

Evaluation of Security Technology for Proactive Safety Management in Public Schools in Edo North Senatorial District of Edo State

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Abstract. This study was designed to evaluate security technology for proactive safety management in public schools in Edo North Senatorial District of Edo State. It shows that there is statistically significant effect of school population size on the security technology for proactive safety management in public schools. About 35% of the variation in the security technology is explained by school population size ($R^2 = 0.325$, $p < 0.05$). The remaining 65% unexplained variation is largely due to variation in order variables outside the regression model. The regression model is statistically significant in terms of goodness of fit ($F = 461.917$, $p < 0.05$). It shows that when the school is over populated that a poor security management will not be able to control the pupils without some technology devices being put in place. Also, the study found out that there is significant relationship between the school environment and security technology for proactive safety management. The position of the public schools within the communities becomes a problem since most of them are sited outside the town and hence faced with more security challenges. More so, the issue of the ownership of public schools is another important factor.

Keywords: Security, technology devices, public school, safety management.

1. Introduction

Safety and security in every institution of learning is very paramount to the effective management of schools. Schools generally are concerned with creating effective teaching and learning atmosphere for both teachers and learners. It is an area of interest that has invoked a great deal of attention and concern from learners, educators, teachers, parents, and the

general public at large. Most importantly, school communities find themselves in situations where other non-academic concerns take up most of their energies with a result that the core school curriculum although important, often becomes a secondary priority. In particular, schools are faced with matters of safety and security. Numerous incidents of violence and injuries are often reported in the media both national and international.

Research has shown that when examining the causes of school security threats, it is important to take into account the school climate. Merrow (2004) posits that schools that have positive school climate have been associated with fewer behavioural and emotional problems for students. Additionally, specific research on school climate indicates that a positive supportive; culturally conscious school climate can significantly shape the degree of academic success in schools (Trump, 2010). Furthermore, Mac Envoy and Welker, (2014) posit that where the school climate is not positive, there will be many threats which will adversely affect the academic work of the school. Many researchers like Khoury, Astor and Zena (2005) have tried to identify some of these security threats which can disrupt the school programmes. They maintained that demographic factors such as school sizes, level of poverty, neighbourhood crimes and school locations can give birth to many threats in the school community. Mastisa (2011) stated that school crime is more apparent in large schools than in smaller schools. According to Xaba (2015) school location also impinges on school safety; schools located at the heart of the cities are more prone to violence than schools in isolated areas. They also stated that the endemic crimes and crises in the cities sometimes spill into the schools. Also, drug dealers see schools

as untapped market for their business by selling drugs to learners, thus making advantage of their curiosity and immaturity (Yell and Rozalski, 2005). There are different types of security threats which teachers, managers and parents are faced with in public secondary schools, some of which includes vandalism, terrorism, extortion, fighting, cybercrime, bombing and bomb threats and kidnapping.

Shannon (2006) conducted a study on school security practices; their consequences on students and climate. The main purpose of the study was to find out the security devices available in the secondary schools and the level of difference between students in the school that have security devices and the ones that do not have security devices. Five research questions were posed to guide the study and three hypotheses were formulated. The design of the study was a descriptive survey. Stratified random sampling technique was used to select 276 public secondary schools. Teachers, students and principals were the respondents and the total numbers of the respondents were 1104. Questionnaire was the major instrument for data collection. The data was analysed with Pearson Correlations while Mean and Standard deviation were used to answer the research questions. The researcher observed that many public secondary schools do not have safety and security devices needed to keep school safe. Shannon found out that schools that have safety and security devices perform better in their academics than in the schools where few of the devices were found. Secondary, that student in the schools where few of the security devices were found were more security conscious than student in the schools where they were not found at all. The study is related to the present study as it tries to evaluate the security technology for proactive safety management in the public schools of Edo North Senatorial District of Edo State.

Another study was conducted by Eric (2009) on "incidence and accident" Implementing the safety regulations prescribed by the South African School of Acts. The purpose of the study was to find out the available security and safety devices available in Lesotho secondary schools and learners experience of school security threats in Lesotho. Six research questions were posed and three null hypotheses were formulated to guide the study. The study was a case study and purposive random sampling technique was used to select four target schools. The respondents were principals and teachers which gave rise to 112 respondents. The instruments for data collection were questionnaires; Mean and standard deviation were used to answer the research questions while t-test statistics was used for the hypotheses at 0.05 level of

significance. The researcher found that many of the public secondary schools in Lesotho are not provided with safety and security devices. Eric also observed presence of dangers such as broken walls, sharp objects, broken sport facilities, playground equipment and classrooms with shattered roofs. The researcher found out that there was no emergency equipment visible in any outside area of the school. The study is related to the present study as it noted that there is poor management of school facilities and neglect of repair of faulty equipment.

Dewer, Peter, Anne and Xiao (2009) had a retrospect study on safety condition in high schools using Virginia Threats Assessment Guidelines. The purpose of the study was to examine the safety and security conditions in the schools studied. Four research questions were posed and three hypotheses were formulated to guide the study. The researcher adopted descriptive survey design. Simple random sampling technique was used to select 960 respondents which were made up of students, teachers and principals. The design was a descriptive survey and the instruments for data collection were questionnaires and the method of data analyses was Multivariate Analysis of Covariance (MANCOVA). It was found that most of the schools have no planned security policies, have no planned way of resolving student's conflicts and have no safety plans on ground to check emergency occurrences. The study is related to the present study as it tries to find out the safety and security conditions in the high schools which he discovered was too poor. This is the gap the present study wants to fill.

Another study was conducted by Omebe (2010) on status of safety precautions in science laboratories in Enugu state, Nigeria. The purpose of the study was to investigate the status of safety in the science laboratories in Enugu state. Three research questions were posed and two hypotheses were formulated. The design for study was descriptive survey and simple random sampling was used to select 200 science students which consisted of 120 females and 80 male students. The instrument for data collection was questionnaire and the method of data analysis was mean and standard deviation for the research questions while t-test was used for testing the hypotheses. The findings of the study show the sources of hazards in the science laboratories include improper techniques of using equipment, improper storage of the equipment, inactive supervision of students during practical, safety screening during experiments and fire extinguishers. The study is related to the present study because the findings are the same with the security loopholes in the public

secondary schools in North Central Zone but differs a little because it is talking of a section of the school.

Rugar (2010) conducted a research on fire emergency preparedness at schools: A case study of secondary schools in Moishi. The purpose of the study was to find out the level of emergency preparedness, prevention, mitigation and awareness in schools. The study was guided by six research questions and three hypotheses. The design of the study was case study. Stratified random sampling technique was used to select secondary schools and simple random sampling technique was used to select 680 respondents from among the students, principals and the teachers. The instrument for data collection was questionnaire. The findings, shown that there was no disaster management policy and emergency equipment in many public secondary schools. Again, there was no culture of maintenance of school facilities in the school. There was also lack of sound educational facilities found in most of the schools. This study is related to the present study as it reveals that there are gaps in the security management in most of the schools studied, no emergency plan and disaster management. There were no proper inspections to discover when school facilities were getting faulty.

Ducan and Enose (2010) conducted a study on assessment and implementation of safety policy in public secondary schools in Kisumu. The study investigated the availability and implementation of certain emergency response strategies in public secondary schools. Five research questions were posed to guide the study and three null hypotheses were formulated. Stratified random sampling was used to select 54 head teachers and 54 quality assurance and standard officers. The instruments used for data collection were questionnaires. Mean and standard deviation were used to answer research questions while t-test was used to test the hypotheses. The findings of the study showed that the implementation of some safety policies was to a large extent satisfactory in the schools studied as evidenced by the following: fire extinguishers, emergency team members available in the schools, dormitories in many schools had emergency doors. Again, most of the dormitories in the schools were fitted with emergency doors. This study is contradictory to the present study because the findings proved that there is proper management of safety and security in the public schools while the present study is working on the improvement of safety and security in public schools.

Furthermore, a study was conducted in River State by Amanchukwu, (2012) on application of intelligence

indicators on secondary school safety and security as a measure of learning enhancement. The purpose of the study was to examine the perception or relationship between staff and students in the application of security measures in secondary schools and the setbacks between teachers and students in the enforcement of educational policies in the schools. Two research questions were posed and two hypotheses were formulated for the study. The design of the study was descriptive survey and simple random sampling was used to select 280 students and 80 teachers. The instrument for data collection was questionnaire. The method of data analysis was mean and standard deviation for the research questions while t-test was used to test the hypotheses. The study found fear among students and staff, anxiety, uncertainty, low morale and absenteeism as factors against safety and security. The study also found out that if stringent measures are not put in place to ensure safety in schools, Nigeria risk not producing men and women it needs to guide the country in the coming years. This study is related to the present study because it emphasized that school safety and security determines the end product of the school and the society at large.

Mastisa (2011) conducted a research on the exploration of safety in township secondary schools in Free Town. The purpose of the study was to examine the safety and security of teachers and learners in township secondary schools. Four research questions were posed and two hypotheses were formulated. The design of the study was exploratory, simple random technique sampling was used to select four out of five education districts all of which 44 secondary schools were selected. The respondents were 44 principals' and 352 teachers which amount to 396 respondents. The instruments for data collection were questionnaires and the data were analysed using mean and standard deviation to answer the research questions while t-test was used to calculate the hypotheses. The findings revealed that despite numerous laws made to protect the rights of the teachers and learners in South African schools, teachers and learners were still not protected. This is because the laws were written without proper implementation. The study is related to the present study as it was found that there are no safety plans made to protect the safety and security of the school, staff and the learners. It differs from the present study as it suggests that there is need to have code of conduct for the staff and the learners instead of equipping the schools with security system in order to make school environment peaceful for teaching and learning. The current study intends to fill this gap. Studies on arrangements to improving the safety

and security of learners in public secondary schools were carried out. A study was conducted on the safety and security of learners in South African public secondary schools by Prinsloo (2005). The purpose of the study was to determine what school management should put in place to ensure that the safety and security rights of learners is protected in the school environment. Four research questions were posed and two hypotheses were formulated. The design of the study was descriptive survey and simple random sampling technique was used to select 64 public secondary schools. 968 persons were the respondents which are made up of principals and teachers. The instruments for data collection were questionnaires and the data were analysed with Mean and Standard deviation to answer the research questions and t-test statistics was used to test the hypotheses. The researcher found out that there was unequal treatment of girls in South African schools and this has negative impact on the rights to education and human dignity. He also found out that school management have not shown much interest to protect the safety rights of the learners by providing some security devices and rebuilding of school fences. The study relates to the present study because the dwelt on the area of safety and security of learners and the need to provide secure environment for learning.

A similar study was conducted by Hasten (2006) on safe school for teaching and learning. The purpose of the study was to find out the perception of teachers on the school safety and security of the teachers and learners. Three research questions were posed and two hypotheses were formulated to guide the study. The design of the study was descriptive survey. Simple random sampling technique was used to select the teachers and the head teachers of the schools sampled. The total number of respondents was 98. The instruments for data collection were questionnaires; Mean and Standard deviation were used to answer research questions while t-test statistics was used to test the hypotheses. The findings indicated that public schools in Malawi were being neglected. There was no proper maintenance of the school buildings, grounds, fences and school facilities. Another discovery was that the general behaviour of the teachers and the students' exhibit contribute to school security threat in the school environment. Again, the researcher found that there was no trust among the members of the staff and students are unfriendly to each other. The study is related to the present study in the area of safe school for teaching and learning. However, it did not cover the improvement of safety security management.

Dewet (2007) conducted a research on school violence in Lesotho, experience and observation of the learners. The purpose of the study was to determine how school violence affects teaching, learning and the safety of the learners. The study was guided by six research questions and four hypotheses. The study was a case study. Simple random sampling technique was used to select the teachers, the learners and the principals who were the respondents and the total number of respondents was 520. The instrument for data collection was questionnaire. The data was analysed using Mean and Standard deviation for the research questions and ANOVA for the hypotheses. It was discovered that constant school violence in the schools which put the lives of the students in danger. It was also revealed that the rules and regulations of the schools were mere paper works. They were not effectively implemented and there was no disciplinary management in the schools. This makes the behaviour of some of the students become threats to the lives of others. The study is related to the present study in the area of safety of teachers and learners. However, the study was carried out in Lesotho while the present study is in Nigeria.

A similar study was conducted by Solomon (2007) on the rights of the learners in Mashakhane public secondary schools. The purpose of the study was to determine what rights the learners should enjoy in their learning institutions and what the management should put in place to safeguard the learner's rights. Two research questions were posed and two null hypotheses were formulated. The study was a case study and simple random sampling technique was used to select the respondents. A total number of 1240 of respondents which was made up of the learners, teachers and their principals were used for the study. The instruments for data collection were questionnaires. Mean and Standard deviation were used to answer the research questions while ANOVA was used to test the hypotheses. The researcher discovered that learners in the public schools are aware of their rights but do not want to accept their responsibilities. The researcher observed that this has allowed an atmosphere that could not support effective learning. The researcher also observed that those rights of the learners were not effectively implemented and so the learners were easily exposed to security threats. This study is related to the present study because it revealed the weakness of the management in keeping the school environment free of safety and security threats for the learners.

Another study was conducted by Cosmas and Kuttickatta (2011) on "How chaotic and unimaginable classrooms have become insight into

prevalent forms of learner's indiscipline. The purpose of the study was to establish the most prevalent form of indiscipline among the learners and how it affects their safety and security. Three research questions were posed and two null hypotheses were formulated to guide the study. The design of the study was descriptive survey. Simple random sampling technique was used to select 125 teachers as the respondents. The instruments were questionnaires and interviews. The data was analysed using Mean and Standard deviation to answer research questions while t-test was used for testing the hypotheses. The findings revealed that, the following forms of disciplinary acts constitute threats to learners and educators in the schools. These are truancy, fighting theft, bullying, vandalism, gunshot and other threatening behaviours. The researcher also found out that the management was doing nothing to improve this situation. Thus, the classrooms and the dormitories are disorderly and threatening grounds. The study is related to the present study because it identified the human security threat which affects the teachers and their teachings, learners and their learning. This is an area which forms part of the present study.

Another, a study was carried out by Mamolibeli, Nithi and Jubulani (2012) on experiencing violence in school: the voice of learners in Lesotho context. The purpose of the study was to enhance the safety and security of learners in public schools. Six research questions were posed to guide the study and three hypotheses were formulated. Simple technique random sampling was used to select the teachers and learners who were the respondents. Their total number was 740. The instruments for data were interviews and questionnaires. Mean and Standard deviation were used to answer the research questions while t-test statistics was used to test the hypotheses. The study found out that learners were exposed to complex patterns of security threats and this was experienced in multiple forms. The researcher also found that few schools were having security gadgets but were in bad condition and in some schools parked in the office. The study is related to the present study as it identifies that security threats are the causes of violence among the students. This creates a gap for the present study which has to find out the ways of improving safety and security of public schools.

Again, a study was conducted by Oadunjoye and Omenu (2013) on the effects of Boko Haram on school attendance in Northern Nigeria. The purpose of the study was to find out if the activities of Boko Haram have direct effects on the attendance of pupils and students to schools. The study was guided by

three research questions and two hypotheses. The design of the study was descriptive survey. Simple random sampling was used to select two tertiary institutions each from Yobe, Bauchi and Borno States as well as thirty rural primary and secondary schools. The instrument for data collection was questionnaire. The data was analysed using mean and standard deviation for the research questions and the t-test was used for the hypotheses. The findings of the study revealed that school attendance is affected in the areas prone to Boko Haram attacks in Northern Nigeria. In addition, schools are often protected during insurgency by government security forces. The researchers also discovered that schools record very low school attendance as parents disallowed their children from attending schools. This study is related to the present study because it discovered Boko Haram and insurgency as major security threats in the Northern States.

The study was conducted to investigate safety and security measures at public schools by Leandri (2011). The purpose of the study was to examine and evaluate the existing security measures in place at difference secondary schools. Three research questions were posed and two hypotheses were formulated to guide study. The design of the study was descriptive survey. Simple random sampling technique was used to select 1685 scholars and 106 educators that form the sample of the study. The instruments for data collection were questionnaires and interviews. The method of data analysis was Mean and Standard deviation answering the research questions and t -test was used for testing the hypotheses. The findings of the study indicated that majority of the schools selected were not having emergency response plans which is one of the security strategies needed for school safety. In addition, most of the schools do not conduct dormitory and locker searches to seize the weapons with which some students use to threaten the lives of others. The researcher also discovered that most of the schools were not having perimeter fencing and there was nothing like security drills for the learners and educators. This study is related to the present study in the area of security measures.

Another study was conducted by Isaac and Musibau (2010) on school plant planning and students learning outcome in public secondary schools. It was to investigate the relative contribution of school plant planning to students' safety and learning outcomes. Two research questions were posed and two hypotheses were formulated to guide the study. A descriptive survey research design was used for the study. Multistage stratified and simple random

sampling technique was used to select 1650 respondents comprising of 150 principals and 1500 teachers. The instruments for data collection were questionnaires and the data were analysed using Mean and Standard deviation while Pearson product moment correlation was used to test the hypotheses. The study revealed that the level of students learning outcome is high when the school plant is safe and secure. It also revealed that poor classroom, laboratories planning and poor school plant maintenance services have negative impacts on students learning outcomes. The study is related to the present study because it dwelt on school plant planning which is part of the study.

A similar study was conducted by Odufowokan (2011) on school plant planning as correlate of students' academic performance. The purpose was to find the relationship between school plant planning, school safety and student academic performance in the schools. Four research questions were posed and three hypotheses were formulated to guide the study. The design of the study was a descriptive survey. Multistage stratified and simple random sampling technique was used to select 1650 and 150 principals which form the sample of the study. The instruments for data collection were questionnaires. The data was analysed using Mean and Standard deviation and Pearson product moment correlation was used for the hypotheses. The study revealed that most of the schools were not properly planned in terms of sitting and security devices. Again, the study also revealed that there was no special safety plan for the safety and security of teachers and students. It also revealed that due to the security challenges prevalent in most of the schools their academic performance was low. The study is related to the present study in the area of school plant planning and the influence on students general.

Xaba (2006) conducted a study on the basic safety and security of school physical environment. The purpose of the study was to find out how the basic safety of the school environment affects the learners and the educators in the schools. Three research questions were posed and two hypotheses were formulated. The design of the study was descriptive survey. Simple random sampling technique was used to select 69 teachers from secondary schools and 69 teachers from primary schools. The instruments for data collection were questionnaires. Mean and Standard deviation were used to answer the research questions while ANOVA was used to test the hypotheses at 0.05 level of significance. The findings of the study revealed that most of the schools were collapsed and have cracked walls which form death

traps to students and educators. Another finding was that most of the schools have not safety planned policy and no internal services of the school facilities. The study is related to the present study as it emphasis on equipping and maintaining school facilities for the safety and security of every school member.

Bert (2011) conducted a study on the impact of school facilities on learning environment. The purpose of the study was to examine the impact of quality and functioning facilities on the school environment. Five research questions were posed and four hypotheses were formulated to guide the study. The design of the study was descriptive survey study. Simple random sampling was used to select 480 respondents made up of teachers and the head teachers. The instruments for data collection were questionnaires and interviews. The data was analysed with Mean and Standard deviation for answering the research questions and ANOVA was used to test the hypotheses. The findings of the study indicated that there was a relationship between school facilities and the safety of learners in the learning environment. In addition, the study revealed that there was no proper management of school facilities and maintenance services. The study is related to the present study because it dealt with school facilities and leaning environment which is one of the major variables in the present study. Another study was carried out by Maryland State Department of Education on safety measures for managing school safety. The purpose of the study was to examine the safety practices across the state and methods to provide a safe learning environment. The study was guided by four research questions and two hypotheses. The design of the study was casual comparative study. Simple random sampling technique was used to select the respondents. The respondents were school teachers and public safety personnel. The total of the respondents was 108. The instrument for data collection was questionnaire. The research questions were answered with Mean and Standard deviation while t-test was used to test the hypotheses. It was found that the use of emergency management agency and law enforcement personnel to train and provide technical assistance to the school personnel were not employed. Again, safety practices like use of metal detectors, surveillance cameras and some other security measures were not practicable in many of the schools. The study is related to the present study in the area of safety measures which is one of the concerns of the present study.

Ibrahim (2010) conducted a study on the manager's view about school safety and security from

invitational theory perspective. The purpose of the study was to determine the views of school managers on the preventive measures of keeping schools safe and secure. Two research questions were posed and two hypotheses were formulated for the study. The design of the study was descriptive survey. Simple random sampling was used to select 35 managers out of 107 in the centre of Elazy city. The instrument for data collection was questionnaire. Mean and Standard deviation were used for answering the research questions and ANOVA was used to test the hypotheses. It was found that most of the schools are not well equipped in the area of human resources. And also failed in the maintenance and repairs of damage facilities. The study is related to the present study in the area of school safety and security but differs in the area of study. A study was also carried out by Klru, Mbagua and Sang (2011) on the challenges facing head teachers in security management in public secondary schools. The purpose of the study was to find out the problems of implementing security measures by the head teachers in the public secondary schools. Three research questions were posed and two hypotheses were formulated to guide the study. The design of the study was descriptive survey. Simple random sampling technique was used to obtain the needed sample of 27 head teachers, 35 prefects and 34 security guards which yielded a total number of 96 respondents. The instruments for data collection were questionnaires. Data was analysed using Mean and Standard deviation and Pearson product moment correlation was used to test the hypotheses. The findings of the study revealed that schools in Kishii were beseeched with security threats such as strikes, thefts and students fighting with dangerous weapons. The study also revealed that the head teachers and the security guards are not vast with strategies used in keeping the school environment safe and secure. The study is related to the present study as it dealt with the security measures with which to keep the school environment safe. The study also discovered the challenges the 80 head teachers are faced with in managing safety and security of the public schools which is the gap the current study intended fill. Studies on the Threats Prevention Strategies needed in Public Secondary Schools.

Nompumelelo (2010) conducted a study on exploration and promotion of safety in schools. The purpose of the study was to discover security prevention strategies for handling safety and security threats in the public secondary schools. To guide this study, four research questions were posed and two hypotheses were formulated. The design of the study was Ex-post-facto research design. Stratified random

sampling was used to select 78 respondents which comprise of teacher, students and principals. The instruments for data collection were questionnaires. The method of data analysis was Mean and Standard deviation while ANOVA was used to test the hypotheses. The researcher revealed that the school stakeholders were not involved in the threat's prevention strategies made for the schools. Thus, the strategies set were ineffective. The researcher also found out that most of the schools lack admission policies, copies of code of conduct for the teachers and learners which enhances security threats free environment. The study is related to the present study because it recommended that every school should have a school safety plan and that every member of the school community should be involved in safety and security keeping.

Another work was done by Smith (2010) on the role of school discipline in combating violence in public secondary schools. The purpose of the study was to examine the role of school discipline as a security threat prevention strategy. Five research questions were posed and three hypotheses were formulated. The design of the study was descriptive survey. Simple random sampling technique was used to select 708 respondents which comprise of principals and teachers as the respondents. The 81 instruments for data collection were questionnaires. The research questions were answered with Mean and Standard deviation while t-test was used to test the hypotheses. The result revealed that most schools have neatly typed code of conducts which are given to students but there was no implementation of the rules, searches of rooms, lockers were not done with seriousness and so most of the students' harbour weapons with which they threaten the lives of other students. The study is related to the present because it dealt in school discipline in combating violence in public secondary schools which is part of security threat which is one of the concerns of the present study.

Furthermore, a study was conducted by Monkwe (2010) on strategies and policies that secondary schools can employ to protect educators and learners in the school environment. The purpose of the study was to investigate ways of preventing security threats which affects educators and learners in the school environment. Five research questions were posed two hypotheses were formulated to guide the study. The study was a descriptive survey. Stratified random sampling technique was used to select 760 respondents which were made up of teachers and principals. The methods of data collection were questionnaires. Research questions were analysed

using Mean and Standard deviation while t-test statistics was used to test the hypotheses. In the findings, Monkwe, observed that teachers and students do not feel protected in the school environment which is full of security threats. The result also proved that there were no trained security personnel in the schools studied. Another discovery was that many of the secondary schools do not have code of conducts that could assist to check the behaviour of the teachers and the learners, thus there were many security threatening behaviours. The study is related to the present in the area of strategies and policies that can be employed to protect educators and learners which is also one of the major concerns of the present study.

2. Statement of the Problem

Promoting and providing a supportive learning environment in which all learners and every member of school community are expected to feel safe is an essential function of all schools. There appear to be security threats across public secondary schools in several places including Edo State with attendant emergencies. There is also evidence that adequate measures have not been put in place to check the threats. These create the need to explore ways of improving on security technology and safety management in public secondary schools in Edo North Senatorial District of Edo State with a view of making the environment more conducive for teaching and learning.

3. Purpose of the Study

The main purpose of the study is on the evaluation of the security technology for proactive safety management in public schools of Edo North Senatorial District of Edo State. Specifically, the study will:

- Ascertain the security technology devices and safety mechanism available for effective security management in public schools in Edo north senatorial district of Edo State.
- Determine available emergency response plans for combating security and safety threats in public schools in Edo north senatorial district of Edo State.
- Determine the relationship between school population and security technology in public schools in Edo north senatorial district of Edo State.
- Determine the relationship between school environment and security technology in public schools in Edo north senatorial district of Edo State.

- Determine the relationship between school ownership and security technology in public schools in Edo north senatorial district of Edo State.

4. Research Questions

The following research questions have been formulated to guide the study:

- What are the basic security technology and safety mechanisms for proactive safety management in over populated public schools in Edo North Senatorial District of Edo State?
- What are the available emergency response plans for combating security challenges and safety threats in the school environment of public schools in Edo North Senatorial District of Edo State?
- What is the relationship between school population and security technology in public schools in Edo north senatorial district of Edo State.
- What is the relationship between school environment and security technology in public schools in Edo north senatorial district of Edo State.
- What is the relationship between school ownership and security technology in public schools in Edo north senatorial district of Edo State.

5. Hypotheses

The following hypothesis were tested in this study at 0.05 alpha level.

- There is no significance relationship between school population and the security technology for proactive safety management in public schools of Edo north senatorial district of Edo State.
- There is no significance relationship between school environment and the security technology for proactive safety management in public schools of Edo North Senatorial District of Edo State.
- There is no significance relationship between school ownership and the security technology for proactive safety management in public schools.

6. Research Methodology

In this study a descriptive survey design will be adopted. According to Nworgu (2006), this design

aims at collecting data on, and describing in a systematic manner, the characteristics, features or facts about a given population. This study described certain variables in relation to a given population. The design will therefore be considered as appropriate because the study is the evaluation of security technology for proactive safety management in public schools Edo Senatorial District of Edo state involving principals and teachers. Questionnaires will be used to collect the information on the evaluation of security technology for proactive safety management in public schools Edo Senatorial District of Edo state. The choice of this approach is because it is seemed to be the appropriate method to collect data for the study.

6.1 Population of the Study

The Edo North Senatorial District has Six (6) Local Government Areas and constitutes roughly about 25 per cent of the entire population of Edo State. It is made up of the Afemai and Akoko-Edo people. The Afemai include the Etsako with 12.19 per cent and Owan with 7.43 per cent while the Ako-Edo speaking people constitute 5.70 per cent of the entire state population with an estimated population of 5 million in the Edo State. The sample population for this study is all the principals and teachers from all the public secondary schools in Edo North Senatorial District of Edo State.

6.2 Sample and Sampling Technique

The sample of this study consists of 155 respondents, made up of 15 primary school headmasters/headmistress, 20 school principals and 120 teachers, which was drawn from both public primary and secondary schools in Edo North Senatorial District of Edo State through multi-stage sampling technique as the followings: simple random sampling technique will be used to drawn 3 LGAs education offices out of the 6 LGAs education offices in Edo North Senatorial District of Edo State Nigeria. Also, the choice of using schools that have existed for more than ten years is to ensure that schools

selected must have experienced series of security traits. Lastly, stratified sampling technique was used to draw the schools and the respondents for the study giving a total of 15 primary school headmasters/headmistress, 20 school principals and 120 teachers from both primary and secondary schools.

6.3 Instrument for Data Collection

Two instruments were used for data collection in the study namely; check list and questionnaire on the security technology for proactive safety management in public secondary schools. The structured questionnaire as the research instrument was administered to 155 respondents located in Edo North Senatorial District of Edo State.

6.4 Validation of the Instrument

The instruments for this study were validated by three experts. A lecturer from the Faculty of Education University of Benin, Benin City, Edo State, Nigeria; a Chief Statistician from Rubber Research Institute of Nigeria, Iyanomo, Benin City and a senior lecturer from Delta State University, Abraka. Terms of validation of the instruments includes clarity, usability and suitability.

6.5 Method of Data Analysis

Research questions were subjected to descriptive statistics and Univariate ANOVA for the analyses.

7. Result and Discussions

Here we present results of data analysis based on three research questions and three hypotheses that guided the study. Results are presented individually in tables according to the order of the research questions and hypotheses. The sample size for this study is 155 but the number used for the study was 150. This was as a result of few questionnaires that was not collected from the field.

Table 1: Frequencies (F) and Percentages (%) of the respondents on available devices for the management of security in public schools in Edo North Senatorial District of Edo State

Garget Items	Frequency	Percentage	Decision
Video surveillance	5	3.33	NA
Access control	23	15.33	NA
Central communication centre	43	28.67	NA
Staff and students ID cards	48	32.00	A
Visitors guidelines	50	33.33	NA
Burglar bars on the windows	80	53.33	A
Iron doors	79	52.67	A
A lightening system on sensitive areas	55	36.67	A
Security lightening, illuminating paths	36	24.00	A
Secured car parking	8	5.33	A
Manned control room with 24 hours operators	0	-	NA
Metal dictators	0	-	NA
Armed response service	0	-	NA
Sprinkler system to control fire outbreak	3	2.00	A
Perimeter fencing of the school	27	18.00	A

KEY: NA = Not available, A = Available

Table 1 shows that items such as Burglar Bars on the windows and Iron doors respectively had percentage of 53.33 and 52.67. This implies that less than the average of total respondents shows that there are Burglary proof and door protectors in their school building. The results show that the major gargets which suppose to be the main instrument for security is not really available in most of the public schools as shown in Table 1 above. Also, from Table 1, instruments such as manned control room with 24 hours operators, metal dictators, armed response service and sprinkler system/extinguishers to control to control fire outbreak are not available of the public schools. This study shows further, that 18 per cent of the public schools in Edo North Senatorial District of Edo State and perimeter fencing to protect pupils from being attacked during school hours. However, with respect to the benchmark of 50% for the whole items, it shows that the security devices for improving security in public schools in Edo North Senatorial District of Edo State.

From the analysis however, it can be deduced that such security devices and facilities as manned control room with 24 hours operations, metal dictators and armed response services were not found available in some of the public schools, while a good number of them such as lightening system on sensitive areas, security lightening illuminating paths, secured car parking, video surveillance, access control, central communication centre, use of staff and students Identity cards, Visitors guidelines were found available but not in a functionable state due to non-availability of power supply in most of the areas where the public schools are located.

Table 2: Frequencies (F) and Percentages (%) of the respondents on available emergency responses plans for managing security threats in public schools in Edo North Senatorial District of Edo State

Garget Items	Frequency	Percentage	Decision
Emergency response team	102	68.00	A
Fire extinguisher	46	30.67	NA
School ambulance	2	1.33	NA
Fire blanket	10	6.67	NA
Sand bucket	25	16.67	NA
Communication/recorder	95	63.33	A
Emergency medical bags	30	20.00	NA
Students counselling services	27	18.00	NA
Students Roll call	33	22.00	A
Bell signals	35	23.33	NA
Emergency PTA meetings	29	19.33	NA

KEY: NA = Not available, A = Available

Table 2 shows the frequencies and percentages of items on the availability of response plans for combating security and safety threats in public schools in Edo North Senatorial District of Edo State. With the benchmark of 50%, all items below 50 per cent are not generally available while others above the 50 per cent benchmark are found to be available in the school locations.

From the analysis, it can be seen that only few emergency responses plan such as emergency response team, students roll call and communication/recorder can be found in some of the public school in Edo North Senatorial

District. Other emergency response plans such as fire blanket, sand bucket, emergency medical bags, students counselling services and Bell signals are not found available in the public schools.

Table 3: Mean (X) and Standard Deviation (SD) ratings by the respondents on ways of improving security of staff in public schools in Edo North Senatorial District.

Items	SDp	XT	SDT	Xg	SDg	Decision
Having crisis response team development for emergencies	0.76	3.23	0.76	3.25	0.76	A
Having constant school site surveys	0.53	3.38	0.59	3.38	0.58	A
Building school safety expectations into school programmes	0.47	3.29	0.56	3.3	0.55	A
Building a network of parents and community volunteers in school compound for easy communication	0.57	3.27	0.69	3.28	0.68	A
Having a model school safety plan	0.72	3.24	0.75	3.24	0.73	A
Establishing security audits for checking damaged equipment and facilities that need repair	0.5	3.47	0.53	3.17	0.67	A
Training programmes for educators and principals on school safety and crisis response	0.99	2.89	0.92	3.23	0.93	A
Improving emergency equipment in schools	0.79	3.23	0.68	2.98	0.85	A
Providing ID card scanner for checking fake ID cards	0.87	3.2	0.7	3.34	0.72	A
Cluster Mean				3.24		A

KEY: NA = Not available, A = Available

Table 3 shows that all the items in the cluster from 26-34 have the grand means of teachers and principals' responses as 3.25, 3.38, 3.29, 3.28, 3.24, 3.17, 3.23, 3.98, 3.34 respectively and the cluster means as 3.24. This indicates that all the respondents agree in all the suggested ways of improving the security of staff in public schools.

From the analysis, it can be concluded that improving security of staff in public schools in Edo North Senatorial District can be done by introducing compulsory staff identity cards, code of conducts, staff development programmes, weekly/monthly staff briefings, fencing of staff quarter and school environment, conducting security surveys in schools and creating community mediation services with various schools management to help support school activities.

Hypotheses 1: There is no significance difference in the school size population and the security technology for proactive safety management in public schools of Edo North Senatorial District of Edo State.

Table 4: Regression Analysis showing the effect of school population size and the security technology for proactive safety management.

Model	B	Std error	T	Sig T	R	R2	F
Constant	12.154	0.862	14.119	0.000			
School population size	0.685	0.032	21.493	0.000	0.570	0.325	451.917

p< 0.05

Table 4 shows that there is statistically significant effect of school population size on the security technology for proactive safety management in public schools. About 35% of the variation in the security technology is explained by school population size ($R^2 = 0.325$, $p<0.05$). The remaining 65% unexplained variation is largely due to variation in order variables outside the regression model. The regression model is statistically significant in terms of goodness of fit ($F = 461.917$, $p<0.05$). Therefore, we do not accept the null hypothesis.

Hypotheses 2: There is no significance difference in the school environment and the security technology for proactive safety management in public schools of Edo North Senatorial District of Edo State.

Table 5: Regression Analysis of school environment and security technology for proactive safety management.

Model	B	Std error	T	Sig T	R	R2	F
Constant	17.606	0.819	21.501	0.000			
School population size	0.500	0.032	15.833	0.000	0.455	0.207	250.695

p< 0.05

The result in Table 5 reveals that school environment has significant effect on security technology for proactive safety management in public schools in Edo North Senatorial district of Edo state ($t = 15.833$, $p<0.05$). School environment accounted for about 23%. ($R^2 = 0.207$) of the total variation on the security technology of overall regression model is significant ($F = 250.695$, $p < 0.05$), hence we not accept the null hypothesis.

Hypotheses 3: There is no significance difference in the ownership of public/ private schools and the security technology for proactive safety management in public schools.

Table 6: Regression Analysis of the school ownership and security technology.

Model	B	Std error	T	Sig T	R	R2	F
Constant	16.233	0.835	19.429	0.000	0.485	0.236	512.426
School population size	0.542	0.032	17.188	0.000			

p< 0.05

Table 6 shows that school Ownership has significant effect on security technology (t = 17.188, p<0.05). About 23.6% (R2 = 0.236) of the total variation in security technology is explained by school ownership while the remaining 76.4% is largely due to variation in other variables outside the regression model. The regression model is statistically significant at 0.05 level. (F = 295.240, p<0.05). The null hypothesis is thereby not accepted.

8. Conclusion

This study found out that there is significant relationship between the school population size and the security technology for proactive management in public schools in Edo North Senatorial District of Edo State, Nigeria. It shows that when the school is over populated that a poor security management will not be able to control the pupils without some technology devices being put in place. Also, the study found out that there is significant relationship between the school environment and security technology for proactive safety management. The position of the public schools within the communities becomes a problem since most of them are sited outside the town and hence faced with more security challenges. In any business setting, the security is the core mandate that management holds with high esteem and enforced by the themselves. Therefore, this study has shown that owners of public schools (government or private) must ensure good security technology within their school premises to secure their pupils and staff from being attacked by hoodlums.

9. Recommendations

Based on the findings of this study the following recommendations are made:

- In view of the fact that the security devices were not generally available in the public secondary schools, the school management should take the issue of security as a matter of priority and so allocate money for the purchasing of such safety and security building equipment as video surveillance

(CCTV), sprinkler system to control fire damage, metal dictators, iron doors, employ armed response services and secured car parking.

- Since emergency response plans/devices for managing security threats are virtually unavailable in the schools, school management should introduce such emergency response plans as holding emergency PTA meetings, making students occasional roll calls, establishing student counselling services, having response team and training the student by bell signals. Management should also put in place such emergency response devices as, fire extinguishers, fire blanket, sand buckets, providing off site evacuation, emergency medical bags and school ambulance.
- The school management should adopt ways of improving security of staff by introducing staff identity cards with seals to avoid fake, introducing staff code of conduct, school counselling services and providing conflict resolution services to keep a positive school climate. More to this, the school management can fence staff quarters, conduct security surveys in the schools and staff quarters in order to control the movement of weapons and can always organize staff development programmes.
- School management should make arrangements on improving students' security, establishing such measures as having constant student briefing and drills especially on security matters. Also measures such as having constant searches of student's lockers to seize weapons and dangerous objects having badges attached to student's uniform and implementing discipline management by the school authority to control threatening behaviours. Furthermore, the school management should provide the list of contraband materials which should not be found with students, have constant audit, supervision of both in the hostels and classrooms and also have

security officers in the school entrances to control influx of hoodlums.

- Management should provide clear measures be appropriate measures for managing security of school plants such as having crisis response team for emergencies, having constant school site surveys, building school safety expectations into the school programmes, having a model school safety plan. The school management should also establish security audits for checking damage equipment and facilities, training programmes for educators and principals on school safety and crises response and improving emergency equipment in schools.
- Since security is paramount for effective teaching and learning in the school the management need to adopt threat prevention strategies to keep the environment safe. This can be done by adopting crime prevention through environmental design. The reason for this is to increase the ability to monitor and prevent delinquent behaviours. Other strategies are, having a perimeter fencing of the entire school, having adequate lightening in the school compound and purchase of current communication device to pass information quick. There should be constant maintenance of school facilities in order to forestall breakdown, establishing school patroller programme, having a written down safety policy, strong discipline management and developing school-community-government partnership to help the school security agents.

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