



## **An Evaluation of Home Environmental Factors Affecting Performance of Boarding Secondary School Students in Kenya**

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The purpose of the study was to establish home environmental factors affecting both girls and boys in day secondary schools in an attempt to achieve academic excellence. The research designs used in the study were descriptive survey and ex-post-facto designs. The population consisted of five head teachers, 140 form-four teachers and 609 form-four students. The sample size was as follows; all the five head teachers, 46 form-four teachers and 201 students, which is 33% of the population for both the teachers and the students. Data was analyzed using descriptive statistics and inferential statistics such as linear multiple regression and factor analysis. The main problems faced by the day students were staying long distances from school, many domestic chores at home, lack of family or parental support towards academic excellence and low family socio-economic status.

### ***Background of the Study***

In early Europe, higher education, including secondary education began with training in religion and philosophy. Its purpose was to prepare leaders, especially religious leaders, and its curriculum reflected this purpose. As time passed, general topics for more applied professions were added as part of secondary education curricula (Cowell and Holsinger, 2000). Those early European secondary schools were almost exclusively for males, focusing on promotion of logical thinking, refined form of expression, and improved memory (Cowell and Holsinger, 2000). From nineteenth century to the Second World War, the curriculum began to encompass more subjects such as modern languages and literature, modern history, and scientific and technological

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subjects.

The majority of day secondary schools in Kenya were originally established for urban students and children from the Asian communities. The boarding tradition began at the turn of 20<sup>th</sup> century by Anglican and Roman Catholic Missionaries, with an aim of adopting English public school system to the African race. In Uganda the most important schools in the early 1900s were boarding schools, which were meant to educate the children of the elite class (Ssekamwa, 1997). The boarding schools had the ability to transform every part of a Ugandan student's life through socialization into Christian and European values.

Boarding schools are justified on Nation building grounds because they bring together students from different regional and ethnic backgrounds. In addition, they may offer economics of scale with regard to teacher utilization and they avoid commuting costs associated with day schools (Republic of Kenya, 2005).

The government of Kenya has established a number of boarding secondary schools throughout the country and sees the need for them to continue existing as boarding institutions (Republic of Kenya, 2005). Some of those schools should continue to be utilized to mix young people from different parts of Kenya.

As secondary schooling expands, the case of subsidizing boarding secondary schools weakens. Schools can be located within daily travel distances for the majority of school-age children (Lewin, 2006). Selective boarding secondary schools are common in Africa, but can double or triple the per-pupil cost and results in much lower enrolment rates than would otherwise be the case.

According to Holsinger, Jacob, and Migimu (2002), in Uganda many boarding school meals are frequently badly managed or badly prepared, despite the adequacy of the diet. Kitavi and Westluzan (1997) reported overcrowding in dormitories in boarding schools, with sometimes double the originally intended number of students being accommodated.

In spite of those problems, an average boarding student enjoys living and studying conditions, which are luxurious, compared to the hardship and squalor endured by many day students. According to Clarissa (1992), Desarrollo (2007), Evans (1999), Jagero (1999), Scharff and Brady (2006), and Oloo (2003), the greatest problem faced by day students was their home environment that was not conducive to reading. Other problems include: long distances from school, bad company at home, lack of proper accommodation and proper diet.

### ***Review of Literature***

Studies by Dermie, Lewis, and MacLean (2006) and Diriye (2006) attribute the poor performance of Somali pupils in United Kingdom to overcrowded accommodation. A typical Somali family of six children can have little or no space to organize their learning materials and may experience learning obstacles such as excessive noise levels. A study by Clarissa (1992) in Barbados examined home environmental factors that have a positive influence on achievement of secondary students. She observed that family stability, unity, and security had a positive influence on school achievement. Data was collected from a sample of 105 form-four students with 40% boys and 60% girls.

A study by Evans (1999) on gender achievement of secondary education in Jamaica revealed that socialization within the home and within the community

contributed to their motivation to achieve. According to Desarrollo (2007), in Latin America the extent to which parents or other family members are actively engaged in a student's education had a positive influence on student achievement. But a study by Hunnum and Park (2004) in rural China indicated that there is no positive correlation between family and community cohesion with student achievement, however the study noticed that the parent-child interaction supported child's aspirations and confidence.

According to Dermie et al (2007), lack of parental support among the Somali students in the United Kingdom contributed to their poor performance. Many of the Somali parents were unable to offer help to their children because of lack of prior education or ability to use English. The above research was supported by studies in Kenya by Jagero (1999), Oloo (2003), and Mackenzie (1997), which showed that a major problem affecting academic achievement was a home environment of the day students that was not conducive to reading.

The problems for day student arose from a lot of work at home. A study by Desarrollo (2007) in Latin America outlined that secondary students with the responsibility of earning money for their families on a regular basis performed poorly in their national examinations. In Malawi, according to Scharff and Brady (2006), girls are expected to help their mothers with labor-intensive house-hold chores before going to school and therefore arrive to class late and exhausted. Because of such responsibilities, girls are less likely than boys to perform well (Scharff, 2007). According to Mbilinyi (2003), most students, especially girls, are engaged in such activities as caring for their siblings when their parents are away, taking care of the sick, and attending to traditional rituals, funerals, and other celebrations. In Kenya Mensch and Lloyd (1997) found out that if girls have more domestic responsibilities than boys, they may have less time for homework, on the other hand, if girls are confined at home after school and boys allowed more freedom, girls may use some of their free time to do more homework thus performing better than boys.

Grantham et al (1998), while studying school performance of Jamaican girls declared that better achievement levels were associated with possession of school materials and access to reading materials outside of (the) school. A study by Hinnum and Park (2004) determined that there was a positive correlation between the presence of reading materials at home and performance in rural China. The above studies by Grantham et al. and Hinnum and Park were extended by a research of Jagero (1999) in Kisumu district that substantiated the finding that lack of reading materials at home was a major factor affecting the performance of day secondary students.

A study by Coady and Parker (2002) in Mexico had shown that distance to secondary school had consistently large negative effect on the probability of enrolling in secondary school. The impact in general was much larger for girls than boys. For girls, a reduction of distance to the nearest secondary school by one kilometer would result on an increase in the probability of attending by 8.6% whereas for boys the corresponding increase would be approximately 6.3%.

Long distances from homes to schools are a likely cause of underparticipation among rural communities in Africa where only few schools exist (Malenya 2008). According to De Jaeghere (2004), in Africa lack of formal secondary schools in close proximity to girls' homes prohibits their participation.

Parents are always concerned about the safety of their daughters as they travel to and from school. In Zambia a study by Nsemukila (2003) revealed that 50% of the children in urban areas are located within 15 minutes walking distance to school compared to 14% in the rural areas. The average walking time to the nearest secondary school was 27 minutes for urban areas and 185 minutes for students in the rural areas.

A study by Kitavi and Westhuizan (1997) in Kenya showed that students from poor families who cannot afford to pay for transport costs must walk long distances to school. In such situations by the time the students reach their schools they are already exhausted and less motivated to learn. The long distance to school can also lead to lateness and absenteeism and even some student can drop out (Kitavi and Westhuizan, 1997).

Studies by Mwinzi and Kimengi (2006), Jagero (1999), and Mensch and Lloyd (1997) in Kenya indicated that being sent home frequently to collect fees balance interfered with students learning, and consequently their academic performance. On average students take up to one week per month to report back to school, in total the student ends up missing an average of one month per term which translates to one term per year (Mwinzi and Kimengi, 2006). The consequences of missing classes have far reaching effects on the students that include increasing probability of dropping out, discouraging hard work, and stressing the students while they are trying to cover missed lessons, hence increase chances of failing (Mwinzi and Kimengi, 2006). According to Mensch and Lloyd (1997), school-based factors that reduce the learning time include disruptions due to teachers' absence and missed classes for chores or punishments. Some of the chores performed at school involve preparing and serving food, running errands, and assisting teachers in their homes.

A study by Scharff (2007) in Malawi found out that girls were more vulnerable than boys to abuse, both while in transit and when in school. To avoid lengthy walk to school some girls make their own lodging arrangement near community day schools that do not offer boarding facilities (Scharff and Brady, 2006). Those self boarders are unsupervised by the school and are therefore at risk of theft and self abuse (Scharff, 2007).

### **Research Design**

The researchers employ the descriptive survey and ex-post-facto designs. A survey design involves asking a large group of respondents questions about a particular issue (Mugenda, 1999). The researchers then use statistical techniques to make conclusion about the population based on the sample, especially if the population is too large.

Kerlinger (1975) states that ex-post-facto is a systematic, empirical inquiry in which the researcher does not have direct control of independent variables because their manifestations have already occurred. According to Newman (1991), ex-post-facto design has limitations because the technique does not establish cause and effect in a relationship but it merely suggest it, and the results may not be easily reproducible.

### **Data Analysis**

Data was analyzed using descriptive statistics, linear multiple regression, and factor analysis methods using Statistical Package for Social Sciences (SPSS).

The researcher developed a Likert scale for most of the questionnaire items for easy analysis of the data. In the scale, the points were awarded by the researcher as follows:

Strongly Agree (SA)	= 5
Agree (A)	= 4
Undecided (U)	= 3
Disagree (D)	= 2
Strongly Disagree (SD)	= 1

### **Data Presentation, Analysis, And Discussion**

Most day students in the study had the following factors affecting their performance: lack of proper accommodation, lack of proper diet, a lot of work at home, bad company at home, a home environment, which is not conducive to learning, staying long distances from school, and lack of reading materials at home.

**Table 1. Factors affecting performance of girls and boys who are day scholars.**

	Mean	
	Boys	Girls
Accommodation (X1)	3.07	2.93
Diet (X2)	3.09	2.33
Work (X3)	3.65	3.93
Bad Company (X4)	3.78	2.73
Home Environment (X5)	4.07	3.67
Long Distance (X6)	4.02	3.93
Reading Materials (X7)	3.57	3.07
Performance (X)	8.30	7.80

As shown in Table 1, the greatest problem faced by the day students was the long distance to their schools at 4.02 and 3.93 (agree) for boys and girls respectively. For the boys the home environment, which is not conducive to learning, was also a problem with an average of 4.07 (agree). Girls did more work at home compared to the boys as shown in Table 1. This could have explained why girls performed poorly than boys in the national examinations.

Staying long distances from school was one of the greatest problems faced by day students. On average the girls stayed a distance of 1.5 km, while the boy's average was 2.5 km. Long distances from school affected girls' performance more than boys', while lateness to school had greater effect on the boys' performance as shown in Table 2. The Pearson moment correlation coefficient for distance and performance is -0.37 and shows that the girls that lived closer to their schools were likely to perform better in KCSE examinations as shown in Table 2. When students stay long distances from school they are likely to exhaust

by the time they reach school and this might affect their concentration in the classroom.

**Table 2. Pearson Moment Correlation Coefficient for distance from home, lateness to school, and performance.**

	Distance	Lateness	Performance
Distance	1		
Lateness	0.626*(girls); 0.068 (boys)	1	
Performance	-0.37(girls); 0.103(boys)	0.034(girls); -0.199(boys)	1

\*Correlation significant at 0.05 level in a two-tailed test.

For the boys lateness to school had a negative influence to the performance with a correlation coefficient of -0.199. This shows that boys who were late were likely to miss some lessons, because of lateness or due to punishment when late. For the girls lateness was highly correlated to distance from school, with a coefficient of 0.626, which was significant at 0.05 levels in a two-tailed test.

**Table 3. Regression analysis of distance to school and lateness for the girls against performance.**

Model	Unstandardized B	Coefficients std error	Standardized ( $\beta$ ) beta	t	Sig t
Constant	8.263	0.959	-	8.618	0.000
Distance	0.977	0.486	-0.643	-2.010	0.068
Lateness	0.736	0.541	-0.436	1.362	0.198

#### Dependent variable: performance

From Table 3 the following regression equation can be derived:

$$Y = 8.263 + aX_1 + bX_2,$$

where  $a = -0.643$  and  $b = -0.436$ ;

therefore

$$Y = -0.643X_1 - 0.436X_2.$$

As can be seen from Table 3, when the distance to school is lowered by 1 km for the girls, the performance will increase by 0.643 percent. One percent reduction in lateness for the girls will increase the performance by 0.436 percent. For the boys distance to school had no effect on performance because the correlation coefficient was low at 0.103.

Extensive work at home was one of the problems affecting the day students. The chores included: cleaning the house, working in family farm or business, cooking, looking after young children, casual labor to earn money for themselves or family, running errands for parents, caring for domestic animals, and drawing water or firewood.

**Table 4.** Chores undertaken by day students by gender as indicated in the Likert scale.

<b>Chores</b>	<b>Girls</b>	<b>Boys</b>
Cleaning the house	3.786	3.927
Working in family business or farm	2.143	2.600
Cooking or cleaning the compound	3.427	3.873
Looking after younger children	2.785	2.564
Casual labor to earn money	1.143	1.545
Running errands for parents	1.643	2.382
Caring for family's domestic animals	1.643	2.109
Fetching water or firewood	2.714	3.873

On average boys performed more chores than the girls, except the duty of looking after young children. The work that was done by majority of day students included cleaning the house, cooking or cleaning the compound, and fetching water or firewood. There was no gender roles as the majority of the boys were involved even in traditional girl's roles such as cleaning the house and cooking, as shown in Table 4. Casual labor to earn money was the least popular chore with the students, at 1.143 and 1.545 (strongly disagreement in the Likert scale) for girls and boys respectively. When students are engaged in many works at home, they have less time to complete their school work; therefore their performance is affected.

**Table 5.** Pearson Moment Correlation Coefficient for problems faced by girls day students.

	X1	X2	X3	X4	X5	X6	X7	X
1	1							
2	0.674*	1						
3	0.728*	0.481	1					
4	0.641**	0.295	0.650*	1				
5	0.202	-0.127	0.535*	0.488	1			
6	0.777*	0.339	0.826*	0.479	0.382	1		
7	0.531**	0.068	0.564**	0.688**	0.707*	0.409	1	
	-0.361	0.098	-0.302	-0.047	-0.054	-0.487	-0.0324	1

\*Correlation is significant at 0.001 level in a two-tailed test.

\*\*Correlation is significant at 0.05 level in a two-tailed test.

As can be seen from Table 5, long distances to school, poor accommodation at home, lack of reading materials at home and a lot of work at home had a

negative influence on girls performance in KCSE, with correlation coefficients of  $-0.487$ ,  $-0.361$ ,  $-0.324$ , and  $-0.302$  respectively. The girls that lacked proper accommodation at home, also lacked proper diet, they had many chores at home, and were likely to stay long distances to school. This is shown in Table 5, where there is a high correlation of the factors with accommodation at  $0.674$ ,  $0.728$ ,  $0.641$ , and  $0.777$  respectively and the correlations were all significant at  $0.001$  in a two-tailed test.

**Table 6. Pearson Moment Correlation Coefficient for problems faced by boys who are day scholars.**

	X1	X2	X3	X4	X5	X6	X7	X
1	1							
2	0.674*	1						
3	0.728*	0.481	1					
4	0.641**	0.295	0.650*	1				
5	0.202	-0.127	0.535*	0.488	1			
6	0.777*	0.339	0.826*	0.479	0.382	1		
7	0.531**	0.068	0.564**	0.688**	0.707*	0.409	1	
	-0.361	0.098	-0.302	-0.047	-0.054	-0.487	-0.324	1

\*Correlation is significant at  $0.01$  level in a two-tailed test.

\*\*Correlation is significant at  $0.05$  level in a two-tailed test.

As shown in Table 6, lack of reading materials at home was the greatest problem affecting performance of boys with a correlation coefficient of  $-0.017$ . Other problems included lack of proper accommodation, the home environment, which is not conducive to learning, and staying long distances from the school. Unlike the girls a lot of work at home was not a great hindrance to performance for the boys.

### **Factor Analysis**

Factor Analysis is a statistical procedure used to uncover relationships among many variables. This allows numerous intercorrelated variables to be condensed into fewer dimensions called factors.

According to Ford et al. (1986), during factor analysis four major issues must be considered: the choice of the factor model to be used, the methods of rotation, the decision about a number of factors to retain, and the interpretation of the factor solutions. The results of factor analysis and the interpretation of the results can be severely influenced by the decisions made at each step of factor analysis (Comrey, 1978; MaCallum, 1993; Weiss, 1976). Weiss (1976) recommended that

researchers must provide a rationale for each decision and interpret results in agreement with those decisions.

### **Factor Model**

Two common methods of factor extraction are Principal Component Analysis (PCA) and Principal Axis Factoring (PAF). In the PCA model, the communality is assumed to be equal to 1, i. e., this is simply a linear transformation of the variables that assumes the factors will explain all the variance in each variable (Rummel, 1970). PCA is a variable reduction technique and it is used when the variables are highly correlated. The advantage of PCA is that it reduces the number of observed variables to a smaller number of principal components, which account for most of the variance of the observed variables (Suhr, 2005). In PAF, this assumption, that the communalities are equal to one is relaxed, and it's allowed the unique portion to be nonzero. As a result the factor loadings are higher and that leads to greater interpretability. PAF has a disadvantage that it includes unique factors and unique sources of error due to unreliability in measurement (Child, 1990). Therefore in analyzing the data the researcher used PCA instead of PAF.

### **The methods of rotation**

Rotation of factors is done in order to improve the meaningfulness, reliability, and reproducibility of factors (Ford et al, 1986; Weiss, 1976). Two methods of factor rotation are orthogonal and oblique.

Orthogonal rotation assumes that the factors are at right angle to each other i.e., the factors are not correlated. In our analysis the factors were highly correlated. The oblique rotation relaxes the assumption that the factors are orthogonal. In this method, one set of variables may lie along an axis, while the other set may lie at 45° to the axis. Allowing for correlations between the factors often simplifies the factor solution since many attitudinal dimensions are, in fact, likely to be correlated. A SPSS OBLIMIN procedure uses oblique rotation (Velicer and Jackson, 1990).

Unlike orthogonal rotation, the pattern matrix and the structure matrix are not equal after oblique rotation. However only pattern matrix need to be examined since it allows for easiest interpretation of factors (Rummel, 1970). The pattern matrices found using oblique rotation are more interpretable than orthogonal rotation solutions, with fewer variables loading significantly on more than one factor. Thus the oblique rotation method was used in the final analysis of this study.

### **Number of Factors to retain**

According to Velicer and Jackson (1990), one rule of thumb is to use an eigenvalue of 1 as the cutoff value. That is, all factors in a particular solution must have eigenvalues greater than 1. Also, one can look at the scree on a plot of eigenvalues against the number of factors. The point at which the eigenvalues begin to level off can also be used as a cutoff point. In this study the number of eigenvalues greater than 1 was used to determine the number of factors to retain.

### **Interpretation of the results**

The ultimate goal of factor analysis is the identification of the underlying constructs (Ford et al, 1986). A commonly used rule specifies that only variables

with loadings of 0.40 and above on a factor should be considered (Ford et al, 1986). Rummel (1970) argued that interpretation calls for an examination of high and low loadings, as well as sign across variable.

**Table 7. KMO and Bartlett's Test**

		Boys	Girls
Kaiser–Meyer–Olkin Measure of Sampling Adequacy		0.738	0.637
Barlett's Test of Sphericity	Approx. Chi-Square	123.581	78.416
	Df	28	28
	Sig	0.000	0.000

Df is degrees of freedom; Sig is observed significance level.

Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy is an index for comparing the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. KMO values vary from 0 to 1, and values that are closer to 1 are better, indicating a factor analysis of the variable is good. A value of 0.6 is a suggested minimum (Ford et al., 1986). As shown in Table 7, both the KMO for the sample from the girls and the boys were greater than 0.6. The test provide minimum standard, which should be passed before a principal component analysis (PCA) should be conducted.

Bartlett's test of sphericity is used to test the null hypothesis that the variables in the population correlation matrix are uncorrelated. As shown in Table 7, the observed significant level is 0.000, which is small enough to reject the hypothesis. It can be concluded that the strength of the relationship among the variables is strong, and it is a good idea to proceed with factor analysis on the data.

**Table 8. Communalities for girls and boys on the greatest problems faced by day students.**

	Initial	Extraction*	
		Girls	Boys
Accommodation	1	0.916	0.661
Diet	1	0.901	0.729
A lot of work	1	0.838	0.723
Bad Company	1	0.767	0.683
Home environment	1	0.851	0.764
Long Distances	1	0.820	0.677
Lack of reading materials	1	0.812	0.609
Performance	1	0.932	0.673

\* Extraction method: Principal Component Analysis

Communality is the proportion of each variable's variance that can be explained by the factors. PCA works on the initial assumption that all variances are common, therefore before extraction the communalities are all equal 1 (Field, 2005). The values of the extraction column indicate the proportion of each variable's variance that can be explained by retained factors.

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Variables with high values are well represented in the common factor space, while variables with low values are not well represented (Field, 2005). As can be seen from Table 8, the variables for the boys and the girls both have high values over 0.6.

**Table 9. Total variance explained for the problems faced by girls day students.**

Component	Initial eigenvalues			Extracted sums of square loading*		
	Total	Variance, %	Cumulative, %	Total	Variance, %	Cumulative, %
1	4.203	52.540	52.540	4.203	52.540	52.540
2	1.483	18.542	71.082	1.403	18.542	71.082
3	1.151	14.394	85.476	1.151	14.394	85.476
4	0.533	6.657	92.133			
5	0.337	4.211	96.344			
6	0.174	2.172	98.516			
7	0.091	1.131	99.648			
8	0.028	0.352	100.00			

\* Extraction method: Principal Component Analysis.

From Table 9 the initial number of factors is the same as the number of variables used in the factor analysis. However not all the eight factors were retained, except for the first three. The Total column contains the eigenvalues. The first factor always accounts for the most variance, i. e., have the highest eigenvalue, and the successive factors accounts for less and less variance. From Table 9, the first factor contains a total of 4.203 of the variance, which is 52.54% of the total variance. The three factors in total accounted for 85.476% of the total variance, which was quite high.

**Table 10. Rotated Pattern Matrix for problems faced by girls day students.**

Problems	Component*		
	1	2	3
Accommodation		0.770	-0.300
Diet		0.991	
Work	0.489	0.533	
Bad Company	0.730	0.378	
Environment	0.974		
Long Distances		0.473	-0.550
Reading Materials	0.857		
Performance			1.001

\* Extraction method: Principal Component Analysis; Rotation Method: OBLIMIN with Kaiser Normalization.

Rotated pattern matrix contains the rotated factor loadings, which are correlations between the variable and the factor. Three factors have been extracted, and those are the factors that analysts are most interested in and try to name. From Table 10 it can be concluded that, as indicated by factor 1, the girls, who were staying in homes with environment that was not conducive to learning, were likely to have bad company at home. These girls also lacked reading materials at home. Therefore the first factor might be called, family-support-for-education-of-the-student factor. Where there is a positive family support, the students are likely to have a better environment for studying. Their parents will be able to provide good lighting system, good reading space, and minimal interference from family members or friends when doing homework. Supportive parents will readily provide reading materials at home for their children.

The factor 2 might be called the socioeconomic-status-of-the-family factor. As can be seen from Table 10. families from disadvantaged backgrounds cannot afford proper accommodation and diet and are likely to delegate a lot of chores at home to their children. The factor 3 is the examination-performance factor. The factor 3 from Table 10 indicates that staying long distance from school has a negative effect on performance for the girls.

As can be seen from Table 9, the factor 1 is responsible for 52.54% of the variance. This shows that girl's performance depends largely on the type of family support they receive at home.

**Table 11. Total variance explained for the problems faced by boys in day schools**

Component	Initial eigenvalues			Extracted sum's of square loading*		
	Total	Variance, %	Cumulative, %	Total	Variance, %	Cumulative, %
1	3.122	39.019	39.019	3.122	39.019	39.019
2	1.296	16.198	55.218	1.296	16.198	55.218
3	1.101	13.762	68.980	1.101	13.762	68.980
4	0.785	9.818	78.789			
5	0.614	7.674	86.472			
6	0.554	6.930	93.402			
7	0.286	3.571	96.973			
8	0.242	3.027	100.00			

\* Extraction method: Principal Component Analysis.

In Table 11 only three factors were retained from the eight variables. The first factor contains a total of 3.122 of the variance, which accounts for 39.019% of the total variance. The three factors accounted for 68.98% of the total variance.

**Table 12.** Rotated pattern matrix for problems faced by boys in day school.

Problems	Component		
	1	2	3
Accommodation	0.771		
Diet	0.838		
A lot of work at home	0.837		
Bad company at home		0.656	
Home environment		0.887	
Long distances		0.791	
Lack of reading materials		0.455	-0.478
Performance			0.793

\* Extraction method: Principal Component Analysis; Rotation method: OBLIMIN with Kaiser Normalization.

It can be concluded from Table 12 that boys' socioeconomic background (factor 1) was a major determinant factor than parental support as in the case of the girls. Positive family support factor in the case of boys was factor 2. It can be concluded from Table 12 that that the performance of the boys was affected by lack of reading materials at home (factor 3).

As can be seen from Tables 1, 2 and 3, distance from school was one of the major factors affecting the performance of the day students. Distance from school affected girls more than boys, even though the girls were staying 1 km closer to the schools than the boys. The finding of this study concurs with the findings of Coardy and Parker (2002) in Mexico; Mulenya (2008) and Kitavi and Westhuizan (1997) in Kenya. The above studies showed that long distance to school can lead to frequent lateness, as supported by data from Tables 1, 2 and 3.

As shown in Tables 1 and 4, extensive work at home had a negative influence on the performance of the day students. The influence was more pronounced among the girls than the boys. The finding concurs with the results of studies by Desarrollo (2007) in Latin America, Scarff and Brady (2006) in Malawi, Mbilinyi (2003) and Mensch and Lloyd (1997) in Kenya. According to the studies, girls were expected to help their mothers in chores than the boys.

From the factor analysis, two factors were identified, parental support for education of the student and socioeconomic status of the parents. The parental support was the main factor for the girls than the boys. These results concurs with the findings from studies by Dermie, Lewis, and MacLean (2006) and Dirye (2006) among Somali pupils in United Kingdom; Clarissa (1992) in Barbados; Evans in Jamaica; and Desarrollo (2007) in Latin America. The above studies found out that parental and community support had a positive influence on student's performance.

The socioeconomic background factor affected the boys more than the girls. According to Republic of Kenya (2002), the people who live below the poverty line in Kisumu district were estimated to be 53% of the population. In the poverty assessment report in the district in May 2000, it was established that

more than half of the population was poor, and the poverty levels have been increasing over time.

The students, who were hungry due to inadequate supper, also lacked proper diet, as shown in Table 8. Those students were likely to be disturbed by nonhuman activities such as mosquitoes, and they lacked proper accommodation in the dormitories. The students had scarcity of facilities such as bathrooms, toilets, and adequate water. This third factor can be called inadequate-boarding-facilities factor. All the schools in this study were initially day schools; therefore they may have not developed adequate boarding facilities.

### ***Conclusions and Recommendations***

#### **Conclusions of the Study**

The major problem faced by day students was staying long distances from school. Long distances to school had more effect on girls' performance than the boys. As can be seen from Table 2, when the distance to school is lowered by 1 km, for the girls, their performance will increase by 0.436 percent. From the factor analysis, long distances to school had a negative correlation to performance as shown in Table 10, factor 3.

From factor analysis, as shown in Table 10, it can be concluded that girls who were day scholars were mainly affected by lack of parental and family support. The girls require good environment, which is conducive to learning. They should be supported by their families by providing good lighting systems, enough reading space, and minimal interference from family members or friends when doing their home work.

The boys who were day scholars were mainly affected by their parental socioeconomic status. The students from disadvantaged backgrounds cannot afford proper accommodation and proper diet, and their parents were likely to delegate a lot of chores at home. The students also lacked reading materials at home, and this affected their performance as shown in Table 12, factor 3.

#### **Recommendations**

1. There is a need by the government to continue giving bursaries to academically gifted, but poor students in secondary schools. The bursaries should be distributed on merit, as opposed to situations where the money is awarded to children of supporters of the politicians.

2. Parents should ensure that there is adequate lighting system for day scholars to study after school. Members of the family and friends of day students should recognize that students need enough space for reading and they should not interfere with them when doing private studies at home.

3. Parents should be encouraged to assign only light duties to day secondary school students while at home, since a lot of work makes the students too tired to do their school work.

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