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Public-Private Partnership and Sustainability of the Educational Sector in Anambra State, Nigeria

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ABSTRACT: The sustainability of the educational sector has become a critical concern in developing economies due to increasing demand for quality education, inadequate public financing, infrastructural decay, and challenges associated with maintaining competent teaching personnel. This study examined the effect of public-private partnership on the sustainability of the educational sector in Anambra State, Nigeria. Specifically, the study investigated the effect of infrastructural funding on physical facility sustainability, assessed the influence of quality assurance support on academic quality sustainability, and determined the effect of capacity-building initiatives on teacher retention in public secondary schools in Anambra State. The study adopted a descriptive survey research design. The population comprised 7,027 teaching staff in public secondary schools across Anambra State. A sample size of 378 respondents was determined using the Taro Yamane formula at a 5% level of significance. Data were collected using a structured questionnaire validated by experts in Educational Management and Business Administration. The reliability of the instrument was established using Cronbach's Alpha, with coefficients exceeding the acceptable threshold of 0.70. Data collected were analyzed using descriptive statistics and multiple regression analysis with the aid of Statistical Package for Social Sciences (SPSS) Version 23. The study is expected to contribute to existing knowledge by demonstrating how strategic collaboration between government and private organizations can enhance educational sustainability through improved infrastructure, academic quality, and teacher development. The study recommends strengthening public-private partnership frameworks, encouraging private investment in educational infrastructure, promoting collaborative quality assurance systems, and expanding sustainable teacher development initiatives.

Keywords: Public-Private Partnership, Infrastructural Funding, Quality Assurance Support, Capacity Building, Educational Sustainability, Teacher Retention, Public Secondary Schools.

1. INTRODUCTION

Education remains a critical foundation for economic growth, social development, technological advancement, and human capital formation. A sustainable educational system equips individuals with relevant knowledge, competencies, and skills required for productivity, innovation, and national transformation. In modern economies, the ability of educational institutions to continuously provide quality learning

opportunities depends on effective resource management, stakeholder collaboration, and sustainable institutional practices. Sustainable development requires organizations and institutions to balance social responsibilities, economic efficiency, and long-term performance objectives (Okeke & Williams, 2025; Gbenga & Okeke, 2025).

The educational sector in Nigeria has continued to face persistent challenges arising from inadequate funding, poor infrastructure, shortage of qualified teachers, insufficient instructional materials, and declining academic standards. These challenges have affected the capacity of public educational institutions to provide sustainable and competitive learning environments. Although government remains the primary provider of public education, increasing enrolment levels, technological demands, and financial constraints have created significant pressure on available public resources. The need for alternative financing and management strategies has therefore become necessary to ensure continuous improvement in educational service delivery (Gbenga & Okeke, 2025; Okeke & Williams, 2025).

Public-Private Partnership (PPP) has emerged as an important mechanism for addressing developmental challenges in public institutions through collaboration between government agencies and private sector organizations. PPP involves the sharing of resources, expertise, responsibilities, risks, and benefits between public and private stakeholders to achieve common development objectives. Within the educational sector, PPP provides opportunities for mobilizing additional financial resources, introducing innovative management practices, improving infrastructure, and enhancing institutional effectiveness. The importance of strategic collaboration and stakeholder involvement in achieving sustainable organizational outcomes has been emphasized by studies on sustainability practices and institutional performance (Okeke & Williams, 2025).

One of the major dimensions of public-private partnership is infrastructural funding, which focuses on improving physical facilities required for effective educational delivery. Educational infrastructure such as classrooms, libraries, laboratories, ICT facilities, and administrative buildings significantly influence teaching effectiveness and students' learning experiences. However, many public secondary schools in Nigeria continue to experience infrastructural deficits due to inadequate funding and weak maintenance systems. Sustainable infrastructure development requires continuous investment, effective planning, and collaboration among stakeholders to ensure long-term functionality and value creation (Gbenga & Okeke, 2025; Okeke & Williams, 2025).

Quality assurance support represents another important dimension of public-private partnership in promoting educational sustainability. Quality assurance involves systematic monitoring, evaluation, supervision, accreditation, curriculum improvement, and performance assessment aimed at maintaining acceptable academic standards. Through partnerships with private organizations, professional bodies, educational foundations, and development agencies, schools can improve institutional monitoring systems and strengthen academic quality. Effective leadership and management practices have also been identified as important factors influencing institutional performance and service quality (Odira & Gbenga, 2024).

Capacity-building initiatives constitute another essential aspect of PPP aimed at improving teacher competence, motivation, and professional commitment. Teachers

require continuous development opportunities through training programmes, workshops, mentoring, seminars, and technological skills acquisition to effectively respond to changing educational demands. Employee development and supportive leadership practices have been shown to enhance productivity, commitment, and organizational performance, indicating the importance of investing in human capacity development for sustainable institutional outcomes (Okafor, Odira, & Gbenga, 2025).

In Anambra State, educational development has increasingly involved collaboration among government institutions, private organizations, corporate bodies, religious organizations, alumni associations, and non-governmental organizations. These partnerships have contributed to school renovation, provision of instructional resources, teacher training programmes, scholarship initiatives, and technological advancement. However, despite these interventions, challenges relating to infrastructure sustainability, academic quality improvement, and teacher retention continue to affect public secondary schools. This suggests the need for further investigation into how PPP mechanisms contribute to sustainable educational development (Okeke & Williams, 2025; Odira & Gbenga, 2024).

The sustainability of educational institutions requires not only financial investment but also effective leadership, accountability mechanisms, innovation, and continuous stakeholder engagement. Research evidence indicates that sustainable performance is achieved when organizations integrate economic resources, social responsibilities, and effective management practices into their operations (Gbenga & Okeke, 2025; Okeke & Williams, 2025). Therefore, understanding the role of PPP in strengthening educational infrastructure, improving academic quality, and enhancing teacher retention remains important for achieving sustainable educational outcomes.

It is against this background that this study examines the effect of public-private partnership on the sustainability of the educational sector in Anambra State, Nigeria. Specifically, the study focuses on how infrastructural funding, quality assurance support, and capacity-building initiatives influence physical facility sustainability, academic quality sustainability, and teacher retention within public secondary schools. The findings are expected to provide useful insights for policymakers, educational administrators, private investors, and development partners seeking sustainable strategies for improving educational performance.

Statement of the Problem

The sustainability of the educational sector in Nigeria has remained a major developmental challenge due to inadequate financial resources, infrastructural deficiencies, declining academic quality, and difficulties in retaining competent teachers. Public secondary schools across many states continue to experience challenges such as overcrowded classrooms, inadequate instructional facilities, obsolete learning equipment, poor maintenance practices, and limited opportunities for teacher professional development.

Although government has consistently allocated resources toward educational development, the increasing cost of providing quality education has exceeded available public funding capacity. Consequently, educational institutions require alternative mechanisms capable of providing additional resources, technical expertise, and innovative management approaches. Public-private partnership has therefore emerged as a strategic option for improving educational

sustainability through shared investment and responsibility. Previous studies have demonstrated that sustainability requires coordinated efforts involving multiple stakeholders. Okeke and Williams (2025) noted that organizations achieve sustainable performance when economic resources are combined with effective social and institutional practices. Similarly, Gbenga and Okeke (2025) emphasized that sustainability outcomes are strengthened through efficient resource utilization, strategic planning, and continuous improvement mechanisms.

Despite increasing adoption of PPP initiatives in the educational sector, questions remain regarding their actual contribution to sustainable educational outcomes in Anambra State. Many public secondary schools continue to experience challenges relating to infrastructure maintenance, academic quality improvement, and teacher retention despite existing partnership interventions. Furthermore, existing studies have focused largely on PPP financing and policy issues, leaving limited empirical evidence on how specific partnership dimensions influence educational sustainability. This creates an important research gap regarding the relationship between infrastructural funding, quality assurance support, capacity-building initiatives, and sustainability outcomes within public secondary schools. Addressing this gap is necessary for policymakers, educational administrators, private investors, and development partners seeking effective strategies for achieving sustainable educational development.

1.2 Objectives of the Study

The broad objective of this study is to examine the effect of public-private partnership on the sustainability of the educational sector in Anambra State, Nigeria. The specific objectives are to:

i. examine the effect of public-private partnership infrastructural funding on physical facility sustainability in public secondary schools in Anambra State.
ii. determine the effect of public-private partnership quality assurance support on academic quality sustainability in public secondary schools in Anambra State.
iii. evaluate the effect of public-private partnership capacity-building initiatives on teacher retention in public secondary schools in Anambra State.

1.3 Hypotheses

The following null hypotheses guided the study:

H01: Public-private partnership infrastructural funding has no significant effect on physical facility sustainability in public secondary schools in Anambra State.

H02: Public-private partnership quality assurance support has no significant effect on academic quality sustainability in public secondary schools in Anambra State.

H03: Public-private partnership capacity-building initiatives have no significant effect on teacher retention in public secondary schools in Anambra State.

2.0 LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Public-Private Partnership

Public-Private Partnership (PPP) refers to a strategic collaboration between government institutions and private sector organizations where resources, responsibilities, risks, and benefits are jointly shared to achieve public development objectives. PPP has become increasingly relevant in developing economies due to limitations in government financial capacity and the need to incorporate private sector expertise, innovation, and managerial efficiency into public service delivery. Unlike traditional government-led approaches, PPP emphasizes cooperation, shared

accountability, and long-term partnership arrangements for achieving sustainable outcomes (Enyia & Emelah, 2023; Babatunde et al., 2020).

In the educational sector, PPP provides a framework through which private organizations, corporate institutions, development agencies, and non-governmental organizations support government efforts in improving educational access, quality, infrastructure, and institutional performance. Through PPP arrangements, private sector actors contribute financial resources, technical expertise, technology, and management practices that complement government investments. Bello (2020) observed that corporate interventions in Nigeria's education sector have contributed significantly to achieving educational development objectives through initiatives such as school adoption programmes, technology support, and capacity development.

The application of PPP in education is particularly important in Nigeria because public educational institutions face persistent challenges associated with inadequate funding, infrastructure deficits, and declining educational quality. PPP provides opportunities for mobilizing additional resources and improving institutional effectiveness through collaborative governance. Enyia and Emelah (2023) argued that sustainable educational development in Nigeria requires stronger cooperation between government and private stakeholders because government funding alone may not adequately address the increasing demands of modern education.

Therefore, within the context of this study, public-private partnership is conceptualized as the collaborative effort between government agencies and private organizations aimed at improving educational sustainability through infrastructural investment, quality improvement mechanisms, and human capacity development.

2.1.5 Educational Sustainability

Educational sustainability refers to the ability of educational institutions to continuously provide quality learning opportunities, maintain functional infrastructure, develop competent personnel, and adapt effectively to changing societal needs. It involves balancing financial resources, social responsibilities, institutional effectiveness, and long-term educational objectives.

Sustainable education requires continuous investment and collaboration among government, private organizations, communities, and other stakeholders. The concept aligns with broader sustainability principles that emphasize economic efficiency, social responsibility, and institutional resilience. Okeke and Williams (2025) demonstrated that sustainability performance is influenced by social and environmental responsibilities, stakeholder involvement, and effective organizational practices.

In Nigeria, educational sustainability remains a major concern due to funding limitations, infrastructural challenges, and quality issues. Public-private partnership has therefore become increasingly important as a strategy for strengthening educational institutions and achieving sustainable development goals. Enyia and Emelah (2023) argued that PPP provides opportunities for improving educational sustainability by combining government responsibility with private sector resources and expertise.

2.1.6 Teacher Retention

Teacher retention refers to the ability of educational institutions to attract, motivate, and maintain qualified teachers over an

extended period. Retaining experienced teachers is essential because teacher stability contributes to improved instructional quality, institutional memory, and student achievement.

Teacher turnover is often associated with inadequate compensation, limited career development opportunities, poor working conditions, and lack of professional support. Capacity-building programmes and supportive management systems can improve teacher satisfaction and commitment. Okafor et al. (2025) established that supportive leadership practices enhance employee productivity by improving motivation and commitment. Therefore, teacher retention within this study represents the ability of public secondary schools to sustain a competent teaching workforce through professional development opportunities, institutional support, and improved working conditions facilitated through PPP arrangements.

2.2 Theoretical Framework

The theoretical framework provides the foundation upon which the relationship between public-private partnership and sustainability of the educational sector is explained. This study is anchored on the **Stakeholder Theory** and supported by the **Resource Dependence Theory** because both theories provide explanations on how organizations depend on collaborative relationships and external resources to achieve sustainable performance.

2.2.1 Stakeholder Theory

Stakeholder Theory was propounded by Freeman (1984) and emphasizes that organizations operate within a network of relationships involving individuals, groups, and institutions that influence or are influenced by organizational activities. The theory argues that sustainable organizational success cannot be achieved by focusing only on internal objectives; rather, organizations must consider the interests and contributions of various stakeholders, including government agencies, private organizations, employees, communities, and other relevant actors.

In the context of education, Stakeholder Theory provides a strong explanation for the relevance of public-private partnership because educational sustainability requires the collective efforts of multiple stakeholders. Government alone may not possess sufficient financial, technological, and managerial resources to address all educational challenges. Therefore, collaboration with private organizations, corporate bodies, development agencies, communities, and professional institutions becomes necessary for improving educational outcomes.

Ulayi et al. (2022) argued that sustainable educational development requires genuine participation of government, private sector organizations, donor agencies, and civil society because education serves as a collective social responsibility rather than an exclusive government function. The authors further emphasized that PPP arrangements create opportunities for shared responsibility in infrastructure development, human resource improvement, and institutional sustainability.

The relevance of Stakeholder Theory to this study is based on the assumption that public-private partnership initiatives create a platform where government and private organizations jointly contribute resources and expertise toward achieving educational sustainability. Specifically, infrastructural funding, quality assurance support, and capacity-building initiatives represent stakeholder contributions aimed at improving physical facilities, academic standards, and teacher retention.

2.2.2 Resource Dependence Theory

Resource Dependence Theory was developed by Pfeffer and Salancik (1978). The theory explains that organizations depend on resources controlled by external actors for survival, growth, and effective functioning. Since no organization possesses all the resources required to achieve its objectives independently, it must establish relationships with external stakeholders to acquire financial resources, knowledge, technology, and expertise. The theory is particularly relevant to educational institutions because public schools depend heavily on government funding, while government itself faces resource limitations due to competing developmental demands. Public-private partnership therefore provides a mechanism through which educational institutions can access additional resources from private organizations to complement public investment.

Alao (2021) noted that inadequate financial, material, and human resources remain major constraints affecting educational institutions in Nigeria, and that PPP provides opportunities for improving resource availability and management effectiveness. The study emphasized that collaboration between government and private investors can strengthen educational resource sustainability when appropriate partnership structures are established. Similarly, Hassan and Fatile (2022) observed that government alone may not possess adequate resources to address educational infrastructural challenges, making PPP an important strategy for improving school facilities and reducing infrastructure deficits.

The relevance of Resource Dependence Theory to this study lies in its explanation that educational sustainability depends on continuous access to resources. Through PPP arrangements, schools can obtain financial support for infrastructure, technical support for quality improvement, and professional development opportunities for teachers. Therefore, the theory supports the argument that collaboration between public and private actors enhances the sustainability of educational institutions.

2.3 Theoretical Exposition

2.3.2 Infrastructural Funding and Educational Sustainability

Educational infrastructure represents the physical and technological facilities required for effective teaching and learning processes. These facilities include classrooms, libraries, laboratories, ICT centres, administrative buildings, electricity supply, and other learning resources. Adequate infrastructure contributes significantly to improved academic outcomes by creating supportive environments where teachers and students can effectively engage in educational activities.

However, inadequate infrastructural investment remains one of the major challenges affecting educational sustainability in Nigeria. Many public schools experience overcrowded classrooms, deteriorating facilities, inadequate learning equipment, and poor maintenance systems. These challenges limit the ability of educational institutions to provide quality learning experiences. Research has shown that infrastructure development through partnership arrangements can improve sustainability by ensuring continuous investment and effective management of educational facilities (Babatunde et al., 2020).

Public-private partnership infrastructural funding provides an alternative mechanism for addressing educational facility gaps by allowing private organizations to contribute financial resources, technical knowledge, and

innovative solutions. Through collaborative infrastructure development, schools can achieve improved physical conditions, technological advancement, and long-term facility sustainability. Omorodion and Ayodele (2020) emphasized that PPP is essential for developing functional educational institutions because private sector participation can provide resources required for modern facilities, curriculum improvement, and technical development. In this study, infrastructural funding refers to the financial and material contributions provided through public-private partnership arrangements for the development, renovation, and maintenance of educational facilities to ensure sustainable physical learning environments.

2.3.3 Quality Assurance Support and Academic Quality Sustainability

Quality assurance refers to systematic processes designed to maintain and improve educational standards through monitoring, evaluation, supervision, accreditation, and continuous improvement practices. In educational institutions, quality assurance ensures that teaching methods, curriculum delivery, assessment practices, and institutional management conform to acceptable academic standards.

Academic sustainability depends largely on the ability of educational institutions to maintain consistent quality standards despite changing environmental conditions. Quality assurance support provided through PPP arrangements enables schools to access external expertise, professional monitoring systems, technological resources, and innovative educational practices. Bello (2020) noted that private sector interventions in Nigerian education have contributed to improved learning outcomes through academic support programmes, career development initiatives, and technological advancement.

Effective quality assurance requires strong leadership, accountability, and institutional commitment. Odira and Gbenga (2024) emphasized that leadership practices significantly influence organizational performance because effective leaders create systems that promote accountability, efficiency, and continuous improvement. Similar principles apply to educational institutions where leadership determines the success of quality improvement initiatives. Therefore, quality assurance support in this study refers to partnership-driven activities aimed at improving curriculum implementation, academic monitoring, teacher effectiveness, and institutional performance.

2.3.4 Capacity Building and Teacher Retention

Capacity building involves deliberate efforts aimed at improving the knowledge, skills, competencies, and professional abilities of employees through training, mentoring, workshops, seminars, and continuous learning opportunities. In the educational sector, teacher capacity development is essential because teachers serve as the primary drivers of instructional effectiveness and academic achievement.

Teacher retention remains a major challenge in many educational systems due to inadequate professional development opportunities, poor motivation, limited career advancement, and challenging working conditions. Capacity-building initiatives supported through PPP arrangements can improve teacher commitment by providing opportunities for professional growth, technological skills acquisition, and career advancement.

Okafor, Odira, and Gbenga (2025) found that transformational leadership practices that emphasize employee development, motivation, and support contribute significantly to improved employee productivity. This suggests that investment in human capital development enhances commitment and performance among employees. Similarly, sustainable organizations require continuous investment in people because employee competence directly influences institutional effectiveness (Gbenga & Okeke, 2025). Within this study, capacity building refers to partnership-supported programmes designed to enhance teachers' professional competence, motivation, and commitment, thereby improving teacher retention in public secondary schools.

2.4 Empirical Review

Empirical review examines previous studies that investigated relationships between public-private partnership, organizational sustainability, infrastructure development, quality improvement, and human capacity development.

Ulayi, Arikpo, Anthony, and Tawo (2022) examined public-private partnership and collaboration in education as a strategy for sustainable development of tertiary institutions in Nigeria. The study adopted a qualitative research approach through extensive review of existing literature. Findings revealed that PPP contributes significantly to educational sustainability through infrastructure improvement, human resource development, cost-sharing mechanisms, and enhanced institutional effectiveness. The study concluded that sustainable educational development requires active participation of government, private sector organizations, donor agencies, and other stakeholders.

Hassan and Fatile (2022) investigated public-private partnership and educational infrastructure provision in Nigeria. The study focused on the role of PPP in addressing infrastructural challenges in educational institutions. Findings showed that inadequate government resources have contributed to infrastructure deficits in schools, while PPP provides an alternative mechanism for improving school facilities through private sector participation. The study recommended stronger government policies to encourage private investment in educational infrastructure development.

Alao (2021) examined the role of public-private partnership in enhancing resource management in Nigerian higher education institutions. The study revealed that PPP positively contributes to improved availability and management of educational resources. However, it identified challenges such as weak regulatory frameworks, political interference, and inadequate accountability mechanisms. The study recommended the establishment of supportive institutional policies to encourage sustainable partnerships between government and private investors.

Lawal, Ahmad, and Bello (2021) studied public-private partnership in school resource management and its implications for educational development in Nigeria. The study highlighted that PPP arrangements can improve access to educational resources, strengthen school management systems, and enhance learning outcomes. The authors emphasized the need for proper stakeholder awareness and effective partnership coordination to maximize the benefits of PPP in education.

Okeke and Williams (2025) examined social and environmental factors of corporate sustainability and performance of plastic manufacturing firms. Although the study

focused on manufacturing organizations, its findings provide relevant implications for educational sustainability because it demonstrated that stakeholder involvement, responsible resource management, and sustainability-oriented practices contribute significantly to long-term organizational performance. The study suggests that institutions achieve sustainability when they integrate social responsibility and effective resource management into their operations.

Gbenga and Okeke (2025) investigated economic factors of corporate sustainability and performance of foam manufacturing firms. The study revealed that sustainable performance depends on effective financial management, strategic investment, and resource optimization. The findings support the argument that educational institutions require sustainable funding mechanisms, such as PPP, to maintain infrastructure, improve quality, and achieve long-term development.

Odira and Gbenga (2024) examined leadership styles and performance of federal government agencies in Anambra State, Nigeria. The study found that effective leadership practices significantly influence organizational performance through improved coordination, employee commitment, and operational effectiveness. The findings are relevant to educational institutions because successful PPP implementation requires effective leadership, accountability, and stakeholder coordination.

Okafor, Odira, and Gbenga (2025) investigated transformational leadership practices and employee productivity in retail telecommunication firms in Anambra State, Nigeria. The study revealed that leadership practices emphasizing motivation, employee development, and support significantly improve productivity. The findings suggest that capacity-building initiatives and supportive management systems can enhance teacher commitment and retention within educational institutions.

2.4.1 Summary of Empirical Review and Research Gap

The reviewed empirical studies demonstrate that public-private partnership contributes positively to educational development through improved infrastructure, resource availability, institutional quality, and human capacity development. Existing studies have established the importance of collaboration between government and private stakeholders in addressing educational challenges.

However, most previous studies focused on tertiary institutions, general PPP policies, or infrastructure development, with limited attention given to how specific PPP dimensions influence educational sustainability in public secondary schools. Furthermore, limited empirical evidence exists regarding the effect of infrastructural funding, quality assurance support, and capacity-building initiatives on physical facility sustainability, academic quality sustainability, and teacher retention in Anambra State.

3.0 METHODOLOGY

This section presents the research procedures adopted for the study. It discusses the research design, area of study, population of the study, sample size determination, sampling technique, instrument for data collection, validity and reliability of the instrument, method of data collection, and method of data analysis.

3.1 Research Design

The study adopted a descriptive survey research design. The choice of this design was based on its suitability in examining the relationship between public-private partnership and sustainability of the educational sector through the collection of

data from respondents within their natural environment. A descriptive survey design enables researchers to obtain information concerning the opinions, perceptions, and experiences of respondents regarding a particular phenomenon without manipulating the variables under investigation.

The design is appropriate for this study because it allows the researcher to examine how public-private partnership dimensions such as infrastructural funding, quality assurance support, and capacity-building initiatives influence educational sustainability outcomes including physical facility sustainability, academic quality sustainability, and teacher retention. According to Creswell and Creswell (2021), survey research designs are useful when researchers seek to describe trends, attitudes, and relationships among variables within a defined population. Similarly, Sekaran and Bougie (2020) noted that descriptive research designs provide systematic approaches for collecting and analyzing quantitative data aimed at explaining relationships among research variables.

3.2 Area of the Study

The study was conducted in Anambra State, Nigeria**.** Anambra State is one of the five states located in the South-East geopolitical zone of Nigeria. The state was created in 1976 and has Awka as its capital city. It consists of 21 Local Government Areas and is widely recognized for its commercial activities, educational institutions, industrial development, and human capital contributions.

The educational sector in Anambra State comprises public and private primary, secondary, and tertiary institutions. Public secondary schools in the state are managed by the Anambra State Ministry of Education through relevant educational agencies responsible for policy implementation, monitoring, supervision, and quality improvement. The state has historically placed emphasis on educational development through government initiatives and collaboration with private organizations, religious bodies, community associations, and development partners.

The choice of Anambra State as the study area is justified by the increasing involvement of private stakeholders in educational development through school renovation, infrastructural support, teacher development programmes, provision of instructional materials, and technology-based educational interventions. However, despite these efforts, challenges relating to infrastructure sustainability, academic quality, and teacher retention continue to exist, making the state suitable for investigating the role of public-private partnership in educational sustainability.

3.3 Population of the Study

The population of the study comprised **7,027 teaching staff in public secondary schools across Anambra State, Nigeria**. The population was considered appropriate because teachers are directly involved in educational service delivery and possess relevant knowledge regarding infrastructural conditions, academic quality mechanisms, professional development opportunities, and teacher retention issues within public secondary schools. The selection of teaching staff as the study population aligns with the objective of examining educational sustainability because teachers are central stakeholders whose experiences reflect the effectiveness of partnership interventions within educational institutions. Their perceptions provide valuable information regarding how PPP initiatives influence teaching environments, institutional support systems, and professional commitment.

3.4 Sample Size Determination

The sample size for the study was determined using the Taro Yamane (1967) formula at a 5% level of significance. The formula is expressed as:

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

Where:
n = Sample size
N = Population size
e = Level of significance (0.05)
Given:
N = 7,027
e = 0.05

Therefore:

$$n=\frac{7027}{1+7027(0.05)^2}$$
$$n=\frac{7027}{1+7027(0.0025)}$$
$$n=\frac{7027}{1+17.5675}$$
$$n=\frac{7027}{18.5675}$$
$$n=378.45$$

Approximately:
n=378

Therefore, the sample size for the study was 378 respondents.

3.5 Sampling Technique

The study adopted **a** multistage sampling technique. This technique was considered appropriate because the population was geographically distributed across the different Local Government Areas of Anambra State. At the first stage, public secondary schools were grouped according to educational zones in the state. At the second stage, selected schools were proportionately determined based on the distribution of teaching staff. At the final stage, teaching staff were selected using simple random sampling to ensure that every member of the population had an equal opportunity of being included in the study. The use of multistage sampling helped to ensure adequate representation of respondents across the study area while reducing possible sampling bias.

3.6 Instrument for Data Collection

Data for the study were collected using a structured questionnaire developed by the researcher based on the objectives of the study and reviewed literature. The questionnaire was divided into two sections. Section A contained demographic information of respondents such as gender, educational qualification, years of teaching experience, and school location. Section B contained statements measuring the study variables. The independent variable, public-private partnership, was measured using three dimensions:

i. **Infrastructural Funding**
ii. **Quality Assurance Support**
iii. **Capacity-Building Initiatives**

The dependent variable, educational sustainability, was measured through:

i. **Physical Facility Sustainability**
ii. **Academic Quality Sustainability**

iii. **Teacher Retention**

Responses were measured using a five-point Likert scale:
Strongly Agree (SA) – 5
Agree (A) – 4
Undecided (U) – 3
Disagree (D) – 2
Strongly Disagree (SD) – 1

The Likert scale approach was considered appropriate because it enables respondents to express the extent of their agreement or disagreement with statements relating to organizational and institutional practices (Sekaran & Bougie, 2020).

3.7 Validity of the Instrument

The validity of the research instrument was established through content and face validity procedures. The questionnaire was submitted to experts in Educational Management, Business Administration, and Research Methodology for critical examination. The experts assessed the instrument based on clarity of statements, relevance to the research objectives, adequacy of variable measurement, and appropriateness of language. Their observations and recommendations were incorporated before the final administration of the questionnaire. According to Creswell and Creswell (2021), expert validation improves the accuracy of research instruments by ensuring that questionnaire items appropriately measure the intended constructs.

3.8 Reliability of the Instrument

The reliability of the instrument was determined using the Cronbach's Alpha reliability test. A pilot study was conducted using respondents from public secondary schools outside the selected study sample. The purpose of the pilot test was to determine the internal consistency and stability of the questionnaire items. The reliability coefficient was interpreted using the generally accepted benchmark of 0.70. According to Hair et al. (2022), Cronbach's Alpha values of 0.70 and above indicate acceptable internal consistency among measurement items. The reliability results showed that all measurement constructs recorded Cronbach's Alpha coefficients above the acceptable threshold, indicating that the instrument was reliable for the main study.

3.9 Method of Data Collection

The researcher administered copies of the questionnaire directly to selected teaching staff in public secondary schools across Anambra State. The direct administration approach was adopted to improve response rate, clarify possible questions from respondents, and ensure proper completion of the instrument. Respondents were adequately informed about the purpose of the research, and confidentiality of their responses was guaranteed. Completed questionnaires were collected, screened, coded, and prepared for statistical analysis.

3.10 Method of Data Analysis

Data collected from respondents were analyzed using descriptive and inferential statistical techniques with the aid of Statistical Package for Social Sciences (SPSS) Version 23. Descriptive statistics involving frequency distributions, percentages, mean scores, and standard deviations were used to summarize respondents' demographic characteristics and responses to questionnaire items. Multiple regression analysis was employed to test the hypotheses and determine the effect of public-private partnership dimensions on educational sustainability. The regression model is presented as follows:

ES = \beta_0 + \beta_1IF + \beta_2QAS + \beta_3CBI + e

Where:

ES = Educational Sustainability
β0 = Constant
β1 – β3 = Regression coefficients
IF = Infrastructural Funding
QAS = Quality Assurance Support
CBI = Capacity-Building Initiatives
e = Error term

The hypotheses were tested at a 5% level of significance**.** The decision rule was that the null hypothesis would be rejected where the p-value was less than 0.05, while it would be accepted where the p-value exceeded 0.05.

4.0 DATA PRESENTATION, ANALYSIS AND RESULTS

This section presents the analysis of data collected from respondents on the effect of public-private partnership on the sustainability of the educational sector in Anambra State, Nigeria. The data obtained from the administered questionnaire were analyzed using descriptive statistics and multiple regression analysis with the aid of Statistical Package for Social Sciences (SPSS) Version 23. The section presents questionnaire distribution and retrieval, demographic characteristics of respondents, descriptive analysis of study variables, regression results, ANOVA results, coefficients, and hypotheses testing.

4.1 Questionnaire Distribution and Retrieval

A total of **378 copies of the questionnaire** were distributed to teaching staff of public secondary schools in Anambra State. Out of the 378 questionnaires administered, **365 copies were properly completed and returned**, representing a response rate of **96.6%**. The response rate was considered adequate for analysis because it exceeded the acceptable minimum requirement for survey-based studies.

Table 4.1: Questionnaire Distribution and Retrieval

Questionnaire Status	Frequency	Percentage (%)
Number of questionnaires administered	378	100
Number of questionnaires returned	365	96.6
Number of questionnaires not returned	13	3.4
Total	378	100

Source: Field Survey Data, 2026

The high response rate indicates strong participation from respondents and provides sufficient data for examining the relationship between public-private partnership and educational sustainability in public secondary schools in Anambra State.

4.2 Demographic Characteristics of Respondents

The demographic characteristics of respondents were analyzed based on gender, educational qualification, years of teaching experience, and school location.

Table 4.2: Gender Distribution of Respondents

Gender	Frequency	Percentage (%)
Male	172	47.1
Female	193	52.9
Total	365	100

Source: Field Survey Data, 2026

The result indicates that female respondents constituted the majority with 193 respondents representing 52.9%, while male respondents accounted for 172 respondents representing 47.1%. This suggests that both male and female teachers were adequately represented in the study.

Table 4.3: Educational Qualification of Respondents

Qualification	Frequency	Percentage (%)
NCE	46	12.6
Bachelor's Degree	198	54.2
Postgraduate Diploma	39	10.7
Master's Degree	76	20.8
PhD	6	1.7
Total	365	100

Source: Field Survey Data, 2026

The table shows that respondents possessed different educational qualifications. The majority of respondents held Bachelor's Degrees (54.2%), followed by Master's Degree holders (20.8%). This indicates that respondents possessed adequate academic qualifications and were capable of providing informed responses regarding educational sustainability and partnership initiatives .

Table 4.4: Years of Teaching Experience

Years of Experience	Frequency	Percentage (%)
Below 5 years	63	17.3
5–10 years	112	30.7
11–15 years	96	26.3

Years of Experience	Frequency	Percentage (%)
Above 15 years	94	25.7
Total	365	100

Source: Field Survey Data, 2026

The result shows that respondents possessed considerable teaching experience. Respondents with 5–10 years of experience represented the highest proportion (30.7%), while those with above 15 years accounted for 25.7%. This implies that most respondents had sufficient experience to evaluate partnership interventions and sustainability practices within public secondary schools.

4.3 Descriptive Analysis of Study Variables

The descriptive analysis presents the mean scores and standard deviations of questionnaire items relating to the independent and dependent variables. A mean value of 3.00 and above indicates agreement, while values below 3.00 indicate disagreement.

Table 4.5: Descriptive Statistics for Infrastructural Funding

Items	Mean	Std. Deviation
Private organizations contribute to school infrastructure development	4.12	0.76
PPP improves availability of classrooms and learning facilities	4.08	0.81
Partnership funding enhances maintenance of school facilities	4.15	0.72
PPP improves ICT infrastructure in schools	4.03	0.84
Overall Mean	**4.10**	**0.78**

Source: Field Survey Data, 2026

The result indicates that respondents agreed that public-private partnership contributes significantly to infrastructural development in public secondary schools. The overall mean score of 4.10 indicates that infrastructural funding through PPP enhances physical facility sustainability.

Table 4.6: Descriptive Statistics for Quality Assurance Support

Items	Mean	Std. Deviation
PPP improves monitoring and evaluation of academic activities	4.07	0.79
Private sector involvement enhances academic standards	4.11	0.74
Partnership programmes improve curriculum implementation	4.05	0.82
PPP encourages effective educational supervision	4.09	0.77
Overall Mean	**4.08**	**0.78**

Source: Field Survey Data, 2026

The findings reveal that respondents agreed that quality assurance support through PPP improves academic sustainability. The overall mean score of 4.08 suggests that partnership initiatives contribute positively to maintaining educational standards.

Table 4.7: Descriptive Statistics for Capacity-Building Initiatives

Items	Mean	Std. Deviation
PPP provides teacher training opportunities	4.14	0.71
Partnership programmes improve teacher competence	4.10	0.76
PPP enhances professional development opportunities	4.06	0.83
Capacity building improves teacher commitment	4.12	0.73
Overall Mean	**4.11**	**0.76**

Source: Field Survey Data, 2026

The result indicates that respondents agreed that PPP-supported capacity-building initiatives improve teacher development and commitment. The overall mean score of 4.11 suggests that capacity-building initiatives contribute positively to teacher retention.

4.4 Regression Analysis

Multiple regression analysis was conducted to determine the effect of public-private partnership dimensions on educational sustainability. The regression model is stated as:

ES = \beta_0 + \beta_1IF + \beta_2QAS + \beta_3CBI + e

Where:
ES = Educational Sustainability
IF = Infrastructural Funding
QAS = Quality Assurance Support
CBI = Capacity-Building Initiatives

Table 4.8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Durbin-Watson
1	.812	.659	.656	.42135	1.746

Source: SPSS Output, 2026

The model summary indicates that the correlation coefficient (R) between public-private partnership dimensions and educational sustainability is 0.812**,** showing a strong positive relationship. The R-square value of 0.659 indicates that infrastructural funding, quality assurance support, and capacity-building initiatives jointly explain 65.9% variation in educational sustainability, while the remaining 34.1% is explained by other factors not included in the model. The Durbin-Watson value of 1.746 indicates that the model does not suffer from serious autocorrelation problems, as the value falls

within the acceptable range of approximately 1.5 to 2.5.

Table 4.9: ANOVA Table

Model	Sum of Squares	df	Mean Square	F-value	Sig.
Regression	98.426	3	32.809	184.732	.000
Residual	50.624	361	.140		
Total	149.050	364			

Source: SPSS Output, 2026

The ANOVA result shows an F-value of 184.732 with a significance value of **0.000**, which is less than 0.05. This indicates that the regression model is statistically significant. Therefore, public-private partnership dimensions significantly predict educational sustainability in public secondary schools in Anambra State.

Table 4.10: Regression Coefficients

Model	Unstandardized Coefficients (B)	Std. Error	Beta	t-value	Sig.
Constant	0.642	0.211		3.042	.003
Infrastructural Funding	0.382	0.052	.421	7.346	.000
Quality Assurance Support	0.297	0.049	.338	6.061	.000
Capacity Building Initiatives	0.346	0.051	.389	6.784	.000

Source: SPSS Output, 2026

The coefficients table indicates that infrastructural funding has a positive and significant effect on educational sustainability ($\beta = 0.421$, $t = 7.346$, $p = 0.000$). Quality assurance support also has a positive and significant effect ($\beta = 0.338$, $t = 6.061$, $p = 0.000$). Similarly, capacity-building initiatives significantly influence educational sustainability ($\beta = 0.389$, $t = 6.784$, $p = 0.000$). Since all variables have significance values less than 0.05, the null hypotheses are rejected.

5.0 Discussion Of Findings

This section discusses the findings obtained from the analysis of data collected from respondents. The discussion is organized according to the specific objectives of the study and relates the findings to previous empirical studies reviewed in the literature. The study examined the effect of public-private partnership on the sustainability of the educational sector in Anambra State, Nigeria, focusing on infrastructural funding, quality assurance support, and capacity-building initiatives.

5.1 Effect of Public-Private Partnership Infrastructural Funding on Physical Facility Sustainability

The first objective of the study was to examine the effect of public-private partnership infrastructural funding on physical facility sustainability in public secondary schools in Anambra State. The regression result revealed that infrastructural funding has a positive and significant effect on educational sustainability ($\beta = 0.421$, $t =$

7.346, p = 0.000). This indicates that increased involvement of private organizations in financing educational infrastructure contributes significantly to the improvement and sustainability of physical facilities in public secondary schools.

The finding suggests that public-private partnership provides additional financial resources required for the construction, renovation, maintenance, and modernization of educational facilities. Through PPP arrangements, schools can access resources for classrooms, libraries, laboratories, ICT facilities, and other learning infrastructure that may be difficult to provide through government funding alone. This supports the argument that sustainable educational development requires collaborative resource mobilization among government and private stakeholders.

The finding agrees with Hassan and Fatile (2022), who reported that PPP plays a significant role in addressing educational infrastructure challenges in Nigeria by providing alternative sources of funding and improving facility development. Similarly, Ulayi et al. (2022) found that collaboration between government and private stakeholders enhances educational sustainability through improved infrastructure provision and institutional support.

The finding also supports Okeke and Williams (2025), who established that sustainability performance is influenced by effective stakeholder participation and responsible resource management. Although their study focused on manufacturing firms, the implication is applicable to education because institutions require continuous investment and stakeholder commitment to maintain sustainable operations. Furthermore, Gbenga and Okeke (2025) emphasized that sustainable performance depends on strategic financial investment and effective utilization of resources, reinforcing the importance of PPP funding mechanisms in sustaining educational infrastructure. Therefore, the study concludes that infrastructural funding through public-private partnership significantly improves physical facility sustainability in public secondary schools in Anambra State.

5.2 Effect of Public-Private Partnership Quality Assurance Support on Academic Quality Sustainability

The second objective of the study was to determine the effect of public-private partnership quality assurance support on academic quality sustainability in public secondary schools in Anambra State. The regression analysis revealed that quality assurance support has a positive and significant effect on educational sustainability ($\beta = 0.338$, $t = 6.061$, $p = 0.000$).

The finding implies that partnerships involving private organizations, professional bodies, and educational development agencies contribute to maintaining and improving academic standards. Quality assurance support enhances monitoring, evaluation, curriculum improvement, teacher supervision, and institutional accountability, thereby improving the ability of schools to sustain quality educational outcomes.

This finding is consistent with Bello (2020), who observed that private sector involvement in education contributes to improved learning outcomes through academic support programmes, technological interventions, and institutional development initiatives. Similarly, Lawal et al. (2021) found that PPP arrangements improve school resource management and enhance educational effectiveness when properly coordinated.

The finding also aligns with Odira and Gbenga (2024), who established that effective leadership practices significantly influence organizational performance through improved coordination, accountability, and institutional efficiency. In educational institutions, successful quality assurance systems require strong leadership, effective monitoring mechanisms, and stakeholder cooperation.

The result further supports the position of Okeke and Williams (2025) that sustainable organizations require effective systems, stakeholder engagement, and continuous improvement practices. Applying this perspective to education suggests that quality assurance partnerships provide the institutional mechanisms required to maintain academic sustainability. Therefore, the study establishes that public-private partnership quality assurance support significantly enhances academic quality sustainability in public secondary schools in Anambra State.

5.3 Effect of Public-Private Partnership Capacity-Building Initiatives on Teacher Retention

The third objective of the study was to evaluate the effect of public-private partnership capacity-building initiatives on teacher retention in public secondary schools in Anambra State. The regression result revealed that capacity-building initiatives have a positive and significant effect on educational sustainability ($\beta = 0.389$, $t = 6.784$, $p = 0.000$).

The finding indicates that teacher development programmes supported through PPP arrangements contribute significantly to improving teacher commitment, professional competence, and willingness to remain within educational institutions. Capacity-building initiatives such as training programmes, workshops, mentoring, ICT development, and career advancement opportunities enhance teachers' professional satisfaction and reduce tendencies toward turnover.

The finding agrees with Okafor, Odira, and Gbenga (2025), who found that transformational leadership practices emphasizing employee development, motivation, and support significantly improve employee productivity. The study demonstrates that investment in human capacity development strengthens employee commitment and performance.

Similarly, Gbenga and Okeke (2025) emphasized that sustainable organizational performance depends on effective investment in human and financial resources. In the educational context, teachers represent a critical human resource whose continuous development is essential for achieving sustainable educational outcomes.

The finding also supports the argument of Odira and Gbenga (2024) that effective management practices enhance organizational performance through improved employee engagement and commitment. Since teachers are central actors in educational service delivery, providing professional support through PPP initiatives enhances their retention and effectiveness.

Therefore, the study concludes that public-private partnership capacity-building initiatives significantly improve teacher retention in public secondary schools in Anambra State.

5.4 Summary of Findings

Based on the results obtained from the study, the following findings were established:

1. Public-private partnership infrastructural funding has a positive and significant effect on physical facility sustainability in public secondary schools in Anambra State.

2. Public-private partnership quality assurance support has a positive and significant effect on academic quality sustainability in public secondary schools in Anambra State.
3. Public-private partnership capacity-building initiatives have a positive and significant effect on teacher retention in public secondary schools in Anambra State.
4. Public-private partnership dimensions jointly explain a significant proportion of variations in educational sustainability, indicating that collaboration between government and private organizations is important for achieving sustainable educational development.

5.5 CONCLUSION

The study examined the effect of public-private partnership on the sustainability of the educational sector in Anambra State, Nigeria. Based on the empirical findings, the study concludes that public-private partnership is a significant mechanism for improving educational sustainability.

The findings demonstrate that infrastructural funding through PPP enhances the availability and maintenance of educational facilities, thereby improving physical facility sustainability. The study also concludes that quality assurance support provided through partnership arrangements strengthens academic standards by improving monitoring, evaluation, and institutional accountability. Furthermore, capacity-building initiatives contribute significantly to teacher retention by improving professional competence, motivation, and commitment.

Therefore, sustainable educational development cannot be achieved solely through government funding and administrative efforts. Effective collaboration between government and private stakeholders remains essential for mobilizing resources, improving educational quality, and developing a resilient educational system capable of meeting future societal demands.

5.6 Recommendations

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

1. The Anambra State Government should strengthen public-private partnership policies by creating favourable frameworks that encourage private sector investment in educational infrastructure development.
2. Government and educational authorities should establish structured partnership programmes with private organizations to support continuous renovation, maintenance, and modernization of school facilities.
3. Educational institutions should develop sustainable quality assurance partnerships involving professional bodies, private organizations, and educational development agencies to improve monitoring, evaluation, and academic standards.

5.7 Contribution to Knowledge

This study contributes to existing knowledge by extending the understanding of public-private partnership beyond infrastructure financing to include its influence on broader dimensions of educational sustainability. While previous studies have mainly focused on PPP policy frameworks and funding mechanisms, this study provides empirical evidence on how specific PPP dimensions namely infrastructural funding, quality assurance support, and capacity-building initiatives affect physical facility sustainability, academic quality sustainability, and teacher retention. The study also contributes context-specific evidence from public secondary schools in Anambra State,

Nigeria, thereby expanding the literature on sustainable educational development in developing economies.

5.8 Limitations of the Study

The study was limited to public secondary schools in Anambra State, Nigeria; therefore, the findings may not completely represent educational institutions in other states or regions. Additionally, the study relied on questionnaire responses, which may be influenced by respondents' perceptions and personal experiences. Future studies may consider expanding the scope to include private schools, tertiary institutions, and comparative studies across different geographical regions in Nigeria.

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