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Navigating Environmental Challenges: Assessing the Impact of Ecological Factors on KCSE Performance in Public Secondary Schools in Samburu County

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ABSTRACT

This study aimed to investigate the environmental factors influencing students' performance in the Kenya Certificate of Secondary Education (KCSE) in public secondary schools in Samburu County, focusing on the unique challenges faced by students in nomadic pastoralist areas. Despite progress in Kenya's secondary education sector, academic performance in Samburu County has remained consistently low, with an average KCSE score of 4.4 (D+) between 2001 and 2010. The study explores the various factors that contribute to this poor performance. The study adopted a mixed-methods approach, gathering data from Form 4 school leavers and high school principals through structured questionnaires. The data was analysed using mean, frequencies, and p-values to determine the significance of each factor. The study identified drought, insecurity, and culture as the most significant environmental factors that influence performance. The study concludes that the drought variable was the main significant environmental factor that affected academic performance in the study area. Cultural practices such as moranhood and insecurity situations were found to be marginally significant. The study recommends that diversification of pastoral livelihoods could be a solution. This means introducing pastoralists to crop farming and entrepreneurship and also utilising natural resources like eco-tourism, cultures, and other environmental resources.

Key words: Culture, droughts, insecurity, performance, students.



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INTRODUCTION

Education is both a human right in itself and an indispensable means of realising other human rights. Investment in education fosters nationalism, patriotism and promotes national unity. In attainment of Millennium Development Goals and vision 2030, investment in education advances social, economic and political pillars hence national development.

Academic performance in high school enables students to continue with their education at various levels. It is also a 'value for money' that the parents spend to educate them. According to Ngware (2006), secondary education enables youth to acquire human capital for access to higher education and improve their skills for the labour market. It also makes 'casual' workers more productive and less affected by poverty than those with lower education levels. Statistics in Kenya show that there has been remarkable growth in secondary education, with 151 secondary schools at independence (1965) and a gross enrolment of 30,120 students. By 1999, this had grown to 3234 schools with a gross enrollment of 661,824 students. However, performance in secondary schools has been quite low. For nine years (2001 to 2010), the average mean score was 4.4, while in Nairobi Province, now County, it has been around 10. However, during this period, only 0.75 per cent (30 out of 3998) qualified to get a mean grade of B+, which guarantees direct entry to university.

LITERATURE REVIEW

An understanding of the spatial and temporal in researching factors affecting the performance of ethnic minority students in secondary schools, Kalam (2003) found out that ethnic minority students lagged in their performances in terms of completion, non-completion, dropout and repetition in different classes, attendance at school, and results in public and school examinations. He found that the attitude of teachers towards ethnic minority students' potentiality, poor economic condition treatment by teachers in the classroom, private tutor-dependent education, lack of helping hand in study at home, lack of awareness among parents, attendance at

school, lack of security and lack of educational environment at home were factors which affected ethnic minority students' performance in secondary schools. In establishing relationships between personal, family and academic factors that determine school failure and how these factors influence one another, Diaz (2003) concluded that parents' level of education, gender, motivation and relationship between peers had a direct influence on student's performance. It concurred with the findings of Siddiqui et al. (1989), which confirmed that family environment affects students' academic performance. Parental attitudes in child rearing and disciplining, as well as their socioeconomic and educational status, were identified as significant factors in influencing student performance.

Caldas and Bankston (1997) found out that in terms of community factors, lack of community resources and low socioeconomic status have been documented as examples. According to Cheers (1990), students from non-metropolitan areas are more likely to have lower educational outcomes in terms of academic performance and retention rates than students from metropolitan areas. Despite an adequate number of educational facilities in rural and remote Australia, school children from these areas remain disadvantaged by other factors. Issues affecting access to education in regional areas include costs, the availability of transport and levels of family income support. In addition, inequity exists with regard to the quality of the education that rural students receive, often as a result of restricted and limited subject choice.

Furthermore, students may also have limited recreational and educational facilities within their school.

RESULTS AND DISCUSSIONS

The Environmental factors were cultural practices, insecurity and droughts. Table 1 below shows the environmental related factors that were examined to determine whether they influence academic performance.

Table 1: Environmental Related Factors

Environmental related factors		KCSE performance		Total N=100(100%)	P value
		Average N=46(46%)	Low N=54(54%)		
Culture	Yes	26(26%)	36(36%)	62(62%)	0.461
	No	20(20%)	18(18%)	38(38%)	
Droughts	Yes	2(2%)	18(18%)	20(20%)	0.011
	No	44(44%)	36(36%)	80(80%)	
Insecurity	Yes	14(14%)	18(18%)	32(32%)	0.827
	No	32(32%)	36(36%)	68(68%)	

Their significance was tested at 5 per cent significant level. The results revealed droughts in the study area had significant association with the poor performance (p value = 0.011). Cultural practices and insecurity which are common in the study area were statistically weak. According to Arsham (1988)

The P-value attempts to provide a measure of the strength of the results of a test.

The following table provides a reasonable interpretation of P-values.

Table 2: P-Values Interpretation

P-value	Interpretation
$P < 0.01$	very strong evidence
$0.01 <= P < 0.05$	moderate evidence
$0.05 <= P < 0.10$	suggestive evidence
$0.10 <= P$	little or no real evidence

The smaller the p-value, the more evidence you have. One may combine the p-value with the significance level to make a decision on a given test of hypothesis. In such a case, if the p-value is less than some threshold (usually .05), then confirm the alternative hypothesis.

CONCLUSION AND RECOMMENDATIONS

Conclusion: The study concludes that droughts variable was the main significant environmental factors that affect academic performance in the study

area. Cultural practices such as moranhood and insecurity situations were found to be marginally significant.

Recommendations: Basing on the findings of the study, the study recommends that, since droughts were found to be the main affecting factor, diversification of pastoral livelihoods could be a solution. This means introducing pastoralists to crop farming, entrepreneurship, and also utilising natural resources like eco-tourism, cultures, and other environmental resources.

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