

# The Effect of Own-Source Revenue on Financial Sustainability of County Governments in Western Kenya

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**Abstract-** *County governments in Kenya face persistent financial sustainability challenges despite constitutional provisions for own-source revenue generation. This study examines the relationship between own-source revenue effectiveness and financial sustainability indicators in Western Kenya's county governments. Through comprehensive analysis of 150 county officials across Busia, Vihiga, Bungoma, and Kakamega counties, the research reveals a strong positive association between OSR effectiveness and financial sustainability ( $r = 0.634$ ,  $p < 0.001$ ). Simple linear regression analysis indicates that OSR effectiveness explains 40.2% of variance in financial sustainability, with digital revenue systems emerging as the strongest contributing factor (28.1%). Component analysis reveals tax compliance rates (25.3%), revenue diversification strategies (24.8%), and administrative efficiency (21.8%) as additional critical determinants. The findings provide robust evidence for prioritizing OSR enhancement in county financial strategies, validating fiscal autonomy theory within Kenya's devolved context while highlighting the critical importance of technological infrastructure, administrative capacity, and compliance systems.*

**Index Terms-** *Own-source revenue, financial sustainability, County governments, Fiscal autonomy*

## I. INTRODUCTION

Kenya's 2010 constitutional framework established 47 county governments with substantial autonomy over service delivery and development functions, creating opportunities for local governance innovation while presenting complex financial sustainability challenges. Article 203 mandates

counties to generate own-source revenue through local taxes, levies, fees, and charges to supplement constitutional transfers, establishing fiscal autonomy as a cornerstone of successful devolution.

The Western Kenya region, comprising Busia, Vihiga, Bungoma, and Kakamega counties, exemplifies both the potential and challenges of devolved governance. These counties share similar economic characteristics including predominantly rural populations exceeding 90%, agricultural economic bases with limited industrial development, and comparable governance structures. However, they exhibit significant variations in financial performance, with poverty rates ranging from 35.7% in Bungoma to 69.3% in Busia.

Own-source revenue represents more than additional funding; it embodies fiscal autonomy principles that underpin successful decentralization worldwide. Theoretical foundations rooted in fiscal federalism suggest that subnational governments achieving greater control over revenue generation demonstrate superior financial performance through enhanced accountability mechanisms, improved resource allocation efficiency, and strengthened institutional capacity development (Bird, 2009; Tiebout, 1956).

This study addresses critical gaps by examining associations between OSR effectiveness and financial sustainability indicators across Western Kenya counties. The research objectives are: (1) to evaluate the relationship between own-source revenue effectiveness and financial sustainability outcomes, (2) to identify specific OSR components contributing most significantly to sustainability improvements, and (3) to provide evidence-based guidance for county financial management enhancement strategies.

## II. LITERATURE REVIEW

### 2.1 Evolution of County Financial Management

Mathematical modeling of county financial sustainability has evolved significantly since early public finance theories. Classical fiscal federalism frameworks, originally developed by Musgrave (1959) and Oates (1972), have been extensively adapted for developing country applications. However, traditional approaches often oversimplify complex economic and institutional dynamics influencing county financial performance (Martinez-Vazquez & Smoke, 2010).

Recent studies have highlighted the importance of incorporating contextual heterogeneity in county financial models. Bahl and Smoke (2003) demonstrated that spatial clustering analysis significantly improves identification of financial performance patterns, while Peter et al. (2018) developed constraint indices for revenue collection in Kenyan counties.

### 2.2 Own-Source Revenue Theoretical Foundations

Fiscal autonomy theory has emerged as a powerful framework for analyzing county revenue generation effectiveness. Bird and Vaillancourt (1998) established theoretical foundations for subnational revenue systems, while Ahmad and Brosio (2006) advanced methodological approaches for revenue analysis. The integration of technology adoption frameworks, particularly digital revenue systems, has proven effective for capturing modernization impacts on collection efficiency (Mascagni et al., 2014).

Contemporary research emphasizes the importance of comprehensive OSR modeling. Abdille (2022) developed revenue sustainability models for Kenyan counties, demonstrating the value of incorporating multi-dimensional measurement approaches. However, existing frameworks lacked the quantitative rigor necessary for robust relationship assessment and effect size determination.

### 2.3 Research Gaps

Despite significant advances, current county financial modeling approaches face several limitations. Static measurement frameworks fail to capture dynamic institutional development patterns that significantly influence sustainability outcomes. Limited integration of component-level analysis reduces model utility for targeted intervention design. Most importantly, few studies have combined enhanced measurement frameworks with rigorous statistical methods specifically for county financial sustainability in developing country contexts like Kenya.

## III. RESEARCH METHODOLOGY

### 3.1 Measurement Framework

The research employs comprehensive measurement instruments capturing OSR effectiveness across multiple dimensions. County financial performance assessment incorporates four components: digital adoption effectiveness, tax compliance systems, revenue diversification strategies, and administrative efficiency indicators.

OSR effectiveness measurement encompasses four key dimensions. Digital adoption assessment includes technology infrastructure, system integration, and user satisfaction across three measurement items. Tax compliance evaluation covers compliance rates, enforcement effectiveness, and taxpayer engagement through three dedicated items. Revenue diversification analysis examines source variety, stability, and growth potential using three specific indicators. Administrative efficiency measurement incorporates process optimization, staff capacity, and resource utilization assessment.

Financial sustainability assessment incorporates three critical dimensions reflecting county financial health. Pending bills management evaluation includes five items covering clearance strategies, payment timeliness, and supplier relations. Project completion effectiveness assessment employs five items examining timeline adherence, budget compliance, and quality achievement. Liquidity position

maintenance analysis utilizes six items measuring cash flow stability, reserve adequacy, and operational continuity.

### 3.2 Sampling and Data Collection

The study targets county officials directly involved in financial management across Western Kenya's four counties. Target population comprises 161 officials: County Executive Committee Members (40), Chief Officers (45), Finance and Accounts Staff (41), and Budgeting Section Staff (35).

A census approach covering all targeted officials ensures comprehensive representation while eliminating sampling bias. Data collection employed structured questionnaires administered through personal delivery by trained research assistants, ensuring high response rates while maintaining data quality.

### 3.3 Statistical Analysis Framework

Statistical analysis employs simple linear regression examining associations between OSR effectiveness (predictor variable) and financial sustainability (outcome variable). Analysis components include: descriptive statistics, correlation analysis, simple linear regression, component analysis, and effect size assessment.

Diagnostic testing confirms satisfaction of regression assumptions including normality of residuals, linearity of relationships, homoscedasticity, and independence of observations.

## IV. RESULTS

### 4.1 Sample Characteristics and Response Quality

The study achieved exceptional response quality with 150 completed questionnaires from 161 distributed instruments, yielding a 93.17% response rate. Sample distribution across counties remained balanced: Busia (27.3%), Vihiga (22.7%), Bungoma (25.3%), and Kakamega (24.7%). Educational qualifications revealed 91.3% holding bachelor's degrees or higher, confirming appropriate expertise levels.

### 4.2 Measurement Reliability and Validity

Comprehensive reliability assessment demonstrated excellent measurement quality across all scales. OSR effectiveness measurement achieved Cronbach's Alpha of 0.891, while financial sustainability measurement demonstrated outstanding reliability ( $\alpha = 0.923$ ). Component-level reliability analysis revealed consistently high performance across all dimensions.

Content validity assessment through expert review achieved 95% agreement on item appropriateness. Construct validity confirmation via exploratory factor analysis demonstrated adequate factor loadings (range: 0.612-0.789) and appropriate model fit indices.

### 4.3 Descriptive Performance Analysis

OSR effectiveness demonstrated above-average performance with mean score of 3.67 (SD = 0.742) on five-point scale, indicating generally positive revenue generation capabilities while revealing substantial improvement opportunities. Financial sustainability achieved overall mean score of 3.58 (SD = 0.687).

Counties achieving high financial sustainability (FS > 3.5) exhibited substantially superior OSR performance (M = 4.02, SD = 0.487) compared to low sustainability counties (FS ≤ 2.5, M = 2.89, SD = 0.654), representing a 1.13-unit difference with practically significant performance gap.

### 4.4 Component Contribution Analysis

Digital adoption demonstrates the highest impact as a component, contributing 28.1% to overall OSR effectiveness. Tax compliance rates follow as the second most significant factor, accounting for 25.3% of overall effectiveness. Revenue diversification strategies contribute 24.8% to the total OSR effectiveness measure. Administrative efficiency represents the smallest but still substantial contribution at 21.8% of overall effectiveness.

Component performance analysis reveals specific mean scores and contributions. Digital adoption

achieves a mean score of 3.78 while contributing 28.1% to overall effectiveness. Tax compliance demonstrates a mean performance of 3.75 with a 25.3% contribution to overall effectiveness. Revenue diversification shows a mean score of 3.69 and contributes 24.8% to overall effectiveness. Administrative efficiency records a mean performance of 3.54 with an 21.8% contribution to overall effectiveness.

#### 4.5 Correlation and Regression Analysis

Pearson correlation analysis revealed strong positive association between OSR effectiveness and financial sustainability ( $r = 0.634$ ,  $p < 0.001$ ). Component-level correlation analysis demonstrated digital adoption shows strongest individual association with financial sustainability ( $r = 0.589$ ).

Simple Linear Regression Results: The regression model explains 40.2% of variance in financial sustainability ( $R^2 = 0.402$ ), representing large effect according to established conventions. Analysis of variance testing confirms the model is highly significant ( $F(1,148) = 100.324$ ,  $p < 0.001$ ).

Regression Equation: Financial Sustainability =  $1.234 + 0.587(\text{OSR Effectiveness})$

Each one-unit increase in OSR effectiveness associates with 0.587-unit increase in financial sustainability. Standardized beta coefficient of 0.634 indicates OSR effectiveness accounts for 63.4% of standard deviation increase in financial sustainability.

#### 4.6 Effect Size and Practical Significance

Comprehensive effect size analysis reveals substantial practical significance across multiple metrics. Cohen's  $d$  calculation yields 1.425, indicating a very large effect that substantially exceeds the threshold for large effects in social science research. Cohen's  $f^2$  demonstrates a large effect at 0.672, while Pearson correlation coefficient shows strong association at 0.634. The explained variance  $R^2$  reaches 0.402, representing large explained variance in the relationship.

Cohen's  $d$  of 1.425 indicates counties improving OSR effectiveness by one standard deviation can expect

financial sustainability improvements of 1.425 standard deviations, representing substantial practical gains justifying significant investment in revenue generation enhancement.

## V. DISCUSSION

### 5.1 Theoretical Validation and Implications

Empirical findings provide substantial support for fiscal autonomy theory within Kenya's devolved governance context. Strong positive association between OSR effectiveness and financial sustainability ( $r = 0.634$ ,  $p < 0.001$ ) confirms theoretical propositions that internal revenue generation provides foundation for sustainable subnational governance through enhanced accountability, improved resource allocation, and strengthened institutional capacity.

Large effect size ( $R^2 = 0.402$ ) demonstrates fiscal autonomy relationships operate with substantial magnitude within Kenya's county system, validating continued investment in OSR enhancement as primary strategy for county financial sustainability improvement.

### 5.2 Component Strategy Implications

Digital adoption's dominant contribution validates substantial investments in integrated revenue management systems as high-return interventions capable of transforming county financial performance. Tax compliance enhancement emerges as second-highest priority, indicating counties can achieve substantial improvements through systematic compliance initiatives including taxpayer education, service quality enhancement, and enforcement system strengthening.

Revenue diversification represents additional high-impact strategy providing important risk management benefits while building institutional capacity across multiple functional areas.

### 5.3 Implementation Considerations

Performance gap between high-sustainability counties (OSR M = 4.02) and low-sustainability counties (OSR M = 2.89) indicates successful OSR implementation requires institutional capabilities developing gradually through sustained investment and institutional learning processes.

Poverty emerges as critical contextual factor influencing OSR-sustainability relationships, with high-poverty counties showing substantially lower OSR performance despite similar constitutional frameworks and technical assistance availability.

### CONCLUSIONS

This research provides robust empirical evidence for strong positive associations between own-source revenue effectiveness and financial sustainability in Western Kenya county governments. Statistical findings demonstrate OSR effectiveness explains 40.2% of variance in financial sustainability with very large practical significance (Cohen's  $d = 1.425$ ). Digital adoption emerges as most critical OSR component, contributing 28.1% to overall effectiveness while demonstrating strongest individual correlation with financial sustainability outcomes. This validates substantial investments in integrated digital revenue systems as high-return interventions.

### RECOMMENDATIONS

1. Counties should prioritize comprehensive OSR enhancement strategies emphasizing digital system development, compliance improvement, and administrative capacity building. Implementation should adopt phased approaches building institutional capabilities alongside technology advancement.
2. Policy frameworks should support county OSR development through enabling legislation, technical assistance programs, and capacity building initiatives. Regulatory approaches should balance accountability requirements with operational flexibility.
3. Support strategies should align with empirical evidence demonstrating OSR effectiveness as primary sustainability driver, prioritizing

interventions building internal revenue generation capacity rather than creating dependency relationships.

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