Relationship between Secondary School Categorization and Value-Added Progress in Public Secondary Schools in Nandi County, Kenya

Prof. Zacharia Kosgei[1], Barno Grace Chelimo[2] & Prof. Kisilu Kitainge[2]
[1]School of Education, Moi University, Eldoret Kenya
[2]School of Education, University of Eldoret

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ABSTRACT

Education processes should lead to the cumulative acquisition of knowledge, skills and values needed for holistic development. However, the current assessment practices in the Kenyan education system focus on the cognitive part of learning at the expense of the affective and psychomotor domains. Therefore, the learners' assessment should use approaches that assess value addition to the critical attributes of holistic development. This study examined the value-addition of learners' holistic development in different public secondary schools in Kenya. The study's specific objectives were: To determine value addition on student academic performance by different categories of public secondary schools in Nandi County. Holistic learning and Multiple Intelligence Theories guided the study. The study adopted a post-positivist research paradigm and a mixed research design that used questionnaires and document analysis to collect information from School principals and form four students. The study's target population was 192 secondary schools, 192 Principals and 10,499 students. The respondents were stratified into National, Extra- County, County, and Sub- County Schools. The study used stratified, proportionate, and purposive sampling to select respondents who included 144 principals from 2 National schools, 4 Extra County schools, 26 county schools, and 112 sub-county schools. Multiple regression analysis was used to determine value addition on academic performance. The residual values of multiple regression analysis were; National, Extra- County, county and sub-county were –2.541, -3.152, -2.690 and -4.094, respectively. These residuals show that in all the categories, there was no value addition to the learners' academic performance in the selected schools. Therefore, this study recommended that; schools adopt a robust assessment method that shows how schools have added value to the learners in a holistic manner. Furthermore, the Ministry of Education should cascade the competency-based curriculum introduced recently at the lower primary level to all levels of the education system.

Keywords: Value Addition, Student Academic Performance, Public Secondary Schools

INTRODUCTION

The assessment of learning outcomes is one of the significant concerns among stakeholders in Kenya. There is a lack of a holistic approach to learning since the focus is significantly on performance in a few learning areas. It places too much emphasis on exam passing rather than skill and knowledge acquisition. Therefore, the system fails to recognize, respect and nurture learners' unique talents, qualities, and potentials (Betts et al., 2017; Government, 2018; Government of Kenya, 2012; Journals, 2015; KICD, 2017; Marope, 2015; UNESCO, 2015b; Yadira et al., 2019). Kenya Certificate of Secondary Education assessment system emphasizes the curriculum's cognitive aspect while ignoring the learner's holistic development. The examination lays too much emphasis on passing, thus driving schools obsessed with realizing high mean scores. It does not consider the affective and psychomotor aspects, i.e., the talents and life skills (Daniel&

Mark, 2019; Haghshenas, 2015). Kenya's current summative examination system has adequately assessed the development of the cognitive aspect. In contrast, assessment of the affective and psychomotor domains has been neglected or given little attention. The none assessment and hence no achievement of these aspects of learning have a significant challenge to the learner's holistic development.

The education philosophy in Kenya focuses on providing holistic quality education and training that promotes education involving cognitive and affective domains. The school curriculum provides knowledge, skills, competencies, and benefits that enable learners to move seamlessly from the education system into the labour market. Further academic, technical, and vocational education add value to the education system's acquisition (Leonard, Kiio, & Mumo, 2018; Nyamai & Mugambi, 2019).

However, there are deviations from the educational philosophy in Kenya depicted by the current school assessment practices. The philosophy's spirit is only achievable by providing quality education and training to the learners by observing the educational standards. There are many quality education indicators, but output indicators have been adopted in Kenya as most direct measurable schooling outcomes. For example, Kenya measures quality at primary and secondary education levels through standardized KCPE and KCSE tests. At the end of the various cycles, this assessment system, with the limited availability of student places at secondary and higher education levels, dictates the teaching/learning processes towards examinations instead of assessing the attainment of skills and competencies applicable to life. This system has created a society where other education objectives other than the cognitive aspect do not seem to be realized by the prevailing system's products (Agingu, 2018; Odanga, 2018; Sellah, Jacinta, & Helen, 2018).

Kenya has four categories/levels of public secondary schools: national, extra-county, county, and sub-county. These schools differ in the teacher-student ratio, infrastructure, facilities, and other resources. Admission into these schools is typically merit-based. The national schools admit learners with the highest marks, followed by Extra County, then county, and the remaining to sub-county schools.

Furthermore, university admission is also competitive because few spaces exist for those who qualify. This situation has created unhealthy competition for the few places available for KCPE graduates expected to join secondary Schools, and the KCSE anticipated graduates to enter the universities. In addition, the primary and secondary schools' teaching processes have become geared towards passing the examination, not skills and competency development. This system has led to unethical practices like cheating, registering weak students privately, and forcing vulnerable learners to repeat classes.

OBJECTIVES OF THE STUDY

1. To determine value addition on learners' academic performance by public National, Extra County, County and Sub-County secondary schools in Nandi County

RESEARCH QUESTIONS

1. What is the effect of value addition on learners' academic performance by public National, Extra County, County and Sub-County secondary schools in Nandi County?

JUSTIFICATION OF THE STUDY

School ranking based on KCPE and KCSE was abolished in Kenya in 2014 by the Ministry of Education. The debate is ongoing on whether to reintroduce it or not. Due to this controversy and other shortcomings of the ranking system, this study's findings will help provide the baseline data regarding methods that can be most effective and objective in assessing and ranking secondary school graduates in Kenya. An integrated approach would be ideal. Value-Added determines the difference between the learners' states of knowledge

or qualification on course entry and exit. It measures the learners' achievement, considering the effects of differential learners' inputs (i.e., entry qualifications). Thus, learners' performance defines the institutional quality of the teaching and learning functions and processes. By taking the starting point of the learners into account, it is possible to consider the extent to which an institution has been responsible for any progress made.

RESEARCH METHODOLOGY

This study adopted mixed methods research. Data collection tools were both qualitative and quantitative. However, the focus was more quantitative than qualitative, as qualitative data collection was only tiny. Therefore, data collection tools were quantitative (questionnaires) and qualitative (document analysis).

The study's target population was all the 192 public secondary schools in Nandi County with candidates for KCSE in 2018,192 principals and 10,449 form four students. In terms of categories, the targeted schools were all National (2), Extra County (4), County (28), and Sub-County (158) schools that had students up to Form Four at the time of the study. It also targeted all the 10,449 form four students. The study focused on value-added by various schools; thus, targeting schools that had at least presented students for KCSE. The principals are the custodians of school results, and the study focused on the KCPE and KCSE results of 2018 candidates.

This study adopted probability (stratified and simple random sampling) and non-probability sampling techniques (purposive). Probability sampling ensures that every item in the population has an equal chance of being included in the sample. Non-probability sampling design (Purposive) applies when the desired number of sample units is selected deliberately or purposely depending upon the inquiry object. The study also used Stratified random sampling to stratify schools into four categories, national, extra-county, county, and sub- County, and simple random sampling to select a sample of schools. Finally, the principals of the sampled schools were purposively selected to participate in the study.

The researcher used Krejcie and Morgan's (1970) table to identify the sample and confirmed the sample using an inbuilt online calculator (www.calculator.net/sample-size-calculator.htm). The two yielded similar results. Therefore, the study sample consisted of 2 National schools- 1 girl school; one boy school; 4 Extra – county schools -1 girl school, three boys school; 27 county schools-14 girl schools, 13 boys schools, and 113 sub-county schools. From the National school's 206 students (118 boys, 88 girls); 251 students from Extra- County schools (144 boys, 107 girls); 332 students from county schools (191 boys, 137 girls); and 364 students (209 Boys, 155 Girls) from sub-county schools.

The research instruments used in the study were questionnaires and document analysis to collect data. The study's data were analysed using multiple regression. The basis for the choice was the unique nature of each objective. Multiple regression determined each school category's value-addition on academic performance. The KCSE and KCPE results were converted into the interval through log transformation in SPSS. This enabled the running of multiple regression analyses.

RESULTS

Value addition by the National schools

Regarding value addition by the national schools, this study answered the research question and tested the hypothesis below: What is the value addition on academic performance by public National secondary schools in Nandi County? H_{01}: There is no statistically significant value addition on public National Secondary Schools' academic performance in Nandi County.

Table 1: Descriptive Statistics-National schools

	Mean	Std Deviation	N
KCSE results	10.08	.936	206
KCPE results	10.82	1.638	206

Source: Field Data (2018)

Table 1 shows that national schools had a KCSE mean of 10.08 and a standard of 0.936. The KCPE mean of the input into the national schools was 10.82, and the standard deviation of 1.638. The means indicate that students' performance in secondary schools is lower than in primary schools. These results show that the students admitted into national schools with 10.08 (KCPE) scored a lower mean of 10.08 in KCSE. In addition, the standard deviation of 1.638 for KCPE means that the scores were more spread out from the mean than a standard deviation of 0.936 for KCSE, which shows that the scores are less spread out from the mean. These results show that secondary schools did not add value to the inputs received from primary schools because the mean at secondary school (KCSE) is lower than at primary school (KCPE). However, more statistical analyses (multiple regression) are required to confirm this interpretation.

Table 2 Model Summary – National Schools

Model	R	R Square	Adjusted R Square	Std. error of the Estimate
1	.755 b	.570	.566	.02754

a school category = extra county

b Predictions: (constant), KCPE1, Schgender = Girls

c Dependent variable KCSE1

Source: Field Data (2018)

Table 2 provides the R, R^2, adjusted R, and standard error of the estimate, determining to what degree a regression model fits the data. The Multiple correlation coefficient R measures the dependent variable's prediction (KCSE results-value added). For example, the R-value of .755 indicated a good level of prediction. However, with an R^2 value of .570, the independent variable explains 57 % of the variability of the dependent variable (KCSE results). Similarly, the cause of 43% of the variation in factors other than the predictors included in this model.

Adjusted R Square (adj. R^2) .566 indicated that the predictors explain 56.6% of the variation in the outcome variable to keep in the model. The discrepancy between R squared and Adjusted R square values was low, indicating a good model fit. The standard error of .02754 measured the precision of the model. As R^2 increases, the standard error will decrease. On average, estimates of KCSE with this model will be wrong by .02754 (2.8%), which is insignificant; therefore, the model is reliable. This table's presentation in this study shows that the regression model was reliable.

Table 3 ANOVA Output- National schools

Model	Sum of squares	df	Mean scores	F	Sig
1 Regression	204	2	.102	134.785	.000
Residual	.154	203	.001		
Total	.358	205			

a school category = National

b Predictors: (constant), KCSE1

c Predictors (constant). Schgender= Girls, KCPE

Source: Field Data (2018)

The F-ratio in the ANOVA Table 3 tested whether the overall regression model fitted the data. The table shows that the independent variables significantly predicted the dependent variable, F (2,203) = 135, P (.000) <.05. Thus, the regression model was a good fit for the data

Table 4 Coefficients for National schools

	Unstandardized coefficients		Standardized coefficients		
Model	B	Std.Error	Beta	t	Sig
(Constant)	.549	.141		3.880	.000
KCPE 1	.441	.131	.742	3.361	.001
Schgender=Girls	-.001	.019	-.004	-.061	.951

a school category = National
b Dependent Variable: KCSE1
Source: Field Data (2018)

According to the regression coefficients in Table 4.6, and taking all other factors into account, the general form of linear equation, $Y=B_0 +B_1X_I +B_2X_2$: where Y is the dependent variable (KCSE results), X1 is the independent variable (KCPE results), and X2 is the independent variable (Gender). The predictive equation was .549 + .441 (KCPE) – .001 (Gender). The B-coefficients showed that the KCPE entry mark was a good predictor of KCSE (B= .441, P (.001) < .05). However, gender was not a good predictor (B= -.001, P (.951) > .05.

Table 5 Residual Statistics- National schools

	Minimum	Maximum	Mean	Standard deviation	N
Predicted value	.9455	1.0242	1.0016	.3158	206
Residual	-.06998	.05496	.000	.02740	206
Std. predicted value	-1.778	.716	.000	1.000	206
Std residual	-2.541	1.996	.000	.995	206

a Category =National
b Dependent Variable: KCSE1
Source: Field Data (2018

A residual is a vertical distance between a data point and the regression line. Each data point has one residual. Positive residuals are above the regression line, negative residuals are below the regression line, whereas zero residuals show that the regression line passes through the point. Residual statistics determine the value added by national schools to student performance based on KCPE and KCSE grades. The residual

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statistic is the difference between predicted and actual results. The residual value of – 2.541 (Table 5) shows that National schools scored at -2.541, lower than the predicted value. In addition, the students scored lower on exit (KCSE) by -2.541 than they had on entry (KCSE). These results imply that National schools subtracted the value of students by 2.541 National schools reduced the value of student performance. A student who scored A ends up with a B+ or B. Therefore, though the national schools generally perform well in mean grades, these results show that National public secondary schools did not add value to this cohort of students. There was a negative value addition to the overall student academic performance.

The results agree with Mbiti (2015) that "despite the reputations of national schools, there is little evidence of positive impacts on learning outcomes for students who attended these schools." This is because their sterling reputations reflected students' selection rather than the school's ability to generate value-added test-score gains (Mbiti & Lucas 2014). Mbiti (2015) noted that elite, prestigious, and highly selective government secondary schools were common worldwide. While such schools were perceived to be academically superior, their reputations simply reflected selection admissions or value-added learning was unclear. He further asserts that if these schools delivered valued-added education, the benefits might accrue heterogeneously to students depending on the characteristics of the student and the schooling environment (Anyang & Boit, 2019; Nyangweso et al., 2019).

It is essential, therefore, to go beyond the raw academic performance grades at KCSE to assess the performance of National schools and focus on the value added to the learner. Although these schools select the best performers from primary schools and have the best resources, they should be held accountable for their output quality.

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Value addition to the student academic performance by Public Extra County secondary schools

Table 6: Descriptive Statistics – Extra County schools

Model	R	R Square	Adjusted R Square	Std. error of the Estimate
1	.928 b	.852	.861.	.06055

Source: Field Data (2018)

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Table 6 shows that the mean for KCSE results was 6.67 and a standard deviation of 2.245, whereas the KCPE results' mean was 8.11 and a Standard Deviation of 1.600. These results show that students' mean at primary school of 8.11(KCPE) was higher than the mean of 6.67 at secondary school (KCSE). Furthermore, the standard deviation of 1.6 at KCPE implies that the scores are less spread out from the mean than a standard deviation of 2.245 at KCSE, showing that the grades are more spread out from the mean. These means imply that Extra County schools did not add value to students in KCSE. The mean at entry is higher than the mean at the exit.

Table 7 Model Summaries for Extra County Schools

Model	R	R Square	Adjusted R Square	Std. error of the Estimate
1	.928 b	.852	.861.	.06055

a school category =Extra County

b Predictions: (constant), KCPE1, Schgender = Girls

c Dependent variable KCSE1

Source: Field Data (2018)

An R-value of .928 indicated a good level of prediction. R^2 value (coefficient of determination) of .852 told that the independent variables explain 85.2 % of the dependent variable's variability (KCSE results) (Table 7). Adjusted R Square (adj. R^2) .861 indicated that the predictors explain 86.1% of the variation in the outcome variable to keep in the model. The low discrepancy between R squared and Adjusted R square values indicates a good fit for the model. The standard error of .06055 (6. %) measured the precision of the model.

Table 8 ANOVA Output Analysis for Extra County Schools

Model		Sum of Squares	df	Mean scores	F	Sig
1	Regression	5.679	2	2.840	774.536	.000
	Residual	.909	248	.004		
	Total	6.588	250			

a school category – Extra County

b Dependent variable; KCSE1

c Predictors (Constant), KCPE1, Schgender-Girls

Source: Field Data (2018)

The F-ratio in the ANOVA Table 8 tested whether the overall regression model fitted the data. Table 4.10 shows that the independent variables statistically significantly predicted the dependent variable (F (2,248) = 774.5, P (.000) <.05. Thus, the regression model was a good fit for the data.

Table 9: Coefficients for Extra County schools

	Unstandardized coefficients		Standardized coefficients		
Model	B	Std. Error	Beta	t	sig
(Constant)	-.428	.039		-11.006	.000
KCPE1	.143	.009	.396	16.170	.001
Schgender = Girls	1.316	.044	.739	30.136	.000

a school category = Extra County
b Dependent Variable: KCSE1
Source: Field Data (2018)

According to the regression coefficients (Table 4.11), all other factors held constant, the general form of linear equation, $Y=B_0 +B_1X_I +B_2X_2$. Where Y is the dependent variable (KCSE results), X1 is the independent variable (KCPE results), and X2 is the independent variable (Gender). The predictive equation is -.428 + .143 (KCPE) + 1.316 (Gender). The B- coefficients showed that the two independent variables (KCPE, Gender) were good predictors of the dependent variable (KCSE). KCPE (B=.143, P (.001) < .05) and Gender (B= 1.316, P (.000) < .05.

Table 10: Residual Statistics for Extra County Schools

	Minimum	Maximum	Mean	Std Deviation	N
Predicted Value	.3644	1.0313	.7961	.15072	251
Residual	-1.9087	.19371	.0000	.06031	251
Std.Predicted value	-2.865	1.560	.000	1.000	251
Std. Residual	-3.152	3.199	.000	.996	251

a school category: Extra County
b Dependent Variable: KCSE1
Source: Field Data (2018)

The residual value of – 3.152 (Table 10) shows that Extra-County schools scored at -3.152 from the predicted value. The expected value is what the students should have achieved under optimum conditions. The students scored lower on exit (KCSE) by -3.152 than they had on entry (KCSE). These results show that though Extra- County schools selected the best KCPE performers that could not join National schools, they subtracted the value of students by 3.152 instead of adding it. As a result, a student who scores a B+ on entry may have a C or C. These results agree with Nyanza County's study findings (Anyang & Boit, 2019). The researchers reported that Extra County schools did not add value to learners' academic performance. The Study concludes that although top-ranked schools admitted students with high entry marks, they added very little value to their student's academic ability during their four-year pursuit of secondary education (Anyang & Boit, 2019; Nyangweso et al., 2019; Wekesa & Kitainge, 2022a).

Value addition to the student academic performance by Public County secondary schools

Table 11: Descriptive statistics-county schools

	Mean	Std Deviation	N
KCSE results	6.24	1.917	332
KCPE results	8.20	.823	332

Source: Field data (2018)

Table 11 shows that the KCPE results mean 8.20, and the standard deviation was 0.823. In contrast, the KCSE results mean was 6.24 and a standard deviation of 1.917. The interpretation of these results is that the primary schools' scores with a mean of 8.20 and a standard deviation of 0.823 were higher and scores less spread out from the mean. On the other hand, the secondary school scores, with a mean of 6.24 and a standard deviation of 1.917, were lower and more spread out from the mean. These results imply that secondary schools did not add value; results from multiple regression output.

Table 12: Model Summary for County Schools

Model	R	R Square	Adjusted R Square	Std. error of the Estimate
1	.425 b	.181	.176	.181

a school category = county
b Predictions: (constant), KCPE1, Schgender = Girls
c Dependent variable KCSE1
Source: Field Data (2018)

In Table 12, the R-value of .425 indicated a good level of prediction. R^2 value (coefficient of determination) of .181 suggested that the independent variables explain 18.1 % of the dependent variable's variability (KCSE results). Adjusted R Square (adj. R^2) .176 indicated that the predictors explain 17.6% of the outcome variable's variation to keep in the model. The low discrepancy between R squared and Adjusted R square values indicates a good model fit. The standard error of .181 (18.1. %) measures the precision of the model.

Table 13: ANOVA Output Analysis for County Schools

Model		Sum of squares	df	Mean Scores	F	Sig
1	Regression	1.128	2	.564	36.320	.000
	Residual	5.109	329	.016		
	Total	6.237	331			

1. **School category; county**
2. **Dependent variable; KCSE1**
3. **Predictors (Constant), KCPE1, Schgender- Girls**

Source: Field Data (2018)

The F-ratio in the ANOVA Table 4.15 tests whether the overall regression model fits the data. Table 13 shows that the independent variables statistically significantly predict the dependent variable F (2,331) = 36.3, P (.000) <.05. Thus, the regression model was a good fit for the data.

Table 14: Coefficients for County Schools

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std.error	Beta	t	Sig.
(Constant)	-.647	.170		3.814	.000
KCPE 1	.065	.017	.238	3.899	.000
Schgender =Girls	1.523	.180	-.515	8.440	.000

a school category; county
b Dependent Variable: KCSE
Source: Field Data (2018)

According to the regression coefficients in Table 14, all other factors considered the general form of linear equation, $Y=B_0 +B_1X_I +B_2X_2$. Where Y was the dependent variable (KCSE results), X1 was the independent variable (KCPE results), and X2 was the independent variable (Gender). The predictive equation is -.647 + .065 (KCPE) + 1.523 (Gender). The B-coefficients showed that the two independent variables (KCPE and Gender) were good predictors of the dependent variable (KCSE). KCPE (B=.065, P (.000) < .05) and Gender (B= 1.523, P (.000) < .05.

Table 15: Residual Statistics for County Schools

	Minimum	Maximum	Mean	Std Deviation	N
Predicted Value	.3352	.9388	.7742	.05838	332
Residual	-.33517	.35095	.0000	.12423	332
Std.Predicted value	-7.521	2.820	.000	1.000	332
Std.Residual	– 2.690	2.816	.000	.997	332

a school category: county

b Dependent Variable: KCSE1

Source: Field Data (2018)

The residual value of – 2.690 (Table 15) shows that county schools scored at -2.690 from the predicted value. The expected value is what the students should have achieved under optimum conditions. The students scored lower on exit (KCSE) by -2.690 than they had on entry (KCSE). These results show that County schools subtracted the value of students by 2.690. A student who scores a B on entry may have a C- or D+ on exit. Therefore, though many county schools are well endowed and admit students with averagely high scores next to Extra – county schools, they did not add value to student performance; instead, they subtracted value.

Value addition to the student academic performance by Public Sub-County secondary schools

Regarding value addition by the Sub-County Secondary Schools, this study tested the following hypothesis: H_{04}: There is no statistically significant value-addition on student academic performance by public sub-county secondary schools in Nandi County.

Table 16: Descriptive statistics-sub-county schools

	Mean	Std Deviation	N
KCSE results	4.90	1.713	334
KCPE results	7.13	4.108	334

Source: Field Data (2018)

For the sub-county schools, Table 16 shows that the KCPE mean is 7.13 and the standard deviation of 4.108. The KCSE results mean was 4.90 and a standard deviation of 1.713. These results show that the KCSE means (4.90) was lower than the KCPE mean (7.13). In addition, the standard deviation of 4.108 for KCPE indicates that grades are more spread out from the mean than 1.713, which shows that results are less spread out from the mean at KCSE. These results show that sub-county secondary schools did not add value to student performance.

Table 17: Model Summary for Sub-County Schools

Model	R	R Square	Adjusted R Square	Std. error of the Estimate
1	.528 b	.279	.275	.3238

a school category = sub-county

b Predictions: (constant), KCPE1, Schgender = Girls

c Dependent variable KCSE1)

Source: Field Data (2018)

An R-Value of .528 indicates a good level of prediction. R^2 value (coefficient of determination) of .279 suggested that the independent variables explain 27.9 % of the dependent variable's variability (KCSE results) (Table 17). Adjusted R Square (adj. R^2) .275 indicated that the predictors explain 27.5% of the outcome variable's variation to keep in the model. The low discrepancy between R squared and Adjusted R square values indicated a good fit for the model. The standard error of .3238 (32. %) measures the precision of the model.

Table 18: ANOVA Output Analysis for Sub-County Schools

Model		Sum of squares	df	Mean scores	F	Sig
1	Regression	2.443	2	1.221	69.692	.000
	Residual	6.326	361	.018		
	Total	8.769	363			

1. **School category – sub-county**
2. **Dependent variable; KCSE1**

Source: Field Data (2018)

The F-ratio in the ANOVA Table 18 tested whether the overall regression model fitted the data. The table showed that the independent variables significantly predicted the dependent variable F (2,361) = 69.7, P (.000) <.05. Hence, the regression model was a good fit for the data.

Table 19: Coefficients for Sub-County schools

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std.Error	Beta	t.	Sig.
(Constant)	.055	.055		1.540	.125
KCPE 1	-.063	-.014	-.201	-4.495	.000
Schgender =Girls	.732	.065	-.502	11.201	.000

a school category = National

b Dependent Variable: KCSE1

c Predictors (Constant), KCPE1, Schgender- Girls

Source: Field Data (2018)

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The regression coefficients table 19, taking all other factors into account, the general form of linear equation, $Y=B_0 +B_1X_I +B_2X_2$. Where Y was the dependent variable (KCSE results), X1 was the independent variable (KCPE results), and X2 was the independent variable (Gender). The predictive equation was .055 – .063 (KCPE) + .732 (Gender). The B-coefficients showed that the two independent variables (KCPE and Gender) were good predictors of the dependent variable (KCSE). KCPE (B=.065, P (.000) < .05) and Gender (B= 1.523, P (.000) < .05.

Table 20: Residual Statistics for Sub-County Schools

	Minimum	Maximum	Mean	Std Deviation	N
Predicted Value	.3711	1.3536	.6632	.08203	364
Residual	-.80679	.31710	.0000	.13202	364
Std. Predicted value	-3.560	8.417	.000	1.000	364
Std. Residual	-4.094	2.395	.000	.997	364

a school category =Sub- County

b Dependent variable: KCSE1

Source: Field Data (2018)

The residual value of – 4.094 (Table 20) shows that sub-county schools scored at -4.094 from the predicted value. The expected value is what the students should have achieved under optimum conditions. The students scored lower on exit (KCSE) by -4.094 than they had on entry (KCSE). These results show that sub-county schools subtracted the value of students by 4. 094. Therefore, a student who scored a B- on entry may score D+ or D on exit. This subtraction of value is a severe issue that needs to be addressed by policymakers. Therefore, though many county schools are well endowed and admit students with averagely high scores next to extra county schools, they did not add value to student performance; instead, they subtracted value. The residual value of – 4.094 (Table 20) shows that sub-county schools did not add value to students' academic performance. In addition, the students performed lower on exit than on entry. In summary, the average residual of all four categories of schools is -3. 619. This shows that all the categories combined did not add value but subtracted it. There was a negative value -added by all the school categories.

These results agree with the study by Nyangweso et al., (2019), which discovered that the categorization of public secondary schools alone was not an express indicator of value addition among general secondary students. According to Mbiti (2015), elite, prestigious, and highly selective government secondary schools were common worldwide. While such schools were perceived to be academically superior, their reputations simply reflected selection admissions or value-added learning was unclear (Glennerster et al., 2011; Mbiti & Lucas, 2014; Nyangweso et al., 2019). The findings of this particular research on the relationship between secondary school categorization and value-added progress have clarified things.

CONCLUSIONS

The categories of schools, national Extra County, county, and sub-county did not add value to academic performance.The findings showed that value addition in public secondary schools in Kenya was not based on secondary school characteristics. Students could add academic value in any category of public secondary school that they were enrolled. Individual student effort and internal academic organization in individual public secondary schools played a pivotal role in value added progress among learners. The paper concluded that irrespective of the score at KCPE and the category of public secondary school a student is admitted after KCPE, a student can add academic value.

RECOMMENDATIONS

The paper recommended that public secondary school characteristics which allowed student improvement at national and extra county school levels more than at sub-county and county secondary schools levels should be duplicated at county and sub county school levels.

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