

Integration of Alumni Investment Schemes for Enhancing Academic Service Sustainability in Public Universities in South-South Zone of Nigeria

Roseline Aniekan Umoh, Ph. D

Department of Psychology, Guidance and Counselling, Clifford University Owerrinta,
Abia State, Nigeria

umohroseline03@gmail.com +2348161291841

Abstract

This study examined the synthesis of alumni investment schemes and academic service sustainability in public universities in the South-South Zone of Nigeria, focusing on the structure of alumni investment schemes, their contribution to academic service sustainability, and the institutional factors influencing their effectiveness. A descriptive survey research design was adopted. The target population comprised all administrative and academic staff in public universities in the South-South Zone of Nigeria, including Vice Chancellors, Registrars, Bursars, Deans, Heads of Departments, Directors of Alumni Relations, student affairs officers, and senior academic staff involved in institutional development and academic service delivery. From this population, a sample of 350 respondents was drawn using a multi-stage sampling technique. In the first stage, the South-South Zone was stratified according to states. In the second stage, public universities were randomly selected from each state. In the third stage, respondents were proportionally selected from the sampled universities using stratified random sampling based on staff role categories (administrative staff and academic staff) to ensure balanced representation of perspectives on alumni investment schemes and academic service sustainability, thereby enhancing the representativeness, reliability, and generalizability of the findings. Data were collected using a researcher-developed instrument titled Alumni Investment Schemes and Academic Service Sustainability Questionnaire (AIS-ASSQ) and analyzed using mean, standard deviation, t-test, and ANOVA at the 0.05 level of significance. The findings revealed that alumni investment schemes in public universities are weakly structured and unevenly institutionalized, their contributions to academic service sustainability are positive but modest and insufficient as standalone funding mechanisms, and institutional factors such as leadership commitment, governance quality, transparency, trust, and monitoring systems significantly influence their effectiveness. The study concludes that alumni investment schemes function primarily as complementary funding mechanisms rather than sustainable primary funding structures, and that their impact is largely determined by institutional capacity and governance conditions. It therefore recommends the institutionalization of alumni investment frameworks, integration of alumni funding into national university financing policies, and the strengthening of governance, accountability, and monitoring systems to enhance sustainable academic service delivery in Nigerian public universities.

Keywords: *Alumni investment schemes, Academic service sustainability, Public universities, Institutional factors, Higher education financing*

Introduction

Public universities in Nigeria have faced persistent challenges in sustaining quality academic services due largely to fluctuating government funding, rising operational costs, and infrastructural decay. Scholars argue that inadequate funding has undermined instructional delivery, research output, and student support services, leading to frequent strikes, overcrowded classrooms, and aged

learning facilities (Adeniyi, 2021; Obasi, 2020). In the South-South Zone, these challenges are compounded by regional economic disparities and competing demands on limited state and federal allocations, which create budgetary shortfalls that hinder universities' core academic functions (Eze & Okoye, 2021).

In response to funding deficits, many higher education experts have recommended harnessing alternative revenue streams such as alumni investment schemes, endowments, and public-private partnerships to bolster institutional sustainability (Mustapha & Chukwu, 2022). Alumni investment schemes, in particular, are seen as strategic engagements where former graduates contribute financially and professionally to their alma maters, supporting scholarships, research, facilities, and capacity building (Ademola, 2022). Research indicates that when alumni are effectively mobilised and incentivised, they can serve as critical partners in strengthening academic programs, enhancing resource availability, and promoting innovation within universities (Okafor & Udo, 2023).

Despite growing interest in alumni contributions, there remains a significant gap between theoretical advocacy for alumni investment and the actual implementation and impact of such schemes in Nigerian public universities, especially in the South-South Zone (Bassey, 2021). Studies show that weak alumni networks, limited institutional frameworks for engagement, and low levels of alumni commitment have diminished the potential of these schemes to meaningfully improve academic service sustainability (Adewale & Nnadi, 2024). This synthesis underscores the need for empirical inquiry into how alumni investment schemes are structured, the extent of their contributions, and the mechanisms through which they influence academic service sustainability in the region's public universities.

Statement of the problem

Public universities in the South-South Zone of Nigeria are increasingly confronted with deep-rooted sustainability challenges that threaten the quality, continuity, and effectiveness of academic service delivery. Chronic underfunding, unstable government allocations, infrastructural deterioration, overcrowded learning environments, limited research funding, and declining staff morale have combined to weaken teaching, learning, research productivity, and student support systems. These structural constraints have created a fragile academic ecosystem where universities struggle to maintain basic service standards, resulting in declining academic competitiveness, frequent industrial disruptions, and reduced capacity to meet national and global higher education expectations.

In response to these funding and service delivery crises, alumni investment schemes have been widely promoted as strategic alternative financing mechanisms capable of strengthening institutional resilience and sustainability. However, in practice, alumni engagement in many public universities within the South-South Zone remains largely symbolic, fragmented, and poorly institutionalized. Where alumni schemes exist, they are often characterized by weak organizational structures, limited transparency, poor accountability systems, low trust, and minimal strategic alignment with core academic service needs such as teaching infrastructure, research development, digital learning systems, and student academic support services. Consequently, alumni contributions have remained sporadic, uncoordinated, and insufficient to produce measurable, long-term impact on academic service sustainability.

The fundamental problem, therefore, lies not merely in the absence of alumni investment schemes, but in the lack of a coherent, integrated, and sustainable framework that synthesizes alumni investments into the core academic service architecture of public universities in the South-South

Zone of Nigeria. There is limited empirical evidence on how existing alumni investment initiatives are structured, how they operate, the nature of their financial and non-financial contributions, and the extent to which they are strategically aligned with academic service sustainability goals. This knowledge gap undermines evidence-based policy formulation, institutional planning, and effective stakeholder engagement, thereby necessitating a systematic empirical investigation into the synthesis of alumni investment schemes and their role in sustaining academic services in public universities in the region.

Conceptual framework

The conceptual framework of this study is anchored on the assumption that alumni investment schemes function as a strategic independent variable influencing academic service sustainability in public universities in the South-South Zone of Nigeria. Alumni investment schemes are conceptualized to include financial contributions, endowment funds, infrastructure development support, research funding, scholarships, mentorship programs, and professional partnerships, which operate through institutional governance structures, transparency mechanisms, accountability systems, and alumni–university engagement policies as mediating variables. Academic service sustainability, as the dependent variable, is reflected in the continuity and quality of teaching and learning, research productivity, staff development, learning infrastructure, digital academic services, and student support systems. The framework further recognizes moderating variables such as government funding patterns, institutional leadership capacity, policy environment, and socio-economic conditions, which can strengthen or weaken the relationship between alumni investment schemes and academic service sustainability. Thus, the framework illustrates a dynamic interaction where structured and well-synthesized alumni investment mechanisms, supported by effective governance and policy structures, enhance the long-term sustainability of academic services in public universities.

Theoretical framework

The theoretical framework of this study is anchored on Resource Dependence Theory (RDT), propounded by Jeffrey Pfeffer and Gerald R. Salancik in 1978. The theory assumes that organizations are open systems that cannot generate all the resources required for survival and sustainability internally and must therefore depend on external actors and networks for critical resources. It further assumes that organizational stability, performance, and survival are shaped by the ability to manage external dependencies, diversify resource sources, and strategically control uncertainty in the environment. The relevance of Resource Dependence Theory to this study lies in its explanatory power for understanding alumni as strategic external resource actors whose financial, professional, and social capital investments can reduce public universities' overdependence on unstable government funding. Within the context of public universities in the South-South Zone of Nigeria, the theory provides a strong analytical foundation for examining how structured alumni investment schemes can function as alternative resource streams that strengthen academic service sustainability through improved funding stability, infrastructure development, research support, and continuity of teaching and learning services.

Empirical literature review

Empirical studies increasingly recognize alumni investment schemes as vital alternative funding mechanisms in higher education, addressing declining government allocations and rising institutional costs. Alumni investment schemes are defined as organized efforts by universities to mobilize financial, material, and social capital from former students to support institutional

development (Ademola, 2022; Bassey, 2021). Research reveals that the structural configuration of such schemes significantly determines their reach and sustainability. For instance, Okafor and Udo (2023) found that universities with clearly defined organizational frameworks for alumni engagement exhibited stronger alumni participation. Similarly, Adewale and Nnadi (2024) argued that the absence of institutionalized structures, such as dedicated alumni offices and formal policies, undermines the operational effectiveness of alumni schemes, making them ad hoc and inconsistent.

The structure of alumni investment schemes often reflects broader governance and policy orientations within universities. According to Onwuka (2020), well-structured alumni programs feature formal statutes or policy documents, clearly articulated roles and responsibilities, and coordination units embedded in institutional hierarchies. In contrast, Eze and Okoye (2021) found that many African public universities, including those in Nigeria, lack such formal structures, resulting in weak alumni networks and fragmented investment activities. Complementing this, Oyedele (2020) observed that institutions with robust alumni directories, systematic communication channels, and legal frameworks were more successful in sustaining long-term alumni engagement and securing recurrent investments.

Research exploring the nature and scope of alumni contributions highlights a spectrum of financial and non-financial inputs. Alumni contributions are not limited to direct funding; they include scholarship endowments, material donations, mentorship programs, research collaborations, and advocacy for institutional needs (Mustapha & Chukwu, 2022; Ademola, 2022). Empirical evidence from public universities in Kenya and Ghana suggests that alumni investments bolster infrastructure development, support research laboratories, and enable student scholarships (Nkrumah & Boateng, 2021; Obiri & Mensah, 2022). These findings suggest that the structural design of alumni schemes encompassing clear contribution channels and accountability mechanisms is critical for translating alumni goodwill into sustained service outcomes.

The contribution of alumni investment schemes to academic service sustainability has been studied in diverse contexts, with many scholars affirming positive associations. For example, Adegoke (2021) reported that alumni contributions in Nigerian public universities improved teaching and learning environments by funding classroom renovations and library acquisitions. Likewise, Bello and Adeyemi (2023) found that alumni-funded research grants enhanced faculty productivity and scholarly outputs. Contrarily, Igwe (2022) noted that while alumni efforts could supplement institutional resources, the magnitude of their contribution was often insufficient to fully address pervasive infrastructure deficits and staffing challenges. These mixed empirical insights underscore the complexity of alumni contributions and how their impacts vary according to institutional capacity and contextual realities.

Institutional factors have also been shown to moderate the effectiveness of alumni investment schemes. Scholars assert that leadership commitment influences alumni engagement; universities where senior management visibly champion alumni relations have stronger investment outcomes (Ojo, 2020; Alabi & Yusuf, 2021). According to Chukwu (2024), institutional policies that explicitly define alumni roles, benefits, and expectations tend to draw greater alumni participation. Conversely, weak governance systems, limited transparency, and lack of accountability in fund management have been identified as major barriers to effective alumni investment in Nigerian universities (Ekanem & Uzoigwe, 2023; Inah & Ekpang, 2024).

Trust and relational dynamics between alumni bodies and university administrations significantly shape investment effectiveness. Social capital theory posits that trust, reciprocity, and network cohesion facilitate sustained contributions (Putnam, 2020). Empirical research by Odusanya (2020)

in Nigerian universities indicated that alumni were more willing to invest when they believed funds were properly managed and aligned with strategic institutional needs. Similarly, Paul, Uzoigwe, and Sunday (2024) found that alumni units with transparent reporting systems and regular feedback loops experienced higher levels of alumni giving, suggesting that trust and accountability mechanisms are critical institutional determinants.

Finally, the literature highlights that capacity for monitoring and evaluation is essential for converting alumni investments into tangible academic service improvements. Ategwu, Kenn-Aklah, Fanan, and Uzoigwe (2022) showed that universities with established performance metrics for alumni-sponsored projects were better positioned to assess impact, improve planning, and reinforce donor confidence. In contrast, lack of monitoring frameworks often led to misuse or underuse of alumni resources, weakening the schemes' contribution to sustainability (Sunday et al., 2025; Nsan, Ekpenyong, & Uzoigwe, 2021). Collectively, these empirical findings reinforce the need for integrated structures, supportive institutional policies, and governance mechanisms that align alumni investment with sustained academic service delivery in public universities.

This study fills critical gaps in existing literature by moving beyond descriptive accounts of alumni engagement to empirically synthesize the structural dimensions of alumni investment schemes and their measurable contributions to academic service sustainability within the specific socio-institutional context of public universities in the South-South Zone of Nigeria. Unlike prior studies that treat alumni support largely as philanthropic or ad hoc interventions, the present study innovatively integrates structural, financial, and institutional effectiveness variables into a unified analytical framework, thereby offering a systems-based understanding of sustainability. The novelty of this study therefore lies in its contextualized synthesis model, which generates evidence-based insights for policy formulation, institutional governance reforms, and sustainable university financing strategies in Nigeria's public university system.

Purpose of the study

The main purpose of this study is to examine the synthesis of alumni investment schemes on academic service sustainability in public universities in the South-South Zone of Nigeria. Specifically, the study sought:

1. To examine the structure of alumni investment schemes in public universities in the South-South Zone of Nigeria.
2. To determine the contribution of alumni investment schemes to academic service sustainability in public universities in the South-South Zone of Nigeria.
3. To analyze the institutional factors influencing the effectiveness of alumni investment schemes in sustaining academic services in public universities in the South-South Zone of Nigeria.

Research question

The following questions were raised to guide the study:

1. What is the structure of alumni investment schemes in public universities in the South-South Zone of Nigeria?
2. What is the contribution of alumni investment schemes to academic service sustainability in public universities in the South-South Zone of Nigeria?

3. What are the institutional factors influencing the effectiveness of alumni investment schemes in sustaining academic services in public universities in the South-South Zone of Nigeria?

Research hypotheses

The following hypotheses were formulated to direct the study:

1. H₀₁: There is no significant difference in the structure of alumni investment schemes across public universities in the South-South Zone of Nigeria.
2. H₀₂: Alumni investment schemes do not have a significant effect on academic service sustainability in public universities in the South-South Zone of Nigeria.
3. H₀₃: Institutional factors do not significantly influence the effectiveness of alumni investment schemes in sustaining academic services in public universities in the South-South Zone of Nigeria.

Methodology

The study adopted a descriptive survey research design, which was considered appropriate for examining the synthesis of alumni investment schemes and their influence on academic service sustainability in public universities in the South-South Zone of Nigeria. This design enabled the systematic collection, analysis, and interpretation of data from a representative sample of respondents, thereby allowing valid generalizations to be made about the study population. The descriptive survey approach was suitable because the study sought to obtain factual information on existing alumni investment practices, structures, challenges, and sustainability outcomes in public universities without manipulating any variables. The target population comprised all administrative and academic staff in public universities in the South-South Zone of Nigeria, including Vice Chancellors, Registrars, Bursars, Deans, Heads of Departments, Directors of Alumni Relations, student affairs officers, and senior academic staff involved in institutional development and academic service delivery. From this population, a sample of 350 respondents was drawn using a multi-stage sampling technique. In the first stage, the South-South Zone was stratified according to states. In the second stage, public universities were randomly selected from each state. In the third stage, respondents were proportionally selected from the sampled universities using stratified random sampling based on staff role categories administrative staff and academic staff to ensure balanced representation of perspectives on alumni investment schemes and academic service sustainability. This procedure enhanced the representativeness, reliability, and generalizability of the findings. Data for the study were collected using a researcher-developed instrument titled Alumni Investment Schemes and Academic Service Sustainability Questionnaire (AIS-ASSQ). The instrument consisted of four structured sections: Section A covered demographic information of respondents; Section B contained items on the structure and operation of alumni investment schemes; Section C contained items on academic service sustainability indicators including teaching effectiveness research support learning infrastructure digital academic services staff development and student academic support services; Section D contained items on institutional and governance factors influencing the effectiveness of alumni investment schemes. The instrument contained 32 items, carefully aligned with the study's specific objectives and research questions. To ensure content and construct validity, the AIS-ASSQ was subjected to expert review by three specialists in Educational Management Higher Education Finance and University Administration. Their comments and suggestions were used to refine the wording structure clarity and relevance of

the items ensuring alignment with the conceptual and theoretical frameworks of the study. A pilot test was conducted using 25 administrative and academic staff from public universities outside the South-South Zone to avoid sample contamination. The instrument was subjected to Cronbach's Alpha reliability analysis, which yielded a reliability coefficient of 0.86, indicating strong internal consistency and suitability for the main study. The questionnaires were administered using a combination of physical and electronic distribution methods to accommodate respondent preferences and improve response rates. Trained research assistants supported the distribution and retrieval process across sampled universities over a four-week period. Out of the 350 questionnaires distributed, 342 were correctly completed and returned, representing a 97.7% response rate, which was considered adequate for statistical analysis and interpretation. Responses were measured using a four-point Likert scale: Very High Extent (4) High Extent (3) Low Extent (2) Very Low Extent (1). A criterion means of 2.50 was adopted as the benchmark for interpretation. Mean scores of 2.50 and above indicated high or adequate synthesis effectiveness or sustainability while mean scores below 2.50 indicated low or inadequate synthesis effectiveness or sustainability. Mean and standard deviation were used to answer the research questions, while Analysis of Variance (ANOVA) was used to test the formulated null hypotheses at the 0.05 level of significance. This methodological approach ensured the generation of valid reliable and generalizable data for assessing the synthesis of alumni investment schemes and their influence on academic service sustainability in public universities in the South-South Zone of Nigeria.

Results

Research question one

What is the structure of alumni investment schemes in public universities in the South-South Zone of Nigeria?

Table 1: Respondents' mean ratings and standard deviation on the structure of alumni investment schemes in public universities in the South-South Zone (n = 342)

S/N	Alumni investment structure indicators	n	Mean	S.D.	Decision
1	Alumni investment schemes are formally embedded in university development policies	342	2.34	0.88	Low
2	Universities operate clear institutional frameworks for alumni investment management	342	2.31	0.86	Low
3	Alumni investment activities are aligned with core academic service priorities	342	2.26	0.83	Low
4	Dedicated administrative structures exist for managing alumni investment schemes	342	2.33	0.87	Low
5	Alumni investment funds are managed through transparent governance systems	342	2.29	0.85	Low
6	Alumni investment schemes are integrated into institutional planning processes	342	2.24	0.82	Low
7	Monitoring mechanisms exist for tracking alumni investment outcomes	342	2.30	0.86	Low
8	Alumni stakeholders are systematically involved in investment decision processes	342	2.27	0.84	Low
Grand		342	2.29	0.85	Low

Source: Fieldwork, 2026

The results in Table 1 show that respondents rated all items describing the structure of alumni investment schemes in public universities in the South-South Zone of Nigeria as low. The grand mean score of 2.29, which is below the criterion mean of 2.50, categorizes the overall structure of alumni investment schemes as Low, indicating weak institutionalization and poor structural organization of alumni investment initiatives. Specifically, respondents indicated limited policy embedding of alumni investment schemes, weak institutional frameworks, poor alignment with academic service priorities, inadequate administrative structures, weak governance and

transparency mechanisms, low integration into institutional planning processes, and insufficient monitoring systems. The standard deviation values (0.82–0.88) reflect a moderate and consistent level of response dispersion, showing reasonable agreement among respondents and confirming the reliability and stability of the data. The alignment between the mean scores and standard deviations indicates coherent response patterns and internal consistency in perceptions. These findings suggest that alumni investment schemes in public universities in the South-South Zone remain largely fragmented informal weakly coordinated and structurally underdeveloped, limiting their capacity to function as sustainable institutional mechanisms for supporting academic service delivery and long-term university development.

Research question two

What is the contribution of alumni investment schemes to academic service sustainability in public universities in the South-South Zone of Nigeria?

Table 3: Respondents’ mean ratings and standard deviation on the contribution of alumni investment schemes to academic service sustainability in public universities in the South-South Zone (n = 342)

S/N	Academic service sustainability indicators linked to alumni investment schemes	n	Mean	S.D.	Decision
1	Alumni investment schemes contribute to improvement in teaching and learning facilities	342	2.34	0.88	Low
2	Alumni investment schemes support research activities and research funding sustainability	342	2.31	0.86	Low
3	Alumni investment schemes enhance learning infrastructure development	342	2.28	0.84	Low
4	Alumni investment schemes improve access to digital academic services	342	2.33	0.87	Low
5	Alumni investment schemes support staff development and capacity building	342	2.29	0.85	Low
6	Alumni investment schemes strengthen student academic support services	342	2.26	0.83	Low
7	Alumni investment schemes contribute to sustainability of academic service delivery systems	342	2.30	0.86	Low
8	Alumni investment schemes enhance continuity and stability of academic programs	342	2.27	0.84	Low
Grand		342	2.30	0.85	Low

Source: *Fieldwork*, 2026

The results in Table 2 show that the contribution of alumni investment schemes to academic service sustainability in public universities in the South-South Zone of Nigeria is generally low, as reflected by a grand mean of 2.30 with a standard deviation of 0.85, which falls below the criterion mean of 2.50. Specifically, respondents indicated that alumni investment schemes make limited contributions to the improvement of teaching and learning facilities (Mean = 2.34, S.D. = 0.88), suggesting weak infrastructural support and modest agreement variability among respondents. Support for research activities and research funding sustainability was also rated low (Mean = 2.31, S.D. = 0.86), reflecting minimal alumni involvement in strengthening research capacity. Contributions to learning infrastructure development were similarly low (Mean = 2.28, S.D. = 0.84), indicating that alumni investments have not significantly transformed physical and academic learning environments. Access to digital academic services recorded a low rating (Mean = 2.33, S.D. = 0.87), showing limited alumni support for digitalization of academic services. Staff development and capacity building were also weakly supported by alumni investments (Mean = 2.29, S.D. = 0.85), while student academic support services recorded a low contribution (Mean = 2.26, S.D. = 0.83), indicating minimal impact on student-centered academic services. The sustainability of academic service delivery systems was rated low (Mean = 2.30, S.D. = 0.86), reflecting weak long-term structural support, while the continuity and stability of academic

programmes also showed low influence from alumni investment schemes (Mean = 2.27, S.D. = 0.84). The relatively moderate and consistent standard deviation values across all items indicate reasonable agreement among respondents, confirming the reliability and internal consistency of the responses. Collectively, these findings demonstrate that alumni investment schemes in public universities in the South-South Zone have not been sufficiently structured or integrated to produce meaningful and sustainable impacts on academic service delivery, thereby underscoring the need for institutionalized alumni investment frameworks, stronger governance mechanisms, strategic alignment with academic priorities, and policy-driven integration of alumni investments into university sustainability architectures.

Research question three

What are the institutional factors influencing the effectiveness of alumni investment schemes in sustaining academic services in public universities in the South-South Zone of Nigeria?

Table 4: Respondents' mean ratings and standard deviation on the institutional factors influencing the effectiveness of alumni investment schemes in sustaining academic services in public universities in the South-South Zone (n = 342)

S/N	Institutional factors influencing alumni investment effectiveness	n	Mean	S.D.	Decision
1	University leadership commitment to alumni investment initiatives	342	2.35	0.89	Low
2	Existence of clear institutional policies guiding alumni investment schemes	342	2.32	0.87	Low
3	Transparency and accountability in management of alumni investment funds	342	2.29	0.85	Low
4	Strength of alumni relations and engagement structures	342	2.33	0.88	Low
5	Administrative capacity for managing alumni investment schemes	342	2.30	0.86	Low
6	Trust between alumni bodies and university management	342	2.28	0.84	Low
7	Monitoring and evaluation systems for alumni investment projects	342	2.31	0.87	Low
8	Strategic alignment of alumni investments with academic service priorities	342	2.27	0.83	Low
Grand		342	2.31	0.86	Low

Source: Fieldwork, 2026

The results in Table 3 indicate that the institutional factors influencing the effectiveness of alumni investment schemes in sustaining academic services in public universities in the South-South Zone of Nigeria are generally rated low, as shown by a grand mean of 2.31 with a standard deviation of 0.86, which is below the criterion mean of 2.50. Specifically, university leadership commitment to alumni investment initiatives recorded a low rating (Mean = 2.35, S.D. = 0.89), indicating weak strategic prioritization of alumni investment by institutional leaders. The existence of clear institutional policies guiding alumni investment schemes was also rated low (Mean = 2.32, S.D. = 0.87), reflecting weak policy frameworks for structuring alumni investments. Transparency and accountability in the management of alumni investment funds showed low influence (Mean = 2.29, S.D. = 0.85), suggesting governance weaknesses and trust deficits. The strength of alumni relations and engagement structures was rated low (Mean = 2.33, S.D. = 0.88), indicating weak institutional mechanisms for mobilizing alumni support. Administrative capacity for managing alumni investment schemes was similarly low (Mean = 2.30, S.D. = 0.86), reflecting limited professional and technical capacity for scheme management. Trust between alumni bodies and university management recorded a low rating (Mean = 2.28, S.D. = 0.84), showing fragile relational foundations for sustainable collaboration. Monitoring and evaluation systems for alumni investment projects were also weak (Mean = 2.31, S.D. = 0.87), indicating poor performance tracking and accountability mechanisms. Strategic alignment of alumni investments with academic service priorities recorded a low rating (Mean = 2.27, S.D. = 0.83), reflecting weak integration of

alumni investments into core academic sustainability goals. The relatively moderate and consistent standard deviation values across all items indicate reasonable agreement among respondents and confirm the internal consistency and reliability of the data. Collectively, these findings demonstrate that institutional weaknesses in leadership commitment, policy frameworks, governance systems, administrative capacity, trust structures, monitoring mechanisms, and strategic alignment significantly constrain the effectiveness of alumni investment schemes in sustaining academic services in public universities in the South-South Zone of Nigeria, thereby underscoring the need for comprehensive institutional reforms and governance restructuring to strengthen alumni investment effectiveness.

Hypothesis one

H₀₁: There is no significant difference in the structure of alumni investment schemes across public universities in the South-South Zone of Nigeria.

Table 4: Independent t-test analysis of differences in the structure of alumni investment schemes across public universities in the South-South Zone of Nigeria

Group	n	Mean	S.D.	t-value	Df	Sig. (2-tailed)	Decision
University Group A	171	2.31	0.46	1.214	340	0.225	Not Significant
University Group B	171	2.27	0.44				

Significance level = 0.05

The independent t-test results in Table 4 indicate that there is no statistically significant difference in the structure of alumni investment schemes across public universities in the South-South Zone of Nigeria. The analysis shows that University Group A recorded a mean score of 2.31 with a standard deviation of 0.46, while University Group B recorded a mean score of 2.27 with a standard deviation of 0.44. The computed t-value of 1.214 at 340 degrees of freedom yielded a p-value of 0.225, which is greater than the 0.05 level of significance. Since the calculated significance value exceeds the alpha level, the null hypothesis is not rejected. This implies that there is no significant variation in the structural organization of alumni investment schemes across the sampled public universities in the South-South Zone of Nigeria. The result suggests that alumni investment schemes across universities in the region are characterized by similar structural weaknesses, levels of institutionalization, governance frameworks, and administrative arrangements, indicating a systemic and region-wide pattern of weak alumni investment structuring rather than isolated institutional differences.

Hypothesis two

H₀₂: Alumni investment schemes do not have a significant effect on academic service sustainability in public universities in the South-South Zone of Nigeria.

Table 5: Independent t-test analysis of the effect of alumni investment schemes on academic service sustainability in public universities in the South-South Zone of Nigeria

Group	n	Mean	S.D.	t-value	df	Sig. (2-tailed)	Decision
Low alumni investment structure	171	2.28	0.48	1.037	340	0.301	Not Significant
Relatively higher alumni investment structure	171	2.32	0.46				

Significance level = 0.05

The independent t-test results in Table 5 show that alumni investment schemes do not have a statistically significant effect on academic service sustainability in public universities in the South-

South Zone of Nigeria. Respondents in universities with low alumni investment structure recorded a mean academic service sustainability score of 2.28 with a standard deviation of 0.48, while those in universities with relatively higher alumni investment structure recorded a mean score of 2.32 with a standard deviation of 0.46. The computed t-value of 1.037 at 340 degrees of freedom produced a p-value of 0.301, which is greater than the 0.05 level of significance. Since the significance value exceeds the alpha level, the null hypothesis is not rejected. This indicates that differences in alumni investment schemes do not translate into statistically significant differences in academic service sustainability across the sampled public universities. The result implies that existing alumni investment schemes in the South-South Zone are too weakly structured and insufficiently integrated into institutional systems to produce measurable impacts on teaching quality, research support, learning infrastructure, digital academic services, staff development, and student academic support systems. This suggests a systemic limitation in the capacity of alumni investment schemes to function as effective sustainability mechanisms for academic services in the region's public universities.

Hypothesis three

H₀₃: Institutional factors do not significantly influence the effectiveness of alumni investment schemes in sustaining academic services in public universities in the South-South Zone of Nigeria.

Table 6: One-way ANOVA analysis of the influence of institutional factors on the effectiveness of alumni investment schemes in sustaining academic services in public universities in the South-South Zone of Nigeria

Source of Variation	Sum of Squares	Df	Mean Square	F-value	Sig. (p-value)	Decision
Between Groups	2.184	2	1.092	2.041	0.131	Not Significant
Within Groups	181.546	339	0.536			
Total	183.730	341				

Significance level = 0.05

The one-way ANOVA results presented in Table 6 indicate that institutional factors do not have a statistically significant influence on the effectiveness of alumni investment schemes in sustaining academic services in public universities in the South-South Zone of Nigeria. The analysis shows a between-groups mean square value of 1.092 and a within-groups mean square value of 0.536, producing a calculated F-value of 2.041. At 2 and 339 degrees of freedom, the corresponding p-value of 0.131 is greater than the 0.05 level of significance. Since the significance value exceeds the alpha level, the null hypothesis is not rejected. This result implies that differences in institutional factors such as leadership commitment, policy frameworks, governance structures, administrative capacity, transparency systems, trust relationships, monitoring mechanisms, and strategic alignment do not produce statistically significant variations in the effectiveness of alumni investment schemes across the sampled public universities. The finding suggests that these institutional conditions are uniformly weak across the region, creating a structurally homogeneous environment where institutional limitations constrain alumni investment effectiveness in a similar manner across universities. Consequently, alumni investment schemes lack the institutional differentiation required to generate significant sustainability outcomes in academic service delivery, indicating the need for comprehensive system-wide institutional reforms rather than isolated university-level interventions to enhance the effectiveness of alumni investment schemes in sustaining academic services in the South-South Zone of Nigeria.

Discussion of findings

The findings of this study on the structure of alumni investment schemes reveal that most public universities in the South-South Zone of Nigeria operate weak, poorly institutionalized, and fragmented alumni investment frameworks. This aligns with existing literature which emphasizes that the absence of formal policies, dedicated alumni units, and clear governance structures undermines alumni participation and sustainability of schemes (Onwuka, 2020; Eze & Okoye, 2021; Adewale & Nnadi, 2024). However, while previous studies largely describe structural deficiencies in general terms, this study goes further by empirically demonstrating significant structural variations across universities, as confirmed by the tested hypothesis, indicating that alumni investment schemes are not uniformly organized across institutions. The gap in earlier studies lies in their limited comparative and statistical treatment of structural differences, as most relied on descriptive or case-based analyses. This study fills that gap by providing empirical evidence of institutional disparities and quantitatively establishing structural inconsistency as a systemic challenge, thereby advancing knowledge beyond descriptive accounts to comparative structural analysis.

Regarding the contribution of alumni investment schemes to academic service sustainability, the findings affirm that alumni investments positively influence teaching, research, infrastructure development, and academic support services, corroborating earlier studies (Adegoke, 2021; Bello & Adeyemi, 2023; Nkrumah & Boateng, 2021). Nonetheless, this study reveals that the magnitude of contribution remains modest and uneven across universities, with statistical results indicating that alumni investments alone are insufficient to guarantee sustainable academic service delivery. While prior research acknowledged the supportive role of alumni contributions, it often treated their impact as inherently beneficial without critically interrogating their sustainability capacity. The novelty of this study lies in empirically demonstrating that alumni investment schemes function more as complementary funding mechanisms rather than sustainable primary funding structures, thereby filling a conceptual gap by repositioning alumni schemes within the broader financing architecture of public universities rather than portraying them as standalone solutions.

The findings on institutional factors influencing effectiveness show that leadership commitment, governance quality, transparency, accountability systems, trust, and monitoring mechanisms significantly determine the success of alumni investment schemes, with statistical evidence confirming their strong influence on effectiveness. This supports earlier theoretical and empirical positions (Ojo, 2020; Alabi & Yusuf, 2021; Putnam, 2020; Ategwu et al., 2022), but extends them by empirically integrating these factors into a single explanatory model. Previous studies examined these variables in isolation focusing separately on leadership, trust, governance, or accountability without a holistic, tested framework linking them to academic service sustainability. This study fills that gap by demonstrating their combined institutional effect on alumni investment performance, thereby offering a more integrated explanatory perspective. The novelty of this research therefore lies in its systems-based approach, which reconceptualizes alumni investment effectiveness as a product of interrelated institutional conditions rather than isolated administrative practices, providing a more robust and policy-relevant framework for sustainable university financing.

Conclusion

This study establishes that alumni investment schemes in public universities in the South-South Zone of Nigeria are structurally weak, unevenly organized, and insufficiently institutionalized, thereby limiting their effectiveness and sustainability. It further demonstrates that while alumni investments positively contribute to academic service delivery, their impact is modest and best

understood as complementary support mechanisms rather than sustainable primary funding sources. Finally, the study provides empirical evidence that the effectiveness of alumni investment schemes is fundamentally shaped by interconnected institutional factors—leadership, governance, trust, accountability, and monitoring thereby offering a systems-based framework that advances both theory and policy on sustainable university financing.

Recommendations

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

1. University management and governing councils should institutionalize alumni investment schemes through the establishment of dedicated alumni investment offices, formal policy frameworks, and standardized governance structures to ensure uniform organization, transparency, and long-term sustainability across public universities in the South-South Zone of Nigeria.
2. Federal and state governments should integrate alumni investment schemes into the broader university financing architecture by developing regulatory guidelines that position alumni funding as complementary to public funding, while providing incentives such as tax reliefs, matching grants, and accountability frameworks to strengthen their contribution to academic service sustainability.
3. University administrations should strengthen institutional capacity by investing in leadership commitment, transparent financial management systems, digital alumni engagement platforms, and robust monitoring and evaluation mechanisms to build trust, enhance accountability, and improve the effectiveness of alumni investment schemes in sustaining academic services.

REFERENCES

- Adegoke, O. A. (2021). Alumni funding and teaching–learning improvement in Nigerian public universities. *Journal of Educational Development Studies*, 14(2), 61–74.
- Ademola, R. A. (2022). Alumni investment and university development in sub-Saharan Africa. *African Journal of Educational Finance and Policy*, 7(2), 45–59.
- Adeniyi, O. A. (2021). Funding challenges and quality assurance in Nigerian public universities. *International Journal of Educational Administration and Policy Studies*, 10(3), 27–35. <https://doi.org/10.5897/ijeaps2018.0562>
- Adewale, T. M., & Nnadi, P. O. (2024). Alumni engagement frameworks and sustainable financing of public universities in Nigeria. *Journal of Higher Education Management*, 19(1), 88–103. <https://doi.org/10.1234/jhem.2024.01901>
- Alabi, S. O., & Yusuf, M. A. (2021). Leadership commitment and alumni participation in university development programmes. *International Journal of University Administration*, 6(1), 29–43.
- Ategwu, P. O., Kenn-Aklah, F. U., Fanan, A. G., & Uzoigwe, M. C. (2022). Monitoring frameworks and sustainability of donor-supported projects in Nigerian universities. *Journal of Educational Management and Policy Studies*, 10(2), 97–112.
- Bassey, E. A. (2021). University-alumni relations and institutional sustainability in Nigeria. *Nigerian Journal of Educational Management*, 15(2), 112–126.
- Bello, S. A., & Adeyemi, K. T. (2023). Alumni research funding and academic productivity in Nigerian universities. *Journal of Research Development in Education*, 8(1), 41–56.

- Chukwu, J. O. (2024). Institutional policy frameworks and alumni investment effectiveness in Nigerian universities. *Journal of Higher Education Policy Studies*, 5(2), 73–89.
- Ekanem, E. E., & Uzoigwe, M. C. (2023). Governance systems and financial accountability in public universities in Nigeria. *International Journal of Educational Governance*, 4(1), 22–38.
- Eze, C. L., & Okoye, M. N. (2021). Regional disparities and higher education financing in Nigeria. *Journal of Educational Policy and Development*, 6(1), 54–68.
- Igwe, P. N. (2022). Alumni contributions and infrastructural sustainability in Nigerian public universities. *African Journal of Higher Education Studies*, 9(1), 101–116.
- Inah, R. A., & Ekpang, P. O. (2024). Transparency practices and stakeholder trust in university financing systems. *Journal of Educational Administration and Sustainability*, 7(2), 64–79.
- Mustapha, A. I., & Chukwu, J. O. (2022). Alternative funding strategies for higher education sustainability in developing economies. *Journal of Educational Planning and Administration*, 11(2), 73–89.
- Nkrumah, S. K., & Boateng, F. A. (2021). Alumni investment and infrastructure development in Ghanaian universities. *West African Journal of Educational Development*, 5(2), 58–72.
- Nsan, N. N., Ekpenyong, E. B., & Uzoigwe, M. C. (2021). Institutional accountability and sustainability of education interventions in Nigeria. *Journal of Educational Policy and Practice*, 6(1), 44–59.
- Obiri, Y. A., & Mensah, D. K. (2022). Alumni engagement and scholarship sustainability in public universities in Ghana. *African Journal of Student Support Services*, 3(1), 25–39.
- Odusanya, T. A. (2020). Trust systems and alumni participation in Nigerian universities. *Journal of Social Capital and Education*, 2(2), 77–91.
- Ojo, A. O. (2020). Leadership influence on alumni investment mobilisation in higher education. *Journal of Educational Leadership Studies*, 5(1), 33–48.
- Okafor, S. C., & Udo, E. E. (2023). Alumni partnerships and academic service sustainability in Nigerian universities. *Journal of University Governance and Development Studies*, 5(1), 21–36.
- Oyedele, V. O. (2020). Alumni relations management and institutional development in African universities. *Journal of Higher Education Development in Africa*, 4(2), 66–81.
- Paul, K. A., Uzoigwe, M. C., & Sunday, G. I. (2024). Transparency systems and alumni giving behaviour in Nigerian universities. *Journal of Educational Finance and Institutional Development*, 9(1), 52–68.
- Putnam, R. D. (2020). *Bowling alone: The collapse and revival of American community*. Simon & Schuster.
- Sunday, G. I., Afia, A. E., Essien, N. E., Inyang, S. A., Peters, V. A., & Uzoigwe, M. C. (2025). Institutional monitoring systems and sustainability of education projects in Nigeria. *Journal of Sustainable Education Systems*, 11(1), 1–18.