



The Effect of Optimal Tax Revenue Utilization on Bridging Infrastructural Deficits in Nigeria: Empirical Evidence of South West Nigeria

Ayooluwa Olotu Ajayi-Owoeye¹, Michael Oludare Oladiran Ajala¹, Theophilus Anaekenwa Aguguom^{2*}, Emmanuel Dare Otitolaiye¹

¹Department of Accounting, Babcock University, Ogun State, Nigeria, ²Accounting and Finance Department, Augustine University, Ilara-Epe, Lagos State, Nigeria. *Email: theophilus.aguguom@augustineuniversity.edu.ng

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ABSTRACT

Bridging infrastructural deficits remains a critical investment pathway for emerging economies in achieving sustainable growth. However, studies linking optimal tax revenue utilization to bridging infrastructural deficits (BIDs) are limited in developing countries, particularly Nigeria. This study seeks to fill this gap by examining the effect of optimal tax revenue utilization on infrastructural development in South West Nigeria. The study adopted a survey research design and employed a structured questionnaire administered to taxpayers across the six states of the region. Using Taro Yamane formula, a sample size of 400 respondents was determined. The validity and reliability of the instrument were confirmed through Cronbach Alpha, KMO, and Bartlett tests. A total of 98.5% of the questionnaires distributed via Google platform were retrieved and validated for analysis. Descriptive statistics revealed that most respondents agreed that optimal tax revenue utilization positively influences BIDs. Regression analysis further showed a significant joint effect of optimal tax revenue utilization on BIDs. The study concluded that effective utilization of tax revenue enhances infrastructural development in South West Nigeria. This paper contributes novel evidence by demonstrating the role of tax revenue optimization in reducing infrastructural gaps and creating investment opportunities in emerging economies like Nigeria.

Keywords: Bridging Infrastructural Deficit, Improved Standards of Living, Infrastructural Investments, Infant Mortality Reduction, Reduction in Unemployment

JEL Classifications: H54, E 22, R53

1. INTRODUCTION

Globally, countries can never survive economically without adequate responses from their taxpayers. Optimal tax revenue utilization is desirable and plays a pivotal role in developing economies and particularly in the Nigerian economy. When tax revenue is properly channeled into productive investments like infrastructure, provision of quality healthcare facilities, education, and security, which are key factors in stimulating economic activities, growth, and improvement in the standard of living of the citizens. Optimal utilization of tax revenue reduces

overdependence on external borrowing and volatility of oil sales revenue and also assists the government in financing its annual budgets, strengthens fiscal stability, and builds public trust in governance. Ackom (2023) posited that when optimal tax revenue utilization is practiced and there is evidence of tax transparency and efficient spending, it inspires voluntary tax compliance from the taxpayers, attracts foreign direct investments, and equally supports sustainable development and positions the economy on the trajectory of long-term growth and competitiveness. Incidentally, optimal tax revenue utilization is one of the complex and problematic typical issues among developing and emerging

economies because of perceived tax injustice, lack of transparency, accountability, and lack of optimal utilization of tax revenue, equity, and fairness in tax administration that could stimulate (Ekeocha et al., 2022).

According to Olugbenga et al. (2022), the issue of optimal tax revenue utilization is predominant among developing economies, and there is insufficient evidence demonstrating an expected attitude toward optimal tax revenue utilization in Nigeria, as there is an obvious perceived tax injustice, corruption and non-remittances of tax revenue collections, and an obvious absence of optimal utilization of tax revenue over the years by successive governments. Some prior studies by Chukwuebuka and Jisike (2020) and Ebimobowei (2023) tend to point to some anomalies in tax administration. The extent and level of tax injustice, weak tax probity, lack of accountability, and absence of social contract practices in Nigeria have been advanced as possible factors affecting optimal tax revenue utilization, and these factors are worth researching and are one of the motivating forces for this study (Adebisi et al., 2022). Possibilities of huge tax disincentives, complications in Nigerian tax laws, and tax unfairness are greatly impeding optimal tax revenue utilization in Nigeria. Governments at all levels depend essentially on optimal tax revenue utilization from the taxpayers, and optimal tax revenue utilization has been an impediment to effective optimal tax revenue utilization (Ebimobowei, 2023). The issue of optimal tax revenue utilization in developing economies has been discussed extensively, and opinions are divided among taxpayers and other stakeholders as to one of the possible causes of noncompliance in a country like Nigeria.

Previous studies have made commendable attempts to research the problem of optimal tax revenue utilization in Nigeria, yet the problems of optimal tax revenue utilization among taxpayers in South West Nigeria have become a typical issue, and the problem still subsists. For instance, the studies of Chukwuebuka and Jisike (2020); Ayeni et al. (2020); Amaeshi et al. (2020) have at various times made efforts to proffer solutions to the lingering problems of optimal tax revenue utilization in Nigeria. Notwithstanding, the problem of optimal tax revenue utilization in Nigeria has become such a complex and problematic researchable issue, creating a wide space for justification for more studies in search of possible solutions, and this tends to justify the need for this current study.

It is observed that voluntary optimal tax revenue utilization in Nigeria has declined, with many taxpayers showing reluctance to fulfill their tax obligations for several reasons. First, there are reports of corruption and unethical practices among the government officials, and tax revenue has been diverted to private pockets (Azende and Ganyyam, 2020). Secondly, taxpayers generally lack adequate education and awareness of their civic responsibility regarding the optimal utilization of tax revenue. Third, tax awareness remains insufficient in Nigeria, where some citizens do not fully understand that tax payment is a legal obligation owed to the state to finance public projects. Fourth, persistent issues of tax injustice, coupled with a lack of transparency and accountability, have created significant disincentives.

Over the years, the perception that government has not effectively utilized tax revenues for infrastructural development and citizens' welfare has further weakened compliance (Oladipo et al., 2022; Adam, 2020). Amadi and Alolote (2020) indicated that the problems of optimal tax revenue utilization in Nigeria require a holistic approach, and more studies considering the heterogeneity of the problem need a strong empirical solution. Adebisi et al. (2022) submitted that despite some previous studies, it has never been easy persuading taxpayers to comply with tax laws and regulations of the tax system, in the midst of taxpayers' lack of clear understanding of the dynamics of the Nigerian tax system, taxpayers' inability to understand their tax obligations, the prevailing level of tax injustice, and non-utilization of tax revenue (Amaeshi et al., 2020; Amadi and Alolote, 2020; Ayeni et al., 2020; Chukwuebuka and Jisike, 2020). It is obvious that taxpayers in Lagos, Osun, Ogun, Oyo, Ondo, and Ekiti need tax education and compliance awareness as an integral roadmap to the solution to optimal tax revenue utilization in Nigeria (Emmanuel and Ibrahim, 2020).

While there is a good number of studies that have made attempts at considering the problem of optimal tax revenue utilization in Nigeria, the problems of optimal tax revenue utilization in Nigeria are increasingly disturbing and desire further empirical studies, and this is one of the justifications for this study. Moreover, the researcher was motivated to embark, having seen the importance of tax revenue and the uncompromising attitude of taxpayers as well as growing tax injustice, lack of accountability of tax revenue, dilapidated infrastructure, and infrastructural deficits in the face of reported misappropriation and monumental corruption cases by government officials in Nigeria. However, the significance of increasing the tax net has become obvious, considering the increasing need for more tax revenue to improve government income, and apparently, optimal tax revenue utilization seems key. Amadi and Alolote (2020) and Ayeni et al. (2020) have not conclusively done adequate research to have improved optimal tax revenue utilization in Nigeria. Divergences and mixed opinions seem to have shown that optimal tax revenue utilization could be improved when there is optimal utilization of tax revenue, equity, and fairness in the use of tax revenues in Nigeria (Adebisi et al., 2022). This study was motivated to contribute to the existing knowledge in search of solutions to the problem of optimal tax revenue utilization in Nigeria.

Considering a dearth of sufficient empirical evidence of the effect of optimal tax revenue utilization on bridging infrastructural deficits in South West Nigeria, this study provides a novel study to fill this gap in the literature. The need for tax revenue to complement the other revenue channels in the Nigerian government funding and a study in this direction capable of enhancing optimal tax revenue utilization in Nigeria at this time and period are considered important. While vast studies have been carried out on optimal tax revenue utilization, the implications and challenges of optimal tax revenue utilization have been under-researched, creating gaps in the literature. Optimal tax revenue utilization is a global concern, as vast studies have been made researching the solution to the complexities and problematic nature of taxpayers' perceptions in relation to optimal tax revenue utilization. It is quite disturbing the

increasing tax evasion among corporate taxpayers (Di Gioacchino and Fichera, 2022). Notwithstanding, the problem of optimal tax revenue utilization in Nigeria has remained a complex and contentious issue that the existing studies have not exhausted (Olaoye and Agugum, 2018; Emmanuel and Ibrahim, 2020; Adebisi et al., 2022; Oladipo et al., 2022). Therefore, in addressing the problem of optimal tax revenue utilization in Nigeria and improving tax revenue, considering the increasing population of the nation and increasing government financial obligations, this study became imperative.

Therefore, to contribute to existing knowledge and fill gaps in the problem of optimal tax revenue utilization in Nigeria, this study proposed and actually investigated the effect of the optimization of tax revenue on optimal tax revenue utilization in South West Nigeria. The studies articulated above did not cover the entire South West States of Nigeria, which is the focus of this study.

The rest were considered in this manner: In section two, the study presented a literature review, and methodology in section 3. Data analysis, results, and discussion of findings were considered in section 4, and conclusions, recommendations, and suggestions for further studies were provided in section 5 of the study.

2. LITERATURE REVIEW

Bridging infrastructural deficits in Nigeria is highly desirable considering the unprecedented growing infrastructural deficits and this worrisome anomaly had hindered economic growth of Nigeria (Olugbenga et al., 2022). Bridging infrastructural deficits entails effective deployment and investment of tax revenue to close gaps in crucial facilities like roads, stable and reliable electricity, and water and transport system. In the South West Nigeria, infrastructures are grossly inadequate, optimal utilization of tax revenue tend to accelerate development and ease the cost of running business activities and improve connectivity in Nigeria (Ekeocha et al., 2022). Studies have shown that there is a correlation between bridging infrastructural deficits and economic development of countries, suggesting pivotal role of bridging infrastructural deficits in Nigeria.

Optimal tax revenue utilization refers to the ability of the government and tax administrators to persistently demonstrate efficiency, transparency and accountability of collected tax revenue from taxpayers to productive investments capable of stimulating a sustainable economic growth and provide essential services like infrastructures, healthcare, quality and affordable education, security and social welfare for the populace (Accinelli and Sánchez-Carrera, 2022). According to studies, optimal tax revenue utilization creates opportunities that will allow citizens maximize earn a decent living standard and allow a condition that maximizes public benefits, enhances sustainable development and enhances economic growth and stability (Alshirah et al., 2021; Bani-Khalid et al., 2022). Carsamer and Abbam (2020) indicated that optimal tax revenue utilization reflects prudent management of a country fiscal resources to generate the highest possible opportunities for businesses, social welfare and economic benefits for the people.

2.1. Optimal Tax Revenue Utilization

2.1.1. *Quality infrastructure investments*

Quality infrastructural investments entails effective allocating of tax revenue to productive investment capable of executing durable, well-thought-out and sustainable projects that are meant to meet international best standards (Chukwuebuka and Jisike, 2020; Ebimobowei, 2023). Quality infrastructural investments is associated with ensuring quality and durable roads, standard and affordable schools capable reducing the rate of school dropouts, good hospital facilities and stable power system (Emmanuel and Ibrahim, 2020; Oladipo et al., 2022). The presence of these key infrastructure's investments ensure reduction of doing business, waste of public funds and provision of long-term value chain creation in the country. Based on these viewpoints, we are expecting the following relationship:

Hypothesis 1 (H_{1a}): Quality infrastructures investments has a significant effect on bridging infrastructural deficits (BIDs) in South West Nigeria

2.1.2. *Improved standards of living*

Improved standards of living are greatly enhanced when there are evidence of optimal tax revenue utilization. Studies have shown that improved standards of living is a reflection of sufficient investments in welfare related and economic stimulating factors by the government (Alstadsaeter et al., 2022; Bogetic et al., 2022). In the Nigerian economic space, this deciphers into better governance, access to essential amenities, and other public goods, reduction of income inequalities, reduction in poverty levels and improved economic opportunities for the people and households (Olugbenga et al., 2022; Amadi and Alolote, 2020). Based on this literature, the study expects the following relationship:

Hypothesis 1 (H_{1b}): Improved standards of living has a significant effect on BIDs in South West Nigeria.

2.1.3. *Infant mortality reduction*

Infant mortality reduction is concerned with deliberate efforts and possible government policies targeted at reducing the number of deaths of children within the age bracket of below 1 year/1,000 live births within a given population of a country (Coster and Voorhout, 2022). Infant mortality reduction is enhanced when there is improved access to quality healthcare, maternal care, sustainable immunization, nutrition, clean water and sanitation that promotes survival and health condition of newborns. Similarly, Cahyonowati et al. (2023); Brun et al. (2022) researched indicated that optimal tax revenue is closely related with improved mortality reduction, reflecting that infant mortality reduction is highly important since the country has historically recorded high rates of infant deaths as a result of preventable causes like malaria, pneumonia, malnutrition and inadequate access to healthcare facilities. Based on prior studies, the study expects the following relationship:

Hypothesis 1 (H_{1c}): Infant mortality reduction has a significant positive effect on BIDs in South West Nigeria.

2.1.4. *Reduction in unemployment*

Reduction in unemployment entails few unemployment refers to a declining the number of people who are willing and able to work but cannot find jobs, through the creation of sustainable employment opportunities and economic growth (Ebimobowei, 2023; Agugum,

2019). It shows a positive effect of optimal tax revenue utilization. In Nigeria, there are evidence of unprecedented high unemployment rate and growing school dropouts and the South West states in Nigeria are greatly affected (Ayeni et al., 2020; Ejemai et al., 2020). Furthermore, Flachaire and Vigorito (2022) pointed that there a correlation between reduction in unemployment and bridging infrastructural deficits, while Hassan et al. (2021); Freytag and Spiegel (2022) assert that countries that aimed closing infrastructural gaps increase the possible reduction in unemployment rate. Based these perspectives, this study expects the following relationship:

Hypothesis 1 (H_{1a}): Reduction in unemployment has a significant positive effect on BIDs in South West Nigeria.

3. DATA AND METHODOLOGY

3.1. Research Design and Data Collection

This study examines the effect of optimal tax revenue utilization on bridging infrastructural deficits in Nigeria. The study employed a survey research design, using a structured questionnaire as the research instrument. The scope of this study covered a wider spectrum of stakeholders in relation to tax revenue and the extent of optimal utilization in the selected states. A total population of 1,232,451 taxpayers in the six South West States of Lagos, Osun, Ogun, Oyo, Ekiti, and Ondo States were used for the study. Using the Taro Yamane formula, a total of 400 respondents were selected from the six states. The 400 taxpayers from the states were the target in Lagos State, Osun State, Ogun State, Oyo State, Ekiti State, and Ondo State. They were obtained using Taro Yamane's (1967) formula, which was adopted to arrive at the sample size that had been proposed for this study.

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

Where:

n = sample size

N = Population size

α = level of significance

$$n = \frac{1,232,451}{1 + 1,232,451(0.05)^2}$$

$n = 399.16 \approx 400$ Respondents

3.2. Method of Data Collection

In this study, primary sourced data formed the sources of data that were collected through the distribution of structured copies of the questionnaire online (soft copy) using Monkey Survey. The online method was adopted as data were administered through a Google survey. The directories of the taxpayers as obtained on the websites of the states' Internal Revenue Services were helpful in accessing the taxpayers via WhatsApp. The choice of the structured questionnaire was justified, as it helped in the collection of opinion-based data for the sake of originality.

3.3. Research Instrument

The instrument that was deployed in gathering data for this study was a structured questionnaire, which contained a reasonable

number of questions and was divided into three different sections, with each section containing questionnaire items that treated a variable out of the many variables to be examined in this study. More specifically, the copies of the questionnaire were divided into three sections: A, B, and C. Section A covered the information about the respondent's bio-data, which included age, gender, marital status, highest level of education, professional qualification, and work experience. Section B focused on questions that were related to organizational profile and engagement. The section covers the rank, tax experience of the respondents, and role. Section C also elicited responses that answered the research questions of the study. The section covered questions on enabling and simplified tax laws, timely tax filing and returns, bridging infrastructural deficits, addressing the decline in tax audits and investigations, optimal utilization of tax revenue, equity and fairness, quality infrastructural investments, improved standards of living, infant mortality, reduction in unemployment, transparency and accountability, and tax justice. In addition, the study employed Likert Scale: Strongly Agree (SA); Agree (A); Undecided (U); Disagree (D); Strongly Disagree (SD), with a Mean value: SA (5), A (4), U (3), SD (2), D (1).

3.4. Validity and Reliability of Research Instrument

3.4.1. Validity of research instrument

The questionnaire used in this study contained clear and direct questions. In addition, the questionnaire was subjected to the face validity test by presenting the scale items to other tax officers at different levels regarded as experts as a result of the activeness of tax revenue in solving many optimal tax revenue utilization-related challenges in Nigeria. Furthermore, a draft of the questionnaire was sent to accountants and auditors with expertise in the area of taxation. The experts in statistical technique and research were not left out. These stages were proposed to elicit the comments of the above experts, generally regarding the wording, sequence, and structure of the questionnaire.

3.4.2. Reliability of the research instrument

In pursuance of the reliability of the research instrument for this study, a test of internal consistency was conducted on the copies of the questionnaire retrieved using the "Cronbach Alpha reliability analysis" with the aid of a suitable statistical tool like Statistical Package for Science Solutions. A pilot study was carried out to ensure the reliability of the research instrument. The pretest was considered necessary to allow the researcher to have foreknowledge of the possible reactions of the respondents, to ascertain the willingness of the respondents, to ensure consistency, and to confirm the reliability of the instrument and the questionnaire when used in the main study. The study presents reliability test in Table 1:

The collected data was coded into the IBM Statistical Package for Service Solution (IBM SPSS) and Cronbach's Alpha coefficient obtained for all the variables was found to be above the acceptable limit of 0.7. Since 0.7 was long-established by Warithaka (2012) to be an acceptable reliability coefficient. The results of the pilot testing indicated that the instrument was reliable since each of the variables Cronbach's Alpha obtained was above 0.70.

3.4.3. KMO and Bartlett tests

Also, KMO and Bartlett tests were carried out on the same administered copies of copies of questionnaire and the results were presented in Table 2.

In Table 2, the computed KMO values range from 0.717 to 0.815: these KMO values were provided in the Table 2 and this showed 0.7 (>0.7) and Bartlett tests results obtained were all significant at 5% significance level (Sig. <0.05) affirming the adequacy of the data.

3.5. Model Specifications

3.5.1. Dependent variable

The study employs bridging infrastructural deficits (BIDF) as the dependent variable of the study.

3.5.2. Independent variables

This study employed optimal tax revenue utilization as the independent variable of the study and the measuring proxies are quality infrastructural investments (QIFI), improved standards of living (ISL), infant mortality reduction (IFM), and reduction in unemployment (RUE). The model specification is given as:

Functional relationship

$$Y = f(X) \quad (1)$$

$$BIDF = f(QIFI, ISL, IFM, RUE) \quad (2)$$

The regression model was econometrically transformed as follows:

$$Y_i = \alpha_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_n x_{in} + \mu_i \quad (3)$$

Y was the dependent variable, α_0 was the intercept, and β_1 was the slope that explained the percentage change in the dependent variable due change in the independent variable. X was the

independent variable, i = cross sectional, and μ represented the error term.

$$BIDF = \alpha_0 + \beta_1 QIFI_i + \beta_2 ISL_i + \beta_3 IFM_i + \beta_4 RUE_i + \mu_i \quad (4)$$

Where:

BIDF: Bridging infrastructural deficit, QIFI: Quality infrastructural investments, ISL: Improved standards of living, IFM: Infant mortality reduction, RUE: Reduction in unemployment.

4. DATA ANALYSIS AND EMPIRICAL RESULTS

4.1. Descriptive Statistics

4.1.1. Histogram for normality test

To test for normality, the histogram was used to access the normality of the model as shown in Figures 1 and 2.

The histogram plots showed the normality test, which indicated that the residuals were normally distributed and had a goodness of fit as indicated by the bell-shaped diagram. The P-P plot also indicated that the points were arranged along the diagonal line. The Normal P-P plots showed the linearity, which implied that the predictor variables (Quality Infrastructural Investments, Improved Standards of Living, Infant Mortality Rate Reduction, Reduction in Unemployment) had a straight-line relationship with all the outcome variable (Bridging Infrastructural Deficits through in accurate tax computations and assessment (ATCA)).

4.1.2. Result of multicollinearity test

This subsection focused on a meticulous examination of collinearity statistics. The analysis focuses on assessing multicollinearity among independent variables (tax justice indicators). Multicollinearity is a condition where independent variables in a regression model are highly correlated, posing challenges to the stability and interpretability of the estimated coefficients. The tolerance and variance inflation factor (VIF) values are employed as key indicators to evaluate the degree of

Table 1: Reliability test

Variables	No of items	Cronbach's Alpha
Bridging infrastructural deficits	6	0.929
Quality of infrastructural investment	6	0.919
Improved standard of living	6	0.935
Infant mortality	6	0.919
Reduction in unemployment	6	0.894

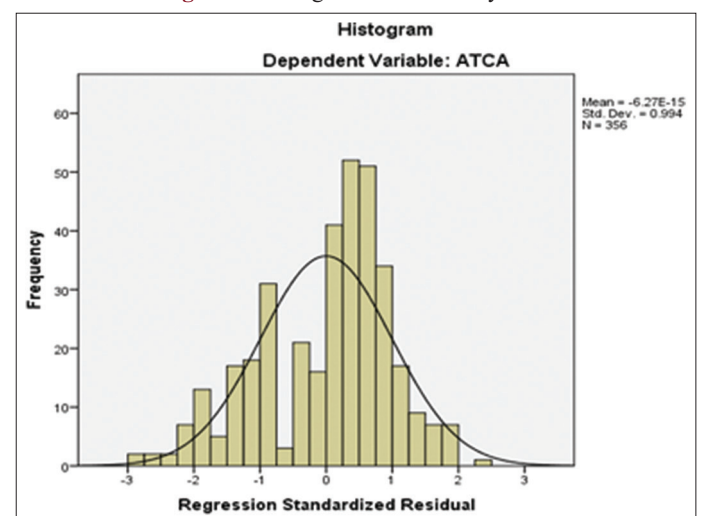
Source: Researcher's study, (2025). BIDF: Bridging infrastructural deficits, QIFI: Quality infrastructural investments, ISL: Improved standards of living, IFM: Infant mortality reduction, RUE: Reduction in Unemployment. @Chosen Significant level of 5%

Table 2: KMO and bartlett tests

Variables	No of items	KMO	Bartlett test Chi-square (significance)
Bridging infrastructural deficits	6	0.717	199.991 (0.000)
Quality of infrastructural investment	6	0.754	157.094 (0.000)
Improved standard of living	6	0.710	210.020 (0.000)
Infant mortality	6	0.730	232.107 (0.000)
Reduction in unemployment	6	0.815	154.422 (0.000)

Source: Researcher's study, (2025)

Figure 1: Histogram for Normality Test.



multicollinearity. Tolerance values close to zero and VIF values exceeding a certain threshold (typically 10) are indicative of heightened multicollinearity concerns. The study presents result of multicollinearity in Table 3.

Table 3 presented the results of the multicollinearity test, which revealed that the VIF values of all the independent sub-variables viral marketing were <10 (VIF <10) which showed that there was no case of severe multicollinearity issues.

4.1.3. Result of homoscedasticity test

The study presents scatter plot for homoscedasticity test in Figure 3.

The scatterplot revealed no exact or systematic pattern, thereby signifying the normality of the residuals and the constant variance.

Figure 2: Normal P-P plot of Regression Standard residue

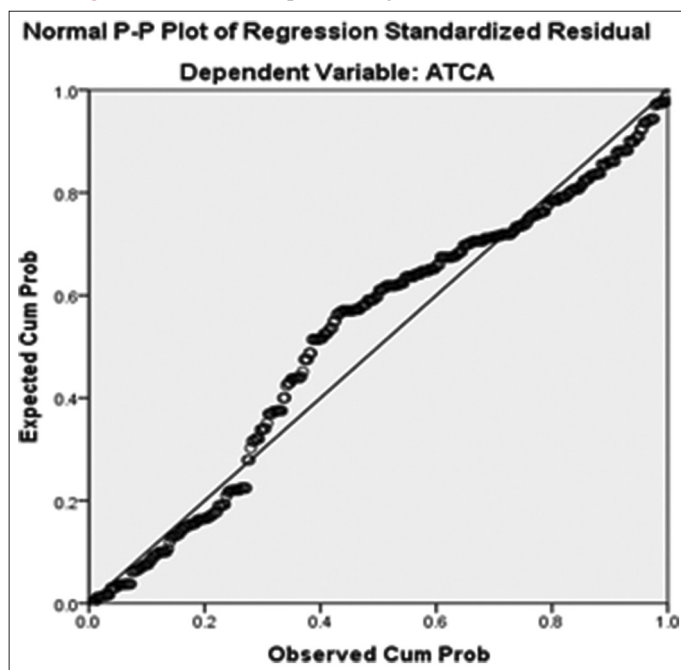
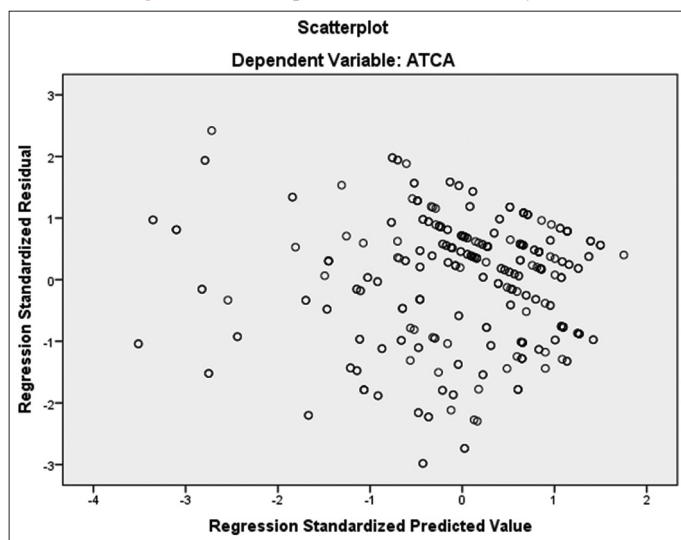


Figure 3: Scatter plot for homoscedasticity test



Source: Author's computation (2025)

This confirmed that the model is homoscedastic.

4.2. Respondents' Responses

4.2.1. Respondents' demographics characteristics

In this subsection, a detailed breakdown of respondents' characteristics, providing all-inclusive view of the sample individuals in terms of gender, age, marital status, educational status, Professional qualifications, work experience and other relevant information. These work as a crucial basis for understanding the composition of the study participants, throwing light on likely patterns and variations that may influence the research outcomes.

4.2.1.1. Respondents' highest level of education

Table 4 displays the socio-demographic characteristics of respondents' highest level of education based on data from the survey conducted for the purpose of this study.

The analysis of respondents' highest level of education yielded interesting insights into the educational attainment within the sample. Notably, the majority of respondents, constituting 41.9%, held an HND/BSc degree, indicating a significant portion of individuals with undergraduate qualifications. Additionally, 27.5% reported possessing M.Sc/M.Phil degrees, reflecting a considerable number of individuals with postgraduate education. Interestingly, 7.3% of respondents held a Ph.D., suggesting a smaller yet notable presence of individuals with the highest academic qualification. Furthermore, 18.0% of respondents reported "Others" as their highest educational level, implying a diverse range of qualifications beyond those explicitly listed.

4.2.2. Respondents' professional qualifications

Table 5 displays the socio-demographic characteristics of respondents' professional qualifications based on data from the survey conducted for the purpose of this study.

Table 3: Result of multicollinearity test

Variables	Collinearity statistics	
	VIF	
QIFI	1.232	
ISL	1.045	
IM	7.135	
RUE	9.094	

Source: Author's computation, 2025; data from field survey. QIFI: Quality infrastructural investments, ISL: Improved standards of living, IFM: Infant mortality reduction, RUE: Reduction in unemployment

Table 4: Respondents' highest level of education

Variables	Frequency	Percent	Valid percent	Cumulative percent
Diploma/ND/NCE	19	5.3	5.3	Diploma/ND/NCE
HND/BSc	149	41.9	47.2	HND/BSc
M.Sc/M.Phil.	98	27.5	74.7	M.Sc/M.Phil.
PhD	26	7.3	82.0	PhD
Others	64	18.0	100.0	Others
Total	356	100.0		

Source: Author's computation, 2025; data from field survey

The analysis of respondents' professional qualifications revealed an interesting distribution within the sampled individual. Notably, the majority (68.0%) reported having qualifications other than ACA/FCA, ACCA/FCCA, ACMA/ACTI/FCTI. This suggested a diverse range of professional certifications beyond the specified categories. Conversely, 32.0% of respondents held one of the specified qualifications, including ACA/FCA, ACCA/FCCA. This indicated a significant portion of individuals with recognized professional designations within the accounting and finance domains.

4.2.3. Respondents' work experience

Table 6 displays the socio-demographic characteristics of respondents' Work experience based on data from the survey conducted for the purpose of this study.

The analysis of respondents' work experience provides insights into the distribution of work tenure. Remarkably, the largest proportion of respondents, constituting 39.3%, reported having worked for 6-9 years, indicating a substantial segment of individuals with moderate experience levels. Furthermore, 28.4% of respondents reported having 2-5 years of work experience, suggesting a significant portion of relatively early-career professionals. Additionally, 16.6% of respondents reported having <2 years of

work experience, while 15.7% indicated having 10 years or more of experience.

4.2.4. Respondents' responses to variable related questions

The descriptive analysis of the respondents' opinions was done in this section. This was achieved by firstly dealing with each independent variable, followed by the dependent variable that proffered answers to the research questions. The responses were based on a Six-point Likert scale coded with numerical values for ease of analysis. The values assigned were 6 for very high, 5 for high, 4 for moderately high, 3 for moderately low, 2 for low and 1 for very low. Interpretation of results was done using descriptive statistics such as percentages, and mean. The mean of the responses using a width of class interval was interpreted as follows: 5.50-6.00 implied very high, 4.50-5.49 implied high, 3.50-4.49 implied moderately high, 2.50-3.49 implied moderately low, 1.50-2.49 low, and 0.50-1.49 implied very low

4.2.5. Respondent responses on bridging infrastructural deficits

Table 7, the survey results regarding Bridging infrastructural deficits in Nigeria indicate a varied but generally positive perception among respondents regarding the factors influencing these processes.

While there is no unanimous agreement, a notable proportion of respondents expressed agreement (33.1-55.6%) with statements highlighting the potential impact of factors such as quality infrastructural investment, improved standard of living, and evidence of improved healthcare on enhancing Bridging infrastructural deficits. These findings suggested a recognition among respondents of the multifaceted nature of optimal tax revenue utilization and the role of socio-economic factors in influencing accuracy in tax assessment. Additionally, a significant percentage of respondents agreed (34.8-47.5%) with the proposition that transparency, accountability, and optimal use of tax revenue could contribute to improved accuracy in tax computation and assessment. This indicated a perceived importance of good governance practices and fiscal management in ensuring accurate tax assessment. While there were some respondents who expressed disagreement or uncertainty, the mean ratings for each statement ranged from 4 to 4. This suggested a moderate to strong agreement on average with the proposed statements, further highlighting the overall positive perception regarding the factors influencing bridging infrastructural deficits.

Table 5: Respondents' professional qualifications

Professional qualifications	Frequency	Percent	Cumulative percent
Valid			
ACA/FCA, ACCA/FCCA, ACMA/ACTI/FCTI	114	32.0	32.0
Others	242	68.0	100.0
Total	356	100.0	

Source: Author's computation, 2025; data from field survey

Table 6: Respondents' work experience

Years	Frequency	Percentage	Valid percent	Cumulative percent
<2 years	59	16.6	16.6	16.6
2-5 years	101	28.4	28.4	44.9
6-9 years	140	39.3	39.3	84.3
10 years and above	56	15.7	15.7	100.0
Total	356	100.0	100.0	

Source: Author's computation, 2025; data from field survey

Table 7: Respondents' responses on bridging infrastructural deficits

Variables	SD (%)	D (%)	U (%)	A (%)	SA (%)	$\bar{x}$	δ
Quality of infrastructural investment has the capacity of improving optimal tax revenue utilization in Nigeria.	2.2	10.1	18.3	36.2	33.1	3.88	1.05
Improved standard of living influences bridging infrastructural deficits in Nigeria.	0.0	5.1	19.9	27.5	47.5	4.17	0.92
Bridging infrastructural deficits can be improved when there is improved infant mortality as evidence of improved healthcare in Nigeria.	0.0	3.1	16.6	24.7	55.6	4.33	0.86
Transparency, accountability and optimal use of tax revenue could enhance Bridging infrastructural deficits in Nigeria.	2.2	10.7	18.3	34.0	34.8	3.88	1.07
Reduction in unemployment can improve bridging infrastructural deficits in Nigeria.	2.2	10.1	18.5	37.4	31.7	3.86	1.05
Tax justice could influence bridging infrastructural deficits in Nigeria	0.0	4.8	18.5	30.6	46.1	4.18	0.90
Overall mean						4.06	

Source: Author's computation, 2025; data from field survey

Table 8: Respondents' responses on quality of infrastructural investment

Variables	SD (%)	D (%)	U (%)	A (%)	SA (%)	$\bar{x}$	δ
To improve optimal tax revenue utilization, the quality of infrastructural investment can influence the reduction of tax evasion in Nigeria.	3.4	3.4	22.8	46.9	23.6	3.84	0.94
Effective optimal tax revenue utilization is enhanced when there is the quality of infrastructural investment affects enabling and simplifying tax laws in Nigeria.	0.0	2.8	9.3	32.0	55.9	4.41	0.77
Optimal tax revenue utilization can improve when the quality of infrastructure influences timely tax filing and returns in Nigeria.	0.6	4.2	27.5	30.3	37.4	4.00	0.93
Quality of infrastructural investment can enhance bridging infrastructural deficits when there is evidence of the quality of infrastructural investment in Nigeria.	8.1	6.7	19.1	32.9	33.1	3.76	1.21
Quality of infrastructural investment can impact optimal tax revenue utilization when there is a decline in tax audit and investigation costs in Nigeria.	4.2	9.6	19.1	21.6	45.5	3.95	1.19
Tax awareness avoidance and reduction in tax avoidance	0.6	4.2	27.2	31.2	36.8	3.99	0.93
Overall mean						3.92	

Source: Author's computation, 2025; data from field survey

In conclusion, the survey results underscored the recognition among respondents of the diverse factors that can influence the accuracy of tax computation and assessment in Nigeria. While opinions varied, there was a general acknowledgment of the importance of factors such as infrastructure, socio-economic development, governance, and tax justice in ensuring accuracy in tax assessment, essential for a fair and effective tax system.

4.2.6. Respondent responses on quality of infrastructural investment

In Table 8, the survey results regarding the influence of quality infrastructural investment on various aspects of optimal tax revenue utilization in Nigeria demonstrate a notable consensus among respondents.

The majority of respondents agreed (46.9-55.9%) that the quality of infrastructural investment could positively impact optimal tax revenue utilization by influencing factors such as the reduction of tax evasion, enabling and simplifying tax laws, timely tax filing and returns, Bridging infrastructural deficits, and the decline in tax audit and investigation costs. These findings suggested a recognition among respondents of the multifaceted role of infrastructure in shaping the tax environment and fostering compliance. Furthermore, while there were varying degrees of agreement across different statements, the mean ratings for each statement consistently fell within the range of 4, indicating a moderate to strong agreement on average with the proposed ideas. This suggested a general consensus among respondents regarding the importance of quality infrastructural investment in enhancing various aspects of optimal tax revenue utilization. To sum up, the survey results underscored the perceived significance of quality infrastructural investment in promoting optimal tax revenue utilization across different dimensions in Nigeria. The findings highlight the need for continued investment in infrastructure as a means to not only drive economic growth but also to create an environment conducive to optimal tax revenue utilization, ultimately contributing to sustainable development and fiscal stability.

4.3. Regression Analysis

This section presents the regression analysis of the effect of optimal tax revenue utilization on Bridging infrastructural deficits in South West Nigeria. The study presents the regression estimate for the model in Table 9.

Table 9: Regression estimate for the model

Variable	BIDF _i = $\alpha_0 + \beta_1 QIFI_i + \beta_2 ISL_i + \beta_3 IFM_i + \beta_4 RUE_i + \mu_i$			
	Coefficient	Standard error	T-statistic	Probability
(Constant)	1.382	0.509	2.713	0.007
QIFI	0.252	0.048	5.240	0.000
ISL	0.042	0.065	0.649	0.517
IFM	-0.121	0.080	-1.513	0.131
RUE	0.480	0.066	7.275	0.000
Adjusted R ²		0.277		
F-Stat (4, 351)		35.09 (0.00)		

Source: Survey data (2025). BIDF: Bridging infrastructural deficits, QIFI: Quality infrastructural investments, ISL: Improved standards of living, IFM: Infant mortality reduction, RUE: Reduction in unemployment. @Chosen Significant level of 5%

$$BIDF_i = \alpha_0 + \beta_1 QIFI_i + \beta_2 ISL_i + \beta_3 IFM_i + \beta_4 RUE_i + \mu_i$$

Therefore, the fitted model is given as:

$$BIDFi = 1.382 + 0.252QIFIi + 0.042ISLi - 0.121IFMi + 0.480RUEi$$

To begin, let's assess the statistical significance of the coefficients. Starting with QIFI, its coefficient is estimated at 0.252, with a standard error of 0.048 and a t-statistic of 5.240. The associated $P = 0.000$, which is less than the chosen significance level of 5%. Thus, QIFI is statistically significant in explaining BIDF at the 5% level. This implies that quality infrastructural investments positively affect bridging infrastructural deficits. Moving on to ISL, the coefficient is estimated at 0.042, with a standard error of 0.065 and a t-statistic of 0.649. The $P = 0.517$, indicating that ISL is not statistically significant in explaining BIDF at the 5% level. Therefore, there is insufficient evidence to suggest a significant relationship between improved standards of living and bridging infrastructural deficits. Next, IFM exhibits a coefficient of -0.121, with a standard error of 0.080 and a t-statistic of -1.513. The associated $P = 0.131$, which is greater than the chosen significance level of 5%. Consequently, IFM is not statistically significant in explaining BIDF at the 5% level. This suggested that there is no significant relationship between infant mortality reduction and bridging infrastructural deficits.

Furthermore, RUE demonstrates a statistically significant relationship with BIDF. The coefficient for RUE is 0.480, with a

standard error of 0.066 and a t-statistic of 7.275. The $P = 0.000$, indicating that RUE is highly statistically significant at the 5% level. Thus, reduction in unemployment significantly contributes to promoting bridging infrastructural deficits. For every one-unit decrease in unemployment, we expect BDF to increase by 0.480 units, holding other variables constant. The adjusted R-squared value, which is 0.277, indicated that approximately 27.7% of the variance in BDF is explained by the independent variables included in the model. While this value is not exceptionally high, it suggested a moderate degree of explanatory power for the included variables.

The model examined the effect of tax justice (optimal utilization of tax revenue on bridging infrastructural deficits in South West Nigeria). The regression revealed that the variables of QIFI and RUE had significant effects; however, the variables of ISL and IFM exhibited positive and insignificant effects. In addition, the joint statistics using the entire explanatory variables revealed a significant effect; hence, the study concluded that tax justice (optimal utilization of tax revenue) had a significant effect on bridging infrastructural deficits in South West Nigeria. This result was found to be in tandem with some other prior studies (Adebiyi et al., 2022; Ariyanto et al., 2020; Al-Rahamneh and Zainol, 2022; Amaning et al., 2021). On the contrary, the result was found not to be in tandem with some documented results in some studies (Ghazo et al., 2021; Accinelli and Sanchez-Carrera, 2022; Peprah et al., 2022; Freytag and Spiegel, 2022). The inconsistencies in the results obtained with some of the previous studies could be due to the environment where the studies were conducted. Also, the study employed continuous data, which were obtained at defined times and which addressed the situations surrounding the topic at the time when the data were gathered. The circumstances and situations of the economy change over time, as change is inevitable; this could cause the variations in the outcome of this study in respect to previous studies.

5. CONCLUSION, RECOMMENDATIONS, LIMITATIONS AND SUGGESTIONS FOR FURTHER STUDIES

This study examined the effect of optimal tax revenue utilization on bridging infrastructural deficits in South West States in Nigeria. The study explored survey research design, using structured questionnaires in obtaining data from a total of 400 taxpayers from the six states of Lagos, Osun, Ogun, Oyo, Ondo, and Ekiti that formed the study respondents. Results from the data analyses were mixed. From the descriptive statistics, while there is no unanimous agreement, a notable proportion of respondents expressed agreement (33.1-55.6%) with statements highlighting the potential impact of factors such as quality infrastructural investment, improved standard of living, and evidence of improved healthcare on enhancing bridging infrastructural deficits in the sampled states. In addition, the regression further revealed that each of the variables of quality infrastructural investments and reduction in unemployment had significant effects; however, the variable of improved standards of living and infant mortality exhibited

positive and insignificant effects. In addition, the joint statistics using the entire explanatory variables revealed a significant effect; hence, the study concluded that tax justice (optimal utilization of tax revenue) had a significant effect on bridging infrastructural deficits in West Nigeria.

The results have implications, suggesting that the governments of the affected states. The government's budget allocations aimed at enhancing infrastructural investments and reducing unemployment can significantly contribute to promoting high incentive for the taxpayers. Bridging infrastructural deficits, potentially improving optimal tax revenue utilization and revenue collection efforts. Also, the study equally revealed that quality infrastructural investments and reduction in unemployment are statistically significant predictors, while improved standards of living and infant mortality reduction do not exhibit statistical significance in explaining bridging infrastructural deficits. Optimal use of tax revenue aimed at enhancing infrastructural investments in each of the states will gain the state governors' approval and recognition by the stakeholders, and also, such efforts aimed at reducing unemployment can significantly contribute to increasing tax awareness and reducing tax avoidance, potentially improving optimal tax revenue utilization and revenue collection efforts.

Based on the findings, the study offers the following recommendations. The study recommends that tax consultants working for the states wherein they are in use should exercise a high level of competence and professionalism in rendering expertise services by rendering honest accounts and true remittances as collected on behalf of the states that engaged them. Also, the study recommends that policymakers should make impactful legislation that will mandate the effective budget implementations. Optimizing tax revenue aimed at improving standards of living and reducing infant mortality and unemployment can contribute significantly to promoting timely tax filing and returns, potentially enhancing tax compliance and revenue collection efforts. Similarly, the study recommends that all hands be on deck for contribution to the development of the states, since effective compliance with tax laws can increase tax revenue accruable to the states to enable the governors' executive capital investments for the benefit of all, reducing unemployment, improving health facilities, and enhancing standards of living for all the stakeholders in the states.

The study provides the following limitations and suggestions for further studies. This study provided a new insight into the existing academic research by analyzing the effect of tax justice on optimal tax revenue utilization, and while this contribution was made, the study had some limitations. Firstly, the study had strong limitations in obtaining true and actual taxpayer populations from each of the six states except Lagos State. Secondly, the level of tax injustice appeared obvious; it was extremely difficult to convince people to accept and fill out questionnaires, and this made the study harvest only a few respondents for this study. Fourthly, many studies of this nature were scarce, making sufficient and elaborate synthesizing of the results complex. Despite the limitations, the researcher developed resilience and strong courage in surmounting the problems. The study suggests that the scope of the study

should be expanded to include other states beyond the six states of South West, Nigeria selected for the study in future studies.

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