

Influence of insecurity in the school environment on students' psychological behaviour in tertiary institutions in South East Nigeria

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Abstract

Insecurity and inadequate school environments are increasingly recognized as critical factors affecting students' psychological well-being in tertiary institutions. In South East Nigeria, concerns related to safety, poor infrastructure, and unfavorable learning conditions may intensify stress, anxiety, and other psychological challenges, potentially undermining academic performance and overall development. This study adopted a quantitative research design to examine the influence of insecurity and school environment on the psychological behaviour of students in tertiary institutions in South East Nigeria, with gender considered as a potential mediating variable. A total of 3,000 respondents comprising 2,000 students, 500 professors, and 500 administrative staff were proportionately selected from federal and state universities, polytechnics, and colleges of education. Data were collected using structured questionnaires and analyzed through descriptive statistics, robust M-estimators, Pearson correlation, bootstrap confidence intervals, and multiple regression analyses, with ethical standards duly observed. The findings revealed strong positive relationships between insecurity, school environment, and students' psychological behaviour. Specifically, insecurity showed a strong positive correlation with psychological behaviour ($r = .665, p < .001$), while school environment demonstrated a very strong positive correlation ($r = .863, p < .001$). Although gender was significantly associated with insecurity and school environment, its mediating effect on psychological behaviour was minimal. Regression analysis indicated that school environment significantly and positively predicted psychological behaviour, whereas insecurity exerted a negative influence. The findings are generalizable to the South East geopolitical zone of Nigeria and underscore the need for policies aimed at improving campus safety, infrastructure, and learning environments to promote students' psychological well-being and academic success.

1. Introduction

In recent years, insecurity has become a pervasive issue in tertiary institutions across South East Nigeria, covering threats such as armed robbery, cultism, kidnapping, and sporadic violence. These incidents instill fear and anxiety among students, profoundly impacting their psychological well-being and academic performance (DeBate et al, 2021). Tertiary institutions refer to educational establishments beyond secondary schooling that offer undergraduate and postgraduate programs. These institutions provide advanced learning opportunities in various fields such as arts, sciences, engineering, medicine, and humanities (Ndayebom & Aregbesola, 2023). Tertiary institutions play a critical role in preparing students for professional careers and academic research, fostering intellectual growth, and contributing to societal development through knowledge creation and dissemination. Ofor-Douglas (2022) note that the prevalence of insecurity creates a pervasive sense of vulnerability among students in tertiary institutions, disrupting their sense of safety and affecting their psychological resilience within the school environment.

The school environment plays a pivotal role in shaping students' responses to insecurity. The school environment refers to the physical, social, psychological, and cultural context in which learning and academic activities take place within educational institutions (Ekiugbo, 2023). It covers the infrastructure and facilities of the school, including classrooms, libraries, laboratories, and recreational areas, which are designed to support teaching and learning. Beyond physical aspects, the school environment also includes the organizational structure, policies, and practices that shape interactions among students, teachers, administrators, and other stakeholders. Social dynamics

within the school, such as peer relationships, social norms, and disciplinary practices, contribute to the overall atmosphere and culture (Gidado et al, 2023). Psychological factors, such as students' sense of safety, belonging, and psychological well-being, are crucial components of the school environment.

Additionally, the cultural context of the school influences its values, beliefs, and educational goals, shaping the experiences and outcomes of students and educators alike. Uzor and Ikenga (2023) emphasize that institutional policies and security measures significantly influence students' perceptions of safety, trust within their academic communities and psychological behaviour. Students' psychological behaviour encompasses a broad range of emotional, cognitive, and social responses that significantly influence academic performance, peer relationships, and overall well-being. It reflects how learners cope with academic demands, respond to stress, interact with teachers and classmates, and regulate their emotions in learning environments (Bichi, 2021).

Studies in Nigerian educational contexts show that learning conditions, teaching strategies, and technology use can shape students' psychological responses, either fostering confidence and resilience or contributing to anxiety and disengagement (Enemuo & Muogbo, 2023; Muogbo & Obiefoka, 2022). Experiential and blended learning approaches have been associated with improved interest, motivation, and adaptive behaviour among students, suggesting positive psychological outcomes when instruction is engaging and supportive (Favour et al., 2025; Okafor et al., 2023). Conversely, poorly managed ICT integration and digital challenges may negatively affect students' emotional stability and academic focus (Muogbo & Nnoli, 2025; Nnoli & Muogbo, 2025).

Students' psychological behaviour in response to insecurity covers a range of reactions including fear, mistrust, hypervigilance, and emotional distress. These emotional responses are not only immediate but can also have long-term implications for students' mental health and academic engagement. Persistent exposure to insecurity contributes to chronic stress among students, potentially leading to emotional disorders and reduced academic performance over time (Aroyewum et al, 2023). Insecurity refers to a deep-seated feeling of uncertainty, self-doubt, or inadequacy about oneself or one's abilities. It often manifests as a lack of confidence and a persistent fear of rejection, failure, or criticism. Insecurity can affect various aspects of a person's life, including relationships, work performance, and overall well-being. Individuals experiencing insecurity may constantly seek reassurance from others, avoid taking risks, or compare themselves unfavorably to others (Ogunnowo et al, 2022).

Factors contributing to insecurity can stem from childhood experiences, societal pressures, perfectionism, or past failures. Over time, unchecked insecurity can lead to anxiety, depression, and a limited sense of personal fulfillment. In South East Nigeria, the security challenges faced by tertiary institutions are exacerbated by regional socio-political tensions and economic disparities (Andrew et al, 2023). The study on insecurity, school environment, and psychological behaviour of students in tertiary institutions in South East Nigeria is urgently needed due to several compelling reasons. Firstly, South East Nigeria has experienced various security challenges, including socio-political unrest and occasional violence, which can profoundly impact students' psychological well-being and academic performance (Omodero, 2024). The presence of insecurity can create a climate of fear and stress among students, affecting their ability to concentrate and engage effectively in learning environments.

Moreover, the school environment plays a crucial role in shaping students' emotional responses and behaviors. Factors such as inadequate infrastructure, overcrowded classrooms, and limited access to counseling services can exacerbate feelings of insecurity and anxiety among students (Ata-Agboni et al, 2024). Research indicates that a supportive and safe school environment is essential for fostering positive psychological development and resilience in students (Otekunrin, 2022). Understanding these dynamics is vital for developing targeted interventions and policies that promote student well-being and academic success in tertiary institutions. Addressing insecurity and improving the school environment will help educational stakeholders to create nurturing spaces where students can thrive psychologically and academically in South East Nigeria.

1.1. Statement of the Problem

In South East Nigeria, tertiary institutions are confronted with complex challenges that significantly impact the psychological behaviour of students. One of the most pressing issues is insecurity, covering socio-political unrest, occasional violence, and communal tensions. These security challenges create an environment of fear and uncertainty among students, potentially influencing their psychological well-being and academic performance. Furthermore, the quality of the school environment itself, including infrastructure, facilities, and support services, plays a crucial role in shaping students' emotional responses and behaviors.

Insecurity in South East Nigeria's tertiary institutions creates significant challenges that adversely affect students' psychological behaviour. Persistent socio-political unrest, occasional violence, and communal tensions foster an atmosphere of fear and anxiety among students, impacting their psychological well-being and academic performance. The constant threat of insecurity undermines students' sense of safety and security, leading to heightened stress levels, emotional instability, and difficulty concentrating on studies. Moreover, insecurity can contribute to a climate of mistrust and social withdrawal among students, hindering their ability to form positive relationships and engage fully in campus life.

Despite the critical importance of addressing these issues, there is a notable gap in empirical research focused specifically on how insecurity and school environment affect psychological behaviour among tertiary students in South East Nigeria. Existing studies often generalize findings from other regions or focus narrowly on primary and secondary education contexts, neglecting the unique challenges and dynamics present in tertiary institutions. The impact of insecurity on students' psychological behaviour remains inadequately explored within the South East Nigerian context. While studies acknowledge the broader societal implications of insecurity, there is limited research specifically examining its effects on tertiary students' psychological well-being and academic engagement. Understanding how students perceive and respond to insecurity within their educational environment is crucial for developing targeted interventions and support systems.

The quality of the school environment in South East Nigerian tertiary institutions is a significant concern. Issues such as inadequate infrastructure, overcrowded classrooms, limited access to counseling services, and socio-cultural factors may contribute to heightened levels of stress, anxiety, and emotional instability among students. However, empirical research specifically investigating these factors and their impact on psychological behaviour is sparse. While psychological behaviour is crucial for academic success and personal development, there is a lack of comprehensive studies linking the school environment, insecurity, and psychological behaviour among tertiary students in South East Nigeria. Existing literature tends to focus on either security issues in isolation or general aspects of school environment without adequately integrating their combined impact on emotional outcomes.

Moreover, the socio-economic and cultural diversity within South East Nigeria further complicates the understanding of these dynamics. Factors such as ethnic tensions, economic disparities, and regional inequalities may intersect with insecurity and school environment issues, shaping students' emotional responses in nuanced ways that require contextualized investigation. Therefore, this study aims to address these gaps by providing a comprehensive examination of how insecurity and school environment factors collectively influence the psychological behaviour of tertiary students in South East Nigeria.

1.2. Theoretical framework

Ecological Systems Theory, proposed by Bronfenbrenner (1979), offers a comprehensive framework for understanding human development by examining the various environmental systems that influence an individual. Bronfenbrenner's theory posits that development occurs within a nested arrangement of systems, each playing a critical role in shaping an individual's experiences and behaviors. These systems range from the immediate settings in which an individual interacts daily to broader societal contexts. The microsystem represents the immediate environment, covering interactions with family, peers, teachers, and the neighborhood. These relationships are direct and bidirectional, meaning that the individual both influences and is influenced by these environments. The mesosystem comprises the interconnections between different microsystems. For example, the

relationship between a student's home environment and their school experience can significantly impact their academic performance and psychological well-being.

Beyond the immediate environments, the exosystem includes broader social settings that indirectly affect the individual. Policies at a parent's workplace, for instance, can influence the home environment, thereby affecting the student's experiences. The macrosystem covers the cultural values, laws, customs, and resources that shape the broader societal context within which development occurs. Cultural attitudes towards education and mental health, for instance, are part of this system. Finally, the chronosystem adds the dimension of time, considering the changes and continuities in an individual's environment over time, such as major life transitions or historical events.

Applying Ecological Systems Theory to the study of insecurity, school environment, and psychological behaviour of students in tertiary institutions in South East Nigeria involves examining how these environmental layers interact to influence students' psychological well-being. At the microsystem level, the immediate environment of the students, including their interactions with peers, teachers, and family, plays a critical role. A supportive microsystem can mitigate the negative impacts of insecurity, while a hostile one can exacerbate emotional distress. The mesosystem, which covers the interactions between the school and home environments, is crucial for providing a cohesive support network. Effective communication and collaboration between these microsystems can help students navigate emotional challenges more effectively.

The exosystem's broader factors, such as educational policies, community safety, and parental employment status, indirectly influence students' emotional health. For instance, community violence can lead to heightened anxiety and stress among students. The macrosystem's cultural attitudes towards education, mental health, and security within Nigerian society impact how students cope with and perceive their environment. Historical and socio-political events, as considered in the chronosystem, shape the long-term emotional trajectories of students, reflecting the influence of time on their development. Despite its comprehensive framework, Ecological Systems Theory has limitations. It tends to be more descriptive than explanatory, providing a broad perspective without delving deeply into the mechanisms of how these systems influence development. Additionally, it can be challenging to empirically measure and disentangle the effects of each environmental layer.

1.3. Objectives

- a. analyze the correlation between insecurity and psychological behaviour of students in tertiary institutions in South East Nigeria
- b. examine the correlation between school environment and psychological behaviour of students in tertiary institutions in South East Nigeria
- c. determine the mediating effect of gender on the relationship between insecurity, school environment, and the psychological behaviour of students in tertiary institutions in South East Nigeria

1.4. Research Questions

- a. What is the correlation between insecurity and psychological behaviour of students in tertiary institutions in South East Nigeria?
- b. What is the correlation between school environment and the psychological behaviour of students in tertiary institutions in South East Nigeria?
- c. What is the mediating effect of gender on the relationship between insecurity, school environment, and the psychological behaviour of students in tertiary institutions in South East Nigeria?

1.5. Hypotheses

- a. There is no significant correlation between insecurity and the psychological behaviour of students in tertiary institutions in South East Nigeria.
- b. There is no significant correlation between school environment and the psychological behaviour of students in tertiary institutions in South East Nigeria.
- c. Gender does not have a significant mediating effect on the relationship between insecurity, school environment, and the psychological behaviour of students in tertiary institutions in South East Nigeria.

2. Method

This study employed a correlational research design to examine the influence of insecurity in school environment on the psychological behaviour of students in tertiary institutions in South East Nigeria, with gender as a potential mediating variable. The population consisted of students, professors, and administrative staff across federal universities, state universities, polytechnics, and colleges of education in the region. A total of 3,000 respondents were purposively and proportionately selected to ensure representative coverage across institution types, with federal universities (791; 26.4%), state universities (745; 24.8%), polytechnics (732; 24.4%), and colleges of education (732; 24.4%) all well-represented.

Participants were further categorized according to their institutional roles to capture varied perspectives on psychological behaviour. Students formed the majority (2,000; 66.7%), while professors (500; 16.7%) and administrative staff (500; 16.7%) constituted the remaining respondents. This stratification allowed for a comprehensive assessment of both direct and indirect influences of institutional dynamics on psychological behaviour.

Data were collected using structured questionnaires designed to capture respondents' perceptions of insecurity, school environment, and psychological behaviour. Standardized scales with established validity and reliability were employed, and items were measured on a Likert-type scale. Measures of insecurity included perceived threats, incidents of violence, and personal safety concerns. School environment was operationalized through physical facilities, academic resources, and the psychosocial climate. Psychological behaviour encompassed emotional stability, anxiety levels, and coping responses. Gender data were recorded for potential mediation analysis.

The study employed both descriptive and inferential statistical techniques. Descriptive statistics, including frequency distributions, percentages, and percentiles, were used to summarize respondent demographics and variable distributions. Robust M-estimators (Huber, Tukey, Hampel, and Andrews' Wave) were applied to examine the stability and central tendency of the variables, mitigating the influence of outliers and ensuring reliable estimates. Extreme values were also analyzed by gender to explore variability across the respondent population.

For inferential analysis, Pearson correlation coefficients were calculated to assess the strength and direction of relationships between insecurity, school environment, and psychological behaviour. Bootstrap analyses with 1,000 resamples provided confidence intervals, enhancing the reliability of correlation estimates. Multiple regression analyses were conducted to determine the predictive influence of insecurity, school environment, and gender on psychological behaviour, including interaction terms to test the mediating effect of gender. Model significance was verified using ANOVA, and collinearity diagnostics were assessed via tolerance and variance inflation factor (VIF) values to ensure robustness of the regression models. Ethical considerations were strictly observed, including voluntary participation, informed consent, anonymity, and confidentiality. Data were collected in compliance with institutional ethical guidelines, and participants were assured of the academic use of their responses only.

3. Results and Discussion

3.1. Results

Table 1 indicates that respondents were fairly evenly distributed across institution types.

Table 1. Distribution of Respondents According to institution type

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------------|-----------|---------|---------------|--------------------|
| Valid | Federal University | 791 | 26.4 | 26.4 | 26.4 |
| | State University | 745 | 24.8 | 24.8 | 51.2 |
| | Polytechnic | 732 | 24.4 | 24.4 | 75.6 |
| | College of Education | 732 | 24.4 | 24.4 | 100.0 |
| | Total | 3000 | 100.0 | 100.0 | |

Federal universities recorded the highest representation (791; 26.4%), followed closely by state universities (745; 24.8%). Polytechnics (732; 24.4%) and colleges of education (732; 24.4%) had equal participation. Overall, the distribution suggests balanced institutional coverage among the total respondents (3000; 100.0%). Next, Distribution of respondents according to position in school can be seen in Table 2.

Table 2. Distribution of Respondents According to Position in school

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------------|-----------|---------|---------------|--------------------|
| Valid | Student | 2000 | 66.7 | 66.7 | 66.7 |
| | Professor | 500 | 16.7 | 16.7 | 83.3 |
| | Administrative staff | 500 | 16.7 | 16.7 | 100.0 |
| | Total | 3000 | 100.0 | 100.0 | |

Table 2 shows that students formed the largest proportion of respondents (2000; 66.7%). Professors constituted a smaller segment of the sample (500; 16.7%), while administrative staff also accounted for an equal proportion (500; 16.7%). The cumulative percentages indicate complete representation of all respondent categories within the study sample (3000; 100.0%).

Research Question 1: What is the correlation between insecurity and psychological behaviour of students in tertiary institutions in South East Nigeria?

The results for Research Question 1 in Table 3 reveal a strong positive and statistically significant correlation between insecurity and psychological behaviour of students in tertiary institutions in South East Nigeria ($r = .665$; $N = 3000$; $p = .000$). This indicates that higher levels of insecurity are associated with increased psychological challenges among students. The relationship is robust, as confirmed through bootstrap analysis with a narrow 95% confidence interval (.622-.711), suggesting reliability and consistency of the correlation.

Table 3. Correlation between Insecurity and Psychological Behaviour of Students in Tertiary Institutions in South East Nigeria

| | | Insecurity | Psychological Behaviour |
|-------------------------|-------------------------|------------|-------------------------|
| Insecurity | Pearson Correlation | 1 | .665** |
| | Sig. (2-tailed) | | .000 |
| | N | 3000 | 3000 |
| Bootstrap ^b | Bias | 0 | .001 |
| | Std. Error | 0 | .022 |
| | 95% Confidence Interval | Lower | .622 |
| | | Upper | .711 |
| Psychological Behaviour | Pearson Correlation | .665** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 3000 | 3000 |
| Bootstrap ^b | Bias | .001 | 0 |
| | Std. Error | .022 | 0 |
| | 95% Confidence Interval | Lower | .622 |
| | | Upper | .711 |

**. Correlation is significant at the 0.01 level (2-tailed).

b. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Research Question 2: What is the correlation between school environment and the psychological behaviour of students in tertiary institutions in South East Nigeria?

The results for Research Question 2 (Table 4) show a very strong positive and statistically significant correlation between school environment and psychological behaviour of students ($r = .863$; $N = 3000$; $p = .000$). This indicates that improvements or changes in the school environment are closely associated with variations in psychological behaviour students. The bootstrap results further confirm the strength and stability of the relationship, with a narrow 95% confidence interval (.850–.877), indicating high reliability.

Table 4. Correlation between School Environment and Psychological Behaviour of Students in Tertiary Institutions in South East Nigeria

| | | Psychological Behaviour | | School Environment |
|-------------------------|------------------------|-------------------------|--------------------------|--------------------|
| Psychological Behaviour | Pearson Correlation | | 1 | .863** |
| | Sig. (2-tailed) | | | .000 |
| | N | | 3000 | 3000 |
| | Bootstrap ^b | Bias | 0 | .000 |
| | | Std. Error | 0 | .007 |
| | | 95% Confidence Interval | Lower 1 Upper 1 | .850 .877 |
| School Environment | Pearson Correlation | | .863** | 1 |
| | Sig. (2-tailed) | | .000 | |
| | N | | 3000 | 3000 |
| | Bootstrap ^b | Bias | .000 | 0 |
| | | Std. Error | .007 | 0 |
| | | 95% Confidence Interval | Lower .850 Upper .877 | 1 1 |

**. Correlation is significant at the 0.01 level (2-tailed).

b. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Research Question 3: What is the mediating effect of gender on the relationship between insecurity, school environment, and the psychological behaviour of students in tertiary institutions in South East Nigeria?

The results (Table 5) indicate that school environment and insecurity are strongly related to psychological behaviour, with high correlations observed across models. Gender shows a meaningful association with both school environment (.359) and insecurity (-.480), indicating a mediating influence. The interaction terms for school environment–gender (-.953) and insecurity–gender (.845) further demonstrate that gender significantly conditions how insecurity and school environment jointly influence psychological behaviour students.

Table 5. Mediating Effect of Gender on the Relationship between Insecurity, School Environment, and Psychological Behaviour of Students in Tertiary Institutions in South East Nigeria

| Model | | School Environment | Insecurity | Gender | SchEnv_Gender | Insecurity_Gender |
|-------|--------------|--------------------|------------|--------|---------------|-------------------|
| 1 | Correlations | School Environment | 1.000 | -.858 | | |
| | | Insecurity | -.858 | 1.000 | | |
| | Covariances | School Environment | .000 | .000 | | |
| | | Insecurity | .000 | .000 | | |
| 2 | Correlations | School Environment | 1.000 | -.875 | .359 | |
| | | Insecurity | -.875 | 1.000 | -.480 | |
| | | Gender | .359 | -.480 | 1.000 | |
| | Covariances | School Environment | .000 | .000 | .001 | |
| 3 | | Insecurity | .000 | .000 | -.001 | |
| | | Gender | .001 | -.001 | .020 | |
| | Correlations | School Environment | 1.000 | -.891 | .125 | -.953 |
| | | Insecurity | -.891 | 1.000 | .293 | .842 |
| | | Gender | .125 | .293 | 1.000 | -.126 |
| | | | | | | -.354 |

| Model | School Environment | Insecurity | Gender | SchEnv_Gender | Insecurity_Gender |
|-------------|--------------------|------------|--------|---------------|-------------------|
| | SchEnv_Gender | -.953 | .842 | -.126 | 1.000 |
| | Insecurity_Gender | .845 | -.953 | -.354 | -.877 |
| Covariances | School Environment | .003 | -.003 | .004 | -.002 |
| | Insecurity | -.003 | .004 | .010 | .002 |
| | Gender | .004 | .010 | .289 | -.002 |
| | SchEnv_Gender | -.002 | .002 | -.002 | .001 |
| | Insecurity_Gender | .002 | -.002 | -.007 | .001 |

a. Dependent Variable: Psychological Behaviour

Table 6 shows that the robust M-estimators for insecurity, psychological behaviour, and school environment are stable across different estimation techniques. Insecurity recorded consistent central values around (28.67–28.73), psychological behaviour ranged from (31.72–32.45), while school environment ranged from (30.76–31.14). The narrow 95% confidence intervals and minimal bootstrap bias indicate reliable and robust estimates, confirming the stability of the variables despite potential outliers.

Table 6. Robust M-Estimators for Insecurity, School Environment, and Psychological Behaviour of Students

| | | Statistic | Bootstrap ^e | | | |
|-------------------------|-----------------------------------|-----------|------------------------|------------|-------------------------|---------|
| | | | Bias | Std. Error | 95% Confidence Interval | |
| | | | | | Lower | Upper |
| Insecurity | Huber's M-Estimator ^a | 28.6693 | .0102 | .1248 | 28.4517 | 28.9386 |
| | Tukey's Biweight ^b | 28.7302 | -.0060 | .1367 | 28.4745 | 28.9799 |
| | Hampel's M-Estimator ^c | 28.6818 | .0018 | .1147 | 28.4556 | 28.9084 |
| | Andrews' Wave ^d | 28.7279 | -.0056 | .1369 | 28.4726 | 28.9808 |
| Psychological Behaviour | Huber's M-Estimator ^a | 31.9554 | -.0015 | .1058 | 31.7245 | 32.1210 |
| | Tukey's Biweight ^b | 32.4448 | .0047 | .1308 | 32.2322 | 32.6317 |
| | Hampel's M-Estimator ^c | 31.7199 | .0138 | .1424 | 31.4838 | 31.9559 |
| | Andrews' Wave ^d | 32.4547 | .0049 | .1308 | 32.2426 | 32.6408 |
| School Environment | Huber's M-Estimator ^a | 30.7560 | .0094 | .1066 | 30.5632 | 30.9646 |
| | Tukey's Biweight ^b | 31.1384 | .0280 | .1063 | 30.9876 | 31.3689 |
| | Hampel's M-Estimator ^c | 30.7689 | .0108 | .1093 | 30.5739 | 30.9779 |
| | Andrews' Wave ^d | 31.1449 | .0297 | .1064 | 30.9951 | 31.3752 |

a. The weighting constant is 1.339.

b. The weighting constant is 4.685.

c. The weighting constants are 1.700, 3.400, and 8.500

d. The weighting constant is 1.340*pi.

e. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Table 7 indicates that the median scores for insecurity (28), psychological behaviour (32), and school environment (31) reflect moderate levels across the variables. Lower percentiles show relatively reduced experiences (insecurity = 18; psychological behaviour = 14; school environment = 16), while higher percentiles indicate elevated levels (95th percentile = 40). The narrow bootstrap confidence intervals confirm the stability and reliability of the percentile estimates across the distribution.

Table 7. Percentile Distribution of Insecurity, School Environment, and Psychological Behaviour of Students

| | | Percentiles | Percentile | Bootstrap ^a | | | |
|------------------------------------|----------------------------|-------------|------------|------------------------|------------|-------------------------|---------|
| | | | | Bias | Std. Error | 95% Confidence Interval | |
| | | | | | | Lower | Upper |
| Weighted Average (Definition 1) | Insecurity | | 5 | 18.0000 | -.0059 | .1076 | 18.0000 |
| | | | 10 | 20.0000 | .3012 | .5592 | 19.0000 |
| | | | 25 | 25.0000 | -.0440 | .2034 | 24.0000 |
| | | | 50 | 28.0000 | .0000 | .0000 | 28.0000 |
| | | | 75 | 34.0000 | -.3985 | .4879 | 33.0000 |
| | | | 90 | 37.0000 | -.0051 | .0706 | 37.0000 |
| | | | 95 | 40.0000 | -.4590 | .10765 | 37.0000 |
| Psychological Behaviour | Psychological Behaviour | | 5 | 14.0000 | .3579 | .7646 | 14.0000 |
| | | | 10 | 22.0000 | -.1916 | .3936 | 21.0000 |
| | | | 25 | 25.0000 | .3902 | .5940 | 25.0000 |

| | | Percentiles | Percentile | Bootstrap ^a | | 95% Confidence Interval | |
|--------------------|-------------------------|-------------|------------|------------------------|------------|-------------------------|---------|
| | | | | Bias | Std. Error | Lower | Upper |
| School Environment | 50 | 32.0000 | .0080 | .0863 | 32.0000 | 32.0000 | 32.0000 |
| | | 36.0000 | -.3545 | .4758 | 35.0000 | 36.0000 | 36.0000 |
| | | 37.0000 | .0312 | .1719 | 37.0000 | 37.9000 | 37.9000 |
| | | 40.0000 | .0000 | .0000 | 40.0000 | 40.0000 | 40.0000 |
| | 75 | 16.0000 | -.0634 | 2.2590 | 14.0000 | 20.0000 | 20.0000 |
| | | 22.0000 | -.0339 | .1808 | 21.0000 | 22.0000 | 22.0000 |
| | | 26.0000 | .0263 | .1570 | 26.0000 | 26.9809 | 26.9809 |
| | | 31.0000 | .0080 | .0891 | 31.0000 | 31.0000 | 31.0000 |
| | | 34.0000 | .2402 | .4250 | 34.0000 | 35.0000 | 35.0000 |
| | 90 | 37.0000 | .1472 | .3522 | 37.0000 | 38.0000 | 38.0000 |
| | | 40.0000 | .0000 | .0000 | 40.0000 | 40.0000 | 40.0000 |
| Tukey's Hinges | Insecurity | 25 | 25.0000 | -.0430 | .2005 | 24.0000 | 25.0000 |
| | | 50 | 28.0000 | .0000 | .0000 | 28.0000 | 28.0000 |
| | | 75 | 34.0000 | -.4010 | .4878 | 33.0000 | 34.0000 |
| | Psychological Behaviour | 25 | 25.0000 | .3985 | .6007 | 25.0000 | 26.9746 |
| | | 50 | 32.0000 | .0080 | .0863 | 32.0000 | 32.0000 |
| | | 75 | 36.0000 | -.3580 | .4760 | 35.0000 | 36.0000 |
| | School Environment | 25 | 26.0000 | .0275 | .1597 | 26.0000 | 26.9873 |
| | | 50 | 31.0000 | .0080 | .0891 | 31.0000 | 31.0000 |
| | | 75 | 34.0000 | .2375 | .4225 | 34.0000 | 35.0000 |

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Table 8 shows that the highest scores for insecurity, psychological behaviour, and school environment reached the maximum value (40.00), recorded among both male and female respondents. The lowest scores varied across variables, with insecurity at (13.00), psychological behaviour at (12.00), and school environment at (10.00). These extremes indicate wide variability in students' experiences and psychological responses across genders

Table 8. Extreme Values of Insecurity, Psychological Behaviour, and School Environment According to Gender

| | | | Case Number | Gender | Value |
|-------------------------|---------|---|-------------|--------|--------------------|
| Insecurity | Highest | 1 | 82 | Male | 40.00 |
| | | 2 | 86 | Male | 40.00 |
| | | 3 | 94 | Female | 40.00 |
| | | 4 | 99 | Female | 40.00 |
| | | 5 | 110 | Female | 40.00 ^a |
| | Lowest | 1 | 2846 | Male | 13.00 |
| | | 2 | 2741 | Male | 13.00 |
| | | 3 | 2688 | Male | 13.00 |
| | | 4 | 2583 | Male | 13.00 |
| | | 5 | 2315 | Male | 13.00 ^b |
| Psychological Behaviour | Highest | 1 | 82 | Male | 40.00 |
| | | 2 | 86 | Male | 40.00 |
| | | 3 | 89 | Male | 40.00 |
| | | 4 | 94 | Female | 40.00 |
| | | 5 | 110 | Female | 40.00 ^a |
| | Lowest | 1 | 2884 | Female | 12.00 |
| | | 2 | 2813 | Female | 12.00 |
| | | 3 | 2655 | Female | 12.00 |
| | | 4 | 2387 | Female | 12.00 |
| | | 5 | 2242 | Female | 12.00 ^c |
| School Environment | Highest | 1 | 1 | Male | 40.00 |
| | | 2 | 82 | Male | 40.00 |
| | | 3 | 86 | Male | 40.00 |
| | | 4 | 94 | Female | 40.00 |
| | | 5 | 110 | Female | 40.00 ^a |
| | Lowest | 1 | 2980 | Male | 10.00 |
| | | 2 | 2961 | Female | 10.00 |
| | | 3 | 2916 | Female | 10.00 |
| | | 4 | 2903 | Female | 10.00 |
| | | 5 | 2857 | Male | 10.00 ^d |

a. Only a partial list of cases with the value 40.00 are shown in the table of upper extremes.

b. Only a partial list of cases with the value 13.00 are shown in the table of lower extremes.

c. Only a partial list of cases with the value 12.00 are shown in the table of lower extremes.
 d. Only a partial list of cases with the value 10.00 are shown in the table of lower extremes.

Table 9 shows that Model 1, including school environment and insecurity, explains a substantial proportion of variance in psychological behaviour ($R^2 = .767$; $N = 3000$; $p = .000$). Adding gender in Model 2 slightly increased explanatory power ($R^2 = .769$; $\Delta R^2 = .002$; $p = .000$). Model 3, incorporating interaction terms (SchEnv_Gender and Insecurity_Gender), further improved the model ($R^2 = .826$; $\Delta R^2 = .058$; $p = .000$), indicating a strong combined effect on psychological behaviour students. Durbin-Watson value (1.739) suggests minimal autocorrelation.

Table 9. Model Summary for the Influence of Insecurity, School Environment, and Gender on Psychological Behaviour of Students

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|------|---------------|---------------|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .876 ^a | .767 | .767 | 3.29624 | .767 | 4925.106 | 2 | 2997 | .000 | |
| 2 | .877 ^b | .769 | .768 | 3.28332 | .002 | 24.624 | 1 | 2996 | .000 | |
| 3 | .909 ^c | .826 | .826 | 2.84501 | .058 | 498.133 | 2 | 2994 | .000 | 1.739 |

a. Predictors: (Constant), School Environment, Insecurity
 b. Predictors: (Constant), School Environment, Insecurity, Gender
 c. Predictors: (Constant), School Environment, Insecurity, Gender, SchEnv_Gender, Insecurity_Gender
 d. Dependent Variable: Psychological Behaviour

Table 10 shows that all three models are statistically significant ($p = .000$), indicating that school environment and insecurity strongly predict psychological behaviour. However, the inclusion of gender in Model 2 did not meaningfully increase the variance explained, and interaction terms in Model 3, though significant, do not indicate that gender has a substantial mediating effect. This confirms that gender does not significantly mediate the relationship between insecurity, school environment, and psychological behaviour students.

Table 10. ANOVA Results for the Influence of Insecurity, School Environment, and Gender on Psychological Behaviour of Students

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|------|-------------|----------|-------------------|
| 1 | Regression | 107024.456 | 2 | 53512.228 | 4925.106 | .000 ^b |
| | Residual | 32562.983 | 2997 | 10.865 | | |
| | Total | 139587.439 | 2999 | | | |
| 2 | Regression | 107289.904 | 3 | 35763.301 | 3317.493 | .000 ^c |
| | Residual | 32297.535 | 2996 | 10.780 | | |
| | Total | 139587.439 | 2999 | | | |
| 3 | Regression | 115353.759 | 5 | 23070.752 | 2850.324 | .000 ^d |
| | Residual | 24233.680 | 2994 | 8.094 | | |
| | Total | 139587.439 | 2999 | | | |

a. Dependent Variable: Psychological Behaviour
 b. Predictors: (Constant), School Environment, Insecurity
 c. Predictors: (Constant), School Environment, Insecurity, Gender
 d. Predictors: (Constant), School Environment, Insecurity, Gender, SchEnv_Gender, Insecurity_Gender

Table 11 shows that in Model 1, insecurity negatively predicts psychological behaviour ($B = -.314$; $\beta = -.288$; $p = .000$), while school environment has a strong positive effect ($B = 1.151$; $\beta = 1.111$; $p = .000$). In Model 2, adding gender shows a small but significant positive effect ($B = .701$; $\beta = .050$; $p = .000$). Model 3, with interaction terms, reveals that neither gender nor the interactions substantially mediate the relationships, despite significant coefficients, suggesting that gender's mediating effect is minimal. Collinearity statistics indicate potential multicollinearity in Model 3, as VIF values exceed recommended thresholds.

Table 11. Regression Coefficients for the Influence of Insecurity, School Environment, and Gender on Psychological Behaviour of Students

| Model | Unstandardized Coefficients | | Standardized Coefficients Beta | t | Sig. | Correlations | | | Collinearity Statistics | |
|-------|-----------------------------|------------|-----------------------------------|--------|--------|--------------|---------|-------|-------------------------|---------|
| | B | Std. Error | | | | Zero-order | Partial | Part | Tolerance | VIF |
| 1 | (Constant) | 5.027 | .291 | 17.302 | .000 | | | | | |
| | Insecurity | -.314 | .019 | -.288 | - | .000 | .665 | -.293 | -.148 | .263 |
| | School Environment | 1.151 | .018 | 1.111 | 16.775 | .000 | .863 | .763 | .570 | .263 |
| 2 | (Constant) | 4.475 | .310 | 14.433 | .000 | | | | | |
| | Insecurity | -.365 | .021 | -.335 | - | .000 | .665 | -.299 | -.151 | .203 |
| | School Environment | 1.185 | .019 | 1.143 | 17.156 | .000 | .863 | .751 | .547 | .229 |
| 3 | (Constant) | 1.404 | .793 | 1.770 | .077 | | | | | |
| | Insecurity | 1.433 | .061 | 1.317 | 23.463 | .000 | .665 | .394 | .179 | .018 |
| | School Environment | -.399 | .054 | -.385 | -7.324 | .000 | .863 | -.133 | -.056 | .021 |
| | Gender | 3.145 | .537 | .225 | 5.853 | .000 | .092 | .106 | .045 | .039 |
| | Insecurity_Gender | - | .037 | -3.324 | - | .000 | .359 | -.490 | -.234 | .005 |
| | SchEnv_Gender | 1.144 | | | 30.778 | | | | | 201.156 |
| | | 1.010 | .033 | 2.820 | 30.346 | .000 | .516 | .485 | .231 | .007 |
| | | | | | | | | | | 148.933 |

a. Dependent Variable: Psychological Behaviour

3.2. Discussion

The strong positive correlation between insecurity and psychological behaviour among students in South East Nigeria ($r = .665$, $p = .000$) indicates that higher insecurity is associated with increased psychological challenges. This finding agreed with Akinfalabi et al. (2023), who reported that insecurity disrupts students' mental health, leading to anxiety, fear, and reduced academic engagement. In a related study, Anyaeji (2022) found that insecurity in tertiary institutions negatively affects students' emotional stability and overall well-being. Similarly, Andrew et al. (2023) observed that economic and social insecurity significantly influence university students' academic performance and psychological health. In contrast, Ofor-Douglas (2022) noted that the severity of insecurity varies across institutions, suggesting that local factors may modulate its psychological impact. These studies collectively underscore that insecurity is a major determinant of psychological behaviour students in Nigerian tertiary institutions.

Regarding the school environment, a very strong positive correlation with psychological behaviour ($r = .863$, $p = .000$) was observed. This finding aligns with Ekiugbo (2023), who emphasized that a supportive school environment enhances student engagement and emotional well-being. In a related study, Gidado et al. (2023) demonstrated that physical and social aspects of the learning environment significantly correlate with academic achievement and psychological adjustment, supporting the assertion that environmental quality is critical for student outcomes. Similarly, Ikegbusi et al. (2022) reported that adequate school facilities and infrastructure positively influence students' academic performance and mental stability. In contrast, inadequate learning environments exacerbate stress and behavioral issues, as observed by Mtimkulu (2022), indicating that environmental deficits intensify psychological vulnerability. These findings collectively highlight the pivotal role of school environment in shaping students' psychological responses.

The analysis of gender as a mediating factor showed minimal influence on the relationship between insecurity, school environment, and psychological behaviour. While gender exhibited associations with insecurity and school environment, interaction terms did not meaningfully mediate psychological behaviour. This finding agrees with Uzor and Ikenga (2023), who noted that although gender differences exist in perceptions of school safety, contextual factors such as institutional policies and local insecurity conditions have a stronger effect on psychological outcomes. In contrast, Ata-Agboni et al (2024) found gendered differences in vulnerability to insecurity, with females reporting higher anxiety under insecure conditions, suggesting that mediation effects may be context-specific. Therefore, while gender correlates with study variables, its mediating effect is limited within the South East Nigerian tertiary context.

Robust M-estimators and percentile analyses confirmed the stability of insecurity, school environment, and psychological behaviour estimates, indicating reliability despite potential outliers. This methodological robustness resonates with Pedrini et al (2022), who recommended bootstrapped or robust statistical methods when analyzing educational and psychological variables. Extreme value analysis revealed that high and low scores occurred across genders, reflecting heterogeneous experiences and responses, consistent with the observations of Anyaeji (2022) regarding variability in students' experiences under insecure and supportive learning conditions.

4. Conclusion

The study concluded that insecurity and school environment significantly influence the psychological behaviour of students in tertiary institutions in South East Nigeria. Findings revealed that higher levels of insecurity are strongly associated with increased psychological challenges, including anxiety, fear, and emotional instability, while a positive and supportive school environment enhances students' mental well-being and promotes adaptive psychological behaviour. Although gender showed some association with insecurity and school environment, it did not significantly mediate the relationship between these factors and psychological behaviour students. The results underscore the importance of creating secure and conducive learning environments to mitigate the negative psychological effects of insecurity. Tertiary institutions must therefore implement comprehensive security measures, enhance infrastructural and social aspects of the learning environment, and provide psychosocial support services to foster students' mental health and overall academic performance.

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Data Availability

The datasets generated during and/ or analyzed during the current study are available from the corresponding author on reasonable request.

Declaration on AI Use

The authors declare that no artificial intelligence (AI) or AI-assisted tools were used in the preparation of this manuscript. AI were used only to improve readability and language under strict human oversight; no content, ideas, analyses, or conclusions were generated by AI.

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