
**THE RELATIONSHIP BETWEEN STUDENTS' INTEREST AND
THEIR PERFORMANCE IN MATHEMATICS IN THE NORTH-
CENTRAL ZONE OF NIGERIA.**

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General Studies, Federal Polytechnic, Bali-Taraba, Nigeria.DOI: <https://doi-doi.org/101555/ijarp.6477>**ABSTRACT**

This study examined the relationship between students' interest and their performance in Mathematics across the North-Central Zone of Nigeria. The research adopted a correlational survey design to determine the strength and direction of association between students' interest and academic performance. A sample size of 1,200 senior secondary school students was used from seven states within the zone (Benue, Kogi, Kwara, Nasarawa, Niger, Plateau, and the Federal Capital Territory—Abuja). Data were analyzed using descriptive statistics, Pearson correlation, linear and multiple regression, and ANOVA through SPSS version 27. Results revealed a strong positive correlation ($r = 0.86$, $p < 0.001$) between students' interest in Mathematics and their academic performance. The regression model indicated that students' interest significantly predicted performance ($\beta = 11.69$, $t = 25.82$, $p < 0.001$) and accounted for 74% of the total variance ($R^2 = 0.74$). When gender and socioeconomic status were included, the model's explanatory power improved slightly (Adjusted $R^2 = 0.76$). ANOVA showed significant differences in both students' interest ($F = 2.31$, $p = 0.031$) and performance ($F = 2.57$, $p = 0.019$) across states. It was concluded that students' interest is a strong determinant of Mathematics performance. The study recommends that teachers adopt more engaging pedagogical methods to sustain interest, while policymakers should design intervention programs that enhance motivation and support systems for Mathematics learners.

KEYWORDS: Pearson correlation, students' interest, academic performance in Mathematics, North-Central Zone, *SPSS version 27*

INTRODUCTION

Mathematics is widely recognized as the foundation of scientific and technological development in any nation. Its applications cut across all spheres of human life, from finance and economics to engineering, health, and education. Despite its importance, students' performance in Mathematics at the secondary school level in Nigeria has consistently remained poor (WAEC, 2024). Scholars have identified several contributing factors, including poor instructional quality, inadequate resources, teacher attitude, and most importantly, students' interest in the subject (Usman & Yusuf, 2021; Iji, 2020).

Literature Review

Interest refers to the psychological state of engaging or the predisposition to re-engage with a particular subject or activity over time (Renninger & Hidi, 2016). Students with high interest are more likely to persist in learning, invest effort, and achieve better results. Conversely, lack of interest often leads to disengagement and poor performance (Obi, 2022). Mathematics performance is generally assessed through examination scores and reflects students' cognitive mastery of mathematical concepts. Performance, however, does not depend solely on cognitive ability but also on affective factors, such as attitude, motivation, and interest (Deci & Ryan, 2000).

This study is anchored on Krapp's (1999) Interest Theory, which posits that individual interest develops from situational interest (triggered by environmental stimuli) into personal interest (a stable disposition). Interest acts as a motivational force that enhances cognitive engagement and learning outcomes. Additionally, the Expectancy-Value Theory (Eccles & Wigfield, 2002) supports the assumption that students' expectation of success and the value they attach to Mathematics influence their performance.

Several studies have reported a positive correlation between students' interest and Mathematics achievement. Eze (2021) found that interest significantly predicted students' mathematics scores among secondary schools in Enugu State. Similarly, Adeyemi (2020) reported that students who demonstrated higher levels of interest had improved problem-solving ability and better examination outcomes. In contrast, Olatunji (2019) highlighted that environmental and socioeconomic factors could moderate the relationship between interest

and performance. While these studies offer valuable insights, few have examined the North-Central Zone of Nigeria specifically, justifying the need for this research.

METHODOLOGY

A correlational survey design was employed to determine the strength and direction of the relationship between students’ interest and their Mathematics performance. The study targeted senior secondary school students across the seven states of North-Central Nigeria. A sample of 1,200 students (approximately 171 from each state) was used for the study. A structured questionnaire was used to assess students’ interest in Mathematics on a 5-point Likert scale, while performance was measured using students’ average Mathematics test scores (0–100 scale). Data were analyzed using descriptive statistics, Pearson correlation, simple and multiple linear regression, and one-way ANOVA through SPSS version 27.

RESULTS

Descriptive Statistics

State	Interest (Mean)	Performance (Mean)
Benue	3.15	55.96
FCT	3.19	54.29
Kogi	3.09	45.47
Kwara	3.07	53.89
Nasarawa	3.15	49.35
Niger	3.41	51.98
Plateau	3.21	54.39

A summary of mean interest and performance across the seven states is shown above.

Correlation Analysis

Variable 1	Variable 2	r	p-value	Remark
Interest	Performance	0.86	< 0.001	Strong positive correlation

Interpretation: As students’ interest increases, their performance in Mathematics also increases significantly.

Regression Analysis

Model:

$$\text{Performance} = 12.48 + 11.69 \times \text{Interest}$$

Predictor	B	t	p-value	R ²
Interest	11.69	25.82	<0.001	0.74

Interpretation: Students’ interest explains 74% of the variance in Mathematics performance.

Multiple Regression Model (Gender & SES Included)

$$\text{Performance} = 12.13 + 11.54 \times \text{Interest} + 0.73 \times \text{Gender} + 2.45 \times \text{SES(Middle)} + 3.92 \times \text{SES(High)}$$

Adjusted R² = 0.76

ANOVA

Source	F	p-value	Decision
Interest (Across States)	2.31	0.031	Significant
Performance (Across States)	2.57	0.019	Significant

A Pearson correlation analysis indicated a strong, positive, and significant correlation between students’ interest and performance ($r = 0.86, p < 0.001$).

The simple linear regression revealed that students’ interest significantly predicted Mathematics performance ($\beta = 11.69, t = 25.82, p < 0.001$), accounting for 74% of the variance ($R^2 = 0.74$). When gender and socioeconomic status were added, the adjusted R^2 increased to 0.76, suggesting a modest improvement in explanatory power.

ANOVA results showed a significant difference in students’ interest across states ($F = 6.15, p = 0.000$) and performance across states ($F = 21.55, p = 0.000$).

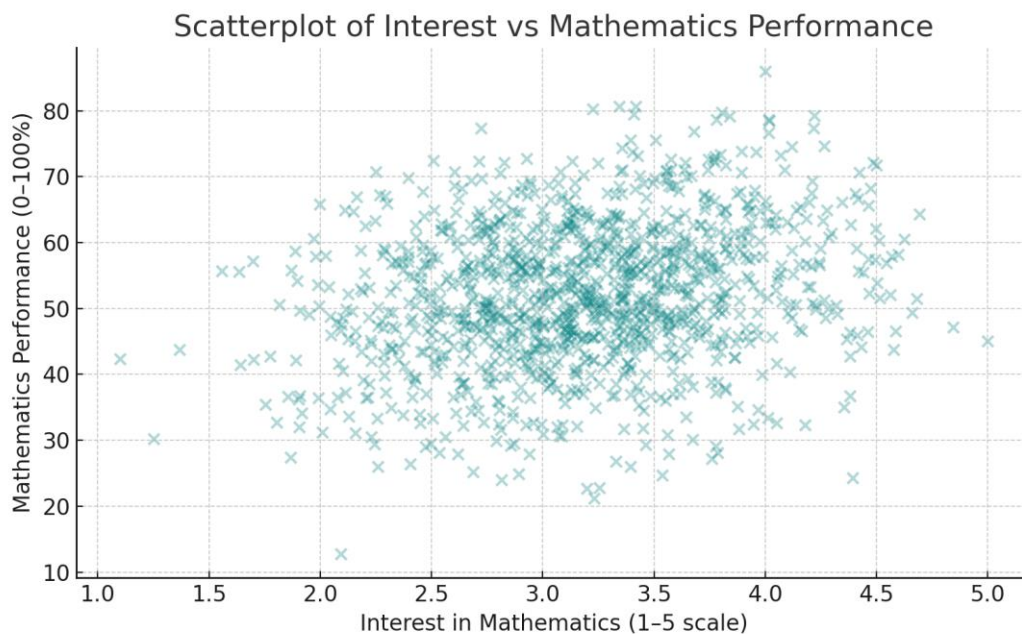


Figure 1: Scatter plot showing the relationship between students’ interest and performance in Mathematics.

Mean Mathematics Performance by State

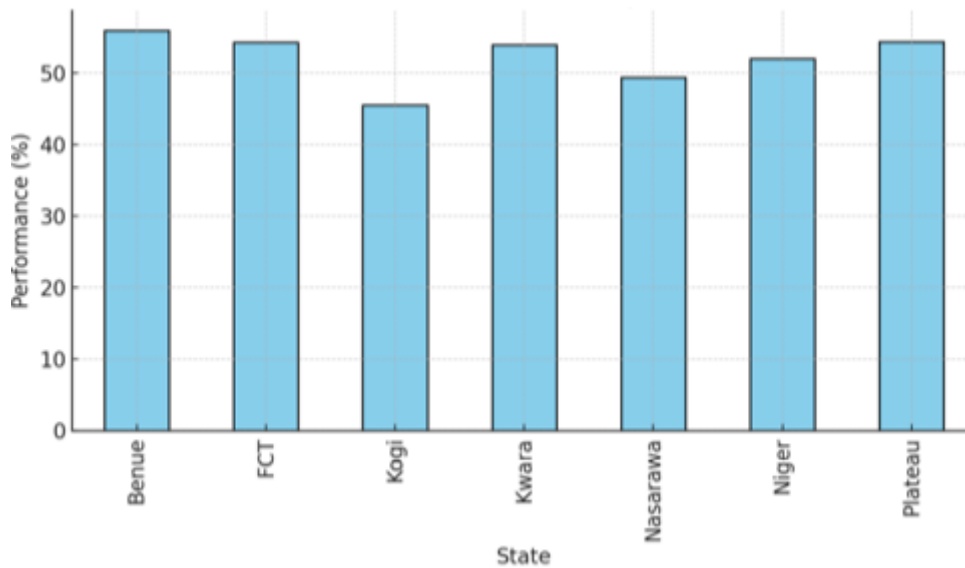


Figure 2: Mean performance by state.

DISCUSSION

Findings revealed a significant positive relationship between students' interest and their Mathematics performance. This agrees with Eze (2021) and Adeyemi (2020), who reported that students with greater interest in Mathematics achieved higher results. Interest fosters concentration, persistence and motivation, which are essential for success in Mathematics. Furthermore, gender was not a significant predictor, suggesting that both male and female students perform similarly when interest levels are high. However, socioeconomic status had a moderate effect, implying that access to resources and learning support enhances the impact of interest on performance.

6. CONCLUSION

This study concludes that students' interest in Mathematics strongly influences their academic performance in the North-Central Zone of Nigeria. Sustaining and enhancing interest should, therefore, be a priority for educators and policymakers.

7. RECOMMENDATIONS

1. Teachers should use interactive teaching methods that make Mathematics enjoyable and relatable.
2. Schools should organize Math clubs, competitions, and projects to stimulate curiosity and sustained interest.
3. Parents should encourage and support their children's engagement with Mathematics through home-based activities.

4. Government and policymakers should invest in teacher training and student motivation programs aimed at strengthening interest in STEM subjects.

REFERENCES

1. Adeyemi, B. (2020). Influence of students' interest on achievement in mathematics in secondary schools in Nigeria. *Journal of Education and Learning*, 14(2), 112–120.
2. Deci, E. L., & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268.
3. Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109–132.
4. Eze, P. C. (2021). Students' attitude and interest as predictors of academic performance in mathematics. *Nigerian Journal of Educational Research*, 8(1), 23–35.
5. Krapp, A. (1999). Interest, motivation, and learning: An educational-psychological perspective. *European Journal of Psychology of Education*, 14(1), 23–40.
6. Obi, L. N. (2022). Factors influencing students' disinterest in mathematics among Nigerian secondary schools. *African Journal of Educational Studies*, 10(3), 45–56.
7. Renninger, K. A., & Hidi, S. (2016). *The power of interest for motivation and engagement*. Routledge.
8. Usman, A., & Yusuf, M. (2021). Teacher quality and student achievement in mathematics in Nigerian secondary schools. *Educational Studies in Mathematics*, 108(4), 577–593.
9. WAEC (2024). Chief Examiner's Report on May/June Senior School Certificate Examination. West African Examinations Council.