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## **Influence of School Climate and School Location on Students' Academic Performance in Science in Adamawa State**

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**Abstract** The study investigated the influence of school climate and school location on students' academic performance in science in Adamawa state. Two objectives were formulated. In line with the objectives, two research questions and two null hypotheses guided the study. A sample of 432 SSS II science students was chosen from the selected secondary schools in Adamawa state. The study adopted descriptive survey design. The instruments used for data collection is School Climate and School Location Questionnaire (SCSQ). The instrument was duly validated and the reliability coefficient of 0.81 was calculated using Cronbach alpha. Mean and standard deviation were used to answer research questions while independent sample t – test and regression analysis were used to test the null hypotheses at 0.05 level of significance. The finding revealed that there is significant influence of school climate on students' academic performance in science in Adamawa State,  $F_{(1, 431)} = 5.251$ ,  $p < 0.05$  and that there is significant difference in the academic performance of science students base on school location in Adamawa State,  $t_{(430, 0.05)} = 2.555$ ,  $p < 0.05$ . It is concluded that school climate influenced students' academic performance in science and difference exist in the academic performance of science students in the urban and rural areas. It is recommended among others that Government should ensure equal supervisory activities to all schools irrespective of location and provide incentives that will attract teachers to the rural area. This practice would have influence on the teaching and learning exercise.

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**Keywords** School climate, school location and academic performance

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### **Introduction**

The poor performance of students in both internal and external examinations in Nigeria calls for concern. In recent times, educators in Nigeria have been increasingly concerned about the need to improve on the academic achievement of students [2]. [1] asserted that parents, teachers and society in general are worried and apprehensive about the best way to improve academic standards, achievement and performances. Moreso, Soyinka cited in [8] observed that the university system in Nigeria needs restructuring. He further stated that, academic standard has fallen drastically and the quality of graduates produced is subject to re-examination. Learning environment plays very vital role in enhancing students' academic performance. School climate and location are part of learning school environment that can enhance effective teaching and learning process. In support of this, [19] asserted that students are more engaged in school and attain higher academic achievement in schools with a positive school climate. [4] conducted a meta-analysis of 78 published research articles concluded that "a positive school climate contributed to higher academic achievement and decreased the negative influence of poor socioeconomic status background characteristics and other risk factors on academic



achievement. Schools are generally located in urban or rural areas. It is observed that schools located in the urban areas tend to have more facilities, manpower, government attention, etc. as against those located in the rural areas. These facilities when harnessed may enhance students' academic performance.

The school climate construct is complex and multi-dimensional. It has been described as the unwritten personality and atmosphere of a school, including its norms, values, and expectations [11] and [16]. Further, it has been described as the "quality and character of school life" [7] p. 182.

Importantly, rather than concerning administrative or physical attributes of the school (e.g., teachers' salary or schools' physical resources), school climate research hones in on the psychosocial school atmosphere, and the inter-group interactions that affect student learning and school functioning [12],[13] and [17]. School climate is a leading predictor of students' emotional and behavioral outcomes. It affects students' adaptive psychosocial adjustment [5], mental health outcomes [18] and [6] and self-esteem [21]. School climate also influences students' behavior, such as rates of bullying and aggression [10] and [20].

[3] conducted research to assess school climate issues and their impact on students' academic achievement in Bahir Dar, Ethiopia. To achieve the objectives of the study, basic research questions were asked with regard to school related factors such as teacher-student relationship, students-peer relationship, administration of the school, security and maintenance of the school, and academic orientation of the school. Descriptive survey method was used and the study was conducted in all general secondary schools in Bahir Dar town, Ethiopia. Systematic random sampling technique was used to select adequate number of respondents. The samples consisted of 662 students, 20 teachers, and 6 principals. To collect data, questionnaire and document analysis were used and analyzed using percentage, mean, and weight mean values. The findings revealed that, except for one component of school climate (security and maintenance of the school) there is favorable school climate for learning. This result is further substantiated by the direct positive relationship between school climate and students' achievement.

School location refers to where a given school is situated. It could be in an urban or rural area. A lot of researches had been carried out in respect to school locations and some hold the view that location influences the academic achievement of students in such a school. [9] conducted a study to determine the correlational relationship between school location and students' academic performances in English language in secondary schools in Ogoja Local Government Area. It adopted a survey research design. The population of the study comprised all the 836 senior secondary two (SS2) students of the 2016/17 academic session in all the 46 public and private secondary schools in Ogoja Local Government Area. Through stratified random sampling, a sample of two hundred (200) students was drawn for the study. Out of this number, 124 representing 62% were males; while 76 students representing 38% were females. The instrument used for data collection was achievement test tagged English Language Achievement Test (ELAT) carved from 2015 English Language Mock Examination in Calabar Education zone. The data obtained was analysed using independent t-test. The results revealed that there is a significant difference in students' academic performance in English language on the basis of school location. Similarly, [15] carried out a study on the academic performance of students in urban, semi-urban and rural secondary school in Oshimili South Local Government Area of Delta State, Nigeria. A survey design was employed in the study. Five hypotheses were formulated to guide the study. The researcher collected data on the Senior Schools Certificate Examination results conducted by the West African Examination Council (WAEC) in the year 2001. The subjects selected for analysis were English Language, mathematics and biology. The others were chemistry and geography. Three out of six secondary schools in the study area were used for the study. Ninety out of two hundred and twenty students in the three secondary schools were used for the study representing 49.1 percent. One way analysis of variance (ANOVA) was used to analyze the data. The study showed that; there was a significant difference in the academic performances among students in urban, semi-urban and rural secondary schools in Economics, Government, History, Civic and Geography. [14] studied the effects of differential distribution of resources on schools performances in examinations and found that location of schools in Oyo State had significant effect on schools academic performances and there was significant difference in the performances between the students of rural and urban schools.

School location and school climate have been identified as some of the factors that can influence students' academic performance in sciences. Previous studies on the influence of these variables on academic



performance are not conclusive. While some of the findings of the studies discovered that, there is a significant influence of these variables on students' academic performance. Some studies equally discovered that these variables do not significantly influence students' academic performance. There is need to actually find out the influence of school location and school climate on students' academic performance in science.

### **Purpose of the Study**

The main purpose of the study is to find out the influence of school location and school climate on students' academic performance in science. The specific purposes are to:

1. Determine the influence school climate on students' academic performance in science in Adamawa State.
2. To determine the difference in the academic performance of science students base on school location in Adamawa State.

### **Research Questions**

1. What is the influence of school climate on the academic performance of students in science in Adamawa State?
2. What is the difference in the academic performance of science students base on school location in Adamawa State?

### **Hypothesis**

The following null hypotheses were formulated and tested at 0.05 level of significance.

**H<sub>01</sub>:** There is no significant influence of school climate on students' academic performance in science in Adamawa State.

**H<sub>02</sub>:** There is no significant difference in the academic performance of science students base on school location in Adamawa State.

### **Methodology**

The study adopted descriptive survey research design, which always concern with finding, describing and interpreting what it is. The target population of the study is 16,265 SSII science Students in senior secondary schools of Adamawa state. The sample for the study comprised 432science students from the selected senior secondary schools in Adamawa State. The instrument for data collection is a structured questionnaire tagged "School Climate and Location Questionnaire" (SCLQ). The instrument contained 20 items and is scored on a five-point scale of Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD). The instrument was duly validated and its reliability coefficient was calculated to be 0.81 using Cronbach alpha method. The data collected using SCLQ was analyzed using descriptive and inferential statistics. Mean and standard deviation were used to answer the research questions while independent sample t – test and regression analysis were used to test the hypotheses at 0.05 level of significance.

### **Results**

The data was analyzed using mean, standard deviation, independent sample t test and regression analysis.

#### **Research Question One**

What is the influence of school climate on the academic performance of students in science in Adamawa State?

**Table 1:** Mean and Standard Deviation of School Climate on the Academic Performance of Students in Science in Adamawa State

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S. D</b>
Students' academic performance	432	32.2819	31.58464
School climate	432	4.0012	.59043



Table 1 shows the mean and standard deviation of school climate and academic performance of students in science in Adamawa State. The average mean of school climate is 4.0012 and that of academic performance of students in Science is 32.2819.

### Research Question Two

What is the difference in the academic performance of science students base on school location in Adamawa State?

**Table 2:** Mean and Standard Deviation of Academic Performance of Students in Science base on School Location in Adamawa State

School location	N	Mean	S. D
URBAN	205	36.3415	31.68133
RURAL	227	28.6159	31.11324
Mean difference		7.7256	

Table 2 shows the mean and standard deviation of academic performance of Science students in senior secondary schools of Adamawa State based on school location. The average mean of academic performance of students in urban and rural schools are 36.3415 and 28.6159 respectively. The mean difference in the academic performance of students in the urban and rural schools is 7.7256.

### Hypothesis Testing

**H<sub>01</sub>:** There is no significant influence of school climate on students' academic performance in science in Adamawa State.

**Table 3:** Summary of Regression Analysis of Influence of School Climate on Students' Academic Performance in Science in Adamawa State

Model		Sum of Squares	Df	Mean Square	F	p-value	R value	R Square
1	Regression	5187.053	1	5187.053				
	Residual	424773.946	430	987.846	5.251	.022 <sup>b</sup>	.110	.012
	Total	429960.999	431					

a. Dependent Variable: Students' academic performance

b. Predictors: (Constant), School climate

Results of Analysis in Table 3 show summary of regression analysis used to test whether school climate has significant influence on senior secondary school students' academic performance in sciences in Adamawa State. The result revealed that there is significant influence of school climate on students' academic performance,  $F_{(1, 431)} = 5.251$ ,  $p < 0.05$ . Since the  $p$  – value (0.022) is less than 0.05 alpha level, the null hypothesis was rejected. This means that there is significant influence of school climate on students' academic performance in Adamawa State.

**H<sub>02</sub>:** There is no significant difference in the academic performance of science students base on school location in Adamawa State.

**Table 4:** Summary of Independent  $t$  - test of Difference in the Academic Performance of Science Students base on School Location in Adamawa State

School location	N	Mean	S. D	Df	$t$ – value	P – value	Remark
Urban	205	36.3415	31.68133				
Rural	227	28.6159	31.11324	430	2.555	.011	H <sub>02</sub> rejected

Analysis in Table 4 shows that there is significant difference in the academic performance of students in urban and rural areas,  $t_{(430, 0.05)} = 2.555$ ,  $p < 0.05$ . The null hypothesis is therefore rejected since the  $p$  – value is less than 0.05 level of significance.

### Findings of the Study

The following are the findings of the study.

1. The finding revealed that there is significant influence of school climate on students' academic performance in science in Adamawa State,  $F_{(1, 431)} = 5.251$ ,  $p < 0.05$ .



2. The finding also revealed that there is significant difference in the academic performance of science students base on school location in Adamawa State,  $t_{(430, 0.05)} = 2.555$ ,  $p < 0.05$ .

### Discussion of Findings

The study investigated the influence of school climate and school location on students' academic performance in sciences in Adamawa state, Nigeria. The following are the discussions of the findings. The finding revealed that there is significant influence of school climate on students' academic performance in science in Adamawa State. The finding agrees with that of [3] who found a direct positive relationship between school climate and students' achievement. In line with this finding, [4] reported that a positive school climate contributed to higher academic achievement and decreased the negative influence of poor socioeconomic status background characteristics and other risk factors on academic achievement. In the same vein, [9] asserted that students are more engaged in school and attain higher academic achievement in schools with a positive school climate.

The finding also revealed that there is significant difference in the academic performance of science students base on school location in Adamawa State. This finding corroborated that of [9] who found that there is a significant difference in students' academic performance in English language on the basis of school location. A similar study by [15] showed that; there was a significant difference in the academic performances among students in urban, semi-urban and rural secondary schools in Economics, Government, History, Civic and Geography.

### Conclusion

Based on the findings of this study, it is concluded that school climate influenced students' academic performance in science and difference exist in the academic performance of science students in the urban and rural areas.

### Recommendations

Based on the findings of the study, the following recommendations were made:

1. Principals should create a favorable climate to enhance better job performance among teachers and give more attention to the effective supervision of teachers and students during teaching and learning. This would enhance students' academic performance.
2. Government should ensure equal supervisory activities to all schools irrespective of location and provide incentives that will attract teachers to the rural area. This practice would have influence on the teaching and learning exercise.
- 3.

### Acknowledgments

we thank almighty Allah for given us the opportunity to conduct this study. We thank the research assistants that help me in collecting the data for this research work.

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