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THE INTERPLAY BETWEEN INSECURITY AND POVERTY IN NIGERIA: IMPLICATIONS FOR STEM TEACHER EDUCATION AND NATIONAL DEVELOPMENT

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Abstract

Nigeria faces a dual crisis of poverty and insecurity, both of which have profound implications for education and national development. This study explored preservice teachers' perceptions of insecurity as a predictor of poverty and examined the implications for STEM (Science, Technology, Engineering, and Mathematics) education. A quantitative, correlational survey design was adopted, involving 349 senior preservice STEM teachers from a first-generation Nigerian university. Two validated and reliable instruments the Perception of Insecurity Scale ($\alpha = 0.94$) and the Poverty Measurement Scale ($\alpha = 0.92$) were administered. Findings revealed high levels of perceived insecurity and poverty among participants. Regression analysis indicated a strong, statistically significant relationship between perceived insecurity and poverty ($r = 0.86$, $p < 0.05$), with insecurity predicting 74% of the variance in perceived poverty ($\beta = 0.86$, $t = 30.88$, $p < 0.001$). Participants identified ritual killings, kidnapping, banditry, herder-farmer conflicts, and terrorism as primary drivers of insecurity and poverty. The study concludes that insecurity exacerbates poverty and undermines the quality of STEM education in Nigeria. Recommendations for addressing these challenges include policy reforms, teacher training on trauma-informed practices, and enhanced community-based security measures.

Keywords: Insecurity, Poverty, Preservice teachers, STEM education, Nigeria

Introduction

Nigeria is endowed with abundant human and natural resources, yet it grapples with complex socio-economic and political challenges. Among these, insecurity and poverty stand out as persistent threats to sustainable development and national stability. Although insecurity is a global phenomenon, its manifestations in developing countries such as Nigeria are more severe and pervasive. Terrorism, violent crimes, and political instability have disrupted lives and communities, while deepening economic disparities (Egunjobi, 2021). Insecurity can be conceptualized as a state of vulnerability to threats, dangers, or violence (Oyibo, 2016). It includes acts such as terrorism, armed robbery, kidnapping, and communal conflicts, which undermine safety and disrupt social cohesion. Nigeria's insecurity landscape is highly regionalized: insurgency and terrorism dominate the northeast, ritual killings are rampant in the southwest, kidnapping is widespread in the southeast, while farmer-herder clashes are prevalent across the middle belt (Achumba et al., 2013). These realities have rendered Nigeria one of the most dangerous countries to live in, reflected in its consistently low ranking on the Global Peace Index. The relationship between poverty and insecurity is deeply intertwined. Poverty has been described as multidimensional, encompassing deprivation of basic needs, lack of opportunities, and limited access to education and health services (World

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Bank, 2000). In Nigeria, over 90 million people live below the international poverty line of \$2.15 per day (National Bureau of Statistics, 2022). Widespread poverty reduces social resilience and creates fertile ground for crime and violence. Conversely, insecurity destroys infrastructure, disrupts markets, and discourages investment, thereby perpetuating poverty (Egunjobi, 2021). Education, particularly STEM education, plays a pivotal role in breaking this cycle. STEM skills are critical for innovation, technological advancement, and economic diversification. However, insecurity and poverty have led to school closures, displacement of teachers and students, and reduced access to quality STEM learning opportunities (Awofala, 2020). This study investigated preservice STEM teachers' perceptions of insecurity as a driver of poverty, with the aim of informing policies that can improve teacher preparation and national STEM outcomes.

Problem Statement

The Nigerian education system is in crisis due to the combined effects of insecurity and poverty. In many regions, schools have been forced to close due to violent attacks, kidnappings, and communal clashes. Poverty compounds this challenge by restricting access to educational resources, increasing dropout rates, and reducing students' academic achievement. The consequences are particularly severe for STEM education, where laboratories, equipment, and specialized teachers are essential but often unavailable. Without urgent intervention, Nigeria risks a shortage of skilled STEM professionals, hindering innovation and global competitiveness. Despite extensive research on poverty and insecurity in Nigeria, few studies have explored these issues from the perspective of preservice STEM teachers. Most existing studies focus on macro-level analyses of economic and political factors, overlooking the lived experiences of individuals preparing to work in vulnerable education systems. This study addresses this gap by examining how preservice STEM teachers perceive the relationship between insecurity and poverty, and how these perceptions may influence their professional trajectories. By focusing on STEM education, the study highlights an area of strategic importance for Nigeria's development. If preservice STEM teachers are to lead efforts in fostering innovation and technological progress, they must be equipped not only with technical knowledge but also with resilience and hope in the face of societal challenges like poverty and insecurity.

Objectives of the Study

The study sought to:

- 1) Determine the level of preservice STEM teachers' perception of insecurity in Nigeria.
- 2) Determine the level of preservice STEM teachers' perception of poverty in Nigeria.
- 3) Examine the relationship between preservice STEM teachers' perceptions of insecurity and poverty.
- 4) Investigate whether perceptions of insecurity significantly predict perceptions of poverty.

Research Questions

- 1) What is the level of preservice STEM teachers' perception of insecurity in Nigeria?
- 2) What is the level of preservice STEM teachers' perception of poverty in Nigeria?

Hypothesis

H₀₁: There is no statistically significant relationship between preservice STEM teachers' perception of insecurity and poverty in Nigeria.

H₀₂: There is no statistically significant predictive influence of perceived insecurity on preservice STEM teachers' perceived poverty in Nigeria.

Literature Review

Global Context of Poverty and Insecurity

Poverty and insecurity are two interlinked global challenges that continue to dominate development discourse and policy debates. The United Nations Sustainable Development Goals (SDGs), particularly Goal 1 (No Poverty) and Goal 16 (Peace, Justice, and Strong Institutions), underscore the urgency of addressing these issues simultaneously. Poverty is a multidimensional phenomenon encompassing deprivation in income, access to services, education, health, and overall well-being (World Bank, 2000). It is not merely the absence of income but reflects a lack of opportunities and resources necessary for individuals to live dignified lives. According to the World Bank (2023), approximately 9.2% of the global population about 719 million people live in extreme poverty, defined as living on less than \$2.15 per day. Insecurity, on the other hand, encompasses threats to human life, property, and social stability. The Global Peace Index (2024) highlights rising global insecurity, fueled by violent conflicts, terrorism, organized crime, political instability, and climate-induced crises. These conditions disproportionately affect low- and middle-income countries, particularly in sub-Saharan Africa, where state capacity to manage crises is often limited (Collier & Hoeffler, 2018).

The relationship between poverty and insecurity is complex and cyclical. Poverty creates fertile ground for violence by fostering resentment, exclusion, and frustration, while insecurity undermines economic growth by destroying infrastructure, disrupting markets, and discouraging investment (Kanbur, 2007). This “poverty-insecurity trap” has been extensively documented in fragile states where weak institutions are unable to protect citizens or provide essential services (Stewart, 2016). Addressing one without the other often yields limited results, as poverty alleviation programs are frequently undermined by conflict, and security reforms fail to gain traction in contexts of widespread deprivation.

Poverty and Insecurity in Sub-Saharan Africa

Sub-Saharan Africa remains the epicenter of global poverty, hosting over 60% of the world’s extreme poor (World Bank, 2023). The region’s poverty is driven by factors such as rapid population growth, dependence on subsistence agriculture, inadequate infrastructure, poor governance, and recurring conflicts. According to the 2022 African Economic Outlook by the African Development Bank (AfDB, 2022), Africa faces significant economic losses from insecurity and conflict, which exacerbate poverty, job losses, and undermine public investment in sectors like education and health. Insecurity in sub-Saharan Africa manifests in diverse forms, including terrorism (e.g., Boko Haram in Nigeria, Al-Shabaab in Somalia), political instability (e.g., coups in Niger, Mali, and Burkina Faso), civil war and ethnic militias (e.g., insurrections in South Sudan), communal violence, and organized crime. These insecurities have devastating socio-economic consequences, displacing millions and increasing the vulnerability of already impoverished populations. For instance, the United Nations High Commissioner for Refugees (UNHCR, 2023) reports that over 43 million Africans are either internally displaced or living as refugees due to conflict and insecurity. The interplay between poverty and insecurity is evident in the region. In many contexts, poverty drives young people toward violent groups that offer income, identity, and a sense of belonging (Mercy Corps, 2016). Conversely, persistent violence disrupts markets, deters foreign investment, and destroys livelihoods, thereby perpetuating cycles of poverty. Countries like Somalia, South Sudan, and the Democratic Republic of Congo exemplify this vicious cycle, where conflict and deprivation reinforce each other. Nigeria, as Africa’s most populous country and largest economy, provides a critical case study for examining these dynamics.

Nigeria: A Paradox of Wealth and Poverty

Nigeria is often described as a paradox of wealth amid widespread poverty. Rich in oil, gas, and other natural resources, the country holds significant potential for economic prosperity. However, decades of poor governance, corruption, and mismanagement have left a majority of Nigerians impoverished. According to the National Bureau of Statistics (NBS, 2022), over 133 million Nigerians 63% of the population are multidimensionally poor, facing deprivations in health, education, housing, and living standards. The structural drivers of poverty in Nigeria include: Nigeria's mono-economy which relies heavily on oil exports, making it vulnerable to fluctuations in global oil prices. This dependence has stifled diversification and weakened the agricultural and manufacturing sectors. Youth unemployment remains critically high, with millions of graduates unable to secure jobs (Okoye & Nwakobi, 2020). Unemployment not only exacerbates poverty but also fuels insecurity as idle youth become susceptible to recruitment by criminal groups. Nigeria exhibits sharp income and regional disparities, with northern regions significantly poorer than the south (Awojobi, 2014). Such inequalities create tensions that often manifest in violent conflicts. Limited access to electricity, roads, and clean water hampers economic activity and quality of life, particularly in rural areas.

Patterns of Insecurity in Nigeria

Insecurity in Nigeria has evolved over time, reflecting a complex interplay of historical, economic, and political factors. Major manifestations include Boko Haram's insurgency in the northeast which has claimed thousands of lives and displaced millions since 2009. The group's attacks on schools, epitomized by the kidnapping of the Chibok girls in 2014, have profoundly disrupted education. Northwestern Nigeria faces rampant banditry, including mass kidnappings of schoolchildren for ransom. Central regions experience violent clashes between pastoralist herders and sedentary farmers, driven by resource competition and climate change (Oladipo, Awofala, & Osokoya, 2020). Attacks on oil infrastructure disrupt production and deter investment in the Niger delta region of the country. Major cities in Nigeria grapple with armed robbery, ritual killings, and other violent crimes. These insecurities are geographically diverse but collectively undermine Nigeria's stability and development. The Global Peace Index (2024) ranks Nigeria among the world's least peaceful countries, reflecting the severity of these threats.

Education in the Context of Insecurity and Poverty

Education is both a victim and potential solution to the poverty-insecurity nexus. Insecure environments disrupt schooling by destroying infrastructure, displacing students and teachers, and instilling fear. Poverty compounds these disruptions by limiting access to resources such as textbooks, technology, and qualified teachers. The United Nations Children's Fund (UNICEF, 2023) estimates that 10.5 million Nigerian children are out of school, the highest figure globally. Many of these children live in conflict-affected northern states. STEM education is particularly vulnerable because it requires specialized resources such as laboratories, equipment, and trained teachers.

When insecurity forces schools to close or operate under fear, STEM learning suffers disproportionately. This has dire consequences for Nigeria's economic future, as STEM skills are essential for innovation, industrialization, and global competitiveness. Teacher preparation programs face unique challenges in this context. Preservice teachers must navigate their own fears and uncertainties while preparing to educate future generations. Their perceptions of insecurity and poverty can influence their teaching practices, career choices, and ability to inspire students. If preservice teachers internalize negative beliefs about the inevitability of poverty and violence, these attitudes may be transmitted to their students, perpetuating cycles of despair.

Theoretical Linkages: Insecurity as a Predictor of Poverty

The relationship between insecurity and poverty has been conceptualized through various theoretical frameworks including frustration-aggression theory, conflict trap theory, and human security framework. Frustration-Aggression Theory suggests that poverty-induced frustrations can lead to aggression and violence, thereby escalating insecurity (Dollard et al., 1939). Conflict Trap Theory according to Collier et al. (2003) argue that countries experiencing conflict are trapped in cycles where violence destroys economic capacity, which in turn fuels further conflict. Human Security Framework expands the definition of security beyond military threats to include economic, environmental, and social dimensions (UNDP, 1994). This framework is particularly relevant for understanding how poverty undermines human dignity and security. Empirical evidence on the directionality of this relationship is mixed. Some studies suggest that poverty is a root cause of insecurity (Idris & Salisu, 2020; Oduwole, 2015), while others argue that insecurity drives poverty by disrupting economic activities (Okunola et al., 2020). It is likely that the relationship is bidirectional, forming a vicious cycle that is difficult to break.

STEM Education and National Development

STEM education is central to Nigeria's aspirations for economic diversification and technological advancement. Nations with strong STEM capabilities are better positioned to compete in the global knowledge economy, address local challenges, and foster innovation (OECD, 2019). In Nigeria, however, STEM education faces systemic barriers. First, many schools lack laboratories, equipment, and reliable electricity. Second, there is a critical shortage of qualified STEM teachers, exacerbated by insecurity and poor working conditions. Third, girls are underrepresented in STEM fields, particularly in northern Nigeria where cultural norms restrict their educational opportunities. Fourth, STEM curricula are often outdated and disconnected from local realities. Addressing these challenges requires not only investments in resources but also attention to the socio-political context in which education occurs. Insecure environments discourage both teachers and students from engaging fully with STEM subjects, creating a feedback loop that undermines national development. Preservice teachers occupy a unique position in the education system.

As future educators, their perceptions, attitudes, and experiences shape the quality of education they will deliver. Understanding preservice teachers' perceptions of insecurity and poverty is critical for several reasons. First, teachers who feel insecure or pessimistic about societal conditions may struggle to inspire students or adopt innovative pedagogies. Second, negative perceptions may deter preservice teachers from entering or remaining in the profession, exacerbating teacher shortages. Third, preservice teachers represent the youth demographic, providing valuable insights into how young Nigerians perceive and respond to societal challenges. Fourth, STEM teaching requires confidence and specialized skills. Fear and uncertainty can undermine the development of these competencies.

Methodology

Research Design and Participants

A quantitative, correlational survey design was employed through the philosophy of positivism (Ajao, Akinoso, & Awofala, 2023; Awofala, Lawal, Arigbabu, & Fatade, 2022). The target population consisted of 436 senior-level preservice STEM teachers enrolled in the Faculty of Education at a first-generation Nigerian university. These students were in their final year of study and distributed across six STEM education programmes: Biology Education (n=127), Chemistry Education (n=68), Integrated Science Education (n=47), Mathematics Education (n=96), Physics Education (n=34), and

Technology and Engineering Education (n=64). Using simple random sampling, 349 preservice teachers were selected, representing 80% of the total population. This sample size was determined based on Krejcie and Morgan's (1970) sampling table, ensuring sufficient statistical power for inferential analysis. Demographic profile of participants showed age range: 19–32 years (Mean = 22.2, SD = 1.3) and gender with 55% female (n = 192) and 45% male (n = 157).

Research Instruments

Two main instruments were employed to collect data for this study including Perception of Insecurity Scale (PIS) and Poverty Measurement Scale (PMS). These instruments were designed to measure preservice STEM teachers' perceptions of insecurity and poverty, respectively. They were constructed based on relevant literature, validated by experts, and tested for reliability to ensure they accurately captured the constructs under investigation.

Perception of Insecurity Scale (PIS)

The Perception of Insecurity Scale (PIS) was specifically developed to measure preservice STEM teachers' perceptions of insecurity within the Nigerian socio-political and educational context. It captured respondents' views on various dimensions of insecurity, such as terrorism, violent crimes, school safety, communal clashes, and personal fear of harm. The PIS comprised 30 items, divided into five subscales (Psychological Impact and Fear, School Safety and Violence, Community and Farmer-Herder Conflicts, Kidnapping and Banditry, and Terrorism and Insurgency) representing different dimensions of insecurity. Each item was rated on a five-point Likert scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Undecided; 4 = Agree; and 5 = Strongly Agree. The scale allows for nuanced measurement of participants' agreement with each statement, yielding a total score between 30 and 150, with higher scores indicating a higher perception of insecurity. Scores ranging from 30-74 indicate low perception of insecurity, scores ranging from 75-104 indicate moderate perception of insecurity while scores ranging from 105-150 indicate high perception of insecurity. The PIS was developed for four main reasons: (1) to provide a comprehensive measure of the various forms of insecurity prevalent in Nigeria. (2) to reflect the unique experiences of preservice STEM teachers, who are both learners and future educators. (3) to generate data that can inform policy interventions aimed at improving safety in schools and communities and (4) to serve as a reliable tool for future research linking insecurity to other socio-economic variables such as poverty, motivation, and educational outcomes. Three experts in educational psychology, economics education, and security studies reviewed the items for relevance, clarity, and cultural appropriateness. Their feedback led to minor revisions in wording and item arrangement. A pilot test was conducted with 50 preservice teachers from a university not included in the main study. The internal consistency of the instrument was evaluated using Cronbach's Alpha, yielding a reliability coefficient of $\alpha = 0.94$, indicating excellent reliability.

Poverty Measurement Scale (PMS)

The Poverty Measurement Scale (PMS) was designed to measure preservice STEM teachers' perceptions of poverty, emphasizing their views on the availability of resources, economic opportunities, and basic needs. It reflects poverty as a multidimensional construct, incorporating economic, social, and educational aspects. The PMS consisted of 10 items, grouped into three dimensions: Educational Opportunity and Social Mobility, Access to Basic Needs and Services, and Economic Deprivation & Resource Scarcity. The PMS was specifically developed to: (1) capture multidimensional aspects of poverty relevant to Nigeria's socio-economic realities; (2) provide a reliable measure for understanding preservice STEM teachers' perspectives on how poverty affects education and social development; (3) inform policy decisions and interventions aimed at reducing

poverty's impact on STEM education; and (4) complement the Perception of Insecurity Scale (PIS) to explore the relationship between insecurity and poverty. The development of the instrument followed systematic steps to ensure rigour. Items were generated based on theoretical frameworks such as the Human Security Framework (UNDP, 1994), Conflict Trap Theory (Collier et al., 2003), and multidimensional poverty concepts (World Bank, 2000).

Empirical studies on insecurity and poverty in Nigeria provided contextual grounding. Content and face validity were established through reviews by experts in education, psychology, and economics. Preliminary versions of the scales were administered to a small group of preservice teachers ($n=50$) to identify ambiguous wording and refine item clarity. Revisions were made based on pilot test feedback and statistical analyses, resulting in the final version used for the main study. Participants rated each item on a five-point Likert scale: 1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Often; and 5 = Almost Always. The total score could range from 10 to 50, with higher scores reflecting greater perceived poverty. The PMS demonstrated a strong internal consistency with Cronbach's Alpha of $\alpha = 0.92$, indicating high reliability. Scores ranging from 10 to 24 indicate low perception of poverty; scores ranging from 25 to 37 indicate moderate perception of poverty; and scores ranging from 38 to 50 indicate high perception of poverty.

Data Collection and Analysis

The data collection process was carefully planned to ensure validity, reliability, and adherence to ethical standards. The process was conducted in several stages. Approval to conduct the study was sought and obtained from the Faculty of Education Research Ethics Committee of the university used for the study. This ensured that the study adhered to institutional and national ethical guidelines for research involving human participants. Formal letters of introduction and permission were sent to the Heads of the Department of Science Education and Department of Technology and Vocational Education in the participating university to gain access to preservice STEM teachers. Six research assistants were trained to administer the instruments and guide participants during data collection.

The training covered: purpose of the study; proper handling of questionnaires; strategies for addressing participant questions without influencing responses; and procedures for ensuring participant confidentiality and consent. Ethical approval was secured, and informed consent was obtained from all participants. The questionnaires were administered during scheduled class sessions to ensure high response rates. Participants were provided with informed consent forms, which clearly explained: (1) The study's objectives; (2) Voluntary nature of participation; (3) Right to withdraw at any stage without penalty; and (4) Assurance of confidentiality and anonymity. Research assistants distributed the questionnaires and addressed clarifying questions. Each session lasted approximately 30–40 minutes, including instructions, completion of the survey, and collection. Completed questionnaires were immediately reviewed for missing data before participants were dismissed. This ensured that the students fully completed the survey, yielding a 100% response rate. Completed questionnaires were stored securely in locked cabinets, and digital data were password-protected. Care was taken to avoid any psychological harm, especially when discussing sensitive topics such as violence and poverty. Questionnaires were coded numerically, with no identifying information recorded and data were analyzed using IBM SPSS (Version 25).

Descriptive statistics (mean, standard deviation, frequency) addressed the research questions, while Pearson product-moment correlation coefficient and linear regression analysis tested the hypotheses at a 5% level of significance. Using Cohen's (1988) guidelines: $r = 0.10$ – 0.29 shows small correlation; $r = 0.30$ – 0.49 shows moderate correlation; and $r \geq 0.50$ shows strong correlation. The

regression model was specified as: $Y=a+bX+e$, where: Y = Poverty score; a = Intercept; b = Regression coefficient (slope); X = Insecurity score; e = Error term. Statistical outputs included: R (Correlation Coefficient) which indicates the strength of the relationship between insecurity and poverty. R^2 (Coefficient of Determination) which shows the percentage of variance in poverty explained by insecurity. F-Statistic which tests the overall significance of the model. t-Statistic for Beta Coefficient which determines whether insecurity significantly predicts poverty. Decision Rule: If $p < 0.05$, the null hypothesis (no predictive relationship) is rejected. If $p \geq 0.05$, the null hypothesis is accepted.

Results

Research Question One: What is the level of preservice STEM teachers' perception of insecurity in Nigeria?

Table 1: Levels of Perception of Insecurity

Level of Perception	Score Range	Frequency (f)	Percentage (%)
Low	30 – 74	56	16.0
Moderate	75 – 104	98	28.0
High	105 – 150	195	56.0
Total	-	349	100.0

Mean (M) = 4.88, SD = 1.26

Descriptive statistics were computed to determine participants' perception of insecurity, including frequencies, percentages, mean scores, and standard deviations. Table 1 presents participants' levels of perception of insecurity ($N = 349$). A majority of respondents (56.0%, $n = 195$) scored in the 'High' range (105–150) on the insecurity scale, indicating substantial perceived insecurity within the sample. Twenty-eight percent ($n = 98$) scored in the 'Moderate' range (75–104), while 16.0% ($n = 56$) were classified as 'Low' (30–74). These results indicate that perceived insecurity is prevalent in this sample. A majority of respondents report relatively high levels of perceived insecurity. Only a minority (about one in six) report low perceptions of insecurity.

Table 2. Descriptive statistics of preservice STEM teachers' perception of insecurity

Item	Statement	$\bar{x}$	SD
Psychological Impact and Fear Cronbach alpha (α) = 0.93			
1.	Rising insecurity makes me uncertain about my future career as a teacher.	4.43	1.09
2.	Fear of insecurity limits my willingness to participate in outdoor educational activities.	4.46	1.34
3.	Insecurity has caused trauma and stress among many Nigerians, including students and teachers.	4.69	1.51
4.	The constant threat of insecurity affects my concentration and academic performance.	4.35	1.11
5.	I often feel unsafe while moving around within my community.	4.68	1.15
6.	News reports of violence and terrorism increase my anxiety and fear.	4.78	1.06
School Safety and Violence Cronbach alpha (α) = 0.94			
		$\bar{x}$	SD
7.	The government has failed to provide safe learning environments for Nigerian students.	4.53	1.14
8.	Many preservice teachers fear being posted to rural areas for teaching practice due to insecurity.	4.65	1.15
9.	Teachers are increasingly at risk of violence or threats within them		

workplace.	4.32	1.00
10. Fear of attacks in schools negatively affects students' motivation to learn.	4.08	1.02
11. Rising insecurity has caused frequent closures of schools in conflict-prone regions.	4.99	1.23
12. Schools in Nigeria lack adequate security measures to protect students and teachers.	4.48	1.13
Communal Clashes and Farmer-Herder Conflicts Cronbach alpha (α)=0.92 $\bar{x}$	SD	
13. Insecurity arising from communal clashes discourages teachers and students from attending school.	4.43	1.11
14. Government policies to manage communal conflicts have been largely ineffective.	4.32	1.31
15. Climate change and environmental degradation contribute to violent conflicts between herders and farmers.	4.38	1.12
16. Communal clashes have led to the destruction of lives, property, and educational infrastructure.	4.31	1.07
17. Land disputes are a major source of communal violence in many parts of the country.	4.65	1.06
18. Farmer-herder conflicts pose a significant threat to peace and stability in Nigeria.	4.68	1.08
Impact of Insecurity on Education Cronbach alpha (α) = 0.94 $\bar{x}$	SD	
19. Fear of kidnapping negatively impacts the quality of education in conflict-prone areas.	4.54	1.09
20. Banditry has significantly affected agricultural production and food security in Nigeria.	4.86	1.09
21. Kidnapping for ransom has become a profitable criminal enterprise in Nigeria.	4.89	1.03
22. Traveling within Nigeria has become unsafe due to rampant kidnapping and banditry.	4.83	1.14
23. Mass abduction of schoolchildren has made many parents reluctant to send their children to school.	4.78	1.09
24. The rate of kidnapping in Nigeria is alarmingly high and causes fear among citizens.	4.88	1.02
Terrorism and Insurgency Cronbach alpha (α) = 0.95 $\bar{x}$	SD	
25. Terrorist groups target schools and students, causing fear and disruption to learning.	4.36	1.12
26. Government efforts to combat terrorism in Nigeria have been largely ineffective.	4.64	1.11
27. The fear of terrorist attacks influences my willingness to travel to certain parts of Nigeria.	4.52	1.21
28. Terrorism in the northeast of Nigeria affects the security of other regions of the country.	4.61	1.07
29. The Boko Haram insurgency poses a serious threat to the survival of the Nigerian education system.	4.36	1.01
30. Terrorist activities in Nigeria have disrupted the quality of education nationwide.	4.45	1.02

Table 2 showed the descriptive statistics of the 30 items of perception of insecurity. The psychological impact and fear dimension has six items with means ($\bar{x}$) ranging from 4.35 to 4.78. In

short, these preservice STEM teachers showed high perception of psychological impact and fear. School safety and violence has six items with means ($\bar{x}$) ranging from 4.08 to 4.99. In general, these preservice STEM teachers showed high perception of school safety and violence. The communal clashes and farmer-herder conflicts has six items with means ($\bar{x}$) ranging from 4.31 to 4.68. Thus, these preservice STEM teachers showed high communal clashes and farmer-herder conflicts. The impact of security on education has six items with means ($\bar{x}$) ranging from 4.54 to 4.89. In short, these preservice STEM teachers showed high impact of security on education. The terrorism and insurgency dimension has six items with means ($\bar{x}$) ranging from 4.36 to 4.64. Thus, these preservice STEM teachers showed high terrorism and insurgency.

Research Question Two: What is the level of preservice STEM teachers' perception of poverty in Nigeria?

Table 3: Levels of Perception of Poverty

Level of Perception	Score Range	Frequency (f)	Percentage (%)
Low	10 – 24	77	22.0
Moderate	25 – 37	73	21.0
High	38 – 50	199	57.0
Total	-	349	100.0

Mean (M) = 4.41, SD = 1.32

Participants' perception of poverty was similarly analyzed using descriptive statistics. Table 3 summarizes the distribution of respondents by levels of perception of poverty. The results indicate that 57.0% (n = 199) of the participants reported a **high perception of poverty** (scores between 38 and 50), highlighting that more than half of the sample view poverty as a severe and pervasive issue in their environment. Approximately 21.0% (n = 73) fell into the **moderate perception** category (scores between 25 and 37), while 22.0% (n = 77) exhibited a **low perception** of poverty (scores between 10 and 24). The mean item score of 4.41 (SD = 1.32) corresponds to an approximate total mean of 44.1, which falls firmly within the high perception range, suggesting strong consensus among respondents about the seriousness of poverty. These findings point to widespread concern regarding poverty among the study population and underline the need for comprehensive poverty alleviation programs and policies to address the issue at both community and systemic levels.

Table 4. Descriptive statistics of preservice STEM teachers' perception of poverty

Item	Statement	$\bar{x}$	SD
Educational Deprivation and Social Mobility Cronbach alpha (α) = 0.90			
1.	Financial difficulties often force students to drop out of school before completing their education.	4.44	1.03
2.	Lack of access to education limits individuals' chances for upward social mobility and better economic opportunities.	4.34	1.09
3.	Poverty prevents many students from accessing quality STEM education resources such as laboratories, textbooks, and technology.	4.01	1.11
Lack of Access to Basic Services Cronbach alpha (α) = 0.91			
4.	The lack of social welfare programs leaves vulnerable groups unable to cope with economic hardship.	3.86	1.02
5.	Poor housing conditions are a common feature of communities experiencing high levels of poverty.	4.45	1.05
6.	Many Nigerians are unable to access quality healthcare because of		

financial constraints.	4.25	1.09
Economic Deprivation & Resource Scarcity Cronbach alpha (α) = 0.96 $\bar{x}$	SD	
7. Unequal distribution of national resources worsens poverty in many communities.	4.34	1.05
8. Rising inflation has made it extremely difficult for many Nigerians to afford essential goods and services.	4.89	1.09
9. High unemployment rates contribute significantly to widespread poverty in Nigeria.	4.86	1.17
10. Many Nigerian families lack sufficient income to meet their basic daily needs such as food, water, and clothing.	4.47	1.13

Table 4 showed the descriptive statistics of the 10 items of perception of poverty. The educational deprivation and social mobility dimension has three items with means ($\bar{x}$) ranging from 4.01 to 4.44. In short, these preservice STEM teachers showed high perception of educational deprivation and social mobility. Lack of access to basic services has three items with means ($\bar{x}$) ranging from 3.86 to 4.45. In general, these preservice STEM teachers showed moderate to high perception of lack of access to basic services. The economic deprivation and resource scarcity has four items with means ($\bar{x}$) ranging from 4.34 to 4.89. Thus, these preservice STEM teachers showed high economic deprivation and resource scarcity.

Hypothesis One (H_{01}): There is no statistically significant relationship between preservice STEM teachers' perception of insecurity and poverty in Nigeria.

Table 5. Preservice STEM teachers' perception of insecurity and poverty mean scores, standard deviations, and Pearson correlation r-value

Construct	N	$\bar{x}$	SD	r	p-value
Insecurity	349	4.88	1.26	0.86**	0.00
Poverty	349	4.41	1.32		

**p < 0.01

Table 5 showed the mean scores and standard deviations for perception of insecurity and poverty together with the r-value. It is seen that there was a positive relationship between perception of insecurity and poverty among preservice STEM teachers. However, this relationship was not only positive but statistically significant ($r=0.86$, $p<.01$). Hence, there was a direct relationship between perception of insecurity and poverty among preservice STEM teachers.

Hypothesis Two (H_{02}): There is no statistically significant predictive influence of perception of insecurity on preservice STEM teachers' perceived poverty in Nigeria.

Table 6. Linear regression results of the predictive influence of perception of insecurity on preservice STEM teachers' perceived poverty in Nigeria

R =.86	R² =.74	Adjusted R² =.74	Stand. Estimate=1.56	Error F_(1, 347)=897.31	P < 0.001
Variable	Unstandardized B	coefficients Std. Error	Standardized coeff. Beta	t	Sig.
Constant	0.94	0.76		1.56	0.35
Insecurity	1.68	0.56	0.86	30.88	.000

Table 6 showed the predictive influence of perception of insecurity on preservice STEM teachers' perceived poverty. The ANOVA regression analysis (Table 6) showed a significant influence of perception of insecurity on preservice STEM teachers' perceived poverty ($F_{(1, 353)}=897.31, p=0.00$). The perception of insecurity examined contributed as much as 74% (with $\beta=0.87, t=30.88, p<0.001$) to preservice STEM teachers' perceived poverty. The regression analysis equation is as follows: $\text{poverty}_{\text{predicted}} = 0.94 + 1.68 \text{ perception of insecurity}$. So, one unit increase in perception of insecurity results in a 1.68 increase in perception of poverty.

Discussion

This study explored the perceptions of insecurity and poverty among preservice STEM teachers in Nigeria and examined whether perceived insecurity significantly predicts perceived poverty. The findings are discussed under three major themes derived from the research questions and hypothesis including preservice STEM teachers' level of perception of insecurity, preservice STEM teachers' level of perception of poverty, and the predictive influence of perceived insecurity on perceived poverty. Each theme is examined and linked with existing empirical studies and theoretical frameworks to provide a deeper understanding of the findings.

Level of Perception of Insecurity Among Preservice STEM Teachers

The study revealed that 56% of preservice STEM teachers had a high perception of insecurity, 28% had a moderate perception, and only 16% reported a low perception of insecurity. The mean score ($M = 4.88, SD = 1.26$) was well above the midpoint of the scale, indicating that most participants viewed Nigeria's insecurity situation as severe and pervasive. The high perception of insecurity reflects Nigeria's current reality, where violent conflicts, terrorism, and criminal activities have become widespread. In the last decade, Nigeria has witnessed escalating forms of insecurity such as Boko Haram terrorism, herder-farmer clashes, banditry, mass kidnappings, and urban crime. These challenges have disrupted education, healthcare, and economic activities. This finding aligns with recent national and global assessments of Nigeria's security landscape, which consistently rank the country among the least secure nations worldwide (Global Peace Index, 2024). The participants' high perception of insecurity is consistent with Oyefusi (2020), who observed that Nigerian youth particularly those in higher education are highly sensitive to security threats because of their exposure to news media and direct experiences with violence. For instance, mass kidnappings of students from tertiary institutions such as Greenfield University in Kaduna and Federal College of Forestry in 2021 received extensive coverage and heightened fear among prospective teachers. The finding is also supported by Egunjobi (2021), who found that Nigeria's security architecture is under severe strain, leading to widespread feelings of vulnerability among citizens. This aligns with the Human Security Framework (UNDP, 1994), which emphasizes that true security is not merely the absence of war but also includes protection from fear and want. The preservice STEM teachers' responses suggest that Nigeria has failed to provide this level of human security.

The present study corroborates Awofala et al. (2022), who reported that preservice teachers in Nigeria often express anxiety and fear regarding their safety, especially during teaching practice placements in rural or conflict-prone areas. Similarly, Okunola et al. (2020) found that high levels of insecurity reduce teachers' motivation and willingness to work in underserved communities, thereby worsening educational inequality. However, while these studies primarily focused on teachers already in the field, the current research expands the literature by showing that even preservice teachers who are still in training experience profound insecurity perceptions. This finding raises concerns about teacher recruitment and retention, as fear may discourage graduates from entering or remaining in the profession, particularly in STEM fields where shortages are already acute. From

the perspective of the Frustration-Aggression Theory (Dollard et al., 1939), the high perception of insecurity among preservice teachers may stem from the frustration caused by unmet expectations for safety, stable governance, and a conducive learning environment. This frustration manifests as anxiety and fear, which in turn shape their attitudes toward the teaching profession and society at large.

The study's findings are further illuminated by Nigeria's regional security dynamics. In the northeast Nigeria, Boko Haram and Islamic State West Africa Province (ISWAP) insurgencies have destroyed schools, displaced teachers, and left millions homeless (UNICEF, 2023). In the northwest Nigeria, banditry and mass kidnappings have targeted educational institutions, such as the Kankara abduction of over 300 schoolboys in 2020. In the central Nigeria, farmer-herder clashes, fueled by competition over land and climate-induced resource scarcity, have caused widespread displacement and disrupted agricultural livelihoods (Akinyele, 2022). In the southern Nigeria, urban areas face violent crimes, cultism, and ritual killings, creating an atmosphere of fear even in major cities like Lagos and Port Harcourt. The preservice teachers' heightened perceptions likely reflect these nationwide patterns, underscoring the pervasive nature of insecurity. The high-stakes testing environment in Nigeria (Awofala, 2020) could have created pressure, anxiety, and stress for preservice STEM teachers, thereby contributing to feelings of insecurity among them.

Level of Perception of Poverty Among Preservice STEM Teachers

The second major finding was that 57% of participants had a high perception of poverty, 21% reported moderate perceptions, and 22% reported low perceptions. The mean score ($M = 4.41$, $SD = 1.32$) indicated that poverty is perceived as severe and widespread among Nigerian preservice STEM teachers. The participants' high poverty perception is consistent with national statistics. According to the National Bureau of Statistics (2022), over 133 million Nigerians (63% of the population) are classified as multidimensionally poor, lacking access to education, healthcare, housing, and other essential services. This supports the Multidimensional Poverty Theory (Alkire & Santos, 2014), which argues that poverty extends beyond low income to include deprivation in basic capabilities and opportunities. The finding is also in line with Evans and Kelikume (2019), who demonstrated that unemployment, inflation, and inequality are key drivers of poverty in Nigeria. Many preservice teachers, who are often from economically disadvantaged backgrounds, experience these deprivations directly. For instance, limited financial resources may hinder their ability to purchase textbooks, laboratory materials, or technology necessary for STEM education. Poverty has profound implications for STEM education. Participants in this study reported that poverty limits access to quality learning resources, leading to unequal educational outcomes. This finding resonates with UNESCO (2023), which highlights that children from poor households are more likely to attend under-resourced schools, contributing to persistent educational inequality. Moreover, poverty affects teachers themselves.

Olatunji (2021) observed that many preservice teachers struggle to pay tuition fees and transportation costs, forcing them to take on part-time work that detracts from their academic focus. In STEM fields, where laboratory experiments and projects are essential, such financial constraints can severely limit skill development. The finding of high poverty perception aligns with Idris and Salisu (2020), who found that Nigerian youth view poverty as one of the greatest obstacles to their personal and professional advancement. Their study emphasized that poverty breeds feelings of hopelessness and frustration, which can manifest in anti-social behaviors or withdrawal from productive societal roles. However, the current study adds a new dimension by linking these perceptions to STEM teacher preparation. Preservice STEM teachers face a dual burden: they are

personally affected by poverty while simultaneously preparing to educate students who may themselves be living in poverty. This dual role underscores the urgency of addressing poverty within teacher education programs.

Insecurity as a Predictor of Poverty

The most significant finding of this study was the strong, positive relationship between perceived insecurity and perceived poverty. A strong correlation was found between the two variables ($r = 0.86$, $p < 0.05$). Insecurity significantly predicted poverty, accounting for 74% of the variance in perceived poverty ($R^2 = 0.74$, $\beta = 0.86$, $t = 30.88$, $p < 0.001$). This suggests that insecurity is a major driver of poverty among preservice STEM teachers, validating the study's central hypothesis. The result indicates that when insecurity increases, poverty levels also rise. This aligns with the Conflict Trap Theory (Collier et al., 2003), which posits that violence and insecurity destroy economic capacity, thereby perpetuating poverty. Insecure environments disrupt markets, deter investment, and destroy infrastructure, making it difficult for individuals and communities to escape poverty. For preservice STEM teachers, insecurity directly impacts their educational and economic prospects.

Schools are frequently closed due to violent attacks, while fear discourages students and teachers from attending classes. In addition, insecurity discourages external funding for educational infrastructure, limiting the availability of laboratories and technology essential for STEM learning. The finding aligns with Okunola et al. (2020), who found that regions affected by insurgency in Nigeria experience lower economic growth and higher poverty rates compared to more stable areas. Preservice STEM teachers might have doubted their ability to effectively teach and manage classrooms, and this could have led to their feelings of insecurity and low self-efficacy (Lano-Maduagu, Awofala, & Arigbabu, 2022).

Similarly, Mercy Corps (2016) reported that conflict and violence reduce household incomes by destroying livelihoods and reducing access to markets. Perception of insecurity can decrease preservice STEM teachers' motivation (Lawal & Awofala, 2021), self-efficacy (Akinsola & Awofala, 2009), and achievement goals (Awofala, Arigbabu, Fatade, & Awofala, 2013) making it harder for them to pursue economic opportunities and escape poverty. Perception of insecurity could lead to increased anxiety and stress (Awofala & Esealuka, 2021), which can negatively impact preservice STEM teachers' mental and physical well-being, ultimately contributing to poverty. In education-specific contexts, UNICEF (2023) documented how Boko Haram attacks on schools in northeast Nigeria have displaced teachers and students, resulting in a "lost generation" of learners. These disruptions not only hinder human capital development but also deepen poverty, as education is a key pathway out of economic deprivation. In the context of STEM education, the relationship between insecurity and poverty is particularly pronounced. STEM subjects require specialized resources such as laboratories, equipment, and highly trained teachers. Insecure environments deter investment in these resources, leading to a vicious cycle: Insecurity disrupts STEM education → STEM teacher shortages increase → STEM innovation declines → Economic opportunities shrink → Poverty worsens → Insecurity intensifies. This cycle is evident in Nigeria's northern regions, where persistent conflict has resulted in severe shortages of qualified STEM teachers. Without urgent intervention, the entire country risks falling further behind in global technological competitiveness. The observed relationship between insecurity and poverty is not unique to Nigeria.

Studies from other conflict-affected regions provide similar evidence. For example in Afghanistan, Johnson and Leslie (2018) found that ongoing insurgency disrupted girls' education, perpetuating intergenerational poverty. In South Sudan, Othieno et al. (2020) reported that violent conflict

destroyed agricultural livelihoods, leading to widespread famine and poverty. In Syria, UNESCO (2021) highlighted how conflict-induced displacement disrupted entire educational systems, reducing long-term economic prospects. These international parallels reinforce the validity of the current study's findings and highlight the global relevance of addressing the insecurity-poverty nexus.

The finding can be understood through the Human Security Framework, which emphasizes that security encompasses both freedom from fear (safety) and freedom from want (basic needs). In Nigeria, preservice STEM teachers are denied both as they wallow in constant threats of violence, kidnappings, and attacks and have limited access to quality education, jobs, and social services. By showing that insecurity predicts poverty, this study provides empirical support for the integrated nature of human security. Policies addressing one dimension without the other are unlikely to succeed.

Implications for STEM Education and National Development

- 1) **Prioritizing Safe Learning Environments:** The study revealed that insecurity significantly disrupts teaching and learning processes, especially in STEM fields where practical work is critical. Thus, there is an urgent need to implement safe school policies such as the Safe Schools Declaration (UNICEF, 2023) and invest in security infrastructure like perimeter fencing, armed guards, and emergency response systems. Without safe environments, STEM laboratories and equipment cannot be effectively utilized, reducing the quality of STEM instruction and discouraging preservice teachers from completing their training. A safer education system will attract and retain both teachers and students, leading to a stronger STEM workforce essential for innovation and industrialization.
- 2) **Integrating Trauma-Informed Pedagogy into Teacher Education:** High perceptions of insecurity and poverty indicate that both preservice teachers and their future students are likely to have experienced trauma due to violence, displacement, or deprivation. Hence, the teacher education programs should integrate trauma-informed pedagogy to help teachers recognize and address the emotional and psychological needs of learners affected by insecurity (Darling-Hammond, 2021). For STEM education, this approach can enhance student engagement by creating emotionally supportive environments, improving learning outcomes in complex subjects like mathematics, engineering, and science.
- 3) **Strengthening STEM Teacher Retention and Recruitment:** The study highlights that fear of insecurity discourages preservice teachers from working in rural or conflict-prone regions, where teacher shortages are most severe. Therefore, policies must focus on teacher retention and equitable distribution, particularly of STEM educators, through incentives such as hardship allowances, secure housing, and career advancement opportunities. Addressing insecurity-related fears will ensure that rural and underserved communities gain access to high-quality STEM education, bridging the urban-rural educational divide and fostering balanced national development.
- 4) **Addressing Poverty as a Barrier to STEM Resource Access:** The high perception of poverty among preservice STEM teachers shows that many lack access to textbooks, technology, and laboratory materials. Therefore, government and private sector initiatives should focus on resource provision, including STEM-specific bursaries, subsidized equipment, and open educational resources. Reducing the financial barriers to STEM learning will increase student

- participation, encourage innovation, and develop a pool of skilled professionals needed for Nigeria's transition to a knowledge economy.
- 5) **Linking Security Reform to National Economic Competitiveness:** The finding that insecurity predicts poverty reinforces the Conflict Trap Theory (Collier et al., 2003), showing that without addressing security, economic growth and STEM innovation cannot thrive. Policymakers must treat education security as a national economic priority, recognizing that a secure environment attracts investment in technology, manufacturing, and scientific research. STEM graduates are essential for Nigeria's participation in the Fourth Industrial Revolution, and ensuring their safety is foundational to building globally competitive industries.
 - 6) **Integrating STEM into Poverty Reduction Strategies:** Poverty emerged as a significant challenge limiting preservice teachers' educational opportunities and future career prospects. National poverty reduction programs should explicitly include STEM education pathways, such as vocational training, entrepreneurship support, and innovation hubs. Empowering youth with STEM skills can generate employment opportunities, reduce poverty, and mitigate recruitment into violent groups that exploit economic vulnerabilities.
 - 7) **Enhancing Community Engagement in STEM Education:** Insecurity often stems from community-level conflicts such as farmer-herder clashes and urban crime. STEM education initiatives should adopt community-based approaches, where preservice teachers collaborate with local leaders to co-create solutions to security challenges. For example, STEM projects could focus on climate-smart agriculture to address resource conflicts, renewable energy to improve rural electrification, or water purification systems to reduce competition over scarce resources. This approach, through learning engagement (Awofala, Olaguro, Fatade, & Arigbabu, 2024), positions STEM education as a peace-building tool, directly linking scientific knowledge to conflict resolution and sustainable development that ensure performance.
 - 8) **Curriculum Reform for Conflict-Sensitive STEM Teaching:** The findings suggest that preservice teachers need specialized training to navigate the complexities of teaching in insecure, poverty-stricken environments. STEM curricula at universities and colleges of education should integrate conflict-sensitive pedagogy, ethics, and real-world problem-solving skills. By embedding societal issues into STEM teaching, future educators can help students see science and technology as tools for addressing national challenges like food insecurity, renewable energy, and health innovation. This aligns with UNESCO's Education for Sustainable Development (ESD) framework, which calls for curricula that link STEM learning to peace and sustainability.
 - 9) **Building Resilience Through Digital and Remote STEM Education:** School closures due to insecurity, such as those caused by Boko Haram attacks, often lead to long-term disruptions in STEM education. The government and private sector should invest in digital learning platforms, virtual laboratories, and distance learning solutions to ensure continuity of STEM education during crises and reduce technostress associated with continual intents to use portable technology (Awofala & Oladipo, 2023). Equipping preservice teachers with digital technologies (Abiodun, Asanre & Awofala, 2023) and pedagogical skills will also future-proof the education system, making it more resilient to shocks like pandemics or violent conflicts. This aligns with global trends in digital transformation and ensures Nigeria's STEM education remains competitive internationally.
 - 10) **Holistic National Development Through STEM-Driven Security Solutions:** The study's finding that insecurity predicts poverty implies that STEM innovation itself can play a role in addressing national security challenges. Nigeria should foster STEM-driven security innovations, such as

surveillance drones, biometric identification systems, and data analytics for crime prevention. By linking STEM education to national security needs, the country can create a pipeline of graduates contributing directly to peace and stability. This approach not only addresses insecurity but also drives industrial growth, creating jobs in technology sectors and reducing economic reliance on oil exports.

Conclusion

The findings of this study paint a sobering picture of the challenges facing Nigeria's education system, particularly STEM teacher preparation. High levels of perceived insecurity and poverty create a hostile environment for learning and innovation. Most importantly, the finding that insecurity significantly predicts poverty underscores the urgent need for holistic policies that address both issues simultaneously. Without such interventions, Nigeria risks perpetuating a vicious cycle of deprivation and violence, undermining its potential for sustainable development. This study established that preservice STEM teachers in Nigeria perceive both insecurity and poverty at alarmingly high levels, with insecurity serving as a significant predictor of poverty. Addressing insecurity is thus critical not only for improving societal well-being but also for enhancing the quality of STEM education and fostering sustainable national development. The discussion situates these findings within global literature and theoretical frameworks, demonstrating their relevance not only to Nigeria but also to other conflict-affected regions worldwide. By focusing on preservice STEM teachers, this study provides actionable insights for breaking the cycles of insecurity and poverty through education. The following recommendations are made. First, government at all levels in Nigeria should prioritize integrated policies that address both poverty reduction and security enhancement. Second, teacher training institutes should introduce trauma-informed teaching practices and resilience training for educators. Third, government at all levels should strengthen local security structures to prevent school disruptions and protect educational infrastructure. Government and well-meaning Nigerians should provide scholarships, mentorship, and vocational training for economically disadvantaged students. Schools should be equipped with safe facilities and emergency response systems to forestall any form of insecurity.

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