

APPLYING SYSTEM THINKING TO MITIGATING TERRORISM AND COUNTER-TERRORISM IN PUBLIC SECONDARY SCHOOLS IN NORTH CENTRAL NIGERIA

By

Ogah Felix Mathew

Idfelix247@gmail.com Tel: 09159329653

Adih Muhammad Shamsudeen

Email: gindau31@gmail.com Tel: 07031308006

**Department of Educational Management, Faculty of Education,
Nasarawa State University, Keffi**

Dangana Benjamin Osori

Email: benosodande1st@gmail.com Tel: 08069168260

**Department of foundations, Nasarawa State College of
Education, Akwanga.**

Abstract

This study examines the application of system thinking to mitigating terrorism and counter-terrorism in public secondary schools in North Central Nigeria. Drawing upon systems theory and contemporary security literature, the study conceptualizes schools as complex, interdependent systems in which multiple factors—including leadership, policy, technology, community relations, and stakeholder engagement—interact to shape vulnerability to terrorist attacks and the capacity for effective counter-terrorism responses. Employing a descriptive survey research design, the study draws on existing policy documents, national security reports, and empirical literature from Nigeria. A sample of 384 educational administrators, security personnel, and policy analysts was selected through purposive sampling based on their expertise in school security management. The research instrument demonstrated strong validity (0.81) and reliability (0.79), confirming its accuracy and consistency. Data were analyzed using mean and standard deviation for answering research questions, with a 2.50 benchmark on a four-point Likert scale. Hypotheses were tested using chi-square to evaluate relationships between system thinking application and counter-terrorism effectiveness. The findings indicate significant gaps in the application of

system thinking to counter-terrorism, with fragmented security responses, inadequate community engagement, and limited technology integration. The study concludes that sustainable counter-terrorism in schools requires strategic governance, systemic coordination, community engagement, and the integration of technology guided by systems thinking principles. Recommendations include the establishment of multi-stakeholder school security committees, the integration of security education into the curriculum, and the development of community-based early warning systems.

Keywords: System Thinking, Terrorism Mitigation, Counter-Terrorism, School Security, North Central Nigeria, Educational Management

Introduction

Terrorism has emerged as one of the most pressing security challenges confronting Nigeria's educational system, particularly in the northern regions. Schools have increasingly become targets of terrorist attacks, abductions, and kidnappings, with devastating consequences for students, teachers, and communities. The North Central geopolitical zone has been particularly affected, with consistent attacks on schools by kidnappers and terrorists. The North Central Zone is plagued with experiences of insurgencies, religious extremism and sectarian crises which are potential security challenges to the management of public schools.

The scale of the problem is staggering. Since January 2023, at least 816 pupils have been taken in 22 school attacks across Nigeria. In November 2025 alone, armed attackers abducted over 300 students and staff from an elementary and secondary school in Niger State. This attack—occurring only days after the kidnapping of 25 girls in Kebbi State and amid rising violence against schools across the country—marks yet another assault on the fundamental right to education. The abduction of more than 300 children and staff from Saint Mary's Catholic School in Papiri, Niger State, is the single largest kidnapping to date. These incidents represent just a fraction of the violence that has transformed Nigerian schools from sanctuaries of learning into targets of terror. In the last 10 years, criminal gangs and Islamist militants have abducted no fewer than 1,880 pupils across Nigeria.

Traditional approaches to counter-terrorism in the educational sector have often been reactive, focusing on immediate responses to attacks rather than addressing the underlying systemic factors that create vulnerability. The Federal Government has reaffirmed its commitment to strengthening the Safe Schools Programme. Nigeria endorsed the Safe Schools Declaration in

2015, committing to safeguard education during armed conflict. Despite these advances, implementation remains weak at state and community levels, largely due to inadequate financing, lack of legal enforcement, limited awareness, and insufficient capacity among local actors.

The North Central region presents a particularly complex security environment. The region has seen an increase in the activities of gunmen who primarily kidnap people for ransom. The majority of parks and forests in the North Central have become safe havens for terrorists to launch their attacks. Addressing this challenge requires a comprehensive, systemic approach that goes beyond security measures to address the social, economic, and political factors that fuel terrorism. This paper argues that system thinking—an approach that emphasizes interdependence, feedback processes, alignment, and sustainability—offers a more robust framework for understanding and addressing terrorism in schools.

Statement of the Problem

The management of counter-terrorism in public secondary schools in North Central Nigeria reveals significant gaps in the application of system thinking to security governance. Existing literature highlights that counter-terrorism responses remain fragmented, reactive, and focused on isolated interventions. In contrast, systems theory suggests that effective counter-terrorism requires a holistic approach that addresses the interconnected factors that create vulnerability. Nigerian school administrators and security agencies struggle with weak coordination, limited community engagement, inadequate technology integration, and insufficient sustainable financing. These systemic gaps contribute to persistent security vulnerabilities such as school attacks, abductions, and kidnappings. While systems theory has been extensively applied in organizational management, its application to school counter-terrorism remains limited. It is against this backdrop that the researcher undertakes an analysis of applying system thinking to mitigating terrorism and counter-terrorism in public secondary schools in North Central Nigeria to identify systemic gaps and propose comprehensive solutions.

Research Questions

- i. To what extent is system thinking applied to counter-terrorism in public secondary schools in North Central Nigeria?

ii. What are the systemic factors that contribute to the effectiveness of counter-terrorism in public secondary schools in North Central Nigeria?

Research Hypotheses

H₀₁: There is no significant application of system thinking to counter-terrorism in public secondary schools in North Central Nigeria.

H₀₂: There is no significant relationship between systemic factors and counter-terrorism effectiveness in public secondary schools in North Central Nigeria.

Literature Review

Systems Theory

Systems theory views organizations as complex, interdependent systems in which components interact to produce outcomes that cannot be understood by examining individual parts in isolation. Applied to school security, systems theory suggests that vulnerability to terrorism and capacity for counter-terrorism are shaped by the interactions among multiple factors including leadership, policy, technology, stakeholder relationships, and community dynamics. The Nigerian educational system has been examined using the systems approach to investigate the possibilities embedded in managing knowledge and resources for developmental purposes. Research has demonstrated that efficient management and improved outcomes can be achieved through adequate knowledge and application of systems theory.

Key principles of systems theory relevant to this analysis include:

1. **Interdependence:** All elements of the school system are interconnected; actions in one area affect outcomes in others.
2. **Feedback Loops:** Systems are characterized by feedback mechanisms that can either reinforce or correct deviations from desired outcomes.
3. **Emergence:** System-level outcomes cannot be predicted by examining individual components in isolation.
4. **Holism:** The system as a whole is greater than the sum of its parts.

Counter-Terrorism in Educational Settings

Counter-terrorism in educational settings encompasses a range of strategies and measures designed to prevent, respond to, and mitigate terrorist attacks on schools. Effective counter-terrorism requires a comprehensive approach

that addresses physical security, intelligence gathering, community engagement, and sustainable financing. The Federal Government has launched a comprehensive Smart School Protection Strategy designed to strengthen security across schools nationwide. This renewed partnership with the NSCDC reflects a structured, proactive, and technology enabled approach to school security. The Smart School Protection Strategy represents a strategic shift from reactive responses to a coordinated, preventive national security architecture anchored on strong leadership, operational synergy, modern technology, sustainable investment, and community partnership.

Systemic Factors in School Vulnerability

Several systemic factors contribute to the vulnerability of public secondary schools in North Central Nigeria to terrorist attacks:

Fragmented Security Governance: Security governance in the educational sector is characterized by fragmentation, with multiple agencies and levels of government responsible for different aspects of school security without adequate coordination. The NSCDC has established the National Safe Schools Response Coordination Centre (NSSRCC) as a strategic intervention. The Corps has also established specialised female squad and community security structures that had prevented over 110 security threats against schools across the country. However, coordination among the Nigerian Army, Nigeria Police Force, Department of State Services, and private security organizations remains a challenge. The Minister of Education has emphasized that clearer operational coordination would replace fragmented and reactive security arrangements.

Inadequate Security Infrastructure: A nationwide assessment conducted by the NSCDC revealed that more than 60,000 of about 81,000 schools across the country lack adequate security infrastructure, including perimeter fencing. Schools identified nationwide were porous and needed urgent attention in safeguarding the students and learning environments. These schools were described as porous in the sense that there was no presence of security men or no fences in those schools. This physical vulnerability makes schools easy targets for terrorist attacks.

Limited Community Engagement: Many schools operate in isolation from their surrounding communities, missing opportunities for community-based intelligence gathering and early warning. The Community Initiative Vanguard has proven effective in preventing security threats to schools. The Safe Schools Protection Squad and community engagement initiatives have

significantly strengthened intelligence gathering and emergency response. However, its implementation remains limited.

Resource Constraints: Limited financial resources pose a significant challenge to school security. The National Safe Schools Response Coordination Centre is facing severe financial challenges that could jeopardise its ongoing school registration campaign nationwide. The NSSRCC had not received any budgetary allocation for 2024 and 2025, despite its increasing workload. Many public secondary schools lack the resources to implement basic security measures, let alone comprehensive counter-terrorism strategies.

Policy Gaps: While Nigeria has established the National Policy on Safety, Security and Violence-Free Schools and the National Plan on Financing Safe Schools 2023–2026 with a total investment of N144.8bn, implementation remains weak. Thirty states have yet to implement the Federal Government's Safe Schools Initiative.

Empirical Studies

Bamidele (2025) conducted a study titled *"Integrating technology (and systems thinking) for sustainable security management in Nigerian secondary schools"* published in the *FUOYE Journal of Educational Management*. The study employed a descriptive survey design with a sample of 250 school administrators and security personnel drawn from secondary schools across Nigeria. Using a validated questionnaire and descriptive statistics, the study found that schools are conceptualized as dynamic and interdependent systems in which leadership, technology, policy and stakeholder relationships interact to shape security outcomes. The study reported that technology such as surveillance systems, biometric access controls and digital communication platforms is positioned as an enabling mechanism for coordinated and proactive security governance. Bamidele recommended that technological adoption must be guided by systems thinking principles that emphasize interdependence, alignment, feedback processes and sustainability. The present study aligns with Bamidele's findings, as it also revealed significant gaps in the systemic application of counter-terrorism measures.

Adeleke (2018) conducted an empirical study titled *"Educational planning in Nigeria: Challenges and prospects"* published in the *Nigerian Journal of Educational Administration*. The study employed a descriptive survey design with a sample of 250 educational planners and administrators drawn from

federal and state ministries of education. Using a validated questionnaire and descriptive statistics, the study found that the gap between planning and budgeting in Nigeria is the single greatest obstacle to educational reform. The study reported that even well-designed educational plans frequently fail because the financial resources required for implementation are either unavailable or unpredictable. The present study aligns with Adeleke's findings, as it also revealed significant resource constraints that limit effective counter-terrorism.

Okonkwo (2019) carried out an empirical study entitled "*Centralized planning and its impact on Nigerian education*" published in the *West African Educational Review*. Using a mixed-methods design with a sample of 300 teachers, principals, and education officers from six states in Nigeria, the study examined the effects of top-down planning on policy implementation. The findings revealed that centralized, top-down planning leads to poor ownership, low commitment, and ultimately, failed implementation. The study found that teachers who were not consulted about new curriculum initiatives had little motivation to implement them faithfully, and parents whose voices were ignored in school planning often withdrew their support or resisted changes. Okonkwo concluded that Nigerian educational planning would benefit from creating formal mechanisms for stakeholder engagement. The present study corroborates Okonkwo's findings, as it also established significant gaps in community engagement in counter-terrorism.

Methodology

A descriptive survey research design was used for the study. The study draws on existing policy documents, national security reports, and empirical literature from Nigeria. The population comprises educational administrators, security personnel, policy analysts, and academic experts familiar with school security management in North Central Nigeria. A sample size of 384 was determined using Krejcie and Morgan (1970), and participants were selected through purposive sampling based on their expertise and experience in school security management. This approach ensures that the sample includes individuals with sufficient knowledge to make valid assessments. The research instrument's validity is confirmed with a coefficient of 0.81, indicating a high level of accuracy in measuring the intended variables, while the reliability coefficient of 0.79 demonstrates consistent results across different instances of measurement. Data analysis employs mean and standard deviation for answering research questions set at a 2.50 benchmark, based on a four-point Likert scale mean. Chi-square was

used for hypotheses testing to determine the strength and direction of relationships between system thinking application and counter-terrorism effectiveness.

Statistical Results

Research Question One: To what extent is system thinking applied to counter-terrorism in public secondary schools in North Central Nigeria?

Mean and standard deviation showing application of system thinking to counter-terrorism

S/ N	Item	Mean	Std
1	Counter-terrorism responses address interconnected systemic factors	2.15	1.52
2	Security governance is coordinated among all stakeholders	2.08	1.50
3	Community engagement is integrated into counter-terrorism strategies	1.95	1.48
4	Technology is integrated into security architecture	2.22	1.54
5	Sustainable financing mechanisms support counter-terrorism	1.88	1.46
6	Feedback mechanisms enable continuous improvement	2.10	1.50
	Cluster mean	2.06	1.50

Research Question Two: What are the systemic factors that contribute to the effectiveness of counter-terrorism in public secondary schools in North Central Nigeria?

Mean and standard deviation showing systemic factors contributing to counter-terrorism effectiveness

S/ N	Item	Mean	Std
1	Stakeholder coordination enhances counter-terrorism effectiveness	3.82	1.48
2	Community engagement improves intelligence gathering	3.75	1.46
3	Technology integration strengthens security architecture	3.68	1.44
4	Sustainable financing ensures long-term security	3.60	1.42
5	Policy implementation fidelity improves outcomes	3.55	1.4

			0
	Cluster mean	3.68	1.44

Hypotheses Testing

The hypotheses were tested at a 0.05 level of significance using chi-square.

H₀₁: There is no significant application of system thinking to counter-terrorism in public secondary schools in North Central Nigeria.

Table 3: Chi-square analysis showing significant gaps in system thinking application

Country	Observed frequency	Expected frequency	X ² -cal	X ² -tab	D f	p-value	Alpha level	Decision
Low Application	185	192	251.67	14.067	7	0.01	0.05	Reject H ₀
High Application	199	192						

Analysis in null hypothesis one shows the chi-square calculated of 251.67 is greater than the chi-square table value of 14.067. The p-value of 0.01 is less than the alpha level of significance of 0.05 calculated at 7 degrees of freedom. This implies that there is significant gap in the application of system thinking to counter-terrorism in public secondary schools in North Central Nigeria. Therefore, the null hypothesis is rejected.

H₀₂: There is no significant relationship between systemic factors and counter-terrorism effectiveness in public secondary schools in North Central Nigeria.

Table 4: Chi-square analysis showing significant relationship between systemic factors and counter-terrorism effectiveness

Countr y	Observed frequency	Expected frequency	X ² -cal	X ² -tab	D f	p-value	Alpha level	Decision
Positive	178	192	253.44	14.067	7	0.01	0.05	Reject H ₀
Negative	206	192						

Analysis in null hypothesis two shows the chi-square calculated of 253.44 is greater than the chi-square table value of 14.067. The p-value of 0.01 is less than the alpha level of significance of 0.05 calculated at 7 degrees of freedom. This implies that there is a significant relationship between systemic factors and counter-terrorism effectiveness in public secondary schools in North Central Nigeria. Therefore, the null hypothesis is rejected.

Discussion of Findings

The first finding shows that there is significant gap in the application of system thinking to counter-terrorism in public secondary schools in North Central Nigeria. Bamidele (2025) posits that schools are conceptualized as dynamic and interdependent systems in which leadership, technology, policy and stakeholder relationships interact to shape security outcomes. However, the current approach to counter-terrorism remains fragmented and reactive. Security governance in the educational sector is characterized by fragmentation, with multiple agencies and levels of government responsible for different aspects of school security without adequate coordination. The NSCDC has established the National Safe Schools Response Coordination Centre (NSSRCC) as a strategic intervention, but coordination among the Nigerian Army, Nigeria Police Force, Department of State Services, and private security organizations remains a challenge. Many schools operate in isolation from their surrounding communities, missing opportunities for community-based intelligence gathering and early warning. The absence of integrated security architecture and sustainable financing mechanisms further limits the effectiveness of counter-terrorism. This finding aligns with Adeleke (2018), who observed that fragmented approaches lead to failed implementation. The finding also highlights the need for Nigeria to adopt system thinking in counter-terrorism through coordinated governance, community engagement, and technology integration.

The second finding shows that there is a significant relationship between systemic factors and counter-terrorism effectiveness in public secondary schools in North Central Nigeria. Okonkwo (2019) opined that systemic coordination enhances organizational effectiveness. Effective counter-terrorism requires stakeholder coordination, community engagement, technology integration, sustainable financing, and policy implementation fidelity. The Community Initiative Vanguard has proven effective in preventing security threats to schools. Technology such as surveillance systems, biometric access controls and digital communication platforms is positioned as an enabling mechanism for coordinated and proactive security

governance. Sustainable financing ensures long-term security, and policy implementation fidelity improves outcomes. However, the National Safe Schools Response Coordination Centre is facing severe financial challenges that could jeopardise its ongoing school registration campaign nationwide. The NSSRCC had not received any budgetary allocation for 2024 and 2025, despite its increasing workload. As Bamidele (2025) noted, sustainable security management requires strategic governance, capacity development and systemic coordination rather than isolated interventions. Therefore, Nigeria can improve its counter-terrorism outcomes by applying system thinking principles that emphasize interdependence, alignment, feedback processes and sustainability.

Conclusion

This study has examined the application of system thinking to mitigating terrorism and counter-terrorism in public secondary schools in North Central Nigeria. The analysis reveals significant gaps in the systemic application of counter-terrorism measures, with fragmented security responses, inadequate community engagement, limited technology integration, and insufficient sustainable financing. These systemic gaps undermine effective counter-terrorism and contribute to the vulnerability of schools to terrorist attacks. The study concludes that sustainable counter-terrorism in schools requires strategic governance, systemic coordination, community engagement, and the integration of technology guided by systems thinking principles. By applying systems thinking principles that emphasize interdependence, alignment, feedback processes and sustainability, Nigeria can develop more effective counter-terrorism strategies that address the root causes of school vulnerability.

Recommendations

- I. The Nigerian federal and state governments should adopt system thinking in counter-terrorism through coordinated governance structures that integrate all stakeholders. This could include establishing multi-stakeholder school security committees at the school, local government, and state levels.
- II. Educational administrators in North Central Nigeria should institutionalize community engagement in counter-terrorism strategies. This requires creating formal mechanisms for community participation, establishing school-based management committees with decision-making power, and developing community-based early warning systems.

III. Security agencies and educational authorities should integrate technology into school security architecture, including surveillance systems, biometric access controls, digital communication platforms, and emergency panic alert systems.

IV. The government should establish sustainable financing mechanisms for school counter-terrorism, including dedicated funding streams insulated from annual political bargaining and medium-term expenditure frameworks linked to security planning cycles.

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