demands for secondary school education and therefore may not be possible to cope with reducing class size that attracts extra cost at the expense of cost efficiency.

The issue of class size as a component of school size and its effect on cost efficiency is widely discussed by many studies. A study conducted by Mucharreira, Cabrito & Capucha (2019) on the net cost of reducing class size in Portugal in a survey noted that the decrease in the number of students per class guarantees

the development of a country and its people as a result of the immediate pedagogical effect it can have on the school efficiency. The study observed that funding was the main challenge facing public schools. The results of the study show that reducing the number of students per class requires extra ordinary expenditures that challenge the limited budgets of the state. The findings reveal that reducing the number of students per class implies more classes and thus requires greater investment in facilities and equipment, as well as in teachers, administrators, and technical staff. The study concluded that small class sizes were efficient in producing academic results. The findings are in agreement with Thng (2017) who found that class size reduction has more economic benefits that outweigh the costs. Reducing class size in secondary schools increases the expenses as the need to hire additional quality and experienced teachers would arise.

Literature has shown that school size factors including enrolment, class size and student teacher ratio are associated to cost efficiency in public secondary schools. A research conducted by Isuku (2016) found that variables of school size such as enrolment, average class size and student- teacher ratio influenced the recurring unit cost of public secondary schools in Nigeria. The study observed that challenges of cost efficiency emanated from insufficient and relatively declining funding compounded by the inefficient use of limited resources in secondary schools. Using the descriptive survey research design, the study found that enrolment and student-teacher ratio factors had significant influence in the reduction of the recurrent unit cost of public secondary education. The results show that enrolment, class size and student- teacher ratio could be increased to the optimum level as a cost reduction strategy in public secondary schools. In addition, the study results showed that the relationship between the expansion of the size factors and the recurrent unit cost was U- shaped; suggesting that the different size factors had optimum sizes. The study concluded that significant savings could be made by increasing school size and the unit cost of education could be reduced through efficient utilization of resources. The results agree with Mbunde (2018), whose findings show that raising the size variables to the optimal level is capable of generating savings which could compensate for the limited budget of the government. The results imply that an optimal cost efficiency in secondary schools is achievable through increases in enrolment, average class size and student-teacher ratio.

Diverse studies showing relationship between enrolment and cost efficiency in secondary schools have been documented. In using survey research design, a study conducted by Weather, Jordan, Crouch, Barnett and Pressley (2019) to investigate cost efficiency of public secondary schools in Uganda identified that over-enrolment and consequently repetition and dropouts remained a challenge. The authors found that repetition, absenteeism and dropouts of students in schools herald the possible wastage of resources which could have been utilized elsewhere within the education sector to increase cost efficiency levels. The results reveal that high enrolment trends contributed to overwork of staff members, insufficient teaching and learning facilities and inadequate classrooms which ultimately have adverse effects on school operating costs. The study recommended the need for discussions on repetition and dropout rates and the possible effects on overall school cost effectiveness of less costly school education. The study also recommended that attention should be drawn to over- enrolment and age of entry into the school system. Further, the study recommended that the government should avail facilities that match students' enrolment. This provides the impetus for mitigating the challenges associated to repetition and dropouts leading to loss of resources. The results agree with Kabay (2016), whose findings suggest that age is closely associated to students' repetition and dropouts in Uganda. Repetition and dropouts are the possible causes of waste in educational resources that could have been optimized elsewhere within the school system.

Literature links cost efficiency to class sizes in secondary schools. The results of a study conducted by Ndethiu, Masingila, Miheso-O'connor, Khatete and Heath (2017) show that large class sizes have negative impact on cost efficiency in teaching and learning due to heavy workload of teachers in terms of marking; lack of individual attention for the students; inadequate teaching and learning resources; and inappropriate pedagogical approaches. The study used questionnaires, interviews and classrooms observation data to examine class size as one of the components of school size and its effect on cost efficiency of public secondary schools in developing countries including Kenya. The authors observed that large class sizes compounded by the cost challenges involved in responding to the pressure to hire more qualified teachers, reducing the number of students per class, reducing the number of lessons per teacher, integrating ICT in teaching and learning, and increasing the requisite resources for teaching and learning including books, facilities and equipment. The study concluded that cost inefficiency in secondary schools was correlated with the large class sizes which were generally falling between 40 and 59 students per class. The study recommended for more support in the form of professional development; workload reduction, integrating ICT in teaching; and increased resources in order to equip teachers with the capacity for large class pedagogy. The results were echoed by Wadesango, Hove and Kurebwa (2016) whose report shows that large class sizes were an impediment to cost efficient classrooms' pedagogies. It is therefore important to address the cost inefficiencies associated with broad class size by properly training teachers and incorporating ICT into teaching and learning.

Previous studies have found a near connection between cost efficiency and the size of schools. In a study conducted in Nairobi County in Kenya to investigate strategies to resolve cost inefficiency in secondary

schools using descriptive survey research design, Karuru (2017) found that single streamed schools were associated to inefficient use of resources. The results of the study also show that the number of streams represented the enrolled population of the students and therefore schools with multiple streams were able to accommodate multiple students without overstretching the existing resources. The study recommends that all schools should be enforced to have at least two or three streams so as to enhance efficient utilization of available school resources. The development of more streams in a school can be a solution to cost efficiency issues by optimizing the use of existing learning resources. The results of the study contradict Asena, Simiyu and Riechi (2016) whose findings showed that the expansion of secondary schools in Bungoma County to three streams per class was limited due to an acute shortage of teachers. Increasing the number of streams compels the government to hire more teachers to meet the expected school student teacher ratio standards.

Studies have documented that cost efficiency varies with school sizes. Results of a study conducted in Mbita and Suba sub counties in Kenya by Ndolo, Simatwa and Ayodo (2016) show that free secondary education policy has a high influence on cost efficiency in small sized and medium sized schools and very high influence in large sized schools. In analyzing the effects of school size on access to high school education, the study integrated descriptive statistics, time trends and multiple linear regression approaches. In evaluating the influence of school size on cost efficiency of public secondary schools, the current study differs from this reviewed study. The study recommends that for cost savings purposes, the government should increase capitation by 100 percent, hire more teachers, develop infrastructural facilities and where possible merge small sized and medium sized schools. The study also suggests that more students should be admitted to medium sized and large sized secondary schools to enable them expand further and maximize cost efficiency. The research further recommended that the government should only register new schools when the current secondary schools have exceeded the optimum threshold. Asena, Simiyu and Riechi (2016) agreed with the recommendations of the study and proposed that the expansions of different public secondary schools in Kenya to three streams per class should be followed by a corresponding increase in financial resources, teachers, facilities and teaching materials. The demand for resource increase therefore has consequences of increasing cost of education, which must be justified by attaining optimal cost efficiency.

IV. Conceptual Framework

The conceptual framework presents a diagrammatic representation of diverse variables and their indicators. The model depicts interrelationships among independent, intervening and dependent variables as set in the research objectives of the study. The research objectives are therefore the guiding principles for the conceptual framework. The conceptual framework for the study is made of several parts as illustrated in Figure 1.

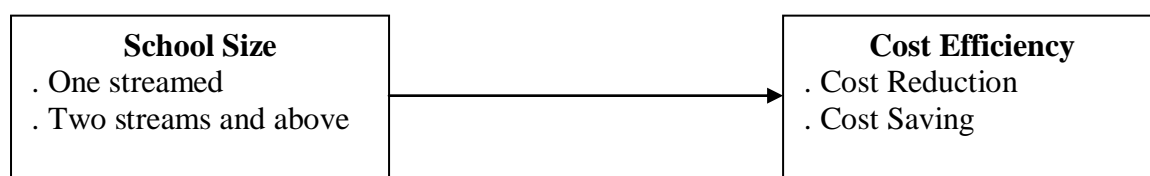


Figure 1: *Conceptual Framework of School size and Cost Efficiency*

V. Research Methodology

The current study adopted post-positivism research philosophy because of its flexibility in employing multiple research instruments to clearly and closely investigate the cost efficiency of public secondary schools. A post-positivist world view considers both quantitative and qualitative methodologies to be valid in investigating a research phenomenon (Gathii et al., 2019). A post-positivist philosophical research approach promotes methodological pluralism, assuming that the method to be used in a given study should be chosen based on the research questions being addressed (Panhwar, Ansari & Shah, 2017). Thus, the principal's questionnaire and the SCDE interview schedule were used in the current study to investigate

the influence of school size on cost efficiency of public secondary schools in Bomet county, Kenya. This methodological approach helped to minimize the risk of biases and maximize reliability in using various perspectives.

This study used a predictive correlational research design in which the researcher adopted simple linear regression statistical processes to predict the value of the cost efficiency of public secondary schools in Bomet County based on the known school size (Pituch & Stevens, 2016). Predictive correlational design is applied when there is a need to find a predicted link between the predictor and the outcome/criterion variable (Lau, 2017).

The target population included all the two hundred and seventy (270) principals of public secondary schools and all the five (5) Sub- County Directors of Education (SCDE) in Bomet County. There were two hundred and seventy (270) public secondary schools and five (5) Sub Counties in Bomet County at the time of the study (Bomet County Education Office Data, 2019). Therefore, there were two hundred and seventy (270) principals and five (5) Sub County Directors of Education at the time of the study. Table 2 shows the accessible population by sub-county.

Table 2

<i>Accessible Population by Sub-county</i>		Sotik	Konoin	Bomet East	Bomet Central	Chepalungu	Total
School size	=1 Stream	62	34	29	31	46	202
	>1 Stream	20	11	10	11	16	68
Principals		82	45	39	42	62	270
SCDE		1	1	1	1	1	5

Source: Bomet County Education Office Data, 2019

The sample size for the principals selected for the study was determined according to the formula by Krejcie and Morgan (1970) for a finite population as follows:

$$S = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

Where:

S = Required Sample

X = Z- value (e.g. 1.96 for 95% confidence level)

N = Population Size

P = Population proportion (expressed as decimal) (assumed to be 0.5 (50%))

d = Degree of accuracy (5%), expressed as a proportion (0.05); it is a margin of error

Inserting the required information into the formula where X= 1.96, Z= 270, P= 0.5 and d= 0.05 gives: $S = \frac{1.96^2 \times 270 \times 0.5(1-0.5)}{0.05^2(270-1) + 1.96^2 \times 0.5(1-0.5)}$
 = 158.8021311777 =159 principals.

This sample was increased by 10% to cater for possible non- responses (Creswell, 2015). Therefore, the sample size increased to 175 principals. This represents the sample for the study and was obtained from the target population using proportionate stratified and simple random sampling methods. In addition, a census technique was used in selecting all the sub counties in the study area. Therefore, all the five (5) SCDE was sampled using purposive techniques in which a SCDE was selected to participate in the study. Table 3 shows the sampling matrix of the study.

Table 3

<i>School Size</i>	Sub- county	Single Stream	More than one Stream	Total
	Sotik	40	13	53
	Konoin	22	7	29
	Bomet East	19	7	26
	Bomet Central	20	7	27
	Chepalungu	30	10	40
	Stratified Random Sample	131	44	175

Source: Ministry of Education Science and Technology, 2019

From Table 3, the total number of secondary schools with one stream in the county is one hundred and thirty one (131) while those with two or more streams are forty four (44). The study used these schools in this category. The number selected from Sotik, Konoin, Bomet East, Bomet Central and Chepalungu in this category is fifty three (53), twenty nine (29), twenty six (26), twenty seven (27) and forty (40) respectively totalling to one hundred and seventy five (175).

Principal's Questionnaire and SCDEs' Interview Schedule were used to solicit data. Data was collected using a structured questionnaire designed to collect the required data from the principals of public secondary

schools in order to address the research objectives of the study. The choice of a structured questionnaire was informed by the fact that it gathered information over a large sample and was more appropriate when addressing sensitive issues since it offered greater anonymity of the respondents. The principal's questionnaire was used in the current study to obtain relevant data in the most reliable and valid manner. An interview schedule aimed at making it possible to obtain the data required to meet the specific objectives of the study was administered to SCDE. Respondents were probed using open ended questions. The guide solicited information covering school size and cost efficiency in public secondary schools by schools.

VI. Data Analysis

The influence of the school size on the cost efficiency was examined using a set of nine indicators. These indicators included school size impacting on the unit costs of water supply, unit cost of electricity supply, unit cost of administration services, unit cost of security services, unit costs of subordinate staff services, and unit costs of stationery expenses. The study used Likert based questions with five-point Likert scale of 1= Very Small Extent (VSE), 2= Small Extent (SE), 3= Moderate Extent (ME), 4 = Large Extent (LE) and 5 = Very Large Extent (VLE). In addition, f=frequency, M=Mean and SD=Standard Deviation. Descriptive statistics of the principal's perception of the influence of school size on cost efficiency is indicated on Table 4.

Table 4
Descriptive Statistics of Principals' Perceptions of School Size on Cost Efficiency

	1 f %	2 f %	3 f %	4 f %	5 f %	Total M	SD
In our school, the overall number of students help us save on4 the unit cost of water supply	2.8%	8	25	87	20	3.77	.859
In our school, the overall number of students help us save on2 the unit cost of electricity supply	1.4%	3	67	61	11	3.53	.728
In our school, the overall number of students help us save on0 the unit cost of administration services	0.0%	16	18	93	17	3.77	.800
In our school, the overall number of students help us save on2 the unit cost of security services	1.4%	20	54	60	8	3.36	.841
In our school, the overall number of students help us save on2 the unit cost of subordinate staff services	1.4%	34	24	70	14	3.42	1.000
In our school, the number of streams per form help us save1 on the unit costs of stationery expenses	0.7%	33	41	60	9	3.30	.917
In our school, the number of students per class helps us save5 on the unit costs of stationery expenses	3.5%	60	20	53	6	2.97	1.047
In our school, the overall number of students help us save on11 the unit cost of stationery services	7.6%	60	29	33	11	2.81	1.109
In our school, the number of streams help us save on the unit10 costs of administration services	6.9%	24	56	52	2	3.08	.927
Average						3.33	0.91

n=144

In respect to the overall number of students helping in the saving of unit costs of water supply, the respondents were in agreement to a large extent (M=3.77, SD=0.859). The unit cost of supply of utilities to school is indirectly proportional to the school size due to the economies of scale. Richards (2017) in a study on school system planning amongst primary and secondary schools in Saint George Grenada noted the importance of the economies of scale leading to cost efficiencies in school management. In this context, Richards (2017) noted that bigger schools enhance the cost efficiencies in utility items supply. The respondents were in agreement to a large extent (M=3.53, SD=0.728) in respect to the overall number of students helping in saving on the unit cost of electricity supply. The findings can be attributed to the fact that there are standard costs associated with electricity provision that would improve with the number of students. For example, a classroom with thirty students would still consume the same amount of electricity as the same class with forty students. The class with forty students however will draw a cheaper unit costs in electricity supply.

The respondents were further in agreement to a large extent (M=3.77, SD=0.800) that the overall number of students helped the school to save on the unit cost of administration services. The respondents in this study largely agreeing with the lower unit cost of administration in respect to the larger schools is informed by economies of scale. Several studies have linked economies of scale in organizations with cost efficiency aspects. These studies include Kimiti *et al.*, (2020) who notes that falling unit costs of services as the quantity increases. When asked on whether the overall number of students helped in saving of the unit costs of security services, the respondents were in agreement to a moderate extent (M=3.36, SD=0.841) in savings associated with unit costs of security services. The respondents were in agreement to a large extent (M=3.42, SD=1.000) that the overall number of students helped in saving on the unit costs of subordinate staff members.

The respondents were further asked on whether the number of streams per form helped in saving the unit costs of stationery expenses. The respondents were in agreement to a moderate extent (M=3.30, SD=0.917) that the number of streams per form helped in saving unit costs associated with stationery expenses. The results of the study can be attributed to the stationery being procured dependent on the number of students per form. Thus, economies of scale set in as the number increases in the school. This then leads to enhanced cost efficiency situation. The findings of this study agree with those of Richards (2017) in regards to cost savings because of optimal organizational size in Canadian schools, where the study ties cost efficiency with school size. The respondents agreed to a moderate extent (M=2.97, SD=1.047) that large number of students per class helps in saving unit costs associated with stationery expenses. The respondents were also asked on whether the large number of students in school helped in saving on the unit costs of stationery services. The results indicated that the respondents were in agreement with this view to a moderate extent (M=2.81, SD=1.109). The study further found that on the number of streams helping in saving on the unit costs of administration had the respondents agreeing to a moderate extent (M=3.08, SD=0.927).

The respondents on average indicated that they thought the school size holistically influenced cost efficiency to a moderate extent (M=3.33, SD=0.91). This can be attributable to large number of students and streams that help save on cost of water and electricity supply; administration, security and administration services; stationary and non-teaching staff salaries in public secondary schools in Bomet County. The standard deviation indicated that there was no consensus amongst the respondents due to a standard deviation of above 0.5.

The study sought to test the hypothesis that school size did not have statistically significant influence on the cost efficiency of public secondary schools in Bomet County. The simple linear regression analysis was utilized to generate the t tests that were used for the following hypothesis testing:

H₀: There was no statistically significant influence of school size on cost efficiency of public secondary schools.

The model summary presented the correlation coefficient (R) and coefficient of determination (R square) with the results presented in table 5.

Table 5

Model Summary of School Size

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.529 ^a	.280	.275	.18851

a. Predictors: (Constant), School Size

The study found that the correlation coefficient between school size and cost efficient was moderate and positively correlated at coefficient of 0.529. The study further found that the coefficient of determination stood at 0.280 which indicated that 28.0% of the variance in the cost efficiency is as a result of the variance in the school size dynamics. This would indicate that up to 72% of the variance in the cost efficiency is as a result of other variables not in the model.

The one-way ANOVA was further used to examine the overall significance of the model that is the model's ability to predict the cost efficiency of public secondary schools in Bomet County. The results were presented in Table 6.

Table 6

Anova of School Size

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.966	1	1.966	55.315	.000 ^b
	Residual	5.046	142	.036		
	Total	7.012	143			

a. Dependent Variable: Cost Efficiency

b. Predictors: (Constant), School Size

The F ratio results stood at $F_{0.05}(1,142) = 55.315, p=0.000 (p<0.05)$. This led to the rejection of the null hypothesis that there was no statistically significant influence of school size on cost efficiency of public secondary schools and acceptance of the alternative hypothesis there was statistically significant influence of school size on cost efficiency. According to Helmreich (2016), a p value of less than 0.05 leads to the conclusion of the overall significance of the model to predict the behaviour of the dependent variable.

The study was further interested in examination of the t test. The t test is a test statistic to determine on whether school size aspects had a statistically significant influence on the cost efficiency of public secondary schools. The results were presented in Table 7.

Table 7

Coefficients of School Size		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	2.397	.168		14.251	.000
	X2	.374	.050	.529	7.437	.000

a. Dependent Variable: Cost Efficiency

The results indicated that $t(0.025, 142) = 7.437$, p value = 0.000 ($p < 0.05$). According to Best and Wolf (2015), the p value of less than 0.05 (level of significance) indicates presence of statistical significance in the influence of the independent variable on the dependent variable. The results in the study having achieved a p value of 0.000 which is less than 0.05 led to the conclusion that there was a statistically significant influence of school size aspects on cost efficiency of public secondary schools in Bomet County. Having achieved the statistical significance of relationship between school size and the cost efficiency of public secondary schools, the practical significance of that relationship was examined using the regression coefficient. According to Darlington and Hayes (2017), the regression coefficient is used to provide the unit change in the dependent variable as a result of the change in the independent variable. In this study, a regression coefficient of 0.374 was achieved which indicated that a unit change in the school size aspects is associated with 0.374 change in the cost efficiency of public secondary schools in Bomet County.

The role of the school size on running costs was explained by interviewee #1 in the following manner.

“Achieving the economies of scale in a large school is possible...increase in school size creates cost advantages and savings can be realized through decrease in cost per unit of providing education service” Interview #1

Interview #6 also raised the issue of cost advantage as a result of school size in the following explanation;

“There are cost advantages when a school go (sic) big such as a fall in average fixed costs and average variable costs” Interview #6

The results of this study on the statistical significance of the influence of school size on the cost efficiency is consistent with the findings of Richards (2017) who linked the school size aspects to economies of scale and thus cost efficiency in the running of schools. In concurrence to the findings by Richards (2017), Ekaette, Ameh and Owan (2020) also linked the school size to the cost efficiency aspects through the mediating influence of the economies of scale. In this context, Ekaette *et al.*, (2020) noted that in the United States of America the large school size is associated with the achievement of the economies of scale leading to reduction of cost per head in service provision for the schools.

VII. Conclusion of the Study

The study concluded that there was a statistically significant influence of school size on the cost efficiency of public secondary schools. The study further found that the school size had a positive influence on the cost efficiency of public secondary schools. These findings are attributed to economies of scales that accrue to a school as it increases in size and thus cost efficiency in the running of schools. Economies of scale work to influence reduction of cost per head in service provision.

VIII. Recommendations of the Study

The schools in Bomet County should leverage on economies of scale associated to large school size in procurement of goods and services. In this context, the economies of scale should accrue through bulk purchases of learning materials and food items while incurring lower unit costs of diverse utility services provisions.

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