# School Physical Facilities and Students' Academic Performance in Public Secondary Schools in Bayelsa State

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## Abstract

*The research examined how school conditions affect academic achievement in Bayelsa State public secondary schools. The study used correlational survey research. For the 2021/2022 academic year, 18,140 pupils from 88 public secondary schools in three Bayelsa State Local Government Areas were studied. Bayelsa State's Ogbia, Sagbama, and Yenagoa LGAs get 1680, 5211, and 11249. In the 2021/2022 academic year, proportional stratified random selection was used to pick 880 students (4.85% of the total population) from public secondary schools in the three designated Local Government Areas of Bayelsa State, Nigeria. The 10-item School Physical Facilities and Students' Academic Performance Questionnaire (SPFSAPQ) was used to gather data. The research supervisor and two measurement and evaluation specialists from the department of educational foundations, Niger Delta University, Wilberforce Island, Bayelsa State, validated the instrument. The reliability coefficients of the instrument internal consistencies were calculated using Cronbach's Alpha. School physical facilities and student academic achievement had dependability coefficients of.750 and.760. Simple percentage analysis, model summary of simple regression analysis, and PPMC analysis were used to analyse demographic data, research question, and hypothesis in SPSS version 26. Physical amenities affect secondary school pupils' academic achievement, according to the research. According to the conclusion, students should not disregard school physical amenities since they may greatly help their secondary school academic achievement.*

*Keywords: School Physical Facilities, Students' Academic Performance*

## Introduction

The educational system in Nigeria has been deregulated into two main interest groups, such as Public and Private Education systems. The Public education is that education that gives room for equal educational opportunity for both rich and poor citizens of that country, Ukeje (2005). Public schools are usually controlled by the three tiers of the government, and get their funding from both the government and voluntary organizations. Private schools are owned by private individuals and are controlled by the owner of such schools. (Hernes, 2001 in Eze, 2016).

UNESCO and the World Bank define private education institutions as those administered and directed by a private group or board of governors not elected by the public. The institution may be run by an NGO or business.

Classrooms, libraries, technical workshops, information and technology facilities, labs, health physical exercises, play areas, and furnishings improve pupils' academic achievement. Thus, the educational environment must be investigated and regulated to improve student performance. School atmosphere may affect or increase academic achievement, according to research. The physical school environment affects instructors, students, and learning, according to Glassman (2010) in Persuade and Turner (2008).

Fraser (1995) in Lyons (2001) noted that inadequate illumination, noise, excessive classroom carbon dioxide, and irregular temperatures made teaching and learning difficult. Poor upkeep and ventilation harm student and teacher health and performance. Eze (2016) referenced Beyond (2012) as saying children require a safe, healthy, and engaging environment to learn. Children spend 6–7 hours in school, where the environment is crucial to their development. Since they spend some time in school, this condition demands careful planning and design to optimise education, health, and stewardship.

Students' performance and responses to events depend on the learning environment, according to Tsavga (2011). This means all societies are influenced by the environment. The learning environment shapes how a student behaves and interacts, shaping it to fit life's demands, whether good or bad. Tsavga believed that building an effective and appropriate learning environment for qualitative and quantitative education is difficult. Teachers and students are vital to teaching-learning in school environments, which comprise instructional, administrative, circulation, convenience, and accessory areas. Students' learning may be improved by their school's location, classroom organisation, and educational facilities and accessories. Good social, political, and economic emancipation, effective teaching, and student learning academic success are anticipated from a well-planned school.

Akan (2018), explained that environment is everything that surrounds the child which are living and non-living things. As a result the child interacts with both his physical and social environment. The work was more concerned with the people in the social environment wish the child comes in contact with and how that under certain conditions, the child could be influenced in a particular way; This may include the way the sub-culture regards a belief system taboos, customs and others within a cultural setting. In this kind of setting, the child"s academic achievement may be low.

Nwankwo (2020), in his work explain that school environment consists of school building, classrooms, furniture, playgrounds, sport facilities, and libraries and many other; which are there to aid or to help the class room teacher for effective delivery of his/her lesson. The impact on the learner is within the premises and only the social aspect of environment is connected with it. The work emphases on teachers out come and have lesser relevant place for the learners' outcome. All of what is found in school environment is there to provide effective delivery of teachers' lessons, making this work not to lack some essential needed facts for his study.

Denga, (2012), as cited by Torupere (2016), explains that sharpening and developing a child, is achievable in the school environment depends on so many factors including the walls of the schools, climate and culture of school including the staff of school and the teacher and learning

process-curricular and extra-curricular activities have to be considered. The school environment is all encompassing- the class room activities and those out-of–classroom activities. All of other organizations within the school cultural affiliation and leadership of such kinds are part of school environments. Hence, Eric (2005) postulates that only a supportive school environment can promote any academic. The good educational atmosphere stimulates learning. Most students spend time in school, which affects performance via curriculum, instruction, and relationships (Lawrence, 2012). According to Mick (2011), school environment supports student safety and health. These may comprise physical plant, academic atmosphere, physical and mental health supports and services, and disciplinary processes and facilities, as supported by appropriate research and validity assessments. School environment is ambiguous, although it usually denotes one or more of the following:

1. School culture: The rituals, traditions, and school different from other schools.
2. School climate: The attitudes held by those in the school about the school (i.e. such ''a friendly supportive place'')
3. Physical environment: The building, classrooms aesthetic look, indoor air quality and other physical characteristics of the building

Academic performance or academic achievement may be referred to not limit to classroom activities but outcome which is the excellence of hard work of the learner. We may recall that earlier in this work, environment was explained to include amongst others the sporting activities which the learner engages in. That is, all the curricular and extra- curricular activities within the school environment; which are contained in any educational institutions goals of attainment. Educational achievement can simply be put as the extent or the degree at which a learner, teacher, or an institution has attained in their short or long- term educational goals of school's certificate (primary or secondary), diplomas and degree certificate, through certain academic activities, and some ways of determining academic performance. The award of certificates: (primary or secondary), Diplomas and degrees after completion of academic activities account for academic achievement. Usually, there are certain parameters to measure or determine performance grades: Test scores, assignments and exam scores amongst others. Although academic achievement may be commonly measured by examinations and continuous assessments, there is no general agreement on how it is best evaluated, or the aspects of assessment that is most relevant- procedural knowledge such as skills or declarative knowledge such as facts.

In Akomolafa and Adesua (2016), Adeyemi said performance measures educational output. Academic performance is how well or poorly a student accomplishes a job or learning process related tasks. Poor performance falls below the academic norm. Charles (1994) defined bad performance as below-standard performance. Physical amenities are important, according to recent research. In conclusion, Ajayi and Ayodele (2014) stressed the importance of these tools for school instructional delivery and oversight. They said that secondary schools' lack of fundamental amenities including classrooms, office commendation, workshops, athletic facilities, labs, libraries, etc. is a great depiction of university life. Scholars don't know which specific characteristics influence academic accomplishment. Test anxiety, environment, motivation, and emotions must be included when modelling school accomplishment (Dowes & Loureen 2015). Santrock in Torupere (2016) defines academic success as what a student has learnt or gained via environmental interactions.

Santrock and Good (2010) added that examinations may assess students' abilities and knowledge: According to Hoyle, referenced in Gaius (2016), schools teach students

information and skills. Beyond this is improving academic achievement. Academic success may be the result of pupils completing curricular and extracurricular activities as required by an academic institution. Performance may be low, decent, or great, depending on school environment characteristics and teaching and learning motivation.

School amenities seem to stimulate students to study. Any school system has school buildings, classrooms, libraries, labs, toilets, learning materials, and other infrastructures to stimulate students to study. Experience has demonstrated that most physical amenities necessary for student learning/performance in public secondary schools are lacking. others appear decrepit, others lack maintenance culture, and some are low-quality.

Teachers are concerned about physical amenities, particularly at public secondary schools. These school amenities seem to have declined over time, maybe owing to rising enrolment and population boom in public schools. School buildings are crucial to learning programs. Teachers need them in a good workplace. When facilities are provided, kids are more engaged in learning, which leads to good performance. Secondary school pupils' performance may be affected by a lack of physical amenities and a compelling learning environment. Most schools lack the resources to improve teaching and learning, hence academic achievement is low. Experience reveals that poor physical conditions reduce student enthusiasm in learning. Therefore, their academic performance may suffer. Without library equipment and suitable classroom seating, pupils may perform poorly.

In addition to sheltering pupils from sun, rain, heat, and cold, there should be ample space, chairs, laboratory and internet facilities, and other physical amenities to boost student motivation and performance. According to "The Nation" newspaper of October 2009, Nigerian students protested public school infrastructure. Thus, proper facilities were thought to improve student performance. Library as one of the school Facilities: A library is a collection of materials such as books, magazines, newspapers among others made accessible for individuals to use or borrow. Libraries have been existed since years ago and are an important part of every developed and developing organization. It gives room for information and knowledge for every individual, notwithstanding he/she creates financial means or background. Library service is a ring for research and educator including, making way for individual to extend their interest, and discover or search new ideas, and connect, and connect with other that share same interest. Library gives service that is more than lending of materials. It enhances literacy, intellectual freedom and cultural diversity and is a very essential resource for individuals, communities and the society at large.

UNESCO (2020) defines a library as an organisation or part of an organisation whose main arm is to build and maintain a collection and facilitate the use of such information resources to meet the informational, research, educational, and recreational needs of its users. Other resources and services incidental to its purpose are not excluded. Edoka (2000) defines a library as a source centre with books and periodicals for teachers and researchers to use for learning, study, research, recreation, and personal interest. Keith (2000) said schools with well-developed libraries perform better. Libraries offer educational resources to improve the curriculum and provide pupils infinite learning possibilities. Libraries are the percentage special limitation course of study for students. Reading materials and readership are why libraries exist. According to the National Centre for Education (2001), the more they read, the better they score on practically every metric in any field. According to Mazi (2006), Obi argued that the amount of books in the library is meaningless if they are not utilised, outdated, unsightly, or unsuitable. Library Research Service (2000), If libraries are just storage units,

somewhere to drop off pupils during teacher preparation, or staffed by paraprofessionals or secretarial staff, they don't help learning.

According to Rabindranath "a library can be thought of as a tower of silence-like a sleeping child, which embodies the trapped vibrations of an age-old ocean. Here language is still, like a calm enlightenment, shackled with words, is imprisoned in the papers in black and white. If all these sublime aspirations of the quest of human mind suddenly find expression-if the rebellious words fly in all directions, it will be a kin to a torrent from the melted ice of the Himalayas. The library encloses within itself this very deluge of the ardent expressions of human souls. In the word of Dike (2001) sees school library as a learning laboratory par excellence where learners find the world of knowledge, interact directly with resources, acquire information and develop research skill for lifelong learning. The objective of the school library is to serve the school's need and to make possible the purpose and methods of education which the school undertakes. The school library enables the students to look to new ways of learning, and with its resources can play a programme of work that aims at new ambition's education result which would be impossible if learning were restricted to the use of direct teaching and textbook alone.

Adeniran (2011) has examined the user satisfaction with academic libraries services: satisfaction is a function of the quality of staff and services of a library. The study also revealed that provision of relevant information materials, access point and conducive environment for learning, teaching and research lead to an increase in the use of library. Pandey and Singh (2014), in their study found that a large number of respondents were satisfied with library resources and services and books are most widely used resources and most preferred services used by the users is circulation service.

Stone and Ramsden (2013), who conducted an empirical study on the impact of the library mixed method (qualitative and quantitative) approach to carry out the study. Interview and questionnaire were used to collect relevant data. Eight universities in the United Kingdom were selected as sample for the study and students were used as the respondents. They found that students who accessed the library data for their academic activities had a positive significant relationship with their academic achievement. Strong (2013) researched on the significant relationship with their academic achievement and sustainable education in the United States of America. The data collected were analyses statistically. The study revealed that the presence of the school library improved the academic performance of students. Similarly, Stone, Ramsden and Pattern (2011) studied the relationship between library usage and academic achievement. Their study found a high correlation between noted that since the library was synonymous to students' academic success, its provision should not be undermined. Library usage and students' academic achievement in schools are significantly of high importance. A high correlation was achieved because of the students' access to library materials which aided their learning.

School physical facilities are some of the bases upon which educational system grows. Subsequent Studies have revealed that school physical facility like school building and the size of classrooms can play a vital role in enhancing students' effectiveness in the educational system. Hinum (1999) asserts that the quality of facilities has impact not only on educational outcomes but on the wellbeing of students and teachers. Adeboyeje and Ayodele (2016) have pointed that the availability of adequate chairs, desks, and other facilities are necessary for the accomplishment of any educational goals and objective. They revealed that effective management of school facilities brings about development of educational programmes and facilitates educational process. It also results to boosting of the morale of teachers and students

and enhances the usefulness in the determination of the worth of the school, Lezolte and Passiroque in Victor (2018), studies showed that school building accounts for significant variance in academic achievement: and, that classrooms should be spacious in order to promote flexibility of usage in groups and in individual activities. Nwachukwu (1994), added that the physical setting (building/interior inclusive) must be attractive enough to make students willing to spend long hours in them during learning and teaching process. Only in this way can the nature of the physical structure affect the learner. Accordingly, the comfort of the learner and the teacher cannot be compromised.

The level of available resources for the educational process will determine the performance, Adesolo, (2016). Similarly, Akinfobrin (2012) identified school physical facilities as a major contributing factor to academic achievement in the school system. The physical facilities of the school amongst which are safe structure, adequate sanitary facilities, a balance visual environment, appropriate thermal (associated) environment, and sufficient shelter space for work and play, and, all emotional needs like pleasant surroundings, a friendly atmosphere and an inspiring environment are what the learner needs, (Knezevia, 2000).

Obasi and Asedike (2007) in Obasi and Sodike (2009), as presented in Educational Resources Management observed that school facilities generally refers to the buildings and the entire grounds or premises of an educational institution as well as other fixed or moveable items of furniture which facilitate teaching and learning. In summary, school facilities are classified based on the availability of the following:
1.      Instructional facilities – library, laboratory, fans, books, boards, software, amongst others.
2.      Recreational Facilities – these are indoor and outdoor items for games and sports, meant for training learners for general body outfit.
3.      Residential Facilities –such as hostel facilities, staff quarters which provides shelter for staff and students.
4.      General Purpose Facilities – such as halls, auditorium, classroom, open space, field farms.
5.      Health Facilities – clinics and any facilities that support improving and providing health services to the school. On the other hand, Akonde (2005) view of health facilities toinclude books, tapes, audio and visual software and hardware technologies that are capable of enhancing health delivery services. The report of primary education in Nigeria by FGN/UNICEF/UNESCO/UNDPP (2000) shows that chalkboard and chalk were the only materials reported as being adequately available in the schools. The Introduction of Universal Basic Education (UBE) has increased enrolment in primary school from 17.9 million in 1999 to 19.2 million in 2000 and 19.4 million in 2001 (FME, 2003). This increase translates to demand for more places at secondary schools resulting to overstretching of the existing physical facilities. Investment in education entails the provision of the necessary infrastructure and facilities that could lead the system to the desired goals and objectives, (Umoru-Onuka 2004). Adegboyega (2002) observed that little attention is paid to education in terms of funding and this money is spent on recurrent expenditure leading to the deterioration of the existing facilities.

Edgerton and Mckechnie (2023) examined a range of other important variables that could be potential mediating factors between environmental perceptions and academic achievement. The study was conducted with 441, S5 students in five secondary schools in Scotland. Students completed a questionnaire that measured their perceptions of their school environment, their

behaviour in school, and their learning goals. In addition, data on student academic achievement, attendance and socioeconomic status was provided by the Local Authority. Regression analysis indicates that students' subjective perceptions of their physical school environment, along with attendance, socioeconomic status and gender are all significantly related to academic achievement.

Habyarimana and Opiyo (2022) determined how the school environment influences students' academic success in 12YBE schools, mainly secondary level in Rwamagana District, Rwanda. Specifically, the study identified the environmental factors associated with students learning in twelve years basic education schools of Rwamagana district, assessed the students' academic performance in twelve years basic education schools of Rwamagana district and ascertained the relationship between school environment and students' academic performance, which was carried out through descriptive study design. Statistical package for social sciences was used to determine levels of the school environment and students' academic performance. Averages and percentages were also used to identify the classes of objects for measuring the impact of the school situation and facilities on school performance of students in Rwanda, Rwamagana District. From the present study, the way school environmental factors like school location, school facilities, school discipline and school community influencing academic performance of the secondary level of 12YBE Schools in Rwamagana district has been established. The correlation between school location, school facilities and academic performance has given that relationships were all positive and statistically significant.

Santos (2022) carried out a research on the relationship between school facilities and students' academic performance in selected public secondary schools. The author found out that students who attended schools where facilities are available and adequate tend to perform higher academically than those who attended schools where there were no facilities or where the facilities are not adequate. This shows that facilities have significant role in the academic performance of students. The result of the finding of the study by Coronado, Kwok and Lee (2022) showed a positive correlation between school facilities and students' engagement and learning. From this study, it therefore implies that for students to perform maximally there must be a correlation between the school facilities and students' engagement and learning.

Ezike (2018) investigated classroom environment and students' academic interest as correlate of achievement in Senior Secondary Chemistry students in selected Public Secondary Schools in Ibadan, Oyo State, Nigeria. The result showed significant relationships between classroom environment and academic achievement, while combined contribution of classroom environment and academic interest was equally significant. Gilavand (2016) in a study whose aim is to investigate the impact of environmental factors (schools' open space, noise, lighting and paintings in educational institutions) on learning and academic achievement of elementary students, found that environmental factors (appropriate coloring, lighting of educational environment and schools' open space) has impact on learning and academic achievement of elementary school students. Also, Eimuhi and Ogedegbe (2016) in a research titled the effect of environmental factors in teaching and learning in primary and secondary schools in Edo state of Nigeria examined environmental factors to determine the outcome of teaching and learning at all times and in all places and concludes that the more enriched the learning environments is, the greater and more widespread are the benefits for academic performance and other student outcomes.

Usaini, Abubakar and Bichi (2015) analyzed how school facilities, teachers and environment significantly affect secondary school students' academic performance in Kuala Terengganu, Malaysia. Descriptive Survey Research design was used in the study in which data from 377 respondents was collected using self-administered questionnaire from 4 selected secondary schools within Kuala Terengganu, Malaysia. Stratified random sampling technique was used to sample the respondents. The data was analyzed using regression analysis. The result of the study indicated that students from a school with adequate facilities, good teachers and favorable environment perform well than those from schools with fewer facilities, unqualified teachers and the less enabling environment.

Nsa, Offiong, Udo and Ikot, (2014) assessed the relationship between school environmental variables and students' academic performance in agricultural science. The scholars employed correlational survey design and selected students randomly. The target population consisted of students. The authors further used copies of questionnaire and checklist. Furthermore, the study data were analyzed through the utilization of Pearson Product Moment Correlation Coefficient (PPMC) analysis. The study showed a significant relationship between availability of laboratory facilities and students' performance in agricultural science. The study also identified a significant relationship between availability of farming facilities and academic performance of students. Based on the study findings, the authors recommended the creation of a more conducive environment that will aid students' perform better academically. In another research by Duruji, Azuh and Oviasogie (2014), which examines the impact of learning environment on students' performance in external examination in secondary schools in Ota, Nigeria considering factors such as school facilities, class size, school location and school plant planning, aesthetics, maintenance culture, sanitation, conveniences. The research found that" the state of learning environment and quality of infrastructure, together with the extent to which they are being maintained has a strong bearing to academic performance among students".

Jato (2014) suggested that school libraries improve student success by providing a peaceful, well-lit study space that promotes mental attention. According to the 2009 American Association of School Librarian (AASL) report, "school library programs improve students' learning" and "school libraries are an essential part of a complete school program as they provide an equitable, fiscally responsible strategy for sharing resources across grade levels and the curriculum while addressing core reading, information, and technology literacy." According to AASL (op.cit), school libraries typically double as classrooms. Matthew (1996) in AASL noted the effectiveness of industrial library utilisation. From the work, library defines the school system of read and write, add and subtract. Our success in the information era relies on a school system that teaches us to handle information, use technology, create, and think. According to Haycock (1995), pupils in schools with adequate library services did better in reading comprehension and in expressing their reading ideas. In his 2003 study "Impact of School Libraries on Student Achievement," Lonsdale argued that the school library's influence decreased as students progressed through high school. He said that pupils in schools with strong libraries and full-time librarians fared better in reading comprehension and reference material usage than those in schools with little or no library service.

Daniel and Felix (2014) evaluated the effect of school environment and peer influence on the students' academic performance. The research examined how educational environment and peer influence affect students psychologically. Twenty-one public secondary schools in sabbatical found that environment strongly affects academic achievement. Students' academic achievement is strongly correlated with their school's role as a second home. Orlu (2013) studied 600 instructors and students in Port Harcourt, River state, to determine how the

environment affects secondary school students' academic performance. The findings of the study suggested that school atmosphere has a considerable impact on academic success. Lawrence (2012) studied "the school environment and standard six students' achievement". The association between school atmosphere and academic success was examined using 400 sample participants. The research found no gender or medium of instruction differences in standard six pupils' educational environments. However, standard six pupils' educational environments differed by location. Urban children do better because their schools have sophisticated amenities that make them comfortable and productive.

Sunday (2012) found that senior secondary school pupils' academic performance is strongly correlated with physical school environment. Physics. To him, the physical school atmosphere affects secondary school physics students' academic performance. Physical facilities, human resources, and their connection influence the school's atmosphere. In physics, pupils with appropriate laboratory facilities perform better than those in schools with fewer or no resources because the lab enhances the physical school experience. Poor amenities, space, and seat arrangement in the classroom, library, and lab affected learning environment organisation.

Chonjo's (1994) research on Tanzanian primary schools' physical infrastructure and instructional materials confirms this. Chonjo questioned instructors and students about instructional materials and learning. According to his research, school performance is linked to teaching and learning resources and equipment. He said that great facilities are essential for quality education. Chonjo's research was unusual in Tanzania since it explicitly related physical amenities to elementary school children' academic achievement. Chonjo ignored training materials and concentrated on amenities. The researcher of this study believes that classrooms, seats, and tables are not adequate to give great teaching and learning. Instructional materials are needed. Maundu (1987) agrees with the present research that a school needs have relevant and appropriate text books and other teaching and learning tools to perform successfully.

## Statement of the problem
The school atmosphere in public secondary schools in the research region seems to worry students, parents, and staff. Insufficient supply of this factor. Some of the structures seem decrepit, neglected, or unusable. Due to high enrolment, student population seems to be rising. Close monitoring of students' performance suggests a lack of suitable qualities and an enabling learning environment to encourage secondary pupils. In schools without these resources, children look uninterested in studying. Some researches have noted that bad school location, inadequate physical amenities, terrible building design, and unprofessional staff may cause pupils physical anguish, which might affect their academic performance. Thus, the concern is the link between school physical amenities and academic achievement in Bayelsa State public secondary schools.

## Purpose of the study
This research set out to answer the question, "How do physical school facilities in Bayelsa State affect students' academic performance?" by looking at secondary school students' grades and attendance. This study's overarching goal is to look at public secondary schools in Bayelsa State and how their physical facilities affect pupils' ability to learn.

## Research Question
The study was driven by the following research question:
In Bayelsa State's public secondary schools, how do the facilities affect pupils' ability to learn?

**Hypothesis**

This is the notion that the researchers have come up with: Students' academic achievement is unrelated to the quality of the school's physical amenities at Bayelsa State's public secondary schools.

**Methodology**

The correlational survey design was used as the research strategy for this investigation. Because it highlights the preexisting link between the study's independent and dependent variables, this design is appropriate for this investigation (Nworgu, 2006). Having said that, the design does demonstrate the presence of a link between the dependent and independent variables; nevertheless, it cannot prove a cause-and-effect relationship. Since the study's independent and dependent variables are quantitative in nature, the design is acceptable for this setting (Johnson & Christensen, 2004). Students' academic achievement serves as the dependent variable in this research, while school location is the quantitative independent variable. The 181,140 secondary school students enrolled in 88 different public schools across three different LGAs in Bayelsa State in the 2021–2022 school year were the intended subjects of this research. In Bayelsa State, the population was split among three local government areas: Ogbia (1680), Sagbama (5211), and Yenagoa (11229). During the 2021/2022 school year, 880 students from public secondary schools in three randomly chosen LGAs of Bayelsa State, Nigeria were chosen for the study. This represents 4.85% of the total population. The students were picked using a proportional stratified random selection approach. Ogbia (81 participants), Sagbama (253) and Yenagoa (546) were the three LGAs in Bayelsa State that made up the sample. Table 1 shows the sample frame and how the sample was distributed across the three (3) chosen LGAs.

**Table 1 Sample frame and distribution of sample into the three (3) selected Local Government Areas**

| S/N | Name of Local Government Area | Population of Students' | Sample size of Students' |
|-----|-------------------------------|-------------------------|--------------------------|
| 1 | Ogbia | 1680 | 81 |
| 2 | Sagbama | 5211 | 253 |
| 3 | Yenagoa | 11249 | 546 |
| *4* | *Total* | *18140* | *880* |

The instrument used in collecting data in the study was questionnaire titled School Physical Facilities and Students' Academic Performance Questionnaire (SPFSAPQ) with ten (10) items. All the items were measured on a 4 point rating scale of:

1. Strongly Agree (SA) 4-points;
2. Agree (A) 3-points
3. Disagree (D) 2-points and
4. Strongly Disagree (SD) 1-point

The research supervisor and two measurement and assessment specialists in the Department of Counselling and Educational Psychology, Niger Delta University, Wilberforce Island, Bayelsa State, validated the instrument. All helpful recommendations, changes, comments, and contributions from the validity process were carefully and truly used in the final instrument draft. After the validity procedure, 10 of the 12 items draughted were authorised for this research. The instrument internal consistencies of several variables were verified using Cronbach's Alpha. Thirty public secondary school students in Kolokuma/Opokuma Local

Government Area of Bayelsa State who were not part of the research were given the questionnaire once. School physical facilities and academic achievement have dependability coefficients of.750 and.760. The figures showed that the reliability coefficient magnitude of the equipment was suitable for research data collecting. Participants received and retrieved questionnaires directly from the researchers. Two trained research assistants helped distribute and retrieve the instrument copies. However, 880 (98%) of the 900 instrument copies provided were correctly administered by respondents. Twenty percent (2%) were inappropriately given. The distribution and retrieval of data gathering instruments took 12 weeks. The demographic data, research question, and hypothesis were analysed using SPSS version 26's simple percentage analysis, model summary of simple regression analysis, and PPMC analysis.

## Results
### Analysis of Demographic Data
**Table 2: Percentage Distribution of Respondents by Gender**

| S/N | Gender | Frequencies | Percentage (%) |
|---|---|---|---|
| 1 | Male | 562 | 64 |
| 2 | Female | 318 | 36 |
| **3** | **Total** | **880** | **100** |

Table 2 shows that 562 (64%) of responders were male and 318 (36%) female students. Male pupils outnumbered female students in the research.

**Table 3: Percentage Distribution of Respondents by Age**

| S/N | Age | Frequencies | Percentage (%) |
|---|---|---|---|
| 1 | 11-13 years | 271 | 31 |
| 2 | 14-16 years | 468 | 53 |
| 3 | 17-19 years | 141 | 16 |
| **4** | **Total** | **880** | **100** |

Table 3 shows that 271 (31%) of respondents were 11-13 years old, 468 (53%) were 14-16 years old, and 141 (16%) were 17-19 years old. This means more students were 14-16 years old than others in the research.

**Table 4: Percentage Distribution of Respondents by School Location**

| S/N | School Location | Frequencies | Percentage (%) |
|---|---|---|---|
| 1 | Urban location | 518 | 59 |
| 2 | Rural location | 362 | 41 |
| **3** | **Total** | **880** | **100** |

Table 4 reveals that 518 (59%) of respondents were from urban schools and 362 (41%) from rural schools. This means urban students outnumbered rural pupils in the study.

**Table 5: Percentage Distribution of Respondents by Local Government Area**

| S/N | Local Government Area | Frequencies | Percentage (%) |
|---|---|---|---|
| 1 | Ogbia | 81 | 9 |
| 2 | Sagbama | 253 | 29 |
| 3 | Yenagoa | 546 | 62 |
| **4** | **Total** | **880** | **100** |

Table 5 shows that 81 (9%) of responders were from Ogbia, 253 (29%) from Sagbama, and 546 (62%) from Yenagoa LGA. This means Yenagoa LGA pupils outnumbered their peers in the study.

## Research Question
What is the connection between school physical facilities and students' academic performance in public secondary schools in Bayelsa State?

**Table 6: Model summary of regression analysis of the relationship between school physical facilities and students' academic performance**

| Variables | N | R | $R^2$ |
|---|---|---|---|
| School physical facilities | 880 | 0.504 | 0.254 |
| Students' academic performance | 880 | | |

Table 6 indicates an r-value of.504 and a r2-value of.254. Students' academic performance is 25.4% influenced by school amenities. Since the two variables are related, the PPMC analysis was performed to see whether the link is significant (Table 7).

## Hypothesis One
No substantial link exists between school location and academic achievement in Bayelsa State public secondary schools.

**Table 7: Pearson Product Moment Correlation Coefficient (PPMC) analysis of the extent of relationship between school location and students' academic performance**

| | | School physical facilities | Students' academic performance |
|---|---|---|---|
| School physical facilities | Pearson Correlation | 1 | .504[*] |
| | Sig. (2-tailed) | | .000 |
| | N | 880 | 880 |
| Students' academic performance | Pearson Correlation | .504[*] | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 880 | 880 |

* = Significant at .05 alpha level; Degree of Freedom (df) = 878; N = 880

Table 7 shows that the PPMC analysis is significant at $p <.05$ alpha level, as the computed p-value of.000 is less than the threshold p-value of.05 with 878 degrees of freedom and a correlation coefficient r-value of.504. Thus, the null hypothesis that school physical conditions do not affect academic achievement in Bayelsa State public secondary schools is rejected. Thus, the alternative hypothesis that school physical conditions affect academic achievement in Bayelsa State public secondary schools is supported.

## Summary of Finding
Physical facilities affect Bayelsa State public secondary school pupils' academic achievement.

## Discussion of Findings
In Table 6, school physical amenities positively affect student academic achievement with a correlation coefficient r-value of.504. Moderate magnitude and positive trend. Positive correlation between school physical facilities and student academic performance means that as school physical facilities scores rise, so do student academic performance ratings.

PPMC study showed a.504 r-value was statistically significant at.05. Thus, public secondary school physical amenities positively correlated with student academic achievement. This research agrees with Nsa, Offiong, Udo, and Ikot (2014), who found that laboratory facilities improve agricultural science students' academic performance. This research also supports Santos (2022) that secondary school amenities affect student achievement.

The correlation between public secondary school physical facilities and academic achievement in Bayelsa State was.504. Alienation coefficient was.864. This figure shows no correlation between school amenities and student achievement. Thus, the research found.504 connection and.864 absence of relationship.

Relationship or coefficient of determination was 25.40%. This illustrates how much school amenities affect student achievement. This score indicates a moderate link between the studied variables. From the percentage decrease in error of prediction (r2) for school physical facilities and student academic achievement, 25.40 was calculated. This suggests that school physical facility ratings lower the inaccuracy of forecasting student academic achievement by 25.40% and vice versa. It further means that, students' academic performance can be predicted from the knowledge of scores of school physical facilities by only 25.40%. This demonstrates the modest association between school infrastructure and academic success. The inaccuracy in predicting school physical facilities from students' academic achievement and vice versa was 74.60%. Thus, only 25.40% of school physical facilities scores can be predicted from students' academic performance scores and vice-versa, while 74.60% cannot. The association between school physical facilities and students' academic achievement was statistically significant, moderate in size, and moderate in percentage of prediction.

**Conclusion and Recommendation**

The research found that secondary school students' academic achievement was significantly related to the quality of their school's physical amenities. Consistent with the findings, it was suggested that students should not underestimate the importance of the school's physical amenities in enhancing their academic success in secondary school.

# REFERENCES

Adegboyega, L. O. (2018). Influence of achievement motivation on Nigeria undergraduates attitude towards examination. *Internal Journal of Instruction* e-ISSN:1308-1470. wwwe. j. -net vol 11.NOp ISSN: 1694-609<Pp77-88.

Adesola, A. O. (2016). *Assessment of the physical school environment of selected private high schools in Ile-Ife, Nigeria. Publish online: 19Dec 2016 https:/Idoi. org/ 10.12968/bjsn 2016.11.10.498*

Ajayi, I.A. & Ayodele, J. B. (2001).*Introduction to Educational Planning Administration and Supervision.*Ado-Ekiti: Yemi Printing Services.

Akomolafa, C. O. & Adesua, V. O. (2016). *The impact of physical facilities on students' level of motivation and academic performance in secondary schools in South West Nigeria.Journal of Education and Practice, 7*(4), 16-24.

Ayodele, J. B.(2016).The role of the head teachers in school plant management and maintenance. *Journal of Teachers' Education, 5,*28-30.

Duruji, M. M., Azuh, D. & Oviasogie, F. (2014). Learning environment and academic performance of secondary school students in external examinations: A study of selected schools in Ota, Nigeria. Proceedings of EDULEARN 14 Conferences, Barcelona, Spain. 7th-9th July, PP.5042-5053.

Edgerton, E. A., McKechnie, J., & McEwen, S. (2011). Students' perceptions of their school environments and the relationship with education outcomes. *Educ. Child Psychol. 28,* 33–45.

Eimuhi, J. O. & Ogedegbe, B. G. (2016).The effect of environmental factors in teaching and learning in primary and secondary schools in Edo State of Nigeria. *Journal of Emerging Trends inEducational Research and Policy Studies (JETERAPS), 7*(4), 310-317.

Eric, S. (2005). The role of supportive school environment in promoting success, an Article from Development Studies centre (DSC). *Developing safe and Healthy Kids*, published in Getting Result, update 5 (hapter3)

Eze, F. N. (2016). *Influence of school environment on academic achievement* of public secondary school in Enugu State. Department of Educational Foundation University Nigeria Nsukka.

Ezike, B. U. (2018). Classroom environment and academic interest as correlates of achievement in senior secondary school Chemistry in Ibadan South West Local Government Area, Oyo State. Nigeria. *Global Journal of Educational Research*, 17, 61-71.

Federal Ministry of Education (2003).*Educational status report.*Abuja: Federal Ministry of Education.

Gaius, T.T. (2016). Influence of school environment on academic performance of students in public secondary schools. Bayelsa.*Unpublished project work*.

Gilavand, A. (2015). Investigating the impact of environmental factors on learning and academic achievement of elementary students: Review. *International Journal of Medical Research &HealthSciences, 3,* 360-369.

Habyarimana, C. & Opiyo, A. (2022). School environmental factors and students' academic performance in twelve years Basic Education in Rwanda: A Case of Rwamagana District, Rwanda. *Global Scientific Journals, 10*(3), 2366-2379

Haycock, K. (1995). The crisis in Canada's school libraries. (Association of Canadian Publishers and Heritage Canada); David Coish. Canadian School Libraries and Teacher Librarians.

Jato, M., Ogunniyi, S. O., & Olubiyo, P. O. (2014). Study habits, use of school libraries and students' academic performance in selected secondary schools in Ondo WestLocal

Government Area of Ondo State. *International Journal of Library and Information Science, 6*(4): 57-64.

Jonhson, B. & Christensen, L. (2004). Educational Research: Quantitative, Qualitative and Mixed Approaches (2nd Eds), Boston USA, Pearson Education Inc.

Lawrence, A.S. (2012). School environment and academic achievement of standard 1x students. *Journal of Educational and Instructional Studies in the world, 2*(3), 210-215.

Lonsdale, M. (2003). Impact of school libraries on student achievement: A review of the research. *http://files.eric.ed.gov/fulltext/ED482253 .pdf on I2 December 20I4 06I2 hrs*

Lyons, G. (2011).Classroom management: *Crating positive learning Australia engagelearning.*

Mick, Z. (2011).*South Corolina School Environment Initiative*: South Corolina Department of Education Columbia: Referee on March http: //ed. Sc.gov/agency/ac/student Intervention Services/document/sc-sch.

Nsa, S. O., Offiong, A. A., Udo, M. F.&Ikot, A. S. (2014). School environmental variables and students' academic performance in agricultural science. *International Journal of Business and Social Science, 5*(8), 163-167.

Nwachukwu, C. C. (2008). *Management: Theory and Practice*. Onitsha: African FEP Publishers Ltd.

Nwankwo, J.I. (2012). *Educational Administration:Theory and Practice*. New Delhi: Vikas Publishing House Pvt. Ltd.

Nworgu, B. G. (2006). Educational Research: Basic Issues and Methodology, Ibadan, Wisdom Publishers Limited

Obasi, F.N. & Asodike, J.D. (2007). *Resource management in Nigeria schools.* Owerri: Alphabet Nigeria Publishers.

Orlu, C. (2013). Environment influence on academic performance of secondary schools in Port Harcourt Local Government Area of Rivers State. *Journal of Economic Sustainable Development, 4*(12), 13-20.

Pandey, S. K. & Singh, M.P. (2014). Users' satisfaction towards resources and services in Government Engineering College of Guru Gobind Singh Indraprastha Unviersity

Persaud, G. & Turner, T. (2012). High definition planning for effective school: Reflections from the field Education Planning, *14*(1), 65-76.

Santos, M. (2022). The relationship between school facilities and students' academic performance in selected public secondary schools. *projecttopics.org*

Stone, G.& Ramsden, B. (2013). Library impact data project: Looking for the link between library usage and student attainment. *College & Research Libraries, 74*(6), 546-559.

Sunday, E. O. (2012). Teacher professional development in the 21st Century Nigeria: The Journey, the potholes and the patches. *An International Journal by Global Educators for All Initiative, 1*(1), 1-6.

Torupere, K. (2016). The influence of school environment on secondary school students' academic performance in Bayelsa State. *Asian Journal of Educational Research,4(*2), 13-24.

Tsavga, J. (2011). The effect of Environment on the Performance of Students in Tarka Local Government Area of Benue State. Unpublished PGDE Thesis, Makuridi: Benue State University..

Ukeje, B. (2005). *Educational Administration*. Enugu: Fourth Dimension

Umoru, O.A.O. (2004). Total quality management: A technique for improving student achievement.*Journal of Oyo State Chapter of Nigeria Library Association.*21(1), 18-28.

UNESCO (2020 JUNE 22) Library *http://Uis unesco. Org/en/glossary-term/library.*

Usaini, M. I; Abubakar, N. A. & Bichi, A. A. (2015). Influence of school environment on academic performance of secondary school students in Kuala Terengganu, Malaysia.American *Journal of Innovative Research and Applied Sciences, 1*(6), 203-209.

Victor, A. (2016). *Environmental approaches and human behavour, Ankpa:  Unpublished Handout.*