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ACCESS TO WASTE MANAGEMENT FACLITIES AND SANITATION PRACTICES AMONG SECONDARY SCHOOL STUDENTS IN BOKI LOCAL GOVERNMENT AREA OF CROSS RIVER STATE, NIGERIA

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ABSTRACT

The study examined access to waste management facilities and sanitation practices among secondary school students in Boki LGA cross River State, Nigeria. Waste management and sanitation practices are essential components of a healthy school environment, particularly in learning capacity. The study indicated how inadequate access to waste management facilities in school has exposed health risk and negatively influence hygienic practices. Specifically, the study sought out, to examine how access to waste bin influence sanitation practices and how access to convenience (toilet) facilities affects sanitation practices among secondary school students. To achieve the above specific objectives, the study employed descriptive survey design and stratified random sampling technique with a study population of 2,406 and a sample size of 343 . Simple linear regression with the help of SPSS version 23 were used to analyze the hypothesis at 0.05 level of significance. Key findings revealed that there is a positive correlation between access to waste bin and effective sanitation practices among secondary students. Similarly, it was further indicated that access to good convenience positively influence effective sanitation practices among learners in secondary school. The study recommended that government and school authorities should ensure good access to waste bin and convenience facilities to promote effective sanitation practices in secondary school.. Furthermore, the study establishes that facility-level variables specifically access to waste bins and access to public conveniences are significant predictors of sanitation practices among secondary school students in Boki LGA. The findings confirm that improved access to sanitation infrastructure is associated with better hygiene behaviour within the school environment.

Keywords: Waste management, sanitation practices and hygiene.

Introduction

The word waste management and sanitation practice are geared toward proper attention to best practice of hygienic environment such as the toilet system, the dustbin items, drinking items, water quality and the safety of the classroom cleanliness. Waste management among secondary school students describes the process in which the school premises is protected from any activities that is capable of making the environment unhealthy and could be detrimental to the health of the students. In most rural communities such as Boki, the school premises are very dilapidated with poor hygiene conditions and such poor system of hygiene has resulted to huge amount of money spent annually by individuals on drugs and medication by some health victims. In Boki, many secondary schools are struggling to provide adequate waste management facilities that will enhance healthy hygiene practices among the students (Eja et al, 2021).

Poor waste management has critically plagued down many secondary schools learning environment with detrimental and psychological effect on the life of the learners. A learner cannot be comfortable to learn in an unconducive environment. Many learning environments particularly in Boki LGA do not have facilities such as clean waste bins, clean toilets, clean water system and clean hand washing items that can be used to maintain a good level of hygiene in their learning centres. Despite many efforts made by the government to ensure availability of these hygiene facilities and expansion of water and sanitary (WASH) services, approximately 28-29% of schools lack basic sanitation and a good water system exposing students to more chronic diseases and educational disruption (WHO, UNICEF, JMP,2022)

Globally, access to adequate waste management and sanitation facilities is recognized as a fundamental human right and essential for public health, education, and sustainable development (WHO/UNICEF Joint Monitoring Programme [JMP], 2022). Despite progress under Sustainable Development Goal 6 (SDG 6) which calls for equitable access to safe sanitation and hygiene for all, an estimated 28 % of schools worldwide still lack basic sanitation services, and 42 % lack basic hygiene facilities (WHO/UNICEF, 2022).Such deficits are linked to increased gastrointestinal illnesses, school absenteeism, diminished cognitive performance, and profound gender disparities in education, particularly in resource-constrained settings where students are required to manage their sanitation needs with inadequate infrastructure (Morgan, 2017; Sharma, 2024).

In sub-Saharan Africa, the situation is even more acute. Rural schools across countries such as Ethiopia, Kenya, Mozambique, Rwanda, Uganda, and Zambia have consistently demonstrated very limited access to improved sanitation and hygiene services, with fewer than 25 % meeting basic sanitation service thresholds and many students practicing open defecation or using unsafe facilities due to facility scarcity or dysfunction (Morgan, 2017). This systemic deficit reflects broader socio-economic inequalities, with school sanitation conditions frequently mirroring community deprivation and resource limitations. While global frameworks emphasize integrated WASH (water, sanitation, and hygiene) interventions to promote health and educational outcomes, implementation remains uneven across African educational contexts.

In Nigeria, similar challenges persist at national and sub-national levels. Recent assessments indicate that a substantial proportion of Nigerian children experience deprivation in at least one WASH component, with sanitation deprivation affecting up to two-thirds of children aged 5–17 across regions (Victor et al., 2025). Studies conducted in southern Nigeria — including Rivers and Bayelsa States and rural areas, reveal widespread inadequacies in school sanitation and hygiene infrastructure, ranging from the absence of functional toilets and handwashing facilities to inconsistent water supplies and poor waste disposal systems (Attah et al., 2023; school assessments in Cross River and Rivers States). Such deficits not only

predispose students to waterborne and sanitation-related diseases, but also undermine the dignity and comfort of learners, affecting daily attendance, particularly among girls and students with special needs.

At the state level, Cross River State mirrors these national trends. Small-scale studies and surveys have documented gaps in sanitation infrastructure and hygiene practices within communities and educational settings, pointing to inadequate toilet facilities, and poor environmental sanitation (Ibiang Arikpo Oka et al., 2019; principals' attitudes toward faeces management). However, research within Cross River has often concentrated on household and community sanitation, or the attitudes of school administrators toward general sanitation, rather than on how specific facility components such as waste bins and public conveniences shape actual sanitation behaviors among students.

In Boki Local Government Area (LGA) a predominantly rural LGA in Cross River State, environmental sanitation practices have been documented in broader community contexts. For example, studies on solid waste management in Boki indicate that improper waste disposal, including indiscriminate dumping and burning, is common, reflecting low environmental awareness and weak infrastructure support (Mbu, 2015). Yet there remains a notable lack of empirical research focused on school environments, particularly secondary schools where adolescents' sanitation practices and facility access influence both health outcomes and academic engagement.

Despite the established link between school WASH infrastructure and student health and educational performance globally, research gaps persist at the intersection of facility access (e.g., waste bins and public conveniences) and sanitation behavior among secondary school students in rural Nigerian contexts. No published study to date has empirically examined how the presence, condition, and accessibility of waste bins and functional public conveniences influence students' sanitation practices specifically in Boki LGA. This represents a clear knowledge gap that your study aims to address one that is critical for informing targeted interventions aimed at improving sanitation behaviors and fulfilling Nigeria's commitments under SDG 6 within rural educational settings.

Theoretical Framework

Ecological Systems Theory

This study is anchored on the Ecological Systems Theory developed by Urie Bronfenbrenner (1979). The theory posits that human behaviour is shaped by interactions within nested environmental systems and that development is driven by structured, reciprocal interactions between individuals and their environments. One core tenet is the microsystem, which represents the immediate setting where direct interactions occur. In the school context, sanitation facilities such as waste bins and public conveniences constitute critical microsystem structures that directly influence students' daily behavioural choices.

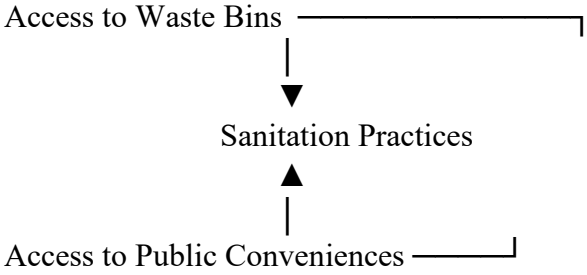
Another key construct is proximal processes, defined as repeated interactions between the individual and environmental features over time. Regular engagement with accessible waste bins and functional toilets reinforces hygienic routines, while absence or inaccessibility weakens behavioural regulation. The theory also emphasizes person–environment interaction, which suggests that behaviour results from the dynamic interplay between individual characteristics (knowledge, attitudes) and environmental affordances or constraints. Thus, even when students understand proper hygiene, inadequate facilities may inhibit compliance.

The mesosystem highlights linkages between settings (e.g., school–home sanitation norms), while the exosystem reflects indirect influences such as local government waste policies. The macrosystem encompasses broader cultural values and sanitation norms that shape institutional priorities. Within this framework, access to facilities is not merely contextual but predictive. Waste bins and public conveniences function as structural determinants that enable, constrain, and reinforce sanitation behaviour. Therefore, this study

applies Ecological Systems Theory to examine how access to waste bins and public conveniences predicts sanitation practices among secondary school students in Boki Local Government Area, Cross River State.

Conceptual Model Linking Variables

Independent Variables (IVs):
Access to Waste Bins
Access to Public Conveniences
Dependent Variable (DV):
Sanitation Practices among Secondary School Students



Waste management in Nigeria

Waste management is described as the ability to regulate the utilization of waste disposal in an area to ensure the lives of people are not negatively affected with disposable pollution that can be detrimental to health. According to Singh et al (2025), waste management in low-resources based encompasses segregation, storage, collection and environmentally safe disposal capable of reducing contamination and diseases transmission. School waste management entails the availability of dust-bin, segregation of waste, and routine removal to prevent disease such as vectors (Shrestha & Pandey, 2023). It also refers to the institutional arrangement that makes provision for a labeled bin, and constant removing of the waste from the dust-bins and the entire environment at large for the protection of lives against communicable diseases. Within WASH frame works, effective and efficient waste management is part of environmental sanitation that interrupts pathogen transmission cycles (Open University,2022).

Waste bin management refers to the availability, adequacy, accessibility, placement, maintenance, and regular evacuation of waste receptacles within the school environment. It goes beyond the physical presence of bins to include their functionality, coverage, labeling, and proximity to waste generation points such as classrooms and playgrounds. Within the WASH framework promoted by the World Health Organization and UNICEF, safe solid waste disposal in schools is recognized as a structural requirement for maintaining environmental hygiene and preventing communicable diseases (WHO/UNICEF JMP, 2022).

Waste Bin Management and Sanitation Practices. Waste bin management in the school context refers to the availability, adequacy, accessibility, placement, maintenance, and regular emptying of waste receptacles within the school environment. It is not limited to the mere presence of bins, but includes their functionality, coverage, labeling, and proximity to points of waste generation such as classrooms and playgrounds. Within the WASH framework advanced by the World Health Organization and the UNICEF, safe solid waste management in schools is considered a structural component of environmental sanitation necessary for disease prevention and hygiene promotion (WHO/UNICEF JMP, 2022).

The relationship between waste bin management and sanitation practice is grounded in environmental determinism within school settings. When waste bins are adequately distributed and regularly maintained, they function as behavioural cues and affordances, increasing the probability of proper waste disposal. Conversely, inadequate or overflowing bins create

structural barriers that may normalize littering. Empirical studies in Nigerian secondary schools indicate that poor waste disposal systems are associated with indiscriminate dumping and weakened sanitation culture (Attah et al., 2023). Thus, waste bin management is conceptualized as a structural predictor of sanitation practice, shaping behavioural compliance through accessibility and environmental reinforcement rather than solely through knowledge

Access to waste management facilities and sanitation practice among secondary school students is situated within the broader Water, Sanitation and Hygiene (WASH) discourse, which conceptualizes sanitation behaviour as the outcome of interactions between environmental infrastructure and individual practices (WHO/UNICEF Joint Monitoring Programme [JMP], 2022). Globally, sanitation practice in schools is defined not merely as knowledge of hygiene, but as observable behaviours such as proper waste disposal, regular use of toilets, and maintenance of environmental cleanliness. Evidence suggests that the availability and quality of sanitation infrastructure are foundational determinants of these behaviours (WHO/UNICEF, 2022).

Sanitation practice in School.

Sanitation is a conscious effort that is made in managing and keeping our learning environment in a good condition that is hygienic and free from contamination. According to Open University (2022), sanitation in-low context is assessed by the utilization of latrine and improved health facilities. Sanitation practice encompass school norms and institutional efforts to maintain cleanliness and safe water handling (Adepoju et al, 2022)

Sanitation thus includes preventing human exposure to health hazardous waste, particularly with items such as excreta, urine, through the availability of safety measures. Sanitation practice refers to the measures taken to promote hygiene and prevent disease transmission through proper waste disposal and management (WHO,2022), it is a multidimensional concept that involves the provision of good drinking water, sanitation items and hygiene practices. Sanitation practice basically involves behavioral and infrastructural efforts geared towards ensuring safe defecation, waste containment, drainage, and vector control (CM Toolkit, 2022). Similarly, Gern et al, (2017) described sanitation as the practices and procedures for ensuring the safe and hygienic use of toilet facilities. This implies that for an effective sanitation to occur in a learning centre, there must be evidence of hygiene facilities and the application of the rules governing the practices.

Public convenience in the school context refers to the availability, functionality, adequacy, privacy, cleanliness, and water accessibility of toilet facilities provided for students. It includes gender-segregated toilets, handwashing points, and facilities that ensure safety and dignity. According to global WASH standards (WHO/UNICEF JMP, 2022), access to improved and functional sanitation facilities is essential for sustaining hygienic behaviour and preventing open defecation.

Conceptually, functional public conveniences reduce environmental and psychological barriers to proper sanitation behaviour. Where toilets are insufficient, unclean, or lack water, students may avoid usage, thereby adopting unsafe alternatives. Research in sub-Saharan African schools demonstrates that inadequate sanitation infrastructure significantly predicts poor hygiene compliance and school absenteeism, particularly among adolescents (Morgan et al., 2017). Therefore, public convenience is conceptualized as a facility-level environmental determinant that predicts sanitation practices by enabling routine hygienic actions and reinforcing socially acceptable sanitation norms. In this study, both waste bin management and public convenience are treated as independent structural variables influencing sanitation practices among secondary school students in Boki Local Government Area, Cross River State. Similarly, Adepoju et al, (2022) indicated that effective toilet hygiene in learning environment is linked to lower level of diarrhea and absenteeism as it provides the students with safe sanitation condition.

Similarly, Bosede et al, (2025) in their study on public conveniences and hygiene system at Ikeduru LGA, Imo State, Nigeria among public and private secondary schools using survey questionnaire and observation check lists administered to 400 students selected through multi-stages sampling indicated that public school are peculiar higher WASH knowledge, while private schools shown a high level of hygiene and proper control of waste management. The researchers concluded that this could be due to the disparity in infrastructure availability and effective control system. The study recommended that improved sanitation facilities and school-based behavioral change intervention is urgently needed for the well-being of the student

Furthermore, Egwuaba & Sunday (2025) conducted a study on sanitation practices and menstrual hygiene management in selected secondary schools in Ekwulobia, Anambra State. The study adopted mixed methods cross-sectional design, basic data were obtained from 400 adolescent girls through questionnaires and interview methods. Key findings showed that insufficient sanitation materials and poor menstrual hygiene practices significantly led to poor school absenteeism. They thus recommended that government should improve school infrastructure and integrate menstrual health education into secondary school scheme.

Gap in literature

In spite of these existing studies on waste management and sanitation practices in Nigerian schools, few have specifically assessed the practices and determinants among secondary schools in Boki LGA. Most researchers have concentrated on urban or broader regional contexts, leaving a gap in localizing empirical data on secondary school student behaviours, facilities. adequacy, and socio-environmental barriers unique to Boki geographical setting.

Statement of the problem

Adequate access to waste management and sanitation facilities remains a persistent challenge in many Nigerian secondary schools, particularly in rural areas. Although sanitation is recognized globally as a fundamental public health and educational requirement by the World Health Organization and UNICEF, infrastructure deficits continue to undermine hygienic practices among school-aged children. In Nigeria, national WASH assessments indicate that a substantial proportion of school's lack basic sanitation services, with rural schools disproportionately affected (WHO/UNICEF JMP, 2022).

Empirical evidence further reveals that sanitation deprivation remains widespread among Nigerian children. For instance, recent national analyses estimate that more than half of school-aged children experience at least one form of sanitation-related deprivation, including lack of access to improved toilet facilities (Victor et al., 2022). In southern Nigeria, studies conducted among secondary school students in Port Harcourt reported inadequate waste disposal systems and poor sanitation practices linked to insufficient facilities (Attah et al., 2023). Similarly, community-level research in Boki Local Government Area of Cross River State identified weak solid waste management systems and low environmental compliance (Mbu, 2015), suggesting structural limitations that may extend to school environments.

Despite policy efforts such as Nigeria's National Policy on Water Supply and Sanitation and school-based WASH interventions supported by governmental and non-governmental organizations, infrastructural gaps persist, particularly in rural Local Government Areas. Previous interventions have largely focused on general hygiene awareness campaigns, periodic sanitation exercises, and broad assessments of WASH conditions. However, these efforts often treat infrastructure availability descriptively rather than analytically.

The critical gap lies in the limited empirical examination of how specific facility components namely access to waste bins and access to public conveniences predict sanitation practices among secondary school students, especially in rural Cross River State. Existing Nigerian studies emphasize overall WASH conditions or health outcomes without isolating

facility-level determinants of behaviour. Furthermore, there is scarce geographically specific evidence from Boki LGA, where rural infrastructural constraints may uniquely shape students' sanitation practices.

Therefore, the problem this study addresses is the insufficient understanding of the relationship between access to waste management facilities and observable sanitation behaviour among secondary school students in Boki Local Government Area. By empirically examining the influence of waste bins and public conveniences on sanitation practices, this study seeks to fill both a methodological gap (facility-level behavioural prediction) and a geographical gap (rural Cross River State evidence), thereby providing context-specific data for targeted school sanitation interventions.

Purpose of the study

The broad objective of the study is to examine how the challenges of poor waste management affects sanitation practices among secondary school students in Boki Local Government Area. Thus, specifically, the study sought to:

1. Assess the influence of waste bins on sanitation practices among secondary school students in Boki Local Government Area.
2. Examine the influence of public convenience on sanitation practices among secondary school students in Boki Local Government Area.

Research questions

To guide the study, the researcher postulated the following research questions

1. How does access to waste bins management influence sanitation practices among secondary school students in Boki Local Government Area?
2. How does access to public convenience influence sanitation practices among secondary school students in Boki Local Government Area?

Hypotheses

The research questions were translated to the following null hypotheses

1. There is no significant influence of access to waste bins and sanitation practices among secondary school students in Boki Local Government Area
2. Access to public convenience does not significantly influence sanitation practices among secondary school students in Boki Local Government Area.

Methodology

Research Design

This study adopted a descriptive survey research design. The descriptive survey design was considered appropriate because it enables the systematic collection of quantitative data from a representative sample of respondents in order to describe existing conditions, patterns, and relationships among variables without manipulation. The design was particularly suitable for assessing students' access to waste management facilities and examining how such access predicts sanitation practices within the school environment.

Research Area of the study

Boki Local Government Area (LGA) is situated in the northern part of Cross River State, Nigeria. It shares boundaries with the Republic of Cameroon to the east, Obudu LGA to the north, Ikom LGA to the south, and Ogoja LGA to the west. The area is characterized by its diverse topography, featuring both lowlands and highlands. Boki is known for its lush rainforests, which form part of the larger Cross River National Park. Boki LGA experiences a tropical rainforest climate, with significant rainfall throughout the year. The climate is generally warm and humid, with an annual weather from 24°C and 30°C. The area receives heavy rainfall, especially during the rain periods mostly from April to October, which supports its dense forest cover and agricultural activities.

Study Population

The study population consisted of 2,406 registered secondary school students across

public and private secondary schools in Boki LGA during the 2024/2025 academic session.

Sample Size Determination

The sample size was determined using Taro Yamane's (1967) formula for finite populations:

$n = \frac{N}{1 + N(e)^2}$

Where:

= required sample size

= population size (2,406)

= level of precision (0.05)

Substituting into the formula:

$n = \frac {2406} {1 + 2406(0.05)^2}$

$n = \frac {2406}{1 + 2406(0.0025)}$

$n = \frac{2406}{1 + 6.015}$

$n = \frac{2406}{7.015}$

$n = 343$

Thus, the minimum required sample size was 343 students. To compensate for possible non-response and incomplete questionnaires, 10% was added: $343 + (10\% \times 343) = 377$ Therefore, 377 questionnaires were distributed to respondents.

Sampling Technique

A stratified random sampling technique was employed to ensure adequate representation of important subgroups within the population and to enhance methodological rigor. The entire student population (2,406) was stratified based on type of school, namely public and private schools. Stratification ensured that both categories of schools were proportionately represented in the sample. Within each stratum, students were selected using simple random sampling through computer-generated random numbers derived from updated class registers. Each student was assigned a unique identification number, and random selection was conducted to ensure that every student had an equal and known probability of participation.

This probability-based approach eliminated selection bias and strengthened the representativeness and credibility of the findings.

Instrument for Data Collection

Data were collected using a structured, self-administered questionnaire developed after extensive review of related empirical studies on sanitation and waste management practices in school settings.

The questionnaire comprised four sections:

1. Socio-demographic characteristics
2. Access to waste management facilities
3. Sanitation practices
4. Hygiene-related behavioral indicators

Items were structured using closed-ended questions and Likert-scale statements to allow for quantitative measurement and regression analysis.

Validity of the Instrument

To ensure validity, the following procedures were undertaken:

Content Validity

The instrument were submitted to three experts in public health and environmental health for critical evaluation. They assessed:

Clarity of items

Relevance to research objectives

Adequacy of content coverage

Appropriateness of response scales

Their recommendations were incorporated to refine ambiguous items and eliminate

redundancy. This process ensured that the instrument adequately measured access to waste management and sanitation practices as conceptualized in the study.

Face Validity

The instrument was reviewed to ensure that items were easily understood by secondary school students and appropriately aligned with their educational level.

Construct Validity

Items measuring sanitation practices and access to facilities were grouped into thematic constructs consistent with theoretical definitions. This ensured that the instrument captured the intended underlying variables.

Reliability of the Instrument

A pilot study was conducted among 30 students in a neighboring Local Government Area with similar socio-demographic characteristics.

The internal consistency of the instrument was assessed using Cronbach's alpha coefficient.

The reliability results were as follows:

Access to waste management facilities scale: $\alpha \geq 0.72$

Sanitation practices scale: $\alpha \geq 0.75$

Overall instrument reliability: $\alpha \geq 0.78$

A Cronbach's alpha value of 0.70 and above is generally considered acceptable for social science research, indicating that the instrument demonstrated satisfactory internal consistency and stability.

Necessary revisions were made after the pilot study to improve clarity and reliability before final data collection.

Data Collection Procedure

- **Sources of data collection**

Both primary and secondary data were obtained. The primary data were collected in the field through questionnaire, open interview with the respondents while the secondary data were collected through newspapers, magazines, internet, publications, journals and relevance material from offices and libraries

- **Procedure for data collection**

A letter of identification from the Head of the Department of Human Kinetics and Health Education, University of Calabar, was given to the researcher to the principals of the secondary schools of the study. The researcher used a questionnaire to elicit information from the respondents on the factors and challenges affecting sanitation practices and it was given to the respondents to choose their options such as strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD) and immediately collect the completed questionnaire from the respondents for onward coding and analysis.

Handling of Missing Data

All returned questionnaires were screened for completeness. Questionnaires with more than 20% missing responses were excluded from analysis. Questionnaires with minimal missing responses (less than 10%) were handled using listwise deletion during regression analysis. The response rate was calculated as:

\text {Response Rate} = \frac {\text {Number of completed questionnaires}} {\text{Number distributed}} \times 100

Only properly completed and valid questionnaires were included in the final dataset.

Method of Data Analysis

Data were coded and entered into the Statistical Package for Social Sciences (SPSS) version 23 for analysis. Descriptive statistics were used to summarize demographic characteristics and key study variables, including:

Means

Standard deviations
Inferential Statistics
To determine the predictive relationship between access to waste management facilities (independent variable) and sanitation practices (dependent variable), simple linear regression analysis was conducted.
The regression model was specified as:
$Y = a + bX + e$
Where:
= Sanitation practices
= Access to waste management facilities
= Intercept
= Regression coefficient
= Error term
Statistical significance was determined at $p < 0.05$. The coefficient of determination (R^2) was used to assess the proportion of variance in sanitation practices explained by access to waste management facilities.

Results and Discussion

Table 2: General description of variables

Variables	N	X	SD
Access to waste bins	234	14.65	3.09
Access to public convenience	234	13.79	2.53
Academic performance	234	13.42	3.18

Presentation of Results

Hypothesis one

There is no significant influence on access to waste bins and sanitation practices among secondary school students.

Table 3: Simple linear regression analysis of the influence of access to waste bins on sanitation practices among secondary school students in Boki Local Government Area of Cross River State (N = 2340)

Model	R	R^2	Adj.R^2	Std error of estimate
1	.237*	.056	.052	3.09607
Model	SS	Df	MS	F Sig
Regression	123.267	1	123.267	12.860 .000
Residual	2080.084	232	9.586	
Total	2203.352	233		

The result from table 3 above showed that the independent (access to waste bins) has a significant influence on the dependent or predicted variable (sanitation practices) among secondary school students in Boki Local Government Area of Cross River State. This implied that access to waste bins accounted for 5.6% of the challenges to sanitation practice in the study area. Secondly, the result of regression ANOVA presented in Table 3 indicated that there is a significant influence on access to waste bins and sanitation practices $F(1, 232) = 12.860$; $p<.05$. The result of this analysis indicated that there is a low contribution of access to waste bins on sanitation practices. This showed that access to waste bins is negatively influencing sanitation practices among secondary school students in the study area.

Hypothesis two

Access to public convenience does not significantly influence sanitation practices among secondary school students. The independent variable in this hypothesis is access to public convenience while the dependent variable is sanitation practices.

TABLE 4: Simple linear regression analysis of the influence of access to public convenience on sanitation practices among secondary school students in Boki Local Government Area of Cross River State (N = 232)

rSimple Linear Regina

Model	**R**	***R*²**	**Adj.R²**	**Std error of estimate**	
1	.374*	.140	.136	2.95803	
Model	SS	Df	MS	F	Sig
Regression	206.684	1	206.684	35.050	.000
Residual	1996.668	232	8.750		
Total	2203.352	233			

The result of analysis in Table 6 indicated that the independent (access to public convenience) has a positive influence on the dependent (sanitation practices) among secondary school students in Boki Local Government Area of Cross River State. This implied that access to public convenience accounted for 14.0% of the challenges to sanitation practice in the study area. Secondly, the result of regression ANOVA presented in Table 4 revealed that there was a significant influence of access to public convenience on sanitation practices F (1, 232) = 35.050; $p<.05$. The result of this analysis indicated that there is a low contribution of access to public convenience on sanitation practices. This showed that access to public convenience is negatively influencing sanitation practices among secondary school students in the study area.

Discussion of Findings

Discussion are based on the result and conceptualization of variables on the formulated hypothesis. Access to waste bins and sanitation practices.

According to the findings here, the null hypothesis was rejected. This implied that there is a significant influence between access to waste bins and sanitation practices among secondary school students in Boki Local Government Area of Cross River State. This finding is in agreement with the findings of Onyeji (2014) who reported that each teaching venue should have separate bins for waste disposal and that students should be encouraged to keep the teaching venue very clean as a requirement for effective sanitation practices in school environment. He furthermore added that there should be waste bins in teacher's rooms and they should encourage have a tradition in *schools that will make dropping of litters randomly* unacceptable in school premises

The findings of this study is also in line with the finding of Yusuf (2012) who reporting on the relationship between availability of waste bins and indiscriminate dumping of refuse revealed that so many of the students indicated that the major reason why refuse is dumped around bushes in school and near the school farms is due to the lack of available waste disposal bins in the school. Oyene (2008) had also opined that students have a high tendency of easily looking for other available options which include dropping of waste on the road, lushes and by school environment when there are no waste bins in schools for such purpose.

The findings are in-line with the findings of Fadeyi et al, (2023) which indicated that proper convenience management can ensure the safe and hygienic use of toilet facilities which can reduce the spread of infections. It was further confirmed by Dahal & Karki, (2023) that convenient management ensures that toilets are well-kept in a clean condition, well-function system, accessible, and well-safe for users, involving proper maintenance and supply of water. It involves behavioral ethics that encourage correct use, cleanliness, and respect for the shared

facility. It also encompasses cleaning routines, handwashing after use, and provision of anal cleaning material as opined by Fadeyi et al, (2023)

Similarly, Centre for Disease Control and Prevention (2015) reported that the rejection of the null hypothesis that there is a correlation between access to public convenient and effective sanitation practices in secondary schools. This implied that there is a significant influence on access to public convenience and sanitation practices among secondary school students in Boki Local Government Area of Cross River State. This finding is in agreement with the finding of Centre for Disease Control and Prevention (2015) which revealed that poor sanitation facilities (toilets and latrines) is detrimental to good health and that is against the international practices of hygiene system. The affected victims are the third world countries, which majority do not have opportunities for good access to suitable toilet facilities resulting to abuse of sanitation practices.

The study key findings also supported the finding of Iwueje (2012) who observed that lacked of adequate and proper sanitation facilities can result in polluted and unhealthy environment with negative impact on human health due to poor waste management. This is manifested in the contaminated community's water, which increased the exposure of students to more infectious. Udeme (2008) revealed that to ensure good sanitation practices, sanitation facilities should be provided to every school premises and should be made accessible to both teachers and students. It was also noted that communal sanitation practices should be discouraged among school students. This implies that every student should avoid polluting the environment any way in the name of communal defecation system which is highly prohibited against sanitation ethics

Conclusion

The first hypothesis examined whether access to waste bins significantly influences sanitation practices among secondary school students in Boki Local Government Area. The analysis revealed a statistically significant relationship between access to waste bins and students' sanitation practices ($p < 0.05$). The null hypothesis was therefore rejected. This finding indicates that the availability, adequacy, and accessibility of waste bins significantly predict proper waste disposal behaviour and overall environmental cleanliness among students. The second hypothesis tested whether access to public conveniences significantly influences sanitation practices among secondary school students. The results also showed a statistically significant relationship between access to public conveniences and sanitation practices ($p < 0.05$). Consequently, the null hypothesis was rejected. This implies that the availability and functionality of toilet facilities significantly influence students' hygienic behaviour, including proper toilet use and maintenance of sanitation standards. Empirically, the study establishes that facility-level variables specifically access to waste bins and access to public conveniences are significant predictors of sanitation practices among secondary school students in Boki LGA. The findings confirm that improved access to sanitation infrastructure is associated with better hygiene behaviour within the school environment.

Recommendations

The following recommendations were made that;

1. School authorities should ensure that adequate waste bins are provided in their schools in order to increase students' access to this facility and improve sanitation practices.
2. The provision of conveniences in schools should be given utmost priority by school authorities to enhance quality sanitation practices in schools.

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