Effect of Tetfund Interventions on Staff and Infrastructure Development in Public Tertiary Institutions of Learning in Benue State, Nigeria

Adueti, Andrew Terver
College of Education, P.M.B. 2008,
Katsina-Ala, Benue State
Department of Economics
07067918149; 08152167960
aduetiandy@gmail.com

Tyondo Terfa,
Department of Economics,
College of Education P.M.B. 2008,
Katsina-Ala, Benue State.

Iormanger, Joshua Terseer,
Internal Audit Unit,
College of Education P.M.B. 2008
Katsina-Ala, Benue State.

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Abstract
This study examined the effects of Tertiary Education Trust Fund (TETFund) interventions on staff and infrastructure development in public tertiary institutions in Benue State, Nigeria. Guided by Public Goods Theory, it addressed three research questions and tested a hypothesis at the 0.05 significance level. A cross-sectional survey design was used, and three institutions, one from each senatorial district, were studied. Primary and secondary data were analyzed using descriptive statistics and Analysis of Covariance (ANCOVA) within a Generalized Linear Model (GLM) framework. The findings showed that TETFund interventions supported infrastructure projects and academic activities, including staff training, research and teaching practice. Intervention levels varied across institutions, and some allocated funds were not accessed because of procedural requirements, limited institutional capacity and project delays. The GLM results indicated significant positive effects on infrastructure development ($F = 42.718$, $p < 0.001$; $R^2 = 51.2\%$) and staff development ($F = 18.153$, $p < 0.001$; adjusted $R^2 = 54.1\%$). Challenges identified included inadequate funding and manpower, weak project supervision and maintenance, low awareness, centralized decision-making, delays, and misunderstandings about conference and workshop support. The study concluded that TETFund contributed significantly to staff and infrastructure development in the sampled institutions, although access and implementation challenges limited the benefits. It recommends reviewing the education tax rate, providing more predictable allocations to eligible institutions, and strengthening administrative capacity, project oversight and accountability.

Keywords: *TETFund, staff development, infrastructure development, Public Goods Theory, ANCOVA.*

1.1 Introduction

Funding education is a major concern for stakeholders and policymakers in Nigeria. Adequate funding, together with its effective use, is essential for providing the staff, facilities and learning materials needed to deliver quality education (Adueti, 2018). The National Policy on Education (NPE, 2012) recognizes education as a costly public service that requires sufficient funding and cooperation between the public and private sectors. This is particularly important for tertiary institutions, which help prepare skilled workers for other sectors of the economy.

Researchers have raised concerns about Nigeria's investment in education. Eijogu, Okezie, Ihugba and Chinedu (2013) note that many countries prioritize education, while funding in Nigeria remains inadequate. The country has also fallen short of UNESCO's recommendation that 26 percent of the national annual budget be allocated to education. Adueti (2018) reports that education spending in selected African countries ranges from 16 to 31 percent. Ghana allocates 31 percent, Uganda 27 percent, South Africa 25.8 percent and Kenya 23 percent. By comparison, Nigeria has recently allocated at most 16–20 percent. This funding shortfall is linked to challenges such as poor infrastructure and limited opportunities to develop human resources in tertiary institutions. In response to these challenges, and following pressure from the Academic Staff Union of Universities (ASUU), the Federal Government established an intervention fund to address needs that regular education funding had not met. The initiative began as the Education Tax Fund (ETF) in 1993, later became the Education Trust Fund, and is now the Tertiary Education Trust Fund (TETFund). Established under the TETFund Act of 2011, TETFund collects a 2% education tax from companies. It provides support for instructional materials and equipment, research and publication, academic staff training and development, and other priorities that help improve educational quality and maintain standards (TETFund, 2022).

TETFund aims to support research, strengthen teaching and learning, develop staff capacity and improve institutional infrastructure. Its allocation formula distributes funds among universities, polytechnics and colleges of education in a ratio of 2:1:1. The Fund has supported research, learning resources, staff development and infrastructure, but its effects and the challenges institutions face in using its support need closer examination.

This study examines how TETFund interventions affect academic staff and infrastructure development in public tertiary institutions in Benue State. It focuses on staff training and development, the effects on teaching and learning, and the challenges and opportunities linked to the interventions. The findings may inform discussion about how intervention agencies can help improve the quality of tertiary education in Nigeria.

1.2 Statement of the Problem

Education underpins civilization, modernization and development, but achieving these goals requires investment. Governments must prioritize funding for facilities, qualified staff, research, student and staff welfare, and community services. When these needs are unmet, tertiary institutions face problems and industrial disputes. These challenges can weaken academic standards and limit the quality of graduates who contribute to society's development. Although Nigerian governments have recognized the importance of higher education, many institutions face constraints. TETFund was established to address some of these challenges by using a tax on companies to improve human resources and infrastructure in public tertiary institutions. Since its establishment in 1993, its interventions have been assessed by scholars, including Sirajo et al. (2024), Ezekwe and Ani (2024), Sharkdam and Clifford (2018), and Onwuchekwa (2016). However, research examining TETFund's contributions and

opportunities in Benue State appears limited. This leaves an empirical and geographical gap in understanding its effects on tertiary education. This study addresses that gap by assessing TETFund's effects on human and infrastructure development in public tertiary institutions in Benue State, and their contribution to educational quality and sustainable development.

1.3 Objectives of the Study

The broad objective of the research is to examine the contribution of TETFund on staff and infrastructure development of tertiary institutions of learning in Benue State, Nigeria. Specifically, the objectives of the research are to:

1.Analyze the effects of TETFund interventions on infrastructure development in public tertiary institutions of learning in Benue State

2.Examine the effects of TETFund intervention on staff development in public tertiary institutions of learning in Benue State

3.Suggest possible solutions in achieving the objectives of TETFund of public tertiary institutions of learning in Benue State

1.4 Research Hypothesis:

Ho: there is no significant effect of TETFund on infrastructure and staff development in public tertiary institutions of learning in Benue State.

2.0 Conceptual Issues

2.1.1 Tertiary Education Trust Fund Interventions (TETFund)

Tertiary Education Trust Fund (TETFund) interventions provide additional financial support for the development of Nigeria's public tertiary institutions. This support helps institutions meet infrastructure and capital needs that may not be addressed promptly through regular government budgets. Mahmood (2010) describes TETFund as a provider of supplementary resources, under an enabling law, for research, learning and development in public tertiary institutions.

Udu and Nkwedu (2014) describe the Fund as being financed through an education tax on companies' income. Initially known as the Education Tax Fund (ETF), it was created to finance capital expenditure and redistribute resources to support education in Nigeria.

TETFund intervention can also be understood as a policy mechanism that supplements conventional budget allocations for infrastructure and capital development in public institutions. It does not cover recurrent expenses such as salaries, wages and routine running costs. Its programmes include regular and special (BOT) interventions, high-impact projects, library development, academic staff training and development (AST&D), manuscript development, conferences and workshops, research, and teaching practice (Mahmood, 2010).

For this study, TETFund intervention means an alternative source of funding for tertiary education, raised through taxation and used to support sustainable institutional development alongside regular government budgets. The Fund is administered by a Federal Government agency operating under enabling legislation. With support from the Federal Inland Revenue Service (FIRS), it collects the education tax from companies and channels resources into infrastructure and human-resource development. The study considers how this support contributes to the development of public tertiary institutions in Benue State.

2.1.2 Concept of infrastructure development

According to Fulmer (2009), infrastructure are physical components of inter-related systems providing commodities and services essential to enable sustain or enhance societal or organization living conditions. Infrastructure development in this study refers to the physical structures such like, classrooms/lecture halls, theatres, offices, hostels, library/laboratory structures, sports arena, power and water supply among other stationaries that sustain teaching

and learning processes in a school environment. It is pertinent to note here that, the demand for infrastructure development in Nigeria and in particular Benue State public tertiary institutions by far out way the supply of same with limited resources for their provision, even though, a necessary condition for development.

This research recognizes infrastructure development as having significant impact on output (students), income (internal generated revenue of the institutions), employment and quality of life for both students and staff, it may equally reduce stress and promote good health and security of the various institutions of learning.

2.1.3 The Concept of Staff Development

Staff development includes formal and informal activities, on or off campus, that help employees understand their responsibilities, build the skills needed to meet institutional goals, and grow professionally for future opportunities (Academic Staff Training and Development). In this study, staff development refers to programmes and interventions that strengthen human capacity and support sustained productivity. These initiatives encourage creative approaches to education, learning and service, while improving key areas such as teacher education, teaching practice, library resources and internet access, special and entrepreneurship education, and literacy. They also promote scientific and information technology literacy, with particular attention to public institutions. Together, these efforts help staff develop their capabilities and enable institutions to better serve learners and meet their goals, both now and in the future.

2.2 Theoretical Review

This study is guided by Public Goods Theory, which originated in economics and was developed by Samuelson (1954). The theory identifies two key features of public goods: non-rivalry and non-excludability. Non-rivalry means that one person's use of a good does not reduce what is available to others, while non-excludability means that people are difficult to prevent from benefiting once the good is provided.

Because of these features, private businesses may underprovide public goods or not provide them at all. Charging users can discourage some people from accessing them, even when the additional cost of serving those users is minimal. This can result in lost social benefits. Samuelson therefore argued that government has a role in financing public goods and making them broadly available. Taxes provide one way to pool contributions and fund services for citizens. Education has important public-good characteristics. Although individuals benefit directly from education, society also benefits through a more skilled workforce and broader social development. Public tertiary education requires sustained investment. Under the theory, funding decisions should consider the combined benefits to institutions and society, rather than relying only on what individual users can afford to pay. Tax revenue can support these services while limiting the exclusion that user charges may create. At the same time, taxation can affect economic activity and resources available for public spending, so funding decisions must weigh costs against social benefits. This framework helps explain TETFund's role in supporting public tertiary institutions in Benue State. The Fund channels education tax revenue into infrastructure and human-resource development, complementing government budgets. These investments aim to improve educational provision and support development. Since the institutions are publicly owned and serve the community, they are accountable for how allocated resources are used. The theory provides a basis for examining whether TETFund interventions support education as a public good. Public Goods Theory has limitations. Its assumptions can be idealistic, and the benefits of public goods can be difficult to measure. The theory may define public goods too narrowly, emphasize efficiency over fairness, and give limited attention to political processes. It can also overlook government failure, including poor resource allocation, corruption and weak institutions. These limitations make it important to

assess the rationale for TETFund funding, how interventions are managed and what outcomes they achieve.

2.3 Empirical Review

Research on TETFund and its predecessor, the Education Tax Fund (ETF), generally reports benefits for tertiary education, including staff development, improved teaching and research, infrastructure and institutional development. Findings are not uniform. Studies also identify bureaucratic requirements and access difficulties that can limit the impact of interventions.

Ezekwe and Ani (2024) examined TETFund support for academic staff training in public universities in South-East Nigeria. Using annual secondary data, an ex-post facto design and Ordinary Least Squares analysis, they found a significant positive relationship between training and effective teaching ($p < 0.01$). They concluded that training strengthens staff knowledge and skills for teaching and research. However, regional scope limits generalizability.

Onyeizugbe, Obiageli and Igbodo (2016) surveyed the University of Nigeria, Nsukka, and Ebonyi State University on TETFund international training. They found a positive relationship between the programmes and staff development. They also found that some allocated funds went unused because universities did not meet access conditions. They recommended that universities learn the application requirements and TETFund allow missed allocations to be accessed later. Its two-university scope limits generalizability.

Research findings are less consistent. Onwuchekwa (2016) surveyed lecturers in South-East universities and found no statistically significant influence of TETFund on educational research. The study used a sizeable sample and reported high reliability (Cronbach's alpha = 0.965). Its calls to simplify procedures and inform lecturers about applications echo access concerns raised by Onyeizugbe et al. Its finding differs from studies reporting wider research benefits. Different measures, locations or access may contribute, but the available summaries do not establish why. Udu and Nkwede (2014), using Public Goods Theory and documentary evidence from Ebonyi State University, reported positive effects on infrastructure, human development and sustainability. They called for fewer bureaucratic delays, competent contractors and donor support. Its single-university scope limits generalization. Ogundu and Nwokoye (2013) described TETFund as supplementary support for public tertiary institutions. They reported that 5,277 lecturers received overseas postgraduate sponsorship between 2010 and 2012, alongside completed or ongoing infrastructure projects. They urged other organizations to help meet university funding needs. The available account gives little methodological detail, making the outcomes difficult to assess independently.

Ugwuanyi (2014) reviewed ETF activities from 1999 to 2010 using ETF and government publications. The study found that intervention projects improved infrastructure and teaching and learning conditions. Its eleven-year scope provides historical context, although ETF findings relate to an earlier funding structure. TETFund's 2014 monitoring and evaluation exercise assessed projects at sampled institutions, including training, conferences, workshops and seminars. It reported considerable national impact and examined delays, resource use and sustainability. Its focus on implementation complements outcome studies, but the summary gives limited information about its sample and measures.

Ozodinobi (2010) analyzed ETF allocations across Nigeria's six geopolitical zones from 1999 to 2007. The study found no evidence of regional favoritism. Universities received the largest allocation component, while polytechnics and colleges of education had similar patterns. Its statistical approach provides evidence on distribution, and its call for transparency, accountability and use of unclaimed funds highlights governance concerns. However, it examined allocations rather than institutional outcomes.

Overall, studies broadly agree that TETFund and ETF have supported staff development, infrastructure and institutional improvement. They also identify access barriers and the need

for effective implementation and accountability. Findings on research impact diverge: Onwuchekwa found no significant influence. Differences in methods, periods, locations and measures may help explain the variation. The literature covers national patterns, the South-East and individual institutions, but none specifically examines TETFund's effects on staff and infrastructure development in Benue State public tertiary institutions. This study addresses that empirical and geographical gap, assessing both intervention benefits and implementation challenges.

3.0 Methodology

3.1 Design of the study:

The study adopted a cross-sectional survey design. This descriptive approach enabled the researchers to measure the study variables as they occurred, without manipulating them. Questionnaires were administered to gather information on the effects of TETFund interventions on staff and infrastructure development. The study also examined allocation and disbursement data for income and expenditure over the years.

Furthermore, Analysis of Covariance (ANCOVA) was used to assess the effects of the independent variable on the dependent variables. The analysis was specified within a Generalized Linear Model (GLM) framework to account for covariates and their interactions with institutional capacity. The results were organized and presented in sequence according to the study objectives.

3.2 Study Area

The study was conducted in Benue State, Nigeria, one of the North Central states. The Benue State Ministry of Information (2018) reported the state's population as 5,181,642. Since its creation in 1976, the State has expanded its education sector. It has over 2,000 secondary schools, two State Universities, three Polytechnics, two public Colleges of Education, health Technology Institutions and a Teaching Hospital. The State also has privately owned Polytechnics and Colleges of Education, Federal Institutions, Military Base Schools and Mission-Owned Tertiary Institutions.

3.4 Population of the Study

The study population comprised academic and non-academic staff at three TETFund-intervened institutions: College of Education, Katsina-Ala (Zone A); Benue State University, now Rev. Fr. Moses Orshio Adasu University, Makurdi (Zone B); and College of Education, Oju (Zone C). Preliminary information obtained from the institutions' public relations or Establishment offices indicated a total staff population of 3,151 across the three institutions.

3.5 Sampling Technique and Sample Size

The study used multistage sampling procedures, including purposive selection of institutions and random selection of staff beneficiaries. Three TETFund-intervened tertiary institutions were selected across the state's senatorial districts. Staff beneficiaries were then selected to receive the structured questionnaire.

The sample size was determined using the Krejcie and Morgan (1970) formula, as cited by Emaikwu (2010):

$$\mathbf{S = \chi^2 NP(1 - P) / [d^2(N - 1) + \chi^2 P(1 - P)]}$$

Where:

- **S** = required sample size
- χ^2 = chi-square value
- **N** = population size
- **P** = population proportion, expressed as a decimal

- **d** = degree of accuracy, expressed as a proportion (0.05)

3.6 Sources and Types of Data

The study used primary and secondary data. Primary data were gathered through questionnaires about the institutions and TETFund's activities in the state. The questionnaire covered academic staff training and development, conference and workshop participation, publications, research sponsorship, library development, teaching practice, infrastructure interventions and manuscript development funding.

Secondary data included institutional allocation records, relevant literature, TETFund library and archive materials, reports, in-house journals, online materials, seminar and conference papers, and periodicals. These sources provided background information and documented beneficiaries' experiences related to the research problem.

3.7 Instrument Validation

The questionnaire was submitted to three experts at Rev. Fr. Moses Orshio Adasu University, Makurdi: one each in Educational Management, Economics Education, and Measurement and Evaluation. They reviewed the instrument's scope, content relevance, coverage, clarity and wording. Their corrections and recommendations informed the final version of the questionnaire.

3.8 Instrument Reliability

Cronbach's alpha was used to estimate the internal consistency of the staff development, infrastructure development and institutional performance scales. A minimum threshold of 0.70 was specified. The items were then combined into scales for analysis, with the covariates measured through those scales.

3.9 Data Collection

The principal researchers trained two regular students from each selected institution as research assistants. The training covered data collection, coding and classification. The assistants administered and collected the questionnaires, and helped score them for analysis under the direction of the principal researchers.

3.10 Data Analysis

Descriptive statistics and ANCOVA was used to analyze the time-series information and address the first and second objectives. The F-statistic and p-value were used to assess the stated hypotheses, while the coefficient of determination (R^2) measured the proportion of variation in the dependent variables explained by the explanatory variables. A sensitivity analysis was also conducted to examine the effects across the three sampled institutions.

Ethical Considerations

The study followed established ethical principles for research involving human participants. Participants were informed about the study's purpose, took part voluntarily and provided information with an understanding of how it would be used. Their information was treated confidentially.

4.0 Results and Discussions

4.1 The Effect of ETF Allocation on Infrastructure Development of Tertiary Institutions in Benue State

In examining the effect of ETF allocation on infrastructure development of tertiary institutions in Benue State, the study used Analysis of Covariance (ANCOVA). The pre-conditions for its estimation and the result of ANCOVA are presented below.

4.1.1 Test for Homogeneity of Variance Results

In order to examine the impact of ETF allocation on the infrastructure development of tertiary institutions in Benue State, the result of the test for homogeneity of variance in the infrastructure development of the sampled institutions is presented in Table 4.1.

Table 4.1: Levene's Test of Equality of Error Variance Results
Dependent Variable: INFRASTRUCTURE DEVELOPMENT

Institutions	Mean	Std. Deviation	N	F	df1	df2	Sig.
BSU, Makurdi	5.00	4.967	16	2.250	2	44	.117
COE, K/Ala	7.69	5.594	16				
COE, Oju	14.87	27.336	15				
Total	9.06	16.219	47				

Source: Computed from SPSS output

The results from Table 4.1 show that Benue State University, Makurdi, College of Education, Katsina-Ala and College of Education, Oju had the infrastructure development of 5.00, 7.69, and 14.87 facilities respectively. This implies that College of Education, Oju has the highest level of infrastructure development (facilities) as a result of the TETFund allocations, followed by College of Education, Katsina-Ala. Benue State University, Makurdi according to the volume of the allocations to them. From the result of the Levene test of homogeneity of variances in the infrastructure development, the assumption of homogeneity of variance was met, because P (0.117) >α (0.05). This is indicated by the Levene's Test of Homogeneity of Variances, F (2.44) = 2.250, P=0.117 with an alpha level of 0.05, P (0.117) >α (0.05), which indicates insignificance. Hence, the null hypothesis (no variance difference) is not rejected (that is, retained). As such, indicating that the assumption of homogeneity of variance among the institutional infrastructure development in Benue State is met.

Therefore, the infrastructure development of the selected institutions can be treated collectively without violating any heterogeneity properties associated with the institutions in terms of TETFund allocation.

4.1.2 The Subject Effect of Institutions on Infrastructure Development in Benue State

The study further examined the effect or influence of institutional differences on the infrastructure development of the tertiary institutions in Benue State. The results are computed and presented in Table 4.2.

Table 4.2: The Effect of Institutional Differences on Infrastructure Development
Dependent Variable: INFRASTRUCTURE DEVELOPMENT

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	799.638a	2	399.819	1.557	.222	.066
Intercept	3961.211	1	3961.211	15.423	.000	.260
Institutions	799.638	2	399.819	1.557	.222	.066
Error	11301.171	44	256.845			
Total	15962.000	47				
Corrected Total	12100.809	46				

Source: Computed from SPSS output

From the result of the subject effect (institutions) on the infrastructure development of the tertiary institutions in Benue State, the study revealed a mean square value of 399.819 and F-statistic value of 1.557 with the P-value of 0.222 > α (0.05). This implies that the subject (institutions or institutional differences) has no significant impact on the infrastructure development of the tertiary institutions in Benue State. Specifically, the results reveal a partial Eta squared value of 0.066. This indicates that only 6% of the variability in infrastructure development is accounted for by the institutional capacity or difference which is negligible.

4.1.3 The Effect of TETFund Allocation on Infrastructure Development in Benue State's Tertiary Institutions

The uni-variate Analysis of Variance (ANCOVA) was further estimated by incorporating the TETFund allocation as a covariate in the model which was specified using full factorial. The aim was to examine the effect of TETFund Allocation on infrastructure development without interaction with the institutional capacities since the assumption of homogeneity of variance was met. Again, the Levene test revealed F-statistic Value of F (2, 44) = 2.159, P= 0.128>α (0.05). The results are presented in Table 4.3.

Table 4.3: The Effect of TETFund Allocation on Infrastructure Development
Dependent Variable: INFRASTRUCTURE DEVELOPMENT

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1934.815a	3	644.938	2.728	.056	.160
Intercept	1684.326	1	1684.326	7.124	.011	.142
TETFund ALLOCATION	1135.178	1	1135.178	4.802	.034	.100
Institutions	1058.082	2	529.041	2.238	.119	.094
Error	10165.993	43	236.418			
Total	15962.000	47				
Corrected Total	12100.809	46				

a. R Squared = .160 (Adjusted R Squared = .101), b. Computed using alpha = .05

Source: Computed from SPSS output

The result in Table 4.3 shows that TETFund allocation significantly impacts positively on the infrastructure development of the tertiary institutions in Benue State. This is because, TETFund allocation revealed the F-Statistic value of 4.802 and P-value of 0.034 < α (0.05), which indicates significance at 5% critical level. This implies that TETFund allocation has strong positive effect on the infrastructure development of the tertiary institutions in Benue State. The result of partial Eta squared revealed that about 100% of the variability in the infrastructure development of the tertiary institutions in the state is accounted by the TETFund allocation. This is also evidenced by the high observed power[b] of 0.572 computed using alpha = 0.05.
But due the low R-squared of 16% and R-squared adjusted of 10.1%, the model in examining the effect of TETFund allocation on the infrastructure development of the tertiary institutions in Benue State was re-specified. The Generalized linear model was therefore, customized to capture both the covariates and its interaction with the fixed factor (institutional capacity). The results are presented in Table 4.4.

Table 4.4: The Effect of TETFund Allocations on Infrastructure Development with Interaction
Dependent Variable: INFRASTRUCTURE DEVELOPMENT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	6834.364a	5	1366.873	10.641	.000	.565
Intercept	478.372	1	478.372	3.724	.061	.083
Institutions	129.150	2	64.575	.503	.609	.024
TETFund ALLOCATION	5487.178	1	5487.178	42.718	.000	.510
Institutions TETFund ALLOCATION	4899.548	2	2449.774	19.072	.000	.482
Error	5266.445	41	128.450			
Total	15962.000	47				
Corrected Total	12100.809	46				

a. R Squared = .565 (Adjusted R Squared = .512), b. Computed using alpha = .05
Source: Computed from SPSS output
From the results of the ANCOVA with interaction, the TETFund allocation has positive impact on the infrastructure development of tertiary institutions in Benue State likewise the TETFund allocation taking cognizance of the institutional capacities or differences. This is because, the study revealed F-statistic values of 42.718 and 19.072 respectively and the p-values of 0.000 < α (0.05) for each. However, TETFund allocation has higher spatial Eta squared value of 0.510 relatively to that of TETFund allocations with institutional capabilities (Eta squared value of 0.412). The study also revealed an estimated R-Squared of 56.5% and the adjusted R-squared of 51.2%. This implies that, changes in the infrastructure development are accounted by the TETFund allocation and the institutional differences for about 51.2%. This explains the goodness of the model, meaning it has good fit. The study also estimated the hypothetical means of the infrastructural development of the institutions in Benue state.

4.2 The Effect of TETFund Allocation on Staff Development of Tertiary Institutions in Benue State

In examining the effect of TETFund allocation on staff development of tertiary institutions in Benue State, the study again used Analysis of Covariance (ANCOVA) just as used in analyzing the effect of infrastructural development and the results are presented below.

4.2.1 Test for Homogeneity of Variance Results

In order to examine the impact of TETFund allocation on the staff development of tertiary institutions in Benue State, the result of the test for homogeneity of variance in the staff development of the sampled institutions is presented in Table 4.5.

Table 4.5: Levene's Test of Equality of Error Variance Results
Dependent Variable: STAFF DEVELOPMENT

Institutions	Mean	Std. Deviation	N	F	df1	df2	Sig.
BSU, Makurdi	13.63	23.392	16	.856	2	44	.432
COE, K/Ala	20.88	42.074	16				
COE, Oju	18.93	47.171	15				
Total	17.79	37.982	47				

Source: Computed from SPSS output

The results from Table 4.5 show that Benue State University, Makurdi, College of Education, Katsina-Ala and College of Education, Oju had the staff development of 13.63, 20.88 and 18.93 persons respectively. This implies that College of Education, Katsina-Ala has the highest level of staff development (persons) as a result of the TETFund allocation, followed by College of Education, Oju. Benue State University, Makurdi has the least number of staff that were supported with the TETFund allocation to the institution. From the result of the Levene test of homogeneity of variances in the staff development, the assumption of homogeneity of variance was met, because P (0.432) >α (0.05). This is indicated by the Levene's Test of Homogeneity of Variances, F (2.44) = 0.856, P=0.432 with an alpha level of 0.05, P (0.432) >α (0.05), which indicates insignificance. Hence, the null hypothesis (no variance difference) is not rejected (that is, retained). As such, indicating that the assumption of homogeneity of variance among the institutional staff development in Benue State is met. Therefore, the staff development of the selected institutions can be treated collectively without violating any heterogeneity properties associated with the institutions in terms of TETFund allocation.

4.2.2 The Subject Effect of Institutions on Staff Development in Benue State

The study further examined the effect or influence of institutional differences on the staff development of the tertiary institutions in Benue state. The results are computed and presented in Table 4.6.

Table 4.6: The Effect of Institutional Differences on Staff Development
Dependent Variable: STAFF DEVELOPMENT

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	449.439a	2	224.720	.150	.861	.007
Intercept	14896.284	1	14896.284	9.944	.003	.184
Institutions	449.439	2	224.720	.150	.861	.007
Error	65912.433	44	1498.010			
Total	81232.000	47				
Corrected Total	66361.872	46				

Source: Computed from SPSS output

From the result of the subject effect (institutions) on the staff development of the tertiary institutions in Benue State as presented in Table 4.6, the study revealed a mean square value of 224.72 and F-statistic value of 0.15 with the P-value of 0.861 > α (0.05). This implies that the subject (institutions or institutional differences) has no significant impact on the staff development of the tertiary institutions in Benue State. Specifically, the results reveal a partial Eta squared value of 0.007. This indicates that only 0.7% of the variability in staff development is accounted for by the institutional capacity or difference which is totally negligible.

4.2.3 The Effect of TETFund Allocation on Staff Development in Benue State

The uni-variate Analysis of Variance (ANCOVA) was further estimated by incorporating the TETFund allocation as a covariate in the model which was specified using full factorial. The aim was to examine the effect of TETFund Allocation on staff development without interaction with the institutional capacities since the assumption of homogeneity of variance was met. Again, the Levene test revealed F-statistic Value of F (2.44) = 0.856, P=0.432 > α (0.05). The results are presented in Table 4.7.

Table 4.7: The Effect of TETFund Allocation on Staff Development
Dependent Variable: STAFF DEVELOPMENT

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	10128.339a	3	3376.113	2.582	.066	.153
Intercept	4187.950	1	4187.950	3.202	.081	.069
TETFund ALLOCATION	9678.900	1	9678.900	7.401	.009	.147
Institutions	686.814	2	343.407	.263	.770	.012
Error	56233.534	43	1307.757			
Total	81232.000	47				
Corrected Total	66361.872	46				

a. R Squared = .153 (Adjusted R Squared = .094), b. Computed using alpha = .05
Source: Computed from SPSS output

The result in Table 4.7 shows that TETFund allocation significantly impacts positively on the staff development of the tertiary institutions in Benue State. This is because, TETFund allocation revealed the F-Statistic value of 7.401 and P-value of 0.009 < α (0.05), which indicates significance at 5% critical level. This implies that TETFund allocation has strong positive effect on the staff development of the tertiary institutions in Benue State. The result of partial Eta squared revealed that about 14.7% of the variability in the staff development of the tertiary institutions in the state is accounted by the TETFund allocation.

This is also evidenced by the high observed power[b] of 0.758 computed using alpha = 0.05. But due the low R-squared of 15.3% and R-squared adjusted of 9.4%, the model in examining the effect of TETFund allocation on the staff development of the tertiary institutions in Benue State was re-specified. The Generalized linear model was therefore, customized to capture both the covariates and its interaction with the fixed factor (institutional capacity). The results are presented in Table 4.8.

Table 4.8: The Effect of TETFund Allocation on Staff Development with Interaction
Dependent Variable: STAFF DEVELOPMENT

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	21461.266a	5	4292.253	3.919	.005	.323
Intercept	1116.581	1	1116.581	1.020	.319	.024
Institutions	2500.156	2	1250.078	1.141	.329	.053
TETFund ALLOCATION	19880.453	1	19880.453	18.153	.000	.307
Institutions TETFund ALLOCATION	11332.927	2	5666.464	5.174	.010	.202
Error	44900.606	41	1095.137			
Total	81232.000	47				
Corrected Total	66361.872	46				

a. R Squared = .623 (Adjusted R Squared = .541), b. Computed using alpha = .05

Source: Computed from SPSS output

From the results of the ANCOVA with interaction presented in Table 4.8, the TETFund allocation has positive impact on the staff development of tertiary institutions in Benue State likewise the TETFund allocation taking cognizance of the institutional capacities or differences. This is because, the study revealed F-statistic values of 18.153 and 5.174 respectively and the p-values of 0.000 < α (0.05) and 0.01 < α (0.05) respectively.

However, TETFund allocation has higher spatial Eta squared value of 0.307 relatively to that of TETFund allocation with institutional capabilities (Eta squared value of 0.202). The study also revealed an estimated R-Squared of 62.3% and the adjusted R-squared of 54.1%. This implies that, changes in the staff development are accounted by the TETFund allocation and the institutional differences for about 54.1%. This explains the goodness fit of the model.

The study also estimated the hypothetical means of the staff development of the institutions in Benue state. The results are presented in Table 4.9.

4.3 The Problems and Possible Solutions of Achieving the Objective(s) of TETFund to Public Tertiary Education Development in Benue State

The research through a scientific method by Krejcie and Morgan (1970) arrived at a sample size of 343 out of a population of 3151. This size was further increased to 360 so as to step up the predictive powers of the research. A total of 348 respondents turn in their responses and it was used for this study as seen below;

This study examined into the effect that exists between TETFund and tertiary educational development into three (3) higher institutions in Benue State of Nigeria. Though, the states have more than this number of tertiary institution, focus is on the three which are the College of Education Katsina-Ala (zone A), Benue State University, Makurdi (zone B) and College of Education, Oju (zone C) due to geographical spread and availability of required data at the time of this research. Three hundred and sixty (360) of both academic, nonacademic and management staffs were sampled out of a population of Three Thousand One Hundred and Fifty One (3151). Questionnaire was administered and 348 were retrieved. Having analyzed the data through trends and co-variance it was revealed that there is upward trend (indicating positive relationship) and also a positive effect (impact) of the Education Trust Fund and tertiary education development proxies by infrastructures and Staff Development in Benue State.

Table 4.9 Questionnaire Administration in Benue State Tertiary Institutions

Institutions	Total number of questionnaires administered	Total number of questionnaires retrieved	Total number of questionnaires not retrieved	Total Percentage Administered
BSU, Makurdi	225	218	07	62.5
COE, K/Ala	75	73	02	20.8
COE, OJU	60	57	03	16.7
TOTAL	360	348 (96.7)	12 (3.3)	100

Source: Field Survey, 2026.

Table 4.9 shows that 360 questionnaires were administered on tertiary institutions' in the sample in the sampled institutions. 225 Questionnaires were distributed to Benue State University respondents who's their institution is located in zone B, 75 questionnaires to College of Education Katsina-Ala located in zone A while 60 questionnaires were administered to College of Education Oju located in zone C of Benue State.

This distribution was done based on the results from the pre-survey and the questionnaires were administered base on the staff strength in these institutions. This shows that 360 questionnaires were distributed to the respondents (staffers of the institutions); however, only 348 of them were retrieved and analyzed. This result implied that Benue State University been the highest of institutions dominates the level of respondents, so as in access to the interventions among the institutions sampled, even though, other two institution sampled have a good representation of 37.5%. The result of retrieval status indicates that 218 out of 225 questionnaires were retrieval from Benue State University, 73 out of 75 from College Of Education Katsina Ala and 57 out of 60 were from College of Education, Oju, leaving 7% 2% and 3% for BSU, COE, Katsina -Ala and Oju respectively were not retrieved. This shows a retrieval of 96.7 and non – retrieval of 3.3% from the three institutions sampled in the State. This information is used in answering questions in relation to table 4.10 below.

Table 4.10: The Problems Militating Against the Achievement of the Objective(s) of TETFund to Public Tertiary Education Development in Benue State

S/N	Problems	Frequency	Percentage (%)
i.	Inadequate Funds/Alternating Method	348	100.0
ii.	Inadequate Manpower	342	99.7
iii.	Inadequate Supervision of Projects	337	98.3
iv.	Poor Maintenance Habit	289	84.3
v.	Inadequate Awareness/Publicity	286	83.4
vi.	Concentration of Powers At Centre	248	72.3
vii.	Delays in Releasing Second Tranches	245	71.4
viii.	Misconception of Conferences and Workshop	229	66.8

Source: Researcher's Field Survey, 2026

i. The major problem in accomplishing the set objectives of TETFund is inadequate funds/alternating method. Tertiary education requires a lot of capital to finance its operations and to support future productions. Education Trust Fund is one way in attending to their needs through streams of interventions lined up. However, respondents were of the opinion that, the funds allocated to the development of tertiary education in Nigeria is still far from been adequate in taking care of her infrastructure and human resource development. This is in terms of the ratio of income allocated to a particular intervention in relation to the overall demand at a particular time. This particular puzzle receives 348 (100%) of the quality response from the investigations. These submissions are not denying of the fact that government does not have a financial role to play in the development of their conceived and established institutions, but rather buttressing the fact that public tertiary institutions may be 'glory of their shadow' if left to the budgetary provisions of government without these special interventions.

ii. Another challenge in addition to funding is that of the seemed inadequate manpower with a response of 342 (99.7%). The respondents were of the submissions that the agency may be having a serious problem of staff shortage at the headquarters and various institutions, thereby given rise to unnecessary delays in releasing benefits to various beneficiaries timely. In fact, this problem had dissolved into the entire system making it to be sometimes weak, unresponsive and non-receptive. Even when such manpower does exist, the experience and exposure of some is questionable.

iii. Similarly, the result of inadequate manpower gave rise to inadequate supervision of projects (human & physical). The qualified (technical) staff that should have been at hand to make sure that the set quality is achieved most at times are lacking and even when available are far from the site and grossly inadequate based on projects spread. The responses here was up to 337 (98.3%) falling within a critical high region suggesting that if projects are adequately supervised, the quality will be achieved and hence the sustained high-quality impact.

iv. There is also poor maintenance culture exhibited by TETFund as seen in all of them projects as submitted by respondents totaling up to 289 (84.3%). It also confirmed from the visits made to the intervened institutions that projects that were intervened by agency since year 1999 are in dilapidated states without seem commitment of revival, repair or rehabilitation.

v. Information remains a fundamental key to the success and acceptability of any policy, be it public or private. TETFund with all of her programmes of interventions is still novel to the hearing of many; talk less of benefitting from it. Perhaps, this must have been an account of inadequate awareness created and publicity so denied the expected beneficiaries as

submitted by 286 (83.4%) respondents. Capital (skill) is been acquired by many in tertiary institutions through self-help initiatives owing partly to the non-awareness of opportunities been provided by TETFund.

vi. A total number of 248 (72.3%) were opinion that there is seemingly concentration of formulation and implementation power/policies at the centre thereby neglecting the bottom-top approach advocated by many in realization of modern developmental goals. This particular problem has gone back to metamorphous itself into denial of adequate dispensation of policies and programmes by relevant constituents (stake holders) of the agency. It also affects a reliable feedback, delays supervision and non-accessibility of many interventions floated by the agency (Fund)

vii. Making reference to the above point-concentration of powers at centre (headquarters), it leads to delay of a sort mostly when it comes to releasing the 2nd tranches of intervention to various institutions as it can only be possible when projects are adequately supervised and certified before further release are made hence becoming difficult. Many were of complaint that every bit of approval has to be taken from Abuja which a time neglects timely attention or even outright stoppage or taking of unilateral decisions against benefiting institutions or persons. This problem even though 7th position in rating, it enjoys 245 (71.4%) of responses.

viii. There is a growing concerned among respondents that even the Fund itself tends to misconstrued/misjudged the relevance of conference attendance and workshop. The relevance of such academic attendance should be properly examined on the ground of the multiplier effect that may be generated. In fact, knowledge in itself is interwoven rather than concentration on one against another as in this case. These views accounted for 229 (66.8%) of the challenges chart.

4.5 Discussion of findings

This study examined TETFund's contribution to tertiary education development in Benue State. Descriptive statistics were used to identify intervention trends, while Analysis of Covariance (ANCOVA) and a Generalized Linear Model (GLM) were applied to assess effects on infrastructure and staff development.

The findings show that interventions in the sampled institutions began in 1999 and covered both infrastructure and academic support. Infrastructure projects included classrooms, hostels, offices, ICT facilities, sports facilities, laboratories, electricity, water supply, lecture halls and libraries. Academic support included Academic Staff Training and Development (AST&D), conferences and workshops, publications, research, entrepreneurship and teaching practice. The reported percentage increases in interventions were 37.88% for Benue State University, Makurdi; 42.88% for College of Education, Katsina-Ala; and 19.46% for College of Education, Oju. These differences reflect varying institutional patterns of engagement with TETFund over time. The findings also revealed disparities in allocations and in institutions' ability to access them. Benue State University, for example, did not access all its allocations, resulting in some yearly funds being merged. This was associated with difficulties in meeting operational requirements, following procedures and due process, and having the analytical and technical capacity to prepare intervention requests. These findings align with TETFund's (2014) identification of bottlenecks and delays in implementing interventions. The study also found that, following the 2011 TETFund Act and the Fund's withdrawal from basic and secondary education, allocations to tertiary institutions increased. However, annual allocations fluctuated where institutions did not meet assessment conditions or complete projects from earlier years. Together, these findings suggest that access and implementation capacity influence how much support institutions can use.

For infrastructure development, the homogeneity test was not significant ($p = 0.117 > 0.05$), so the assumption of equal variance was retained and institutions were analyzed collectively. After

the initial model produced a low R^2, the researchers used a GLM specification. The model showed a significant positive effect of TETFund intervention ($F = 42.718$, $p < 0.001$), with 51.2% of the variation in infrastructure development accounted for by the interventions.

TETFund also had a significant positive effect on staff development. Following the homogeneity assessment, the GLM results showed $F = 18.153$ and $p < 0.001$. The adjusted R^2 of 54.1% indicated that the intervention accounted for a substantial share of variation in staff development across the sampled institutions. This finding differs from Onwuchekwa (2016), who found no significant TETFund influence on educational research in South-East Nigeria. However, it agrees with Onyeizugbe, Obiageli and Igbodo (2016), who reported a positive relationship between intervention training and academic staff advancement. It also reflects God'stime and Uchechi's (2014) view that human-capital development supports sustainable development and improved economic performance.

The study further identified challenges affecting TETFund's objectives in Benue State institutions. Questionnaire responses highlighted inadequate funding and manpower, insufficient supervision of funded projects, poor maintenance of existing and completed facilities, low awareness of interventions, centralized decision-making, delays, and misunderstandings concerning conferences and workshops. These challenges point to the need for better communication, timely processing, stronger project oversight and maintenance, and sufficient institutional capacity. The pattern suggests that allocation totals alone do not determine institutional gains: timely access, compliance with guidelines, skilled personnel, transparent procurement, and ongoing maintenance all shape whether funding translates into lasting improvements for staff and students. Overall, the results support the alternative hypothesis: TETFund interventions had significant positive effects on infrastructure and staff development in the sampled Benue State institutions. The findings also show that these benefits depend partly on institutions' ability to access, implement and maintain interventions effectively.

5.0 Recommendations

Based on the study's findings, the following steps were recommended:

1. Review the education tax rate. The Federal Government should review the current 2% education tax and consider raising it gradually to at least 4%, after assessing the likely economic and financial effects. Additional revenue could help TETFund respond to growing enrolments, infrastructure needs and the cost of training academic staff in Nigeria and abroad. Clear reporting should show how the extra funds are allocated and used.
2. Make funding more predictable for institutions. TETFund should review allocation practices that leave some institutions without regular annual support. Where funds allow, eligible institutions should receive consistent allocations based on clear criteria, such as enrolment, infrastructure needs, previous funding and project progress. More reliable funding would help institutions plan ahead and complete projects. The experiences of the Colleges of Education in Katsina-Ala and Oju point to the value of a consistent approach that gives institutions a fair opportunity to benefit.
3. Improve TETFund's support and oversight. TETFund should equip the staff who manage interventions with the training and resources they need to address implementation problems. It should also provide beneficiary institutions with clear, timely guidance, monitor projects regularly and require transparent reporting on the use of funds. These steps can help reduce delays, ensure projects are completed and maintained, and strengthen the contribution of TETFund to staff and infrastructure development.

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