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| RESEARCH ARTICLE

Influence of School Type on Secondary School Students' Performance in Mathematics in Nyahururu and Laikipia North Sub-Counties, Laikipia County, Kenya

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| ABSTRACT

Performance in Mathematics is valued in all societies due to its strong foundation for a country's scientific development. Consequently, performance in mathematics is a global issue of concern at the high school level of education. Further, Mathematics performance in Kenyan secondary schools has been wanting, especially in both Nyahururu and Laikipia North Sub-Counties. Hence, this study examined the influence of school type in terms of mixed day secondary schools, mixed boarding secondary schools, single sexed boys, and single sexed girls' secondary schools. The study employed a descriptive survey research design. Data was collected from a sample of 393 respondents from both Nyahururu and Laikipia North Sub-Counties. The Central Limit Theorem was used to select 16 secondary schools. The study applied a stratified random sampling technique in order to distribute respondents proportionately to the identified school types. Data was collected from both students and their Mathematics teachers using questionnaires, while personal interviews were used to collect data from school principals. Students' focus group discussions were also used to triangulate data. The reliability of the research instruments was estimated using test-retests, while validity was determined by piloting the research instruments. The analysis of data was done using frequencies, percentages, and linear regression analysis at a 0.05 level of significance using the Statistical Package for Social Sciences (SPSS). The study revealed that there was a statistical relationship between school type and students' performance in Mathematics with Linear Regression analysis at (r^2=0.639; p>0.0423) in the Nyahururu sub-county and (r^2=0.693; p>0.0475) in Laikipia North sub-county. These study findings led to the conclusion that there is a need for education stakeholders to pay more attention to factors that seem to influence girls' performance in Mathematics negatively compared to their male counterparts.

| KEYWORDS

Mixed sexed school; Performance in Mathematics; School type; single sexed school.

| ARTICLE INFORMATION

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1. Introduction

The need for heightened performance in Mathematics among students has been emphasized globally. This may be due to the role of Mathematical skills in the advancement of scientific and technological disciplines as well as in solving other complex societal demands (Pandey, 2017; Shabalala & Ncube, 2016). Further, this would explain why many governments seek solutions to improve students' learning environment (UNESCO, 2012). Indeed, educationists in modern society have suggested that there is a strong interplay between educational outcomes and school socialization (Healey et al., 2019; Ravi, 2015).

Sociologists in the discipline of education have attempted to explore and document determinants of students' academic performance. According to Cronin (2020) and Henslin (2018), sociologists are concerned with the immediate physical and social learning environment of the learner as it is a major determinant of a student's educational achievement. This line of inquiry revolves around the link between the composition of students, whether they are in single or mixed sexed schools, and students' academic performance (Ravi, 2015 and Okita, 2012). According to Cronin (2020), Gobby and Walker (2017), and Young & Muller (2016), a society's covert cultural aspects, such as its aspirations and attitudes, are key determinants of the academic performance of its members.

Performance in Mathematics has been a major concern in developed countries. This is attributed to the desire by the same governments to be self-sufficient in scientific and technological fields (Orodho et al., 2014; Malemya (2018) and UNESO, 2012). In Japan, OECD (2012) and Wei & Dzeng (2014) observed that performance in mathematics among high school students was much better than in most developed countries. This performance was associated with the availability of better quality of school factors such as Mathematics text books, scientific calculators, Mathematics learning models, and comfortable classrooms for all students specializing in Mathematics (Malemya, 2018 & OECD, 2013).

In Africa, there exists a need for governments to strengthen performance in Mathematics at the secondary level of education. In Nigeria, Eme (2014) and Sa'ad et al. (2014) are in agreement that their government has invested heavily in secondary education. However, Awofala (2017) observed that poor performance in mathematics among girls in public schools still exists due to their negative attitudes towards learning mathematics. This was aggravated by inadequate physical facilities such as classrooms. Correspondingly, Akuro & Ngozi (2014) and Ngeche (2017) observed that the government of Cameroon had invested heavily in different types of school's physical resources, as well as in teaching and learning Mathematics by implementing post-2015 Education for All (EFA) goals. Nevertheless, these interventions did not enhance positive attitudes towards the study of Mathematics among boys and girls in high schools (Nalova, 2017 and Ngeche, 2017).

Correspondingly, in Kenya, in spite of the emphasis on secondary school students' performance in Mathematics, there have been diverse school-based challenges facing different types of schools (KNEC, 2021). Specifically, there are challenges associated with school factors such as in-adequate classrooms, desks and chairs for the students, negative attitudes towards Mathematics, inadequate text books, and poor school culture (Mutai, 2016 and Orodho, 2014). Mensa et al. (2013) in Ghana, Sarwat et al. (2013) in Ethiopia, and Ngaruiya (2018) in Kenya are in agreement that factors associated with school type are major contributors to the disparity in Mathematics achievement among boys and girls.

According to Gachahi et al. (2014) and Kiumi et al. (2013), there has been a serious concern among educational stakeholders in Kenya regarding a small and unequal number of boys and girls studying Mathematics, science, and technological courses. This is in spite of the observation that the government has been allocating 30% of the Ministry of Education budget to cater to secondary education towards improved academic performance, particularly in mathematics (Kenya Institute of Curriculum development, 2021). The Kenya National Examinations Council (2021) observed that in the years 2018, 2019, and 2020, forty percent (40%) recorded a grade (E) in Mathematics. The same report noted that only fifteen percent (15%) of the students attained A to B- grade in Mathematics. This means that only a few students are qualified to pursue Science and Mathematics related courses at the university level.

Likewise, students' performance in Mathematics in Laikipia County has been wanting. According to the Laikipia County Director of Education office (2021), the County mean-scores in Mathematics for 2018, 2019, and 2020 were: 3.734, 3.75, and 3.796, respectively. The mean scores for the targeted Laikipia Sub-Counties, namely Nyahururu and Laikipia North, respectively, were the poorest and highest in Mathematics in the County in 2018, 2019, and 2020 at national examinations. However, both counties performed below the national mean of slightly below 4.0.

In light of consistent poor performance in Mathematics over the years, it was critical to investigate the extent to which the influence of school type with regard to whether a school is a mixed day or mixed boarding or single sexed boys' or girls' school on students' performance in Mathematics was investigated. The resulting data might assist in establishing the degree to which school type influences students' performance in Mathematics in Nyahururu and Laikipia North Sub-Counties.

1.1 Objectives of the Study

To achieve the primary objective of this study, which was to determine the influence of school type on students' performance in Mathematics among secondary school students in Nyahururu and Laikipia North Sub-Counties, Laikipia County, Kenya, four specific objectives were formulated. These sought to:

1. Determine the influence of mixed sexed day secondary schools on students' performance in Mathematics.
2. Evaluate the influence of mixed sexed boarding secondary schools on performance in Mathematics.
3. Establish the influence of single sexed girls' boarding secondary schools on students' performance in Mathematics.

4. Examine the influence of single sexed boys' boarding secondary schools on students' performance in Mathematics.

1.2 Research Hypothesis

On the basis of these research objectives, four null hypotheses were formulated. These were:

1. There is no significant relationship between mixed sexed day secondary schools and students' performance in Mathematics.
2. There is no significant relationship between mixed sexed boarding secondary schools and students' performance in Mathematics.
3. There is no significant relationship between single sexed girls' boarding secondary schools and students' performance in Mathematics.
4. There is no significant relationship between single sexed boys' boarding secondary schools and students' performance in Mathematics.

1.3 Delimitations of the Study

Leedy and Ormrod (2016) suggested that delimitations of a study constitute exact demarcations of a research problem. This study was mainly delimited to selected school factors and their influence on students' performance in Mathematics. Further, this study was focused on students' performance in Mathematics in Nyahururu and Laikipia North Sub-Counties with the view to establishing the extent to which selected school factors influenced performance in Mathematics in targeted Sub-Counties of Nyahururu and Laikipia North of Laikipia County in Kenya. In addition, this study was carried out in public schools only as there were no private secondary schools in Nyahururu and Laikipia North Sub-Counties since the establishment of the free tuition secondary school program in Kenya.

1.4 Limitations of the Study

The study limitations refer to problems that the researcher may have little or no control over (Bryman, 2012; Creswell, 2013). This study was conducted under certain conditions that, in one way or another, would weaken or limit the generalizability of its findings. This study was limited by the shortage of time for the respondents to fill out the questionnaires while they were in school, which was required by the researcher. To solve this problem, the researcher decided to collect them later. Also, some school principals had a busy schedule, either in or out of school. To overcome this limitation, the researcher decided to book an appointment with the school principals so that they would agree on the appropriate time for the personal interview. Some of the respondents might not have provided accurate information due to personal nature, sensitivity, and confidentiality associated with socio-economic status, religion, and gender issues, among others, due to their socialization. To overcome this, the respondents were assured of the anonymity and confidentiality of their responses during data collection and even afterward. To this end, the respondents were not expected to indicate their names in the questionnaires.

2. Review of Relevant Literature on School type and Students' Performance in Mathematics

Studies concerning the relationship between school type and academic performance of students have yielded mixed results. Pahlke et al. (2014) compared students' performance in single sex and mixed sex schools from different states in the United States of America. This particular study was done after the implementation of the 2011 proposal by the USA national government that all public schools should be made single sexed or have single sexed classes. The findings showed that students in mixed-sex schools were more likely to pass the Mathematics examination than those in single-sexed schools. These findings contradict other findings from studies by other scholars, such as (Malik, 2013 and Mwihia, 2020), which found that girls in mixed schools performed worse compared to girls in single-sexed schools. It is, however, noted that the subsequent study was based on students from different age brackets, that is, those aged 12 to 18 years compared to students aged 8 to 11 years old. The current research has used students from almost the same age bracket, between 16 and 17 years of age. Normally, students in Form Three in the Kenyan system of education are between 14 and 18 years old.

In another study, Kiwanuka et al. (2015) investigated the factors that seemed to influence performance in Mathematics among 4,819 students in central Uganda. Kiwanuka et al. (2015) study used questionnaires to elicit information related to the impact of school factors on students' achievement in Mathematics. From the analysis, it was found that the composition of the students' population in terms of gender accounted for twenty percent of students' performance in Mathematics. This study had findings different from those done earlier in Kericho-Kenya by Mburu (2013) and Orodho et al. (2014), which established that school type had more than fifty percent influence on students' academic achievement. Based on these contradictory findings, further investigation into the relationship between school type and academic achievement became important. The current study might assist in establishing whether the composition of students in terms of sex has a significant influence on their academic performance.

2.1 Research Design

This research has used a descriptive survey design. This is because it involves the description of peoples' opinions and principles concerning a prevailing occurrence without necessarily influencing their behavior (Bryman, 2012; Gray, 2014; Maxwell, 2012). This

research design enhanced the collection of data by the use of questionnaires, focus group discussions (FGD), and interviews without manipulating either students', teachers', or principals' behavior

2.2 Sampling Procedures

Leavy (2014) observed that sampling is a procedure of choosing a subsection of the population to be studied. This study contains a sample of public secondary schools, Form Three Students, their Mathematics teachers, and the principals of their schools from both Nyahururu and Laikipia North Sub-Counties.

Creswell (2013) and Maxwell (2012) are in agreement that when the Central Limit Theorem (CLT) is used, the sample size should be 30% or more of the targeted population, which produces a sample mean that reflects a normal distribution. Hence, a third of the total population is the minimum number of observations required to carry out a research study. Consequently, 30% of the secondary school sample was deemed to be adequate. This was achieved through stratified sampling for the inclusion of different types of schools in Kenya's secondary school system. Eligible schools for the sample were boarding schools for boys only, boarding schools for girls, mixed day schools, and mixed boarding schools. Thereafter, simple random sampling was carried out on every stratum of school type.

The selection of a sample of Form Three students employed a stratified sampling method. This assisted in the classification of schools into co-educational day as well as boarding schools, girls' only and boys' only schools. For the schools with multiple streams, simple random sampling was used to select one of the Streams of Form Three class. Thereafter, simple random sampling was used in-order to choose a sample of Form Three students. In order to select a sample of Form Three Mathematics teachers, purposeful sampling was used, while the census method was used to select all the participating principals from the selected schools.

2.3 Sample Size

According to Bryman (2012), in order for a researcher to get significant results, the Central Limit Theorem (CLM) affirms that a sample size of thirty percent or more of the total population is required. Thus, this study used thirty percent (30%) or 16 secondary schools out of the total population (44) secondary schools. The 16 schools comprised different categories of secondary schools. Out of only the three girl secondary schools, two of them were sampled, while the only boy secondary school, was included in the sampled schools. The mixed day secondary schools were 28; hence, 9 schools were sampled. Mixed boarding schools were 12, and so 4 schools were to be sampled. Hence, 13 mixed secondary schools were selected.

In order to get a sample of Form Three students from the selected secondary schools, Krejcie and Morgan (1970) formula was used. When this formula was applied to a population of 3,363 Form Three students 345 students were selected of the population stratum in terms of school type. Therefore, mixed day schools were represented by 171 students, that is 91 boys and 80 girls whereas mixed boarding schools were represented by 124 (66 boys and 58 girls) respondents. Further, respondents from girls' boarding schools were represented by 33 students while boys' school contributed 17 respondents.

Further, using a simple random sampling technique, 16 Form Three teachers of Mathematics were selected from the participating secondary schools while all principals of selected schools participated in the study.

3. Data Analysis, Findings, and Discussion of Results

The student respondents were requested to indicate their performance in Mathematics in terms of grade. The results supplied by the student respondents in their previous Term are presented in Table 1 by school type and by male and female students.

Table 1: *Form Three Students' Performance in Mathematics Examination by School Type and Grade.*

School type	Gender	N n	A-A- %	B+-B- %	C+-C- %	D+-D- %	E %	Mn	SD
Boys only	**Schools**	15	40	20	33	7	00	7.86	2.07
Girls only	**Schools**	30	33	34	31	2	00	7.07	1.93
Mixed day schools	**Boys**	103	17	28	30	20	8	4.12	1.37
	Girls	92	9	14	19	36	22	2.26	1.22
Mixed boarding	**Boys**	42	24	16	38	15	07	5.38	2.72
	Girls	36	19	11	35	21	14	3.14	1.53
Total	**Students**	318	15	16	28	27	14	4.01	1

Source: Field Data, 2023

The Data in Table 1 indicated that the majority (40%) of the boys in single sex secondary school scored grade A and A-, 20% scored between grade B+ and B-, while the rest (33% and 7%) respectively scored between C+ - C- and D+ - D- respectively. With regard

to the mean and standard deviation, boys single sexed school had a mean score of 7.86 and a standard deviation of 2.07. A mean score of 7.86 is equivalent to B plain which is regarded as one the best grades for admission for admission to science-based courses in a university. Among Girls respondents in secondary school, 33% of them said they had scored grade A - A-, 34% scored between grade B+ and B-, 31% scored between grade C+ and C-. A few (2%) of them scored between grade D+ and D- while none of the respondents scored grade E. This implies that the best grades (A to B-) were scored by more than two thirds (67%) of the students in girls only secondary schools. The lowest (E) grade in the Mathematics examination was not scored by any respondents in girls' only secondary school. The mean score for girls only secondary school was 7.07, which is equivalent to C+. This grade is the minimum grade for admission into a university course.

With regard to mixed boarding secondary schools, 24% of the boys and 19% of the girls responded that they scored grade A to A- respectively; 16% of boy and 11% of the girl respondents scored grade B+ to B- respectively. Grade C+ and C- were scored by 38% and 35% of the boy and the girl respondents, respectively. The lowest (E) grade was scored by 7% of the boys and 14% of the girl respondents. With regard to the mean, boys had a mean of 5.38, and girls had a mean score of 3.14. This mean is equivalent to C- and D+, respectively. In mixed day secondary schools, 17% of boys and 09% of girls scored grade A to A- respectively, 28% of the boy respondents and 14% of the girl respondents scored grade B+ to B- respectively, 30% of the boys and 19% of the girls scored between C+ to C- grade while 20% boys and 36% girls scored grade D+ - D-. The lowest (E) grade was scored by 8% of boys and 22% of girls, while the mean score for boys in day secondary school was 4.12, and girls had a mean score of 2.26. A mean score of 2.26 is equivalent to a grade of D. This is one of the lowest grades in an examination. This implied that girls in mixed day secondary schools were going through challenges that made them score poorly in Mathematics examinations. According to Ombati (2013), challenges that girls in day secondary schools go through include exploitative child labor, long distance to and from school, sexual harassment, domestic work preference, unequal teacher attention compared to boys in school, bullying, and verbal harassment in public transport.

The foregoing findings seem to indicate that students in single sexed secondary schools had the best performance in Mathematics, followed by mixed boarding secondary schools and mixed day schools. This finding reflects a remark by some principals who noted that:

"Majority of the current Form Three students have been scoring below D+ and, especially girls, since they were admitted in Form One. This is because the academic performance of students in mixed secondary schools is influenced by a variety of factors which are found at home, school, class and on their way to and from school."

Hence, the influence of the type of school on sex is significant. This is in agreement with King'ori et al. (2018), Raana (2013), and Kibera (1993), who made an observation that students in co-educational secondary schools performed poorer in Mathematics than students in single sexed secondary schools.

3.1 Form Three Students Mathematics Mean Scores

Mathematics teachers were requested to indicate the mean scores of their Form Three classes. The study results by school type by sex are presented in Table 2

Table 2: *Teachers' Projected Performance of Form Three in Mathematics by School Type and Mean Scores.*

Mean Score	Mean Grade	Boys only School	Girls only School	Mixed day		Mixed Boarding	
				Boys	Girls	Boys	Girls
		f (%)	*f (%)*	*f (%)*	*f (%)*	*f (%)*	*f (%)*
12 – 10.5	A - A-		1(50)				
10.4 - 7.5	B+ - B-	1(100)					
7.4 - 4.5	C+- C-		1(50)	2(25)		1(25)	
4.4 - 1.5	D+- D-			4(75)	4(50)	3(75)	3(75)
Below 1.5	E			2(25)	4(50)		1(25)
Total		1(100)	2(100)	8(100)	8(100)	4(100)	4(100)

Key: *f*= frequency; %= Percentage

The results in Table 2 have shown that the only respondent teachers in boys' only secondary school projected that his class would score a mean of between 10.4 -7.5. For the girls' only secondary schools, there were two teacher respondents; one of the respondents projected that the students would score a mean-score ranging from 12.0 - 10.5, while the other one estimated that students would attain a mean-score ranging between 7.4 – 4.5. It was also evident from Table 4.26 that in mixed day secondary schools, 25% of the respondents' reported that their boy students were likely to attain a mean-score ranging from 7.4-4.5, at 50%

a mean-score of between 4.4-1.5 while the remaining (25%) of boy respondents were likely to attain a Mathematics mean-score of below 1.5. The data in Table 4.27 has also indicated that 50% of the girl students in mixed day secondary schools were likely to score a mean of below 1.5, while the remaining 50% of girls were likely to score a mean ranging from 4.4-1.5.

With regard to mixed boarding secondary schools, 75% of the boy respondents were projected to attain a mean score ranging from 4.4-1.5, while the remaining 25% of the boys were likely to attain a mean score ranging between 7.4 and 4.5. The results in Table 4.23 further indicate that 25% of girls' in boarding secondary schools were likely to score a mean of below 1.5, while the majority (75%) of the girls in mixed boarding secondary schools were likely to attain mean score ranging from 4.4-1.5.

Notice that mathematics teachers in only boys' secondary schools had confidence that students in such schools would attain better grades in mathematics than their counterparts in mixed schools. On the other hand, Mathematics teachers teaching girls in single sexed schools projected a better performance of their students than the performance of girls in mixed sexed schools. These findings support the findings of a previous study done in Kenya by Chonge (2020), whereby he found that there were significant differences in levels of performance in mathematics between students in mixed and single-sexed classes. Further, these results are similar to those of Raana (2013) in Pakistan, which found that girls in single gendered environments performed better academically than in a mixed sex environment. According to Garcia (1998), a learning environment in a single sexed student population was found to be favorable for academic performance for either male or female students due to fewer distractions from the opposite gender and the existence of less gender stereotyping. Saidin & Brahim (2013) and Koech (2006) revealed that students' academic performance also increased once students were segregated in separate classrooms with regard to the biological sex of students.

3.2 Testing of Hypotheses

After carrying out an analysis and discussion with regard to school type and students' performance in Mathematics, attention was focused on testing the hypotheses. The main hypothesis of the study stated that: "there is no significant relationship between school type and students' performance in Mathematics." In order to test the hypothesis, the researcher performed a regression analysis, and the results are presented in Table 3.

Table 3: *Linear Regression of the School Type and Students' performance in Mathematics.*

Sub-County	Variables of Study	Mixed day Secondary Boys; Girls	Mixed Boarding Secondary Schools Boys; Girls	Single Sex Secondary Schools Boys; Girls	Sub County
Laikipia North	School type; Students performance in Mathematics	r^2=0.451; r^2= 0.400 p=0.0399; p=0.0341	r^2=0.562; r^2= 0.514 p=0.0446; p= 0.0418	r^2= 0.829; r^2= 0.723 p=0.0494; p=0.0456	r^2= 0.693 p= 0.0475
Nyahururu		r^2=0.443; r^2=0.386 p=0.0373; p=0.0310	r^2=0.522; r^2 =0.482 p=0.0385; p= 0.0394	r^2=0.722; r^2=0.664 p=0.0441; p=0.0421	r^2= 0.639 p= 0.0423

Note: Correlation is significant at a 0.05 confidence level

The analysis in Table 3 has indicated the results of linear regression in relation to school type by gender and students' performance in Mathematics. The analysis also shows that the relationship between school type and students' performance in Mathematics among boys and girls in day secondary schools in Laikipia North was at r^2=0.451; p>0.0399 for boys and r^2 =0.400; p>0.0341 for girls which was significant at 0.05. Further, it has been shown by the analysis that in Nyahururu Sub-County, there was a corresponding weak relationship between school type and students' performance in day schools with r^2 = 0.443; p>0.0373 for boys and r^2 = 0. 386; p> 0.0310 for girls which was significant at 0.05. Therefore, the hypothesis "There is no significant relationship between mixed sexed day secondary schools and students' performance in Mathematics" was rejected. These results have collaborated with the results of a study done in Nigeria by Ogechukwu & Chika (2018), which led to the conclusion that students from mixed day secondary schools seemed to experience diverse hardships both in school and in their journey to and from their homes. In the same regard, Haker (2000) noted that negative experiences by students in mixed day secondary schools were assumed to be major causes of poor academic performance in sciences and Mathematics among students.

The data analyzed has further indicated that mixed boarding secondary schools in both sub- counties demonstrated that there was a relationship between school type and students' performance with $r^2 = 0.562$; $p > 0.0446$ for boys and $r^2 = 0.514$; $p > 0.0418$ for girls students which was significant at 0.05 in Laikipia North Sub- County. The results have also shown that in Nyahururu Sub-County, mixed boarding secondary schools demonstrated a relationship between school type and students' performance in Mathematics with $r^2 = 0.522$; $p > 0.0385$ for boys and $r^2 = 0.482$; $p > 0.0394$ for girls. These results demonstrated that there was a statistically significant relationship between school type in terms of mixed boarding secondary schools and students' performance in Mathematics in both Sub- Counties. Hence, the hypothesis "There is no significant relationship between mixed boarding secondary schools and students' performance in Mathematics" was rejected.

The linear regression for the relationship between single sexed girls boarding secondary schools and students' performance in Mathematics was (r^2=0.723; 0.0456) for girls in Laikipia North sub- county and ($r^2 = 0.664$; $p > 0.421$) in Nyahururu sub- county which was significant at 0.05. Therefore, the hypothesis that "There is no relationship between single sexed girls' boarding secondary schools and students' performance in Mathematics" was rejected. Additionally, it can be observed that the relationship between school type in terms of single sexed secondary schools and students' performance in Mathematics was statistically stronger in Laikipia North than in Nyahururu Sub-County.

The relationship between single sexed boys in secondary schools and students' performance in Mathematics showed a relationship with ($r^2 = 0.829$; $p>0.0494$) for boys in Laikipia North and ($r^2 = 0.721$; $p > 0.0441$) in Nyahururu sub- county. Therefore hypothesis that "There is no significant relationship between single sexed boys' secondary schools and students' performance in Mathematics" was rejected. This is also in accordance with a study by Rodriguez (2020) which observed that boys' students in single sexed schools outperformed other students in other school categories

Further, single sexed secondary schools in the study area seem to perform better than mixed sexed schools. According to Eisenkopf et al. (2015), in Switzerland, single gendered schools did better in Mathematics than their counterparts in mixed sexed schools as they are not distracted by issues of gender stereotyping during the teaching and learning process. On the hand, Willis et al. (2006) and Tsanwani (2009) opined that single sexed schools and mixed sexed schools differ in academic performance due to differences in schedule for lessons and assessment strategies as well as due to teachers' and students' attitudes towards learning.

With regard to sub-county analysis, the influence of school type on performance in Mathematics seemed to be stronger in Laikipia North than in Nyahururu sub-county. This is for the reason that in the Laikipia North sub-county, regression analysis of the results was higher ($r^2 = 0.693$; $p= 0.0475$) than in the Nyahururu sub-county ($r^2= 0.639$; $p= 0.0423$) at 0.05 level of significance. These findings corresponded with the findings of Mburu (2013), which were tested for the significance of the relationship using Chi-square at a significance level of 0.05, 15 degrees of freedom, and 25.0 critical Chi-square. The Chi-square results was $68.5 \geq 25.0$, which led to the conclusion that school type in terms of gender was significantly related to academic performance.

4. Conclusion

The main objective of this study was to examine the influence of school type on secondary school students' performance in Mathematics in Nyahururu and Laikipia North sub-counties of Laikipia County in Kenya. To achieve this objective, a linear regression analysis was done at a 0.05 level of confidence. The findings revealed that the Laikipia North sub-county recorded a correlation coefficient of $r^2 =0.616$ and $p>0.0475$, while the Nyahururu sub-county indicated a correlation coefficient of $r^2 =0.6390$ and $p> 0.0423$. These results seem to suggest that in Laikipia North, the influence of school type was stronger than in the Nyahururu sub-county.

It's also worth taking note that this study was conducted under certain limitations that, in one way or another, would weaken or limit the generalizability of its findings. First, this study was limited by the shortage of time to fill the questionnaires by the respondents. To solve this problem, the researcher decided to distribute them to the respondents and to collect them later. Further, some of the respondents might not have provided accurate information due to confidentiality associated with gender issues, among others, due to respondents' socialization. To overcome this, the respondents were assured of anonymity and confidentiality of their responses during data collection and even afterwards. Lastly, respondents were not expected to indicate their names in the questionnaires.

Based on the key findings of this study and the conclusions, a number of recommendations for enhancement of academic performance in Mathematics among secondary school students within Nyahururu and Laikipia North Sub-counties have been suggested. On the basis of the findings, which are anchored on four major study objectives and their corresponding hypotheses, a number of recommendations have been made. These include: with regard to the finding that students' performance in Mathematics was low amongst girls as compared to boys in the same environment, there is a need for education stakeholders to pay more attention to factors that seem to affect girls negatively compared to their male counterparts. Education stakeholders such as parents, teachers, and students should also be informed that the sex of a student does not affect academic abilities. Armed

with this positive thinking, gender prejudices will disappear from all the stakeholders, leading to enhanced performance in Mathematics for both boys and girls.

Finally, a similar study should also be carried out in secondary schools in other areas across Kenya, Africa, and in other regions in the world for comparison purposes and a wider generalization of findings. This will assist stakeholders in education in gaining a better understanding of school contextual factors and their influence on students' performance in Mathematics.

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