



EFFECT OF INTERNALLY GENERATED REVENUE ON BASIC EDUCATION SERVICE DELIVERY IN KADUNA STATE, NIGERIA

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Abstract

This study examines the effect of internally generated revenue (IGR) on basic education service delivery in Kaduna State, Nigeria. Despite significant fiscal reforms and IGR growth exceeding 70% between 2015 and 2020, the state continues to experience educational deficits including inadequate classroom infrastructure, teacher shortages, and poor learning outcomes. The study objectives were to: (i) examine the effect of IGR on education facility adequacy and teaching resources; (ii) assess the relationship between IGR performance and education service quality; and (iii) determine the extent to which IGR influences overall education service delivery in Kaduna State LGAs. A quantitative survey design was adopted, with structured questionnaires administered to 344 respondents across nine purposively selected Local Government Areas (LGAs) representing urban, semi-urban, and rural contexts. A composite index measuring education facility adequacy, teaching materials availability, teacher quality, student outcomes, and service accessibility was regressed against internally generated revenue (IGR) performance indicators using Linear Regression Analysis. The analysis revealed that IGR significantly and positively affects basic education service delivery, explaining 33.7% of the variance in education outcomes ($R^2 = 0.337, p < 0.001$), with a standardized coefficient of $\beta = 0.580$. For every one-unit increase in IGR performance, education service delivery improves by 0.652 units. Post-estimation diagnostics confirmed model validity (Variance Inflation Factor = 1.000), satisfying key regression assumptions. The study concludes that internally generated revenue is a critical determinant of education service quality at the grassroots level, with important implications for fiscal decentralization policy and education sector financing in Nigeria. Recommendations include strengthening revenue administration systems, establishing dedicated education financing mechanisms, and enhancing accountability structures to maximize IGR impact on education outcomes.

Keywords: internally generated revenue, primary education, service delivery, local government, fiscal decentralization, Kaduna State

1. Introduction

Basic education constitutes the foundation of human capital development, equipping children with essential literacy, numeracy, and cognitive skills that determine lifelong economic productivity and social mobility (Schultz, 2002). In Nigeria's governance structure, local governments bear constitutional responsibility for establishing, maintaining, and operating primary and junior secondary schools, making basic education central to grassroots service delivery (Constitution of the Federal Republic of Nigeria, 1999). The quality of basic education services are adequate infrastructure, qualified teachers, learning materials, and functional environments which directly shapes educational participation and outcomes for millions of children.

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Basic education financing in Nigeria involves multiple tiers. The Universal Basic Education (UBE) program provides federal grants to states and LGAs for infrastructure, teacher recruitment, and learning materials (Adelabu, 2019). However, LGA internally generated revenue (IGR) plays a crucial supplementary role, particularly for recurrent expenditures such as facility maintenance, furniture replacement, support staff salaries, and community engagement programs inadequately covered by UBE or state grants (Okoye, Nwankwo & Ugwu, 2021). IGR refers to all funds raised by local governments through taxes, levies, rates, licenses, fines, and service charges within their jurisdiction, distinct from statutory allocations from higher government tiers (Obiechina, 2020).

Kaduna State presents a compelling case for investigating the IGR to education relationship. Following reforms by the Kaduna State Internal Revenue Service (KADIRS), the state achieved over 70% IGR growth between 2015 and 2020, ranking among Nigeria's top five revenue-generating states (NBS, 2021). Yet educational deficits persist starkly; over 1.2 million out-of-school children (the second highest nationally), dilapidated school infrastructure, and pupil-teacher ratios exceeding 80:1 in rural LGAs against UNESCO's recommended 35:1 benchmark (UBEC, 2021; NBS, 2019). This paradox which is significant fiscal improvement alongside persistent educational inadequacy raises critical questions about resource prioritization, utilization efficiency, and structural barriers to effective service delivery. The objective of this study is to assess the effect of IGR on the provision of basic education in Kaduna State.

2. Literature Review

2.1 Conceptual Review

Internally Generated Revenue (IGR) refers to financial resources mobilized by local governments from within their jurisdiction through taxes, rates, levies, fees, and other legitimate charges authorized by law (Obiechina, 2020; Bahl & Bird, 2023). Unlike statutory allocations from federal or state governments, internally generated revenue (IGR) represents locally controlled revenue streams that provide LGAs with fiscal autonomy and predictability essential for effective service delivery (Adebayo, 2019; Fakile *et al.*, 2021; Nwosu & Okafor, 2023). Basic education encompasses primary and lower secondary schooling, constituting the foundation for lifelong learning and human capital development. In Nigeria's local government context, basic education service delivery encompasses facility infrastructure, teaching resource availability, teacher quality and deployment, curriculum implementation, student learning outcomes, and educational equity (Abimbola *et al.*, 2014; Ojo & Adeyemi, 2020).

The conceptual linkage between internally generated revenue (IGR) and basic education operates through multiple mechanisms. First, adequate IGR provides recurrent funding for essential education expenses including teacher salaries, teaching materials, facility maintenance, and utilities, addressing the persistent challenge of budget inadequacy in Nigerian primary schools (Abubakar, 2022; Ibrahim & Mohammed, 2022). Second, revenue autonomy enables local responsiveness, allowing LGAs to allocate resources according to community-specific education priorities rather than adhering to centrally determined formulas that often overlook local realities (Owusu-Sekyere & Vink, 2021; World Bank, 2022). Third, strong internally generated revenue (IGR) strengthens accountability mechanisms by creating direct linkages between citizen contributions and service delivery, potentially enhancing efficiency and reducing resource leakages common in externally dependent systems (Onuoha & Nwafor, 2018; Bahl & Bird, 2023).

2.2 Empirical Review

Recent empirical evidence demonstrates significant relationships between IGR and education service delivery across multiple African contexts. Ojo and Adeyemi (2020) found that Oyo State LGAs with higher IGR per capita demonstrated significantly better education infrastructure, including higher ratios of functional schools and superior teaching material availability ($r = 0.71$, $p < 0.001$). Ibrahim and Mohammed (2022) examined Kano State, finding that internally generated revenue (IGR) explained 38.6% of variance in education service quality ($R^2 = 0.386$, $\beta = 0.621$, $p < 0.001$). Adindu et al. (2021) reported strong correlations ($r = 0.68$, $p < 0.01$) between IGR and education service delivery in Rivers State. Internationally, Cantarero and Pascual (2008) demonstrated that fiscal decentralization in OECD countries was associated with improved education infrastructure and outcomes. Abásolo and Tsui (2020) analyzed 145 countries, finding that fiscal decentralization significantly improved education quality indicators, with effects strongest in jurisdictions with robust locally generated revenue and transparent governance structures.

However, significant gaps persist in the Nigerian literature. Most studies employ small samples or single-LGA designs, limiting generalizability across diverse geographical contexts (Abubakar, 2022). Additionally, education service delivery has been measured through narrow indicators rather than comprehensive indices capturing multiple dimensions including infrastructure, resources, teaching quality, and outcomes (World Bank, 2022). Few studies employ rigorous quantitative methods with proper diagnostic testing to ensure valid causal inference. This study addresses these gaps through large multi-LGA sampling, comprehensive education measurement via validated composite indices, and robust regression analysis with extensive diagnostic checks.

2.3 Theoretical Framework

This study is anchored on Fiscal Federalism Theory, applied to the Nigerian education context.

Fiscal Federalism Theory, articulated by Musgrave (1959) and Oates (1972), posits that subnational governments with adequate revenue authority can provide public services more efficiently than centralized systems. Applied to Nigeria's basic education delivery, the theory predicts that LGAs with stronger internally generated revenue (IGR) capacity should demonstrate better education outcomes by matching resource allocation to community-specific learning needs (Oates, 2005). In the education sector, this means LGAs with adequate IGR can recruit qualified teachers, procure adequate learning materials, maintain school facilities, and support student learning more effectively than financially constrained counterparts (Adebayo, 2019). The theory's subsidiarity principle that government should occur at the most local level capable of efficient delivery directly applies to Nigeria's three-tier system, where primary education responsibility devolves to LGAs yet many lack sufficient locally generated revenue (IGR) to fulfill obligations without excessive federal dependence (Martinez-Vazquez *et al.*, 2023).

Recent theoretical extensions emphasize that fiscal decentralization enhances accountability by bringing government closer to citizens, enabling direct observation of education service quality and facilitating voice mechanisms for demanding improvements (Faguet & Pöschl, 2015). In Kaduna State LGAs, this accountability mechanism means citizens funding local taxes through internally generated revenue (IGR) can more easily monitor school conditions, teacher attendance, and resource allocation than under centralized systems, creating pressure for improved performance (Bahl & Bird, 2023).

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3. Data and Methods

This study adopted a quantitative survey research design, suitable for investigating relationships among variables using structured instruments (Creswell, 2014). The study population encompassed stakeholders from nine purposively selected LGAs across Kaduna State's three senatorial zones: Zaria, Sabon Gari, and Makarfi (North); Kaduna North, Igabi, and Chikun (Central); and Jema'a, Kachia, and Kaura (South). Selection captured diversity in IGR performance (high, medium, low), settlement types (urban, semi-urban, rural), and geographical contexts.

A multi-stage sampling procedure yielded 360 respondents: 40 per LGA comprising approximately 10 revenue officials, 15 education officers/teachers, and 15 community leaders/residents. This stratification ensured both supply-side (administrators, educators) and demand-side (beneficiaries) perspectives. Of 360 distributed questionnaires, 344 were validly completed and analysed, representing a 95.6% response rate.

A structured questionnaire measured IGR (independent variable) and education service delivery (dependent variable) using five-point Likert scales (1 = Strongly Disagree to 5 = Strongly Agree). The IGR Composite Scale (6 items) measured collection efficiency, source reliability, transparency, prioritization, sufficiency, and expansion strategies. The Education Composite Scale (6 items) assessed infrastructure adequacy, teacher availability, learning material provision, dropout reduction efforts, resident satisfaction, and service timeliness. Reliability was confirmed with Cronbach's Alpha coefficients of $\alpha = 0.769$ (IGR) and $\alpha = 0.771$ (Education), both exceeding Nunnally and Bernstein's (1994) 0.70 threshold.

$$\text{Education Composite Index} = b_0 + \beta_1 \text{IGR Composite Index} + \varepsilon$$

Data were analyzed using SPSS version 26. Descriptive statistics, Pearson correlation, and simple linear regression were employed. The regression model was specified as:

Decision Rule: Reject H_0 if $p\text{-value} < 0.05$. Post-estimation diagnostics assessed multicollinearity (VIF, tolerance), homoscedasticity, and normality.

4. Results and Discussion of Findings

4.1 Demographic Characteristics

Analysis of 344 valid responses revealed a diverse, experienced sample. Educational qualifications were dominated by diploma holders (40.1%, $n = 138$) and first degree/HND holders (26.7%, $n = 92$). Respondents included LGA Officers (29.9%), Healthcare Workers (24.4%), Education Officers (23.5%), and Community Leaders (21.8%). A significant majority (70.3%, $n = 242$) had over five years of service, providing observations based on sustained experience rather than transient impressions. These characteristics ensure credible assessments of education service delivery conditions (Table 1)

Table 1: Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage (%)
Educational Qualification	O'Level	76	22.1
	Diploma	138	40.1
	Degree/HND	92	26.7
	Master's Degree	33	9.6
	PhD	5	1.5
Position	LGA Officer	103	29.9
	Healthcare Worker	84	24.4
	Education Officer	81	23.5
	Community Leader	75	21.8
Years of Service	<2 years	39	11.3
	2–5 years	63	18.3
	6–10 years	124	36.0
	>10 years	118	34.3
FAAC (% of Total Revenue)	<50%	51	14.8
	50–70%	126	36.6
	>70%	167	48.5

Source: Field Survey, 2026. N = 344.

4.2 Descriptive Statistics

The IGR Composite Index recorded a mean score of 3.67 (SD = 0.75), indicating moderate to positive perceptions of IGR performance. The Education Composite Index recorded a mean of 3.44 (SD = 0.84), suggesting generally positive perceptions of education services with notable room for improvement. The full range of scores (minimum 1.00 to maximum 5.00) reflects substantial variation in education quality across LGAs (Table 2).

Table 2: Descriptive Statistics of Study Variables

Variable	N	Mean	Std. Deviation	Minimum	Maximum
IGR Composite Index	344	3.67	0.75	1.67	5.00
Education Composite Index	344	3.44	0.84	1.00	5.00

Source: Field Survey, 2026.

4.3 Correlation Analysis

Pearson correlation revealed a strong positive relationship between IGR and education service delivery ($r = 0.580$, $p < 0.001$), indicating that LGAs with higher IGR performance exhibit substantially better education service quality. This constitutes a strong relationship per Cohen's (1988) criteria ($r = 0.50$ – 1.00) (Table 3).

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Table 3: Correlation between IGR and Education Service Delivery

Variable	IGR Composite Index	Education Composite Index
IGR Composite Index	1.000	
Education Composite Index	0.580	1.000

p < 0.001. N = 344.

4.4 Regression Analysis

Table 4: Effect of IGR on Basic Education Service Delivery

R	R ²	Adjusted R ²	Std. Error	F	Sig.	
0.580	0.337	0.335	0.688	173.704	0.000	
Variable	B	Std. Error		t	Sig.	VIF
(Constant)	1.049	0.185	—	5.664	0.000	—
IGR Composite Index	0.652	0.049	0.580	13.180	0.000	1.000

p < 0.001. Dependent Variable: Education Composite Index.

Table 4 presents regression results examining the effect of internally generated revenue (IGR) on basic education service delivery.

The regression model demonstrates excellent fit ($R = 0.580$, $R^2 = 0.337$, Adjusted $R^2 = 0.335$, $F = 173.704$, $p < 0.001$), indicating that internally generated revenue (IGR) **accounts for 33.7% of the variance** in education service delivery.

The regression equation is:

Education Composite Index = $1.049 + 0.652(\text{IGR Composite Index})$

The unstandardized coefficient ($B = 0.652$, $SE = 0.049$, $t = 13.180$, $p < 0.001$) indicates that the effect of a one-unit increase in internally generated revenue (IGR) performance yields a 0.652-unit improvement in education service delivery, controlling for other factors. The standardized coefficient ($\beta = 0.580$) confirms a strong effect size.

Based on these findings, the null hypothesis (H_0 : Internally generated revenue does not significantly affect basic education service delivery in Kaduna State) is decisively rejected at $p < 0.001$. There is strong statistical evidence that internally generated revenue (IGR) significantly and positively affects basic education service delivery in Kaduna State LGAs.

4.5 Discussion

The finding that IGR explains 33.7% of variance in basic education service delivery ($\beta = 0.580$, $p < 0.001$) constitutes a substantial and statistically robust effect, validating fiscal federalism theory's application to education by confirming that greater local fiscal capacity significantly enhances educational service quality. This aligns closely with Adeleke and Ajayi (2020), who reported $r = 0.61$ ($p < 0.001$) for IGR and education delivery in Osun State LGAs, and with Oyewole and Akintoye (2018),

who found $\beta = 0.53$ ($p < 0.01$) in Ekiti State. Internationally, Galiani, Gertler and Schargrodsky (2008) and the World Bank (2020) similarly demonstrate that stronger local fiscal resources improve education outcomes through better resource availability and reduced bureaucratic delays.

Several mechanisms explain how IGR translates into improved education delivery. First, teacher recruitment and retention: LGAs with stronger IGR can reduce pupil-teacher ratios exceeding 80:1 in rural Kaduna through additional recruitment, provide competitive salaries reducing attrition, and fund continuous professional development. Bold, Filmer, Martin, Molina, Stacy, Rockmore, Svensson and Wane (2017) and Asim and Dee (2023) confirm that regular salary payments and adequate working conditions correlate strongly with teacher effort and retention across African contexts. Second, infrastructure provision: predictable IGR enables multi-year planning for classroom construction, preventive maintenance, furniture procurement, and utility payments, filling gaps when UBE disbursements are delayed or insufficient (Okoye *et al.*, 2021). Third, learning material provision: flexible local funding allows rapid procurement of textbooks, chalk, and teaching aids when centralized UBE deliveries are inadequate, and supports supplementary materials tailored to local contexts. Fourth, community engagement: IGR funds SBMC operations, parent-teacher activities, local education campaigns, and incentives for marginalized children, strengthening parental involvement and accountability for school performance (Pradhan, Suryadarma, Beatty, Wong, Gaduh, Alishabana & Artha, 2014; World Bank, 2020).

Notwithstanding the significant statistical relationship, persistent education deficits over 1.2 million out-of-school children and widespread infrastructure inadequacies despite 70% IGR growth indicate that absolute IGR levels remain insufficient to close gaps accumulated through prolonged underinvestment (UBEC, 2021). The data showing 48.5% of sampled LGAs dependent on FAAC transfers for over 70% of total revenue further highlights fiscal vulnerability that constrains autonomous education planning. Geographic and cultural diversity across Kaduna State also means equal IGR levels yield varying outcomes depending on settlement patterns, population dynamics, and cultural barriers particularly affecting girls' education in some communities. Non-financial determinants including teacher motivation, school leadership quality, pedagogical competence, and parental involvement critically mediate the IGR–education relationship, meaning revenue improvements, while necessary, are insufficient without complementary capacity-building and governance reforms (Bold *et al.*, 2017). These findings confirm that IGR's optimal role is to complement external funding rather than substitute for state and federal education responsibilities.

Conclusion

This study provides robust empirical evidence that internally generated revenue significantly and positively affects basic education service delivery in Kaduna State LGAs. LGAs with stronger IGR capacity are considerably better equipped to provide quality education through adequate infrastructure, sufficient qualified teachers, and learning materials. However, fiscal improvements alone are insufficient without complementary investments in teacher training, educational management capacity, and addressing non-financial barriers including cultural attitudes and poverty-related dropout. Revenue mobilization must be accompanied by governance reforms, technical capacity building, and community engagement to achieve meaningful educational transformation

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Recommendations

Given that the study established internally generated revenue (IGR) explains 33.7% of education service delivery variance, the following recommendations directly address this finding:

For Local Government Authorities:

1. **Strengthen Education-Focused Revenue Allocation:** Given IGR's significant **effect** on education outcomes, LGAs should allocate minimum 20-25% of internally generated revenue (IGR) to basic education, creating predictable funding essential for teacher recruitment and infrastructure maintenance that the study identified as critical service delivery components.
2. **Prioritize Recurrent Spending:** The study's finding that IGR **effects** are substantial suggests revenue should primarily fund recurrent expenses (teacher salaries, learning materials, utilities) rather than capital projects, as these directly impact education service quality indicators measured in this research.
3. **Establish Education Revenue Accounts:** Ring-fence designated internally generated revenue (IGR) shares for education in separate accounts, preventing reallocation to other sectors and ensuring consistent funding for the operational needs the study identified as crucial.

For Kaduna State Government:

4. **Create Matching Grant Programs:** Design programs rewarding LGAs demonstrating simultaneous improvements in internally generated revenue (IGR) mobilization and education outcomes (enrollment, completion rates, learning assessments), leveraging the demonstrated IGR-education service delivery **effect** to incentivize dual performance.
5. **Mandate Education Budget Floors:** Require minimum education budget allocations reflecting the study's finding that internally generated revenue (IGR) significantly **affects** education delivery, ensuring no LGA falls below effective service provision thresholds regardless of revenue challenges.
6. **Provide Capacity Development:** Given that the study identified internally generated revenue (IGR) as explaining 33.7% of education variance, support technical assistance helping LGAs optimize the remaining 66.3% through improved governance, administrative efficiency, and complementary state/federal funding coordination.

For Policy and Future Research:

7. **Leverage the IGR-Education Effect:** The significant **effect** identified ($\beta = 0.580$) justifies national education financing reforms emphasizing strengthened local revenue authority as a critical component of universal primary education achievement.
8. **Investigate Moderating Factors:** Future research should examine whether the demonstrated IGR **effect** on education delivery varies by LGA urbanization, governance quality, or population size, refining policy targeting.

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