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**RELATIONSHIP BETWEEN PRINCIPALS’ SECURITY SAFETY TECHNIQUES AND EFFECTIVE MANAGEMENT OF POST BASIC SCHOOLS IN ADAMAWA STATE, NIGERIA**

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**Abstract**

This study examined the relationship between principals’ security safety techniques and effective management of Post Basic Schools in Adamawa State, Nigeria. Three research questions and four hypotheses guided the study. Correlational research design was adopted for this study. The population of this study is 6140. This population comprise of 340 principals’ and 5800 teachers from the five education zones in Adamawa State. This sample for this study is 614. This sample size comprised 580 teachers’ and 34 principals. Multi-stage sampling procedure was adopted for the study. The instrument used for data collection is a self-structured questionnaire titled “Principals’ Security Safety Techniques Questionnaire (PSSTQ)” with a total of 15-items. PSSTQ yielded a reliability co-efficient of 0.80. Descriptive statistics of Mean and Standard Deviation were used in answering the three research questions raised for the study using real limits of numbers. Simple Linear Regression was used in testing hypotheses 1, 2 and 3, while ANOVA of Multiple Regression Analysis was used in testing hypothesis 4 at 0.05 level. The findings revealed that there is a significant relationship between the predictors (physical security management, human security management, technological security management) and effective management of Post Basic Schools, as evidenced by a significant F-statistic (F=5.996, p < .05). It can be concluded that technological security management technique makes the strongest unique contribution to explaining effective management of Post Basic Schools in Adamawa State, Nigeria. Based on the findings of the study, it was recommended among others: principals should endeavor to always use warning signs on perimeter fence, burglar proofing on windows and, protective lighting and other barriers (such as security gate across a passage) as these could further enhance effective school administration. Federal government, State Government and other non-governmental organizations should ensure principals deploy school personnel, parental participation and Rapid Armed Response (Policemen) in combating insecurity in their respective schools by providing them with the necessary manpower requirements and financial support.

**Keywords: Principals’ Security Safety Techniques, Physical Security Management Technique, Human Security Management Technique, Technological Security Management Technique, and Effective Management of Post Basic Schools.**

**1 Introduction**

Learning requires a positive atmosphere where students feel not just physically safe, but emotionally and psychologically safe from all forms of dangers. Creating such environment means ensuring students safety throughout the entire school day by keeping them free from both physical, social or emotional threats within and outside the school environment. School security management is an integral and indispensable part of the entire school management system and must be properly handled to create a conducive school climate for effective pedagogy. [23] noted that students cannot learn if they do not feel safe and that a safe school environment is essential for students of all ages. For schools to be save, [10] noted that schools should have safety programmes and preventive strategies to be implemented by all stakeholders in the school. The finding is also supported by [40] who pointed out that to ensure security in the school compound, cameras should be placed throughout the school building which will allow school personnel to see and possibly video tape motion of anyone within the camera view in the school.

To continuously advance with effective security measures in schools, suggesting that the height of school fences and gates should be increased up to 1.5metre to provide effective security in the institutions. Besides, [13] opined that there should be installation guide signage at the gate, patrol of the school by community volunteers and the engagement of armed security guards in the schools. [36] suggested that school should go for Cisco physical security system which uses a Cisco IP video surveillance camera to dictate motions near the fence and automatically send alert to the school security officers’ mobile phone or pager. All these suggest to the effectiveness of the security measures identified in this study in providing sustainable security management measures in our secondary schools.

School security safety technique is the process of creating conducive and proper internal environment in the school [31]. School security safety technique according to [18], it refers to the steps taken to secure the learners both physically and psychologically by the use of variously assigned security awareness programmes and strategies. [20] asserted that school security management refers to ways of providing security technologies and strategies which can be used to mitigate formidable security threats in the school. It has to do with plans or measures taken to protect and manage school violence, reduce security risks, and ensure that the school environment is safe for learning. School security management is the plan for the protection that is given to the stakeholders within the school, learners, educators and managers from crime and accidents, by means of well-drawn policies which should be well managed [39]. The school is an organization that needs to have planned safety rules and regulations to protect its components so that the culture of learning and teaching is enhanced. According to [21], school security management refers to strategies and procedures required to co-ordinate the diverse activities of the school organization in order to achieve maximum safety. One of the important duties of the school manager is to ensure that safety programmes are implemented and that necessary steps are taken whenever situations arise which could be potentially dangerous [8].

Re-iterating, Ronoh (2018), safety and security measures are means of preventing crisis, and reacting to violations of existing rules that prohibits unruly behaviours which are likely to cause security and safety risks. Inconsonance to [35], [16], states that safety and security measures in schools involve obedience to] rules and regulations, reading labels on chemicals, laboratory equipment, wearing safety gadgets, having fire extinguisher in required places, observing road/path signs and highway codes, etc. Hence, a well-functioning school is not only a school that promotes teaching and learning, but also cares for safety and security of personnel and the available facilities. As opined by [14], school safety and security management measures/techniques are the strategies and procedures required to coordinate the diverse activities of the school, protect and manage school violence, reduce security risks and ensure that the school environment and the facilities are safe for teaching and learning. School principals embark on safety and security measures to protect students, staff and facilities in the event of dangers.

School security is the establishment and maintenance of protective measures that ensure a state of inviolability from hostile act or influences [29]. This is to say that security measures are to be reinforced to keep students, teachers, other workers and the environment free from harm and danger. Creating and maintaining secure environment needs clear understanding and management by all students, teachers and non-teaching staff. According to [29], it is essential that scholars and members of staff feel safe at school and it is for this reason that schools should have security plans in place which would be revised regularly.

Effective management of secondary schools refers to the control and co-ordination of man, material and financial resources of the school in order to attain the predetermined and stipulated aims, goals and objectives of secondary school education. In this regard, a well- managed school begins with advanced security and pedagogical planning by the head of the school and the teachers to ensure that teachers have adequate knowledge of their subjects and that security needs of students because without security, no meaningful learning can take place. The principal is expected to treat school security as a priority to ensure its adequacy in the environment. Managing school security is achieved through policies and programmes that embrace all stakeholders and demands that principals should be up-to-date with the modern security management practices that will help in making their schools safe and secure for teaching and learning. Despite the benefits of maintaining security in secondary schools in Nigeria and Adamawa State in particular, it appears that school principals, who are the chief executive officers of public secondary schools, are failing to apply adequate security management practices or measures in their schools. This claim is further evidenced by the prevalent incidence of bullying, gansterism and cultism by a group known as ‘shila boys’ which is prevalent in secondary schools in Adamawa State [44]. UNICEF further noted that principals must be concerned not only with the quality of instruction, but also with the maintenance of safety and security in the school. [29] asserted that the principal should endeavor to improve the school environment through the application of security management practices so that the teachers could feel confident, respected and safe. Managing school security is done by means of policies and programmes which will embrace all stakeholders.

Most of the incidents witnessed nowadays in schools indicate that schools are not safe and secure and that the perpetrators of violence in school come from within and outside schools [42]. The author stated that these perpetrators include students, their parents and mobs or individuals from the school communities and their targets are students, educators and principals, security guards and parents. Over the last decade, the consistent occurrence of insecurity, loss of life, kidnap and brings school security to the top of issues that need to be holistically studied and researched as to how to manage the situation from its current negative stride. [44] while commenting on the rate of insecurity in secondary schools noted that in the year 2021, there have been 20 attacks on schools in Nigeria, with 1,436 children abducted and 16 children dead. Some female and male students feel threatened as a result of rampant incidences of sexual abuse, rape, homosexual, bullying in schools and society. The case of bullying of a youngster, Sylvester Oromoni which happened in Dowen College, Lagos, which led to his death, the case of 10 years old girl of Christ-land College who was gang raped by her colleagues at their trip to Dubai, the case of homosexual reported at Deeper Life Secondary School in Oyu, Akwa Ibom state, just to mention a few [15]. The case of Teaching and learning will be unattainable when safety is amiss in the centre of community development [1]. Despite the challenging situation in the country on school security, schools still open their doors to students and staff knowing fully that the climate is riddled with all kinds of life-threatening mishaps; schools take measures to well manage staff and their students which is a great task added to their already demanding role of training future leaders. One of the important duties of the school principal is to ensure that safety programmes are implemented and that necessary steps are taken to keep the school safe whenever a potentially dangerous situation arises in the school [17].

School security management practice is a combination of strategies and procedures required to co-ordinate the diverse activities of the institution in order to achieve safety [45]. Hence, security management can be defined as the plan for the protection that is given to the stakeholders (learners, educators and managers) within the school from crime and accidents by means of well-drawn policies which should be well managed [41]. In the context of this study, school security management involves measures and procedures put in place to ensure the safety of lives and facilities. Furthermore, [45] highlighted four security management practices for ensuring school safety as follows: school security management procedures, physical security management practices, human security management practices and technological security management practices. When security procedures are in place, it then provides a platform on which physical security measures are put in place to curb security threats in these schools. This study was delimited to physical security management practices, human security management practices and technological security management practices. The school managers have to be at alert by putting adequate physical security measures in place to cope with the current wave of security threats in the country [1] stressed the need to continuously advance with effective school security measures, and suggested that the heights of school fences and gates should be increased up to 1.5 meters. [13], opined that there should be installation of guide signage at the gate, patrol of the school personnel, community volunteers and armed security guards in the schools.

Physical security management practices are implemented in schools to ensure the safety of lives and property. When physical security practices are correctly and effectively implemented by a school principal, maximum protection will be guaranteed. Physical security measures can be divided into three categories consisting of the outside perimeter measures, inner middle perimeter measures and the internal measures [2]. Examples of physical security measures are school fences, school locks and keys, burglar-proof, CCTV, radio, intercom, telephone and intercom systems. The outside perimeter measures are found outside of the school building normally the perimeter (first line of defence) of the premises such as signs, fences and other barriers (barricades), lighting, alarms and patrols. The inner middle ring (inside) are the security measures used within the boundaries of the facility and can include fences and other barriers (walls), alarms, lighting (often with motion detecting capabilities), Close Circuit Television (CCTV) cameras, warning signs, doors, locks, burglar proofing on windows, security staff and access control systems. Lastly, the internal physical security measures are found within buildings and include alarms, CCTV cameras, turnstiles, windows and door bars, locks, safes, vaults, protective lighting and other barriers (such as security gate across a passage [14]. These physical security tools are very essential to maintaining security in the school; however, they cannot function without human beings. Hence, the need for human security management practices [32].

The human security management practices are aspects of security management that deals with the use of human beings in preventing and combating security threats [45]. According to [7], using human beings in security systems is often either overlooked or neglected completely. Despite the facts that human’s plays vital roles in security. It is usually the humans that make the decision to take action and decide on what action to take during a crisis or emergency [7]. Most technological practices will not be able to function successfully without a human component. For example, if an alarm is triggered at a school, a policeman or security guard will have to respond to the alarm in order for the technological aid to work effectively and for the intruder to be apprehended. Some of the human components in security could include guards, community and/or parental participation, school personnel, security officers, private security company personnel on contract who might also offer a rapid armed response service or police officers. As much as the human components of security are important, it is believed that the application of technology will help to improve their ability to ensure adequate security in the school. [45] opined that technological security management practices, as adjunct to physical security management, can be excellent tools and make great contributions to the safety of scholars and staff as well as reducing violence in schools.

Technological security management practices are aspects of security management that deals with the application of technological tools and equipment in preventing and combating insecurity [22]. Technological security management practices should, however, be correctly applied within the school environment and maintained after the installation, otherwise they will not be effective. Security technologies that can be implemented within a school include closed circuit television (CCTV) systems, including the videoing and storing of video surveillance footage whether analogue or digital; intruder alarms; metal detectors or hand- held detectors; x-ray machines and/or card reader systems [29]. According to the authors, these technologies can assist a school by providing information that would not otherwise be available, can free- up manpower and can, in-the-long-run, be cost- effective for a school.

[32], Pointed out that some of the safety and security measures in personnel management (staff and student) could include guards, community or parental participation, security officers, private security personnel on contract who might also offer a rapid armed response service or police officer, town vigilante group. There have been hues and cries over the safety and security of students, staff and facilities in Nigerian secondary schools [38]. [27] stressed that secondary school students in Nigeria are often very much in danger of being harmed and the perception can lead to withdrawal from school. In the same vein, [28] lamented on the adverse effect of insecurity on the students, parents and the community. On the issue of safety of use of school facilities, [46], observed that many educational facilities in Nigerian secondary schools recently are sources of hazards (dilapidated structures, classrooms, furniture’s and bushy environment) to mention but a few. [47], stated that a large percentage of secondary schools in Nigeria are unsafe, there are no fire extinguishers, poor water supply and there is general lack of knowledge about safety and security measures among students and staff.

Despite the importance of school safety, there seems to be an upsurge of violence arising quite rapidly in schools. It seems that a new wave of mayhem in society has not spared the secondary schools. It is expected that secondary school principals and members of the school management should be at alert all the time to prevent occurrence and the acts of hooliganism to avoid blames for professional negligence. In some schools, students resort to senseless destruction, burning, maiming, raping or even killing those teachers they think are harsh on them [29]. Ojo reported that some students go to school with jack knifes, battle axes and even locally made guns to threaten and bully fellow students. These problems not only endanger students and teachers but they also prevent teachers from concentrating on teaching and students from concentrating on learning.

There has also been an increased influx of cult groups into secondary schools in Nigeria including Adamawa State resulting to high security threats. This unfortunate situation has increased the call for adoption of security management measures which may curb the menace of insecurity and make secondary schools safe for teaching and learning. Security management practices like school security management procedures, physical security management practices, human security management practices, and technological security management practices have been proffered as effective in curbing school security threats. However, the level of adoption of these security management practices by secondary school principals ‟ in Adamawa State is not clearly known. Thus, what are the practices applied by principals in Adamawa State to protect immediate school members and her host community from security threats? Therefore, the problem of this study put in question form is: what is the relationship between principals’ security safety techniques and effective management of Post Basic Schools in Adamawa State, Nigeria?

**2 Objective of the Study**

This study examined the relationship between principals’ security safety techniques and effective management of Post Basic Schools in Adamawa State, Nigeria. Specifically, the study examined the relationship between principals’ security safety techniques of;

1. Physical security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria.
2. Human security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria.
3. Technological security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria.

**3 Research Questions**

The following research questions were raised to guide the study:

1. What is the level of physical security management technique in Post Basic Schools in Adamawa State, Nigeria?
2. What is the level of human security management technique in Post Basic Schools in Adamawa State, Nigeria?
3. What is the level of technological security management technique in Post Basic Schools in Adamawa State, Nigeria?

**4 Statement of Hypotheses**

The following null hypotheses were formulated to guide the study and were tested at 0.05 Alpha level of significance:

1. There is no significant relationship between physical security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria.
2. There is no significant relationship between human security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria.
3. There is no significant relationship between technological security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria.
4. There is no significant relationship between principals’ security safety techniques (physical security management, human security management, technological security management) and effective management of Post Basic Schools in Adamawa State, Nigeria.

**5 Methodology**

Correlational research design was adopted for this study. The study area is Adamawa State, Nigeria. The population of this study is 6140. This population comprise of 340 principals’ and 5800 teachers from the five education zones in Adamawa State [34]. Based on the five education zones in Adamawa State, the population is further broken down into; Ganye (1059 principals and teachers), Numan (1236 principals and teachers), Gombi (1178 principals and teachers), Mubi (1291 principals and teachers), and Yola (1376 principals and teachers) respectively. Principals constitute the respondents of this study because of the fact that they are at in the best position to give detailed information on how security safety techniques affect the management of their respective schools. Also, principals constitute the respondents of this study because as instructional heads, they are in the best position to give detailed information on how security safety techniques affect their daily classroom assigned responsibilities.

This sample for this study is 614. This according to [9] who stated that 10% is satisfactory in every population of 5000 and above. And using this method upholds that each member of the population of the study has equal chances of being selected. This sample size comprised 580 teachers’ and 34 principals. Multi-stage sampling procedure was adopted for the study. The reason for using multi-stage sampling is because different sampling techniques were applied at different stages in selecting the Post Basic School principals and teachers [9].

Firstly, schools were stratified into the five already existing educational zones in the State which include; Mubi, Ganye, Gombi, Numan and Yola zones. Simple random sampling technique (hat and draw to be specific) was used in sampling 34 Post Basic Schools from the five educational zones in the state, based on the assertion by [9], that in using simple random sampling technique, each element of the population has equal and independent chance of being included in the sample. To Creswell, simple random sampling does not only give each element in the population an equal chance of being included in the sample, but also makes the selection of every possible combination of the desired number of respondents equal. A total number of 34 Post Basic Schools were selected across the five Education Zones of; Yola, Numan, Ganye, Gombi and Mubi in Adamawa State.

Secondly, proportionate stratified random sampling technique was used in selecting the respective numbers of teachers per sampled school across the five Education Zones in the following order; Yola=127, Numan=117, Ganye=103, Gombi=111 and Mubi=122, totaling 580. Proportional stratified random sampling involves taking random samples from stratified groups, in proportion to the population. This is done to avoid every element of bias that could arise due to the researcher's familiarization with any given Education Zone. Proportionate stratified random sampling technique was used because the researchers were interested in taking random samples from stratified groups, in proportion to the population. The use of this sampling technique is justified because stratification gives a smaller error in estimation and greater precision than the simple random sampling method: the greater the differences among the strata, the greater the gain in precision.

Thirdly, simple random sampling technique was further used in selecting the 580 teachers across the five Education Zones respectively. The choice of this sampling technique is to give each of the 580 teachers’ equal opportunity of being included in the study. In this study, principals and teachers stand in a better position of providing reliable and realistic information needed for the study. Especially as it relates to principals’ security safety techniques (physical security management, human security management, technological security management) and effective management of Post Basic Schools in Adamawa State, Nigeria. Fourthly, purposive sampling technique was used in selecting principals from each of the 34 selected Post Basic Schools in the five Education Zones of; Yola, Numan, Ganye, Gombi and Mubi in Adamawa State

The instrument used for data collection is a self-structured questionnaire titled “Principals’ Security Safety Techniques Questionnaire (PSSTQ)” with a total of 15-items. The items were structured on a five-point rating scale of VHL=Very High Level (4), HL=High Level (3), ML=Moderate Level (3), LL=Low Level (2) and VLL= Very Low Level. To ensure the validity of the instrument, the instrument was submitted to three senior lecturers from the Department of Physical Sciences Education, Faculty of Education, Modibbo Adama University, Yola for face and content validation. Data were collated and analyzed for reliability using Cronbach Alpha Statistic. Cronbach Alpha Statistics was used because it helped the researchers to determine the internal consistency of items of the instrument. The reliability co-efficient of (PSSTQ) yielded 0.80. This total reliability coefficient of 0.80 was considered high enough and reliable to be used for the study.

Six hundred and fourteen (614) copies of the instrument were administered to the respondents by the researchers with the aid of ten well-briefed research assistants who are conversant with the study area. The direct delivery approach was to use to enable the researchers and research assistants to thoroughly explain the purpose of the study to the respondents and also, to ensure all completed questionnaire copies are retrieved on the spot. Descriptive statistics of Mean and Standard Deviation were used in answering the three research questions raised for the study using real limits of numbers. Simple Linear Regression was used in testing hypotheses 1, 2 and 3, while ANOVA of Multiple Regression Analysis was used in testing hypothesis 4 at 0.05 level. The decision rule was that, if the p-value is less than the significance level (α = 0.05), the null hypothesis would be rejected and alternative hypothesis accepted.

**6 Results**

Three research questions were raised and answer using descriptive statistics of mean and standard deviation. Three hypotheses were also formulated and tested at 0.05 level of significance using Simple Linear Regression and Multiple Regression Analysis.

**6.1 Research Question One**

What is the level of physical security management technique in Post Basic Schools in Adamawa State, Nigeria?

To answer this research question, responses on the level of physical security management technique in Post Basic Schools in Adamawa State, Nigeria were collected and analyzed as shown in Table 1.

**Table 1** Mean and Standard Deviation of Level of physical security management technique in Post Basic Schools in Adamawa State, Nigeria

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S/N | Items n=580 | Mean | S. D | Remark |
| 1 | Warning signs on perimeter fence | 4.79 | 1.05 | HL |
| 2 | Burglar proofing on windows | 4.58 | 0.99 | HL |
| 3 | Alarms on doors | 4.36 | 0.92 | HL |
| 4 | Protective lighting and other barriers (such as security gate  across a passage | 4.56 | 0.94 | VHL |
| 5 | Turnstile configured to enforce one-way human traffic in schools | 3.99 | 0.86 | HL |
|  | **Average Mean** | **4.46** | **0.95** | **HL** |

The average mean and standard deviation of physical security management in Post Basic Schools in Adamawa State, Nigeria are shown in Table 1. In **Post Basic Schools in Adamawa State**, a high level of physical security management technique indicated by an average mean score of 4.46 and standard deviation value of 0.95. This implies that principals use warning signs on perimeter fence, burglar proofing on windows and, protective lighting and other barriers (such as security gate across a passage) to a high level.

**6.2 Research Question Two**

What is the level of human security management technique in Post Basic Schools in Adamawa State, Nigeria?

To answer this research question, responses on the level of human security management technique in Post Basic Schools in Adamawa State, Nigeria were collected and analyzed as shown in Table 2

**Table 2** Mean and Standard Deviation of level of human security management in Post Basic Schools in Adamawa State, Nigeria

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/N** | **Items** n=580 | **Mean** | **S. D** | **Remark** |
| 1 | Private security guard | 4.64 | 1.02 | HL |
| 2 | Rapid Armed Response (Policemen) | 4.77 | 1.06 | VHL |
| 3 | Parental participation | 4.79 | 1.08 | VHL |
| 4 | School personnel | 4.80 | 1.09 | VHL |
| 5 | Community participation (local vigilante group) | 4.68 | 1.03 | VHL |
|  | **Average Mean** | **4.74** | **1.06** | **VHL** |

The mean and standard deviation of the level of human security management in Post Basic Schools in Adamawa State, Nigeria are shown in Table 2. A high level of human security management technique in Post Basic Schools in Adamawa State, Nigeria is indicated by an average mean score of 4.74 and standard deviation value of 1.06. This implies that to a very high level, Post Basic School principals deploy school personnel, parental participation and Rapid Armed Response (Policemen) in combating insecurity in their respective schools.

**6.3 Research Question Three**

What is the level of technological security management technique in Post Basic Schools in Adamawa State, Nigeria?

To answer this research question, responses on the level of technological security management technique in Post Basic Schools in Adamawa State, Nigeria were collected and analyzed as shown in Table 3.

**Table 3** Mean and Standard Deviation of level of technological security management technique in Post Basic Schools in Adamawa State, Nigeria

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/N** | **Items** n=580 | **Mean** | **S. D** | **Remark** |
| 1 | Closed Circuit Television (CCTV) systems, including the videoing and storing of video surveillance footage whether analogue or digital | 4.67 | 1.00 | VHL |
| 2 | Intruder alarms | 4.39 | 0.98 | VHL |
| 3 | Metal detectors | 4.89 | 1.09 | VHL |
| 4 | Hand- held detectors | 4.90 | 1.12 | VHL |
| 5 | X-ray Machines and/or card reader systems | 4.28 | 0.93 | VHL |
|  | **Average Mean** | **4.63** | **1.02** | **VHL** |

Result of analysis in Table 3 shows the mean and standard deviation of level of technological security management technique in Post Basic Schools in Adamawa State, Nigeria. An average mean of 4.63 and standard deviation of 1.02 shows very high level of technological security management technique in Post Basic Schools in Adamawa State, Nigeria. This implies that Post Basic School principals use; Hand-held detectors, Metal detectors and Closed-Circuit Television (CCTV) systems, including the videoing and storing of video surveillance footage whether analogue or digital to a very high level.

**7 Hypotheses Testing**

**7.1 H01:** There is no significant relationship between physical security management technique effective management of Post Basic Schools in Adamawa State, Nigeria.

**Table 4a** Result of Regression Analysis of Significant relationship between physical security management technique effective management of Post Basic Schools in Adamawa State, Nigeria.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 9.269 | 1 | 9.269 | 7.866 | .008b |
| Residual | 41.613 | 32 | 1.178 |  |  |
| Total | 50.882 | 33 |  |  |  |

|  |
| --- |
| a. Dependent Variable: Effective management of Post Basic Schools |
| b. Predictors: (Constant), Physical security management technique |

Table 4a presents the results of a regression analysis examining the relationship between physical security management and effective management of Post Basic Schools in Adamawa State, Nigeria. The table shows that the regression model is statistically significant (F(1, 33) = 7.866, p < .05), indicating that there is a significant relationship between physical security management and effective management of Post Basic Schools in Adamawa State, Nigeria.

**Table 4b: Model Summary**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .449a | .196 | .472 | 1.02469 |
| a. Predictors: (Constant), Physical security management technique | | | | |

Table 4b provides a summary of the regression model, showing that the model has a moderate effect size (R = .449), meaning that there is moderate relationship between physical security management and effective management of Post Basic Schools in Adamawa State, Nigeria. The predictors in the model account for a significant proportion of the variance in effective management of Post Basic Schools in Adamawa State (R2 = .197). The adjusted R2 value suggests that approximately 47.2% of the variance in effective management of Post Basic Schools in Adamawa State can be explained by principals' physical security management technique.

**Table 4c: Coefficients of Beta**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 2.083 | .590 |  | 3.452 | .001 |
| Physical security management technique | .421 | .150 | .449 | 2.806 | .008 |

|  |
| --- |
| a. Dependent Variable: Effective management of Post Basic Schools |

Table 4c displays the coefficients for the predictors in the regression model. The standardized coefficient (Beta) for physical security management technique is .449, indicating a moderate positive relationship with effective management of Post Basic Schools. The t-value of 2.806 suggests that the relationship is statistically significant (p = .008).

**7.2 H02:** There is no significant relationship between human security management and effective management of Post Basic Schools in Adamawa State, Nigeria.

**Table 5a:** Results of Regression Analysis of Significant relationship between human security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Model | | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | | Regression | 9.885 | 1 | 9.885 | 9.460 | .004b |
| Residual | 35.897 | 32 | 1.045 |  |  |
| Total | 45.692 | 33 |  |  |  |
| a. Dependent Variable: Effective management of Post Basic Schools | | | | | | | |
| b. Predictors: (Constant), Human security management technique | | | | | | | |

Table 5a illustrates the results of a regression analysis examining the relationship between human security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria. The table indicates that the regression model is statistically significant (F(1, 33) = 9.460, p < .05), suggesting a significant relationship between principals' human security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria.

**Table 5b: Model Summary**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model | | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | | .476a | .228 | .504 | 1.00480 |
| a. Predictors: (Constant), Human security management technique | | | | |

Table 5b provides a summary of the regression model, indicating that the model has a moderate effect size (R = .476), meaning that there is moderate relationship between principals’ human security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria. The predictors included in the model account for a considerable proportion of the variance in effective management of Post Basic Schools in Adamawa State, Nigeria (R2 = .228). The adjusted R2 value suggests that approximately 50.4% of the variance in effective management of Post Basic Schools in Adamawa State, Nigeria can be explained by principals' human security management technique

**Table 5c: Coefficients of Beta**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 1.717 | .655 |  | 2.621 | .013 |
| Human security management technique | .551 | .179 | .476 | 3.078 | .004 |

|  |
| --- |
| a. Dependent Variable: Effective Management of Post Basic Schools |

In Table 5c, the coefficients for the predictors in the regression model are presented. The standardized coefficient (Beta) for human security management technique is .476, indicating a moderate positive relationship with effective management of Post Basic Schools. The t-value of 3.076 suggests that the relationship is statistically significant (p = .004).

**7.3 H03:** There is no significant relationship between technological security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria.

**Table 6a:** Results of Regression Analysis of significant relationship between technological security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Model | | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | | Regression | 9.998 | 1 | 9.998 | 9.860 | .004b |
| Residual | 33.995 | 32 | 1.014 |  |  |
| Total | 43.993 | 33 |  |  |  |
| a. Dependent Variable: Effective Management of Post Basic Schools | | | | | | | |
| b. Predictors: (Constant), Technological Security Management Technique | | | | | | | |

Table 6a shows the results of the regression analysis testing the relationship between technological security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria. The regression model is statistically significant, F(1, 33) = 9.860, p < .05, indicating that there is a significant relationship between technological security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria.

**Table 6b: Model Summary**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model | | R | R Square | Adjusted  R Square | Std. Error of the Estimate |
| 1 | | .488a | .246 | .318 | .99993 |
| a. Predictors: (Constant), Technological Security Management Technique | | | | |

In Table 6b, the model summary shows that the correlation coefficient (R) between technological security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria is .488, indicating a moderate positive relationship. The coefficient of determination (R Square) is .246, indicating that 31.8% of the variance in effective management of Post Basic Schools can be explained by principals' technological security management technique. The adjusted R Square is .318, suggesting that when considering the number of predictors in the model, the explanatory power decreases slightly.

**Table 6c: Coefficients of Beta**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 1.881 | .592 |  | 3.175 | .003 |
| Technological security management technique | .524 | .167 | .488 | 3.137 | .006 |

|  |
| --- |
| a. Dependent Variable: Teachers’ job performance |

Table 6c presents the coefficients for the predictors in the model. The unstandardized coefficient (B) for technological security management technique is .524, indicating that for every one-unit increase in technological security management technique, there is a corresponding increase of .524 units in effective management of Post Basic Schools. The standardized coefficient (Beta) is .488, indicating the strength and direction of the relationship between technological security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria. The t-value is 3.137, which is statistically significant at p < .05, providing further support for the significant relationship found in the regression analysis.

**7.4 H04:** There is no significant relationship between principals’ security safety techniques (physical security management, human security management, technological security management) and effective management of Post Basic Schools in Adamawa State, Nigeria.

**Table 7a: Results of Regression Analysis of Significant relationship between principals’ security safety techniques (physical security management, human security management, technological security management) and effective management of Post Basic Schools in Adamawa State, Nigeria**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | Regression | 21.648 | 3 | 4.329 | 5.996 | .001b |
| Residual | 20.204 | 31 | .722 |  |  |
| Total | 41.852 | 33 |  |  |  |

a. Dependent Variable: Effective Management of Post Basic Schools

b. Predictors: (Constant), Physical security management, human security management, technological security management

Table 7a presents the results of a regression analysis examining the relationship between various security safety techniques possessed by principals and effective management of Post Basic Schools in Adamawa State. The regression model indicates that there is a significant relationship between the predictors (physical security management, human security management, technological security management) and effective management of Post Basic Schools, as evidenced by a significant F-statistic (F=5.996, p < .05). This suggests that at least one of the predictor variables has a non-zero effect on effective management of Post Basic Schools.

**Table 13b: Model Summary**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .712a | .502 | .432 | .84967 |

a. Predictors: (Constant), physical security management, human security management, technological security management.

In Table 7b, the model summary provides additional insights into the regression model's performance. The r – value of 0.712 indicate that there is strong relationship between the predictor variables (physical security management, human security management, technological security management) and effective management of Post Basic Schools in Adamawa State, Nigeria. The R-square value of .502 indicates that approximately 50.2% of the variance in effective management of Post Basic Schools in Adamawa State, Nigeria can be explained by the combined effect of the predictors. The adjusted R-square, which accounts for the number of predictors in the model, is .432, suggesting that the model's explanatory power decreases slightly when considering the complexity of the predictors.

**Table 7c: Coefficients of Beta**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | -.267 | .778 |  | -.343 | .734 |
| Physical security management technique | -.198 | .240 | .309 | .876 | .418 |
| Human security management technique | .167 | .391 | .195 | .426 | .674 |
| Technological security management technique | .410 | .146 | .480 | 2.803 | .079 |

|  |
| --- |
| a. Dependent Variable: Effective Management of Post Basic Schools |

Table 7c displays the coefficients from a multiple regression analysis, revealing how each variable in the model contributes to predicting effective management of Post Basic Schools. The analysis shows that physical security management technique has a beta value of 0.309, indicating that it explains 30.9% of the variance in effective management of Post Basic Schools, with a t-value of 0.876 and a p-value of .418. Similarly, human security management technique has a beta value of 0.195, explaining 19.5% of the variance in effective management of Post Basic Schools, with a t-value of 0.426 and a p-value of .674. On the other hand, technological security management technique has a beta value of 0.480, explaining 48.0% of the variance in effective management of Post Basic Schools, with a t-value of 2.803 and a p-value of .079.

It can be concluded that technological security management technique makes the strongest unique contribution to explaining effective management of Post Basic Schools in Adamawa State, Nigeria when controlling for the variance explained by all other variables in the model, as it has the largest beta coefficient of .480. In contrast, human security management technique makes a comparatively smaller unique contribution, with a beta value of .195.

**8 Summary of Major Findings**

The following are the findings of the study:

1. Physical security management and effective management of Post Basic Schools in Adamawa State, Nigeria is statistically significant at F(1, 33) = 7.866, p < .05).
2. Human security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria is statistically significant at F(1, 33) = 9.460, p < .05).
3. The results revealed that technological security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria statistically significant at F(1, 33) = 9.860, p < .05.
4. The regression model indicates that there is a significant relationship between the predictors (physical security management, human security management, technological security management) and effective management of Post Basic Schools, as evidenced by a significant F-statistic (F=5.996, p < .05). This suggests that at least one of the predictor variables has a non-zero effect on effective management of Post Basic Schools. It can be concluded that technological security management technique makes the strongest unique contribution to explaining effective management of Post Basic Schools in Adamawa State, Nigeria when controlling for the variance explained by all other variables in the model, as it has the largest beta coefficient of .480. In contrast, human security management technique makes a comparatively smaller unique contribution, with a beta value of .195.

**9 Discussions of Findings**

The finding of this study revealed that physical security management and effective management of Post Basic Schools in Adamawa State, Nigeria is statistically significant at F(1, 33) = 7.866, p < .05). The major findings were that principals use warning signs on perimeter fence, burglar proofing on windows and, protective lighting and other barriers (such as security gate across a passage) to a high level. This finding agrees with the findings of [1] whose findings revealed that there was a significant relationship between physical school security measuresand staff job performance in secondary schools in Ilorin metropolis which means that if the school has enough physical and technical security measures to prevent student problem behaviours in secondary school, it will lead to effective performance of school staff positively. This finding corroborate with that of [29] whosefindings indicated that physical security measures were adopted by principals in public secondary schools in Anambra State. The finding corroborate with that of [4] whose study revealed that safety and security measures are adopted by principals for staff and students management of public secondary schools in Imo State, Nigeria. [4] further revealed that safety and security measures adopted by principals for staff and students’ management include the issuance of identity cards to staff and students to distinguish them from intruders; formulation of strict school safety rules and regulations; orientating staff and students on security tops to safeguard their life, stationing of security guard at school gate, enlightenment of staff and students on regular safety and security updates among others. The finding was in congruent with [30] who revealed that principals promote learning environment free of fears and dangers among staff and students through safety measures for personnel management, the safety measures adopted by principals for personnel management prevent physical attacks, violence and emotional disorder among staff and students of secondary schools in Enugu State.

The second findings of the study revealed that human security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria is statistically significant at F(1, 32) = 9.460, p < .05). The major findings were that to a very high level, Post Basic School principals deploy school personnel, parental participation and Rapid Armed Response (Policemen) in combating insecurity in their respective schools. This finding corroborate with that of [29] whosefindings indicated that human security measures were adopted by principals in public secondary schools in Anambra State. This finding agrees with that of Onuorah and Nwankwo (2020) whose findings indicated that principals of public secondary schools in Anambra State utilize human security management practices to a low extent. [32] further revealed that principals employ security guards, contract private security company to provide school security, collaborate with local vigilante groups to provide for school security, employ a security consultant for issues concerning the security of their respective schools for effective administration of public secondary schools. This finding however disagrees with the findings of [43] whose findings revealed that majority of the school reacted negatively to all the items on the table. However, this result shows that the public secondary school administrators did not make sufficient use of security safety techniques for management of public secondary schools in Anambra State. [43] further revealed that principal’s deployment of the security safety techniques for management of public secondary schools in Anambra State was poor. The finding agrees with that of [28] whose findings revealed that it is acceptable to have staff and student identity cards, staff code of conduct and conflict resolution management programmes to help the staff as well as the students know how to resolve their disputes. The respondents agreed too that there is need to have constant searches of student’s lockers and boxes to seize weapons and dangerous objects from the students. In contrast to the findings of this study, [32] however revealed that secondary school principals to a low extent collaborate with the police to ensure security in the school for effective administration of public secondary schools. This finding however disagrees with of [28] whose findings showed among others that some security devices for the improvement of security situations as well as the emergency response plans for managing security in public secondary schools were not available in most schools.

The third finding of the study revealed that technological security management technique and effective management of Post Basic Schools in Adamawa State, Nigeria statistically significant at F(1, 33) = 9.860, p < .05. Majorly, the findings revealed that Post Basic School principals use; Hand- held detectors, Metal detectors and Closed-Circuit Television (CCTV) systems, including the videoing and storing of video surveillance footage whether analogue or digital to a very high level. This finding however disagrees with the findings of [42], whosefindings revealed that the extent to which principals apply staff training, use of video surveillance cameras, physical access control, radio and alarm systems and computer assisted programmes as security management practice is to a low extent. This finding agrees with that of [28] whose findings revealed that secondary school principals fail to utilize technological security gadgets for effective school administration. The findings corroborate with that of [27] whose findings revealed that technological security measures and staff performance are significantly related. This finding disagrees with that of Nwobodo et al (2023) whose study on institutional security concluded that lack of technical know-how on the use of security devices by the security personnel as well as illiterate in the aspect of law and governance which is ambivalent to their nature of work. Subsequently, this is in line with the findings of [33] whose findings revealed that there is a significant relationship between safety measures planning for quality public senior secondary school administration in River State. Also, [27] showed that security devices for improving security in public secondary schools are not generally available. [2], who asserted that inadequate incentive programmes, poor conduct of regular safety inspection, and unavailability of security gadget, like CCTV, lack of control on access, lack of man guard create unrest thereby affecting effective management of school. Andrew concluded that safety measures are very necessary to support academic success of students by creating orderly learning environment devoid of risks, fear of danger. However, the findings were contradicted by [18] whose finding revealed among others that some security devices for the improvement of security situations as well as the emergency response plans for managing secondary schools were not available in most schools. The disagreement in findings could be attributed to difference in geographical locations of the studies, and the period they were carried out. The possible explanation for these disagreements could possibly be due to Governor Ahmed Fintiri’s intervention in secondary schools in Adamawa State.

Lastly, the regression model indicates that there is a significant relationship between the predictors (physical security management, human security management, technological security management) and effective management of Post Basic Schools, as evidenced by a significant F-statistic (F=5.996, p < .05). This suggests that at least one of the predictor variables has a non-zero effect on effective management of Post Basic Schools. It can be concluded that technological security management technique makes the strongest unique contribution to explaining effective management of Post Basic Schools in Adamawa State, Nigeria when controlling for the variance explained by all other variables in the model, as it has the largest beta coefficient of .480. In contrast, human security management technique makes a comparatively smaller unique contribution, with a beta value of .195. This finding corroborate with that of [1] whose findings revealed that there was a significant relationship between the school security measures (physical and technological) and staff job performance at public secondary schools located in Ilorin Metropolis. [1] further indicated that ensuring school safety implies freedom from risk, protection of lives and properties of the school members and the school, and reduction of intra and inter-school conflict while upholding quality education. The finding agrees with that of [14] whose findings revealed that there is a significant relationship between physical security measure and effective management of public secondary schools in Lagos State, Nigeria (r=.672, p <.05). The study therefore concluded that safety and security planning promote effective management of public secondary schools in Lagos State, Nigeria.

**10 Conclusion**

Based on the findings of the study, it was concluded by the researchers that the institutionalization of security safety techniques in public secondary schools in Adamawa State could enhance effective management of Post Basic Schools in the State. The researchers concluded that safety measures adopted by principals plays a significant relationship in the management of public secondary schools. The researchers envisaged that if secondary school principals utilize the immense benefits of physical, human and technological security management techniques in their daily service delivery; the management of Post Basic Schools in the State would be greatly enhanced.

**11 Recommendations**

Based on the findings of the study, the following recommendations were made:

1. Principals should endeavor to always use warning signs on perimeter fence, burglar proofing on windows and, protective lighting and other barriers (such as security gate across a passage) as these could further enhance effective school administration.
2. Federal government, State Government and other non-governmental organizations should ensure principals deploy school personnel, parental participation and Rapid Armed Response (Policemen) in combating insecurity in their respective schools by providing them with the necessary manpower requirements and financial support.
3. Post Basic School principals should further enforce the use of Hand- held detectors, Metal detectors and Closed-Circuit Television (CCTV) systems, including the videoing and storing of video surveillance footage whether analogue or digital, as this would enhance the quality of school management.
4. Since technological security management technique make the strongest unique contribution to explaining effective management of Post Basic Schools in Adamawa State, Nigeria when controlling for the variance explained by all other variables in the model, as it has the largest beta coefficient of .480, the State government should ensure Hand- held detectors, Metal detectors and Closed Circuit Television (CCTV) systems, including the videoing and storing of video surveillance footage whether analogue or digital are made readily available as these could further improve the management of Post Basic Schools.

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