Revenue diversification as a driver of financial sustainability in private schools in Lusaka Province, Zambia

Lusungu Anne Kumwenda[1*]
Lubinda Haabazoka[2]
Harrison Daka[3]

[1*]siamelusungu@gmail.com

[1,2,3]The University of Zambia

https://doi.org/10.51867/ajernet.7.2.20

ABSTRACT

Private schools in Zambia supplement the capacity of the public education system and contribute substantially to educational access at the primary and secondary levels. However, a significant proportion of these institutions face severe financial fragility driven by overdependence on tuition fees as a single and precarious revenue stream. This study examines the effect of revenue diversification on the financial sustainability of private schools in Lusaka Province, Zambia. Grounded in the Tuckman and Chang financial vulnerability model and Bowman's financial capacity framework, the study employed an explanatory sequential mixed-methods design (QUAN→qual). The target population comprised school owners, principals, bursars, and accountants employed at 594 registered private primary and secondary schools across the six districts of Lusaka Province. Using two-stage stratified random sampling guided by Yamane's formula at a 5% margin of error and 95% confidence level, 300 questionnaires were distributed, yielding 272 valid responses representing a response rate of 90.7%. Qualitative data were gathered through 15 purposively sampled semi-structured telephone interviews conducted until theoretical saturation was achieved. A Financial Sustainability Index (FSI) was computed using Principal Component Analysis (PCA), with the Kaiser-Meyer-Olkin statistic of 0.922 and Bartlett's Test of Sphericity confirming data suitability for factor analysis. The mean FSI of 0.53 (SD = 0.202) indicated moderate but fragile financial sustainability. Classification of sampled schools by FSI level revealed that 39% experienced normal financial sustainability, 39% unstable, 15.4% absolute, and 6.6% critical financial sustainability. Pearson correlation analysis, supported by bootstrap estimation with 5,000 resamples, revealed a strong, statistically significant positive relationship between revenue diversification and financial sustainability ($r = 0.799$, $p < .001$; BCa 95% CI: 0.753–0.850). Multiple regression analysis confirmed revenue diversification as the dominant predictor of financial sustainability ($R^2 = 0.67$; $F(7,264) = 75.15$; $p < .001$), with market competition significantly moderating the relationship between revenue diversification and financial sustainability. Qualitative findings strongly triangulated these results, with all participants consistently reporting that schools with diversified income streams beyond tuition fees achieved significantly greater financial stability. The study concludes that revenue diversification is not a peripheral financial strategy but a structural imperative for private schools in Zambia's volatile educational and economic environment. Immediate policy and institutional interventions are required to support its systematic development across the sector. This study recommends that private school administrators should develop and implement formal, resourced revenue diversification strategies that identify multiple income streams appropriate to their institutional context, resource base, and community environment.

Keywords: Financial Sustainability, Mixed Methods, Lusaka Province, Private Schools, Revenue Diversification, Zambia

I. INTRODUCTION

Private schools constitute a critical and growing component of the educational landscape in Zambia. In Lusaka Province, the country's most populous and economically active province, private primary and secondary schools serve a substantial proportion of total learner enrolment, catering to families whose educational preferences or geographic circumstances direct them towards private educational providers. According to the Ministry of Education (2025), 594 registered private schools operate across the six districts of Lusaka Province, collectively employing thousands of teachers and support staff and providing educational services to hundreds of thousands of learners. Despite this significance, private schools in Zambia operate in an increasingly precarious financial environment that threatens the long-term viability of the sector.

The fiscal foundations of the private school sector are fragile, built primarily on tuition fee income that is inherently volatile, seasonally variable, and susceptible to external shocks. The Zambian government's expansion of the free education policy in 2022 introduced a significant competitive threat to private schools across all fee levels, reducing the relative value proposition of fee-paying private education and accelerating the migration of price-sensitive families to free public schools. According to the Zambia Open Private Schools Association (ZOPSA, 2022), approximately 40% of private schools in Zambia were experiencing financial distress following the introduction of free education in government schools, with over 60% of learners from affected schools transferring to public institutions. At the same time, Zambia's macroeconomic environment has been characterised by persistently high inflation, currency depreciation, and rising operational costs, particularly for energy, transport, and imported educational inputs, creating a cost-revenue squeeze that threatens the financial viability of schools with no income beyond tuition fees.

Financial sustainability, defined broadly as the ability of an organisation to maintain adequate financial resources to support its mission, meet its operational obligations, and ensure long-term institutional viability (Tuckman & Chang, 1991; Bowman, 2011), is thus an existential challenge for a significant portion of the private school sector in Zambia. The literature on non-profit financial management and education finance consistently identifies revenue concentration, the dependence on a single or narrow set of income sources, as the primary structural driver of financial fragility in educational institutions (Carroll & Stater, 2009; Froelich, 1999; Greenlee & Trussel, 2000). Revenue diversification, which involves the deliberate development of multiple non-correlated income streams, is correspondingly identified as the primary structural safeguard against this fragility.

For private schools in Zambia, revenue diversification could encompass a wide range of activities beyond tuition fees: facility hire, community education programmes, vocational training, commercial enterprises such as school canteens and bookshops, philanthropic fundraising, donor partnerships, after-school coaching programmes, and digital learning services. However, the extent to which private schools in Lusaka Province have actually developed diversified income portfolios, and the empirical relationship between their diversification levels and their financial sustainability outcomes, has not previously been investigated through rigorous mixed-methods inquiry. This empirical gap represents the primary motivation for the present study.

This article addresses the gap by empirically investigating the effect of revenue diversification on the financial sustainability of private schools in Lusaka Province, using a rigorous mixed-methods design that combines the statistical power of quantitative survey analysis with the contextual depth of qualitative interviews. The study is theoretically grounded in the Tuckman and Chang (1991) financial vulnerability model and Bowman's (2011) financial capacity framework, both of which provide coherent theoretical predictions about the revenue diversification–financial sustainability relationship. The study generates a multidimensional Financial Sustainability Index (FSI) using Principal Component Analysis, providing a more comprehensive and empirically robust measure of financial sustainability than the single-indicator measures used in most prior research. The article contributes original empirical evidence to a field where the Zambian private school sector has been systematically underrepresented and makes practical recommendations for both school administrators and policymakers.

1.1 Statement of the Problem

The financial sustainability of private schools in Lusaka Province is threatened by structural revenue concentration. Evidence from comparable sub-Saharan African contexts indicates that most private primary and secondary schools derive between 70% and 95% of their income from tuition fees (Metto & Ombaba, 2021; Ng'ang'a & Kibati, 2016), and available evidence from Zambia suggests a similar pattern (ZOPSA, 2022; Mulenga & Daka, 2018). This mono-revenue dependency creates an institutional structure that is particularly vulnerable to enrolment fluctuations, economic downturns, and policy disruptions, all of which have occurred in Zambia in recent years. The consequences are directly observable in the sector's financial outcomes: deferred teacher salaries, deferred maintenance expenditures, inadequate investment in teaching and learning materials, and in the most severe cases, school closure.

The academic literature on financial sustainability of educational institutions has largely focused on higher education and public sector organisations, with limited empirical attention directed at private primary and secondary schools in developing countries. Studies examining the specific relationship between revenue diversification strategies and financial sustainability outcomes in Zambian private schools are absent from the published literature. This creates a critical knowledge gap that prevents school administrators from making evidence-based decisions about financial strategy, prevents policymakers from designing appropriately targeted support interventions, and prevents development partners from directing resources to the most impactful areas of intervention. This study directly addresses this gap by providing the first comprehensive empirical investigation of the revenue diversification–financial sustainability relationship in Zambian private schools.

1.2 Research Objective

The primary objective of this study is to evaluate the effect of revenue diversification on the financial sustainability of private schools in Lusaka Province, Zambia.

1.3 Research Hypothesis:

H1: Revenue diversification is positively associated with financial sustainability of private schools in Zambia.

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 The Tuckman–Chang (1991) Financial Vulnerability Model

The primary theoretical foundation for this study is the financial vulnerability model originally developed by Tuckman and Chang (1991) to assess financial risk among American non-profit organisations. The model identifies four key indicators of financial vulnerability: poor equity balances, revenue concentration, low administrative costs, and low or negative operating margins. Revenue concentration, defined as the degree to which an organisation's income is derived from a single or small number of sources, is the most directly relevant indicator for the Zambian private school context. Tuckman and Chang (1991) argue that organisations with highly concentrated revenue streams face disproportionate exposure to income shocks, because they lack the income diversification buffer needed to sustain operations when the primary revenue source is disrupted.

The model predicts that organisations with diversified revenue portfolios will demonstrate greater financial resilience and sustainability because they can offset losses from any single income source with income from others. Applied to private schools in Lusaka Province, the Tuckman–Chang model predicts that schools with more diversified income portfolios should exhibit higher FSI scores and demonstrate greater stability in the face of enrolment pressures, macroeconomic shocks, and policy disruptions that characterise the current operating environment. The model has been extensively validated across non-profit sub-sectors (Carroll & Stater, 2009; Greenlee & Trussel, 2000; Hager, 2001) and its revenue concentration indicator has been consistently identified as a significant predictor of financial distress and organisational failure across diverse institutional settings. Despite its origins in the American non-profit context, the Tuckman–Chang model is theoretically appropriate for the Zambian private school context, as private schools share many characteristics with non-profit organisations: they are mission-driven, serve community educational needs, operate on constrained margins, and face comparable financial vulnerability dynamics.

2.1.2 Bowman's (2011) Financial Capacity Framework

The second theoretical pillar of this study is Bowman's (2011) financial capacity framework, which conceptualises organisational financial health as a function of both short-term financial capacity, the immediate ability to meet operational obligations, and long-term financial capacity, the ability to invest in mission advancement and build organisational resilience over time. Central to Bowman's framework is the principle that revenue diversification is a prerequisite for long-term financial capacity, because it reduces dependence on any single income source and generates operating surpluses that can be reinvested in institutional development, reserve building, and strategic growth.

Bowman (2011) argues that organisations maintaining diversified revenue portfolios are better positioned to manage environmental uncertainty, respond to external disruptions, and sustain service delivery during adverse financial conditions. For private schools in Zambia, the capacity to maintain multiple income streams is directly linked to the ability to preserve educational service quality and achieve long-term institutional sustainability. The integration of the Tuckman–Chang (1991) and Bowman (2011) frameworks creates a theoretically coherent foundation for this study: the Tuckman–Chang model explains the risk-reduction dimension of diversification, while Bowman's framework explains the capacity-building dimension. Together, they predict that revenue diversification should be both negatively associated with financial vulnerability and positively associated with financial sustainability, providing convergent theoretical support for the study's central hypothesis.

2.2 Empirical Review

2.2.1 Revenue Diversification and Financial Sustainability

The empirical literature on revenue diversification and financial sustainability in educational institutions is substantial but geographically concentrated in developed economies and focused primarily on higher education institutions and large non-profit organisations. Jaafar et al. (2023) examined revenue diversification among 20 Malaysian public universities from 2008 to 2017, operationalising diversification through the Herfindahl-Hirschman Index (HHI) and finding that universities with more diversified revenue portfolios demonstrated significantly better financial sustainability outcomes. The panel regression analyses revealed statistically significant positive relationships between revenue diversification and return on assets as a measure of financial sustainability. The study concluded that over-reliance on government grants, analogous to private schools' dependence on tuition fees, was the primary driver of institutional financial instability.

Kimathi and Irungu (2024) investigated the revenue diversification and financial sustainability relationship among public universities in Kenya, finding that institutions with the most diversified income portfolios, incorporating research grants, consultancy income, commercial enterprises, and philanthropic partnerships, recorded significantly higher financial sustainability scores. The study found that revenue diversification had a statistically significant positive influence on financial sustainability when measured by the sustainability ratio, and highlighted that the most financially resilient institutions treated revenue diversification as a strategic priority embedded in their institutional planning processes. Nalwoga (2021) found in a qualitative study of private universities in Uganda that despite major external threats including governmental regulations and market fluctuations, the ability to diversify income sources was essential to boosting financial sustainability, with private universities encouraged to seek revenue from research funding, public-private collaborations, and grants.

Riachi (2021) conducted case-study research on the determinants of financial sustainability of Strathmore University in Kenya, finding that income diversification through multiple sources including tuition, research grants, and consultancy services was associated with greater financial stability. The study emphasised that financial sustainability could not be achieved through dependence on tuition fees alone and recommended that institutions consider other funding sources including private sector partnerships, endowments, and international collaborations. Ngcobo et al. (2024) conducted an exploratory study on revenue sourcing for the financial sustainability of a university of technology in South Africa, reporting that relying on single sources of revenue is not financially viable and concluding that diversifying revenue sources can enhance financial sustainability.

2.2.2 Evidence from Private and Secondary School Contexts

In the sub-Saharan African context, Ng'ang'a and Kibati (2016) conducted a quantitative study of private colleges in Kenya and found that schools relying exclusively on tuition fees were significantly more vulnerable to financial distress than those that had diversified into after-school programmes, facility hire, community services, and philanthropic donations. Their study concluded that income diversification functioned as a structural safeguard against the volatility of fee-dependent revenue models, insulating financially diversified schools from the shock of enrolment declines that affected purely tuition-dependent competitors during economic downturns. Similarly, Metto and Ombaba (2021) examined private secondary schools in Kenya and found that debt financing through trade credit had a positive and statistically significant impact on financial sustainability, demonstrating that revenue base expansion and diversified financing strategies are important drivers of financial sustainability in the private school context.

Osei-Kuffour and Peprah (2020) examined private tertiary institutions in Ghana and found a positive and moderate significant relationship between financial sustainability and income diversification, with revenue diversification predicting financial sustainability by approximately 17.6%. The scholars concluded that revenue diversification creates fiscal space that positively drives financial sustainability, providing specific quantified evidence of the diversification effect in an African educational context. Ndlovu (2020) concluded in a study of factors affecting university financial sustainability in Zimbabwe that increased revenue streams through diversification is key for making educational institutions financially sustainable, corroborating the broader theoretical predictions of the Tuckman–Chang model.

Chisanga (2018) conducted a situational analysis of financial sustainability in selected public secondary schools in Zambia, finding that school revenue generation and diversification promoted financial sustainability. The study revealed that schools with more diverse income sources were better positioned to meet their financial obligations and maintain operational continuity. Although focused on public schools, Chisanga's (2018) findings provide contextually relevant evidence from the Zambian educational sector that informs the present study's theoretical expectations and interpretive framework. Katongo and Phiri (2023) examined factors influencing financial sustainability of local health non-governmental organisations in Zambia and found that effective cost management and revenue diversification were crucial determinants of financial sustainability, providing additional contextual evidence from the Zambian non-profit sector.

2.2.3 Evidence from Non-Profit and Voluntary Sector Literature

Carroll and Stater (2009) provided an influential contribution to the revenue diversification literature through their analysis of non-profit organisations in the United States, demonstrating that revenue diversification reduced financial volatility and improved organisational stability over time. Using a panel dataset spanning 14 years, they found that organisations with greater revenue diversification experienced significantly less financial volatility, measured as year-to-year variation in financial ratios, than those with more concentrated revenue portfolios. Froelich (1999) demonstrated that organisations transitioning from concentrated to diversified revenue portfolios achieved significantly better long-term institutional survival outcomes, while Greenlee and Trussel (2000) found that revenue concentration was among the strongest predictors of non-profit financial vulnerability and imminent financial distress. These foundational non-profit finance studies provide robust empirical grounding for the expectation that revenue diversification should improve financial sustainability outcomes in the Zambian private school context.

Hager (2001) tested the Tuckman-Chang measures specifically among arts organisations, finding that the revenue concentration indicator had significant predictive validity for organisational financial vulnerability. The study also noted important qualifications: poorly conceived diversification strategies, particularly those involving activities unrelated to the core organisational mission, can introduce operational complexity and management distraction that reduces overall institutional efficiency. These qualifications suggest that diversification is most effective when implemented within a broader framework of sound financial management and when aligned with institutional core competencies and resource capacity.

2.3 Research Gaps

The review of empirical literature reveals several specific gaps that this study addresses. First, there is a near-complete absence of empirical studies examining the revenue diversification–financial sustainability relationship specifically in private primary and secondary schools in Zambia or comparable sub-Saharan African economies. The existing literature is dominated by higher education studies and large non-profit organisations in developed country contexts. Second, the methodological approaches used in existing studies tend to be either purely quantitative or purely qualitative, rather than mixed-methods designs capable of capturing both the statistical patterns and the contextual mechanisms of the diversification–sustainability relationship. Third, most existing studies do not use a composite FSI as the dependent variable but instead rely on single financial performance indicators such as return on assets or gearing ratios, limiting their ability to capture the multidimensional nature of financial sustainability. Fourth, the specific moderating effects of market competition and regulatory intensity on the revenue diversification–financial sustainability relationship have not been examined in the private school context. This study addresses all four gaps through its mixed-methods design, composite FSI computation, and moderation analysis.

III. METHODOLOGY

3.1 Research Philosophy and Design

The study was grounded in the pragmatist research philosophy, which supports the use of multiple methods and mixed epistemologies to investigate complex social and organisational phenomena (Creswell & Creswell, 2022; Saunders et al., 2023). Pragmatism was appropriate for this research because the problem of understanding and explaining financial sustainability in private schools is inherently multidimensional, requiring both the generalisability of quantitative analysis and the contextual depth of qualitative inquiry. The study adopted an explanatory sequential mixed-methods design (QUAN→qual), in which quantitative data collection and analysis preceded qualitative data collection, with the qualitative phase designed to explain, contextualise, and enrich the quantitative findings. This design is recommended in the mixed-methods literature when quantitative findings are statistically robust but require qualitative contextualisation to explain the mechanisms and processes underlying statistical relationships (Creswell & Poth, 2024; Toyon, 2021).

3.2 Study Area, Population, and Sampling

The research was conducted in Lusaka Province of Zambia, which was selected as the study area because it contains the largest concentration of registered private schools in the country, with 34% of all Zambian learners attending private schools located in this province (Ministry of Education, 2025). There are 594 registered private primary and secondary schools across the six districts of Lusaka Province: Lusaka District (380 schools; 64%), Chilanga District (70 schools; 12%), Chongwe District (65 schools; 11%), Kafue District (45 schools; 8%), Luangwa District (20 schools; 3%), and Rufunsa District (14 schools; 2%). The study population comprised school owners, principals, bursars, and accountants employed at these institutions, individuals with direct knowledge of and responsibility for their schools' financial management and sustainability.

For the quantitative phase, the representative sample size was determined using Yamane's (1973) sampling formula. At a 5% sampling error margin and 95% confidence interval for a population of 594 schools, the formula yielded an initial minimum sample of 240. This was adjusted upward by 25% to 300 to account for anticipated non-responses, as recommended for electronic survey administration in educational research (Dillman et al., 2014). Two-stage stratified random sampling was employed across the six districts and across primary and secondary school levels, ensuring proportionate representation of the geographic and institutional diversity of the sector. Of the 300 questionnaires distributed, 279 were returned and 272 were found to be valid following data cleaning, representing an effective response rate of 90.7%, substantially exceeding the 60% threshold recommended for organisational survey research (Zikmund, 2013).

For the qualitative phase, 15 participants were purposively selected on the basis of their institutional roles, years of experience, and the financial sustainability status of their schools. Inclusion criteria required participants to have at least five years of experience in their current roles and to be employed at schools that had been operational for at least five years. The qualitative sample included school owners (n=4), principals (n=4), bursars (n=4), and administrators (n=3), drawn from primary, secondary, and combined schools across different financial sustainability levels. Sampling continued until theoretical saturation was reached at the fifteenth interview, confirming the adequacy of the sample size for qualitative purposes (Braun & Clarke, 2022; Hennink et al., 2017).

3.3 Data Collection Instruments

Quantitative data were collected using a structured survey questionnaire administered electronically through Google Forms. The questionnaire comprised five-point Likert scale items measuring all study constructs. The revenue diversification scale consisted of seven items covering: the variety of revenue sources; strategic dependence on multiple streams; active pursuit of new revenue; resource allocation to diversification; revenue diversification as a strategic priority; financial capacity for new opportunities; and the clarity of diversification strategies. The scale was adapted from validated instruments used by Jaafar et al. (2023) and Osei-Kuffour and Peprah (2020), contextualised for the Zambian private school setting. Content validity was established through review by three academic experts in educational finance and management, and face validity was confirmed through pilot testing with 30 respondents. The Cronbach's alpha for the revenue diversification scale was 0.85, confirming high internal consistency. The financial sustainability scale comprised seven items covering cash flow generation, revenue stability, reserve adequacy, contingency fund maintenance, operating surplus stability, and revenue-cost balance (Cronbach's alpha = 0.88; Average Variance Extracted = 0.61).

Qualitative data were collected through semi-structured telephone interviews guided by a protocol aligned with the study objectives. Interview questions explored: the financial condition of the school; income sources and their reliability; experiences of revenue diversification; challenges in developing alternative income streams; the perceived relationship between income diversification and financial stability; and strategies for improving financial sustainability. Interviews lasted 30–45 minutes each and were audio-recorded with participant consent. Professional transcription services were used to produce verbatim transcripts for subsequent thematic analysis.

3.4 Data Analysis

Quantitative data analysis proceeded through several stages. First, descriptive statistics including means, standard deviations, skewness, and kurtosis were computed for all construct items to assess response distributions and normality. Second, Exploratory Factor Analysis (EFA) using PCA extraction and the Kaiser criterion (eigenvalue > 1) was conducted to confirm the unidimensionality of each construct scale. Third, PCA was applied to the seven financial sustainability items to compute the FSI, with scores standardised using min-max normalisation to produce a continuous index on a 0–1 scale. Fourth, Pearson product-moment correlation analysis was conducted to assess the bivariate relationship between revenue diversification and the FSI. Bias-corrected and accelerated (BCa) bootstrap confidence intervals based on 5,000 resamples were computed to assess the stability of correlation estimates. Fifth, multiple linear regression analysis was conducted using Hayes' (2013) PROCESS Macro version 4.2 to determine the predictive power of revenue diversification and to examine moderating effects of regulatory intensity and market competition.

Before interpreting regression coefficients, all relevant regression assumptions were verified: linearity was assessed through scatterplots and partial regression plots; independence of errors was confirmed through the Durbin-Watson statistic (DW = 1.87, within the acceptable 1.5–2.5 range); homoscedasticity was confirmed through residual plots; normality of residuals was confirmed through histograms and normal probability plots; and absence of multicollinearity was confirmed through Variance Inflation Factors (all VIF < 2.0) and Tolerance values (all > 0.50). Qualitative data were analysed using Braun and Clarke's (2022) six-step reflexive thematic analysis framework, supported by NVivo version 15 software. Trustworthiness was established through triangulation of quantitative and qualitative data, member checking with five participants, and transparent methodological reporting.

3.5 Ethical Considerations

Ethical approval for the study was obtained from the University of Zambia Research Ethics Committee prior to data collection. Informed consent was obtained from all participants before survey completion and interview participation. Anonymity and confidentiality were maintained throughout: survey responses were anonymised at point of collection, interview participants were assigned codes (Participant 1 through Participant 15), and school-identifying information was not collected or reported. Participation was voluntary, and participants were informed of their right to withdraw at any time without consequence. Data were stored on password-protected servers accessible only to the research team, in accordance with data protection principles.

IV. FINDINGS & DISCUSSIONS

4.1 Demographic Profile of Respondents

The study sought to examine selected demographic information of the participants. The findings are presented in Table 1.

Table 1
Demographic Characteristics of Respondents (N = 272)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	147	54
	Female	125	46
	Total	**272**	**100**
Age Group (Years)	31–40	73	26.8
	41–50	85	31.3
	Subtotal (31–50)	**158**	**58.1**
Educational Level	Certificate/Diploma	80	29.4
	Undergraduate Degree	120	44.1
	Master's Degree	47	17.3
	Doctoral Degree	25	9.2
	Total	**272**	**100**
Work Experience	1–5 years	87	32
	6–10 years	112	41.2
	11–15 years	73	26.8
	Total	**272**	**100**
Institutional Role	Bursars/Accountants	114	41.9
	School Heads/Principals	102	37.5
	School Owners	56	20.6
	Total	**272**	**100**
School Location	Urban	112	41.2
	Rural	80	29.4
	Peri-Urban	50	18.4
	Other	30	11
	Total	**272**	**100**

Of the 272 valid survey respondents, 147 (54.0%) were male and 125 (46.0%) were female, reflecting a slight male predominance consistent with gender distribution patterns in educational administration in Zambia. The largest age cohort was 41–50 years (31.3%), followed by 31–40 years (26.8%), with the combined 58.1% representation of these cohorts indicating a sample dominated by experienced mid-career professionals. Regarding educational qualifications, 44.1% held undergraduate degrees, 29.4% certificates or diplomas, 17.3% master's degrees, and 9.2% doctoral degrees. In terms of work experience, 41.2% had 6–10 years of experience at their current school, 32.0% had 1–5 years, and 26.8% had 11–15 years. Concerning institutional roles, 41.9% of respondents were school bursars or accountants, 37.5% were school heads or principals, and 20.6% were school owners. These profiles confirm that the sample comprised individuals with direct knowledge of and responsibility for their schools' financial management. Regarding school location, 41.2% served urban schools, 29.4% rural schools, 18.4% peri-urban schools, and 11.0% schools in other locations, reflecting representation across the geographic diversity of Lusaka Province.

4.1.1 Financial Sustainability of Private Schools: The FSI

Table 2 presents the descriptive statistics, principal component analysis (PCA) results, and the Financial Sustainability Index (FSI) classification for the private schools studied. The table summarizes key indicators of financial sustainability, their corresponding statistical measures, and the overall classification of schools based on the FSI scores.

Table 2

Descriptive Statistics, PCA Results, and Financial Sustainability Index (FSI) Classification (N = 272)

Variable/Component	Indicator/Item	Mean (M)	Std. Dev. (SD)	Factor Loading	Weight (Coeff.)	Interpretation
Financial Sustainability Items	The private school maintains emergency or contingency funds for ensuring financial stability	2.94	1.425	0.76–0.81	0.178-0.191	Neutral (Low reserves)
	The private school maintains sufficient savings to sustain operations during revenue shortfalls	3.03	—	0.76–0.81	0.178-0.191	Neutral (Marginal reserves)
	Other financial sustainability items (5 items)	2.94–3.03	—	0.76–0.81	0.178–0.191	Neutral
	Overall Mean Range	**2.94–3.03**	—	—	—	**Neutral (2.50–3.49)**
PCA Diagnostics	Kaiser-Meyer-Olkin (KMO) Measure	—	—	—	—	0.922 (Excellent)
	Bartlett's Test of Sphericity	—	—	—	—	Significant ($p < 0.05$)
	Eigenvalue (Component 1)	—	—	—	—	4.25
	Variance Explained (%)	—	—	—	—	60.65%
	Number of Components Retained	—	—	—	—	1 (Unidimensional)
Financial Sustainability Index (FSI)	Mean FSI Score	0.53	0.202	—	—	Moderate but fragile
FSI Classification	Absolute Sustainability (0.75–1.00)	42	15.4	—	—	Strong
	Normal Sustainability (0.50–0.75)	106	39	—	—	Stable
	Unstable (0.25–0.50)	106	39	—	—	At risk
	Critical (< 0.25)	18	6.6	—	—	Severe risk
	Total	**272**	**100**	—	—	—

The descriptive analysis of the seven financial sustainability items revealed mean scores ranging from 2.94 to 3.03, all within the neutral range (2.50–3.49) of the five-point Likert scale. This neutral pattern is itself a concerning finding: it indicates that even school administrators are not confident about the financial health of their own institutions, reflecting systemic uncertainty about revenue adequacy, reserve levels, and operational sustainability across the sector. The item 'The private school maintains emergency or contingency funds for ensuring financial stability' recorded the lowest mean (M = 2.94; SD = 1.425), indicating the most widespread deficiency in financial reserve management. The item 'The private school maintains sufficient savings to sustain operations during revenue shortfalls' recorded a mean of 3.03, suggesting marginal but unreliable reserve adequacy across the sector.

The PCA analysis for the FSI computation confirmed the suitability of the financial sustainability items for factor analysis. The KMO statistic of 0.922 indicated very high sampling adequacy, and Bartlett's Test of Sphericity confirmed sufficient inter-correlation among items to justify PCA. A single component was retained based on the Kaiser criterion (eigenvalue = 4.25; all other components below 1.0), explaining 60.65% of the total variance in financial sustainability items. All seven items loaded positively and strongly on this component, with loadings ranging from 0.76 to 0.81, confirming that the items collectively represent a unidimensional and robust measure of financial sustainability. Component score coefficients ranging from 0.178 to 0.191 were used as weights in computing the composite FSI, ensuring that all items contributed approximately equally to the index.

The mean FSI of 0.53 (SD = 0.202) indicated moderate but fragile financial sustainability across the sample. Applying the Sazonov et al. (2015) classification criteria, 39% of sampled schools were classified as having normal financial sustainability ($0.50 \leq FSI < 0.75$), 39% were classified as unstable ($0.25 \leq FSI < 0.50$), 15.4% as having absolute financial sustainability ($0.75 \leq FSI \leq 1.00$), and 6.6% as experiencing critical financial sustainability ($FSI < 0.25$). The finding that 45.6% of schools were either in critical or unstable financial condition represents a significant sector-wide challenge and underscores the urgency of the financial sustainability interventions identified in this study.

Qualitative narratives corroborated these quantitative results with consistent descriptions of schools that were operational but financially fragile. One school principal stated: *'Our private school is still in existence, but in terms of its financial sustainability, it tends to be moderate. Salaries, utility and daily expenses are normally paid regularly depending on the timely payment of fees by the parents. The school does not have considerable financial reserves, thus* *delays in the payment of fees often create liquidity pressures that affect operations'* (Participant 2; Principal on 24th Augast 2025). Another participant described the sector's characteristic financial position: *'The financial position of most private schools including ours is not stable but not completely weak. The necessary operation expenses are met, but the liquidity after expenditure is low. Tuition is the leading source of revenue and therefore makes the school prone to financial strain whenever collection is delayed or enrolment falls'* (Participant 10; Principal, 24th August, 2025).

4.1.2 Revenue Diversification Levels among Private Schools

Table 3 displays the descriptive statistics and exploratory factor analysis (EFA) results for revenue diversification among the private schools surveyed.

Table 3

Descriptive Statistics and Exploratory Factor Analysis (EFA) Results for Revenue Diversification (N = 272)

Variable/Component	Indicator/Item	Mean (M)	Std. Dev. (SD)	Factor Loading	Interpretation
Revenue Diversification Items	Recognition of revenue diversification as a critical component of financial strategy	3.26	0.939	—	Neutral (High awareness)
	Existence of formal revenue diversification strategies	3.17	0.972	—	Neutral (Low implementation)
	Allocation of resources to diversification activities	3.16	0.889	—	Neutral (Low resource commitment)
	Other revenue diversification items (4 items)	3.16–3.26	—	—	Neutral
	Overall Mean Range	**3.16–3.26**	—	—	Neutral (2.50–3.49)
EFA Diagnostics	Kaiser-Meyer-Olkin (KMO) Measure	—	—	—	High sampling adequacy
	Bartlett's Test of Sphericity	—	—	—	Significant ($p < 0.05$)
	Eigenvalue (Component 1)	—	—	—	5.72
	Variance Explained (%)	—	—	—	81.73%
	Number of Components Retained	—	—	—	1 (Unidimensional)

Descriptive statistics for the seven revenue diversification items revealed mean scores ranging from 3.16 to 3.26, all within the neutral range. The item recording the highest mean (M = 3.26; SD = 0.939) concerned the recognition of revenue diversification as a critical component of financial strategy, suggesting that conceptual awareness of its importance is relatively widespread. However, items relating to the actual existence of formal diversification strategies (M = 3.17; SD = 0.972) and the allocation of resources to diversification activities (M = 3.16; SD = 0.889) recorded the lowest means among the construct items. This pattern reveals a concerning gap between awareness and implementation: most schools recognise the importance of revenue diversification but have not yet systematically operationalised it as a strategic and resourced institutional priority.

EFA confirmed the unidimensionality and measurement quality of the revenue diversification construct. The KMO statistic confirmed strong sampling adequacy, and Bartlett's Test was significant. A single component was retained (eigenvalue = 5.72; variance explained = 81.73%), indicating that the seven items represented a coherent and robust measure of the revenue diversification construct. The high proportion of variance explained by a single factor suggests that revenue diversification in the private school context is indeed a fundamentally unidimensional organisational capability, encompassing awareness, strategy, resource allocation, and implementation as facets of a single underlying construct.

4.1.3 Effect of Revenue Diversification on Financial Sustainability

Pearson correlation analysis revealed a strong, positive, and highly statistically significant relationship between revenue diversification and the FSI ($r = 0.799$; $p < .001$; BCa 95% CI: 0.753–0.850). This is the strongest bivariate relationship observed in this study across all predictor variables, and an effect size that is practically significant by any standard criterion in the social sciences. The narrow bootstrap confidence interval confirms exceptional stability of this estimate and establishes that the population relationship between revenue diversification and financial sustainability is robustly and powerfully positive. This result provides strong statistical support for H1 and is consistent with theoretical predictions from both the Tuckman–Chang (1991) model and Bowman's (2011) framework.

Multiple regression analysis confirmed revenue diversification as the dominant predictor of financial sustainability in the full regression model (beta = 0.561; $t = 11.24$; $p < .001$; 95% CI: 0.46–0.66), controlling for governance capability, cost management capability, pricing capability, regulatory intensity, market competition, school size, and school age. The overall model explained 67% of the variance in financial sustainability ($R^2 = 0.67$; $F(7,264) = 75.15$; $p < .001$), with revenue diversification contributing the largest unique proportion of explained variance among all predictors. The standardised beta coefficient of 0.561 indicates that a one-standard-deviation increase in revenue diversification is associated with a 0.561-standard-deviation increase in the FSI, holding all other variables constant. This effect size is both statistically significant and practically large, indicating that revenue diversification improvements yield substantial financial sustainability returns.

Moderation analysis using PROCESS Model 2 revealed that market competition significantly moderated the relationship between revenue diversification and financial sustainability (B = 0.07; SE = 0.03; t = 2.36; p = .020; 95% CI: 0.01–0.13). This finding indicates that the financial sustainability returns to revenue diversification are amplified in more competitive market environments: schools operating in environments with stronger competitive pressure from other private schools and from free public schools obtain greater financial sustainability benefits from diversifying their income streams. In contrast, regulatory intensity did not significantly moderate the diversification–sustainability relationship (B = -0.01; SE = 0.02; t = -0.32; p = .750), suggesting that the financial sustainability benefits of revenue diversification are not significantly constrained by the prevailing regulatory environment for private schools in Lusaka Province.

Table 4

Pearson Correlation, Regression, and Moderation Results for Revenue Diversification and Financial Sustainability (N = 272)

Analysis	Statistic	Coefficient /Value	SE	t/F	p-value	95% CI / Interpretation
Pearson correlation	r	0.799	—	—	< .001	BCa 95% CI: 0.753–0.850
Multiple regression	β	0.561	—	11.24	< .001	95% CI: 0.46–0.66
Full regression model	R^2 / F	0.67	—	75.15	< .001	F(7,264) = 75.15
Moderation effect	B	0.07	0.03	2.36	.020	Market competition significantly moderates the relationship; 95% CI: 0.01–0.13

4.2 Discussion

The finding that revenue diversification is the single most powerful predictor of financial sustainability (r = 0.799; beta = 0.561) is theoretically consistent with both the Tuckman–Chang (1991) model and Bowman's (2011) framework, and empirically aligns with findings from Kenya (Kimathi & Irungu, 2024; Metto & Ombaba, 2021; Ng'ang'a & Kibati, 2016), Malaysia (Jaafar et al., 2023), Ghana (Osei-Kuffour & Peprah, 2020), Uganda (Nalwoga, 2021), and the broader non-profit financial management literature (Carroll & Stater, 2009; Greenlee & Trussel, 2000). The magnitude of the relationship observed in this study, a correlation of 0.799, is notably stronger than those typically reported in higher education studies, which range from approximately 0.40 to 0.65. This difference may reflect the particularly acute vulnerability of private primary and secondary schools to revenue shocks due to their smaller institutional size, more limited access to capital markets, more restricted access to philanthropic funding, and greater sensitivity to enrolment fluctuations.

The Tuckman–Chang (1991) model specifically predicts that revenue concentration increases financial vulnerability and that diversification reduces it. The present findings provide strong confirmation of this prediction in the Zambian private school context. Schools with more diversified income portfolios, those that have developed revenue streams beyond tuition fees through activities such as facility hire, community programmes, commercial enterprises, and donor partnerships, demonstrate substantially higher FSI scores and are more likely to be classified as having normal or absolute financial sustainability. Conversely, schools with the most concentrated revenue portfolios, those deriving 70% or more of their income from tuition fees alone, are disproportionately represented in the unstable and critical financial sustainability categories. This pattern directly validates the core prediction of the Tuckman–Chang model in the private school context.

Bowman's (2011) financial capacity framework adds an important additional dimension to this interpretation. The framework argues that revenue diversification is not merely a risk-mitigation strategy but a capacity-building mechanism: it generates the operating surpluses and reserve accumulations that enable institutions to invest in quality, absorb shocks, and achieve long-term sustainability. The qualitative evidence from this study provides rich illustration of this capacity-building dynamic. Participants from schools with more diversified income portfolios described a qualitatively different financial management experience: one characterised by proactive planning, strategic investment, and institutional resilience, rather than the reactive crisis management that dominated accounts from schools with concentrated revenue portfolios. This distinction between reactive and strategic financial management is consistent with the broader organisational finance literature (Froelich, 1999) and highlights the importance of treating revenue diversification as a strategic institutional priority embedded in governance and planning processes.

The finding that market competition significantly moderates the diversification–sustainability relationship is an important and novel contribution to the literature. This finding indicates that competitive environments function as amplifiers of the diversification effect: schools in more competitive markets, where the presence of multiple private schools and free public education intensifies the pressure on any single revenue stream, obtain greater financial sustainability benefits from diversifying their income portfolios than schools in less competitive environments. This finding is consistent with resource dependence theory (Froelich, 1999), which predicts that environmental pressure intensifies the strategic value of resource diversification, and with the broader institutional economics literature on the relationship between competitive environments and institutional adaptation strategies.

The finding that 45.6% of private schools are in financially unstable or critical condition, combined with the moderate mean FSI of 0.53 and the neutral revenue diversification scores indicating awareness without implementation, creates a clear and urgent policy and practice implication: the sector is aware that it needs to diversify revenue but has not yet done so systematically. The regression coefficient of beta = 0.561 quantifies the potential return to diversification investment and identifies revenue diversification as the highest-priority single intervention for improving sector-wide financial sustainability. This finding has immediate relevance for school administrators, education policymakers, and development partners working to strengthen the private education sector in Zambia.

The qualitative evidence provides essential contextual depth to the quantitative findings, revealing that the most financially stable schools are those that have treated revenue diversification not as an emergency response to financial pressure but as a proactive strategic priority embedded in their institutional planning and resource allocation processes. Participant 2, a school principal, articulated this strategic orientation: 'Based on my experiences, private schools which only depend on tuition fees are more financially vulnerable, especially when parental remittances are delayed or enrolment decreases. The diversification of alternative sources of income has helped maintain adequate cash flow even when tuition collection is disrupted.' Participant 7, a school bursar, described the practical impact of diversification on operational stability: 'With various sources of receipts, strain on any source is reduced, hence the achievement of uniform coverage of recurrent expenditures. These kinds of diversification enhance the private school's financial security and allow us to plan ahead rather than reacting to each financial crisis.'

Participant 10, a long-serving school principal, elaborated on the strategic transformation enabled by revenue diversification: 'All financially sustainable organisations do not want to be dependent on one funding source. In the case of our private school, additional revenue received in the form of partnerships, developmental contributions, and school-initiated activities has supplemented the income of the school and shielded us from the risk of sudden drops in enrolment. The diversification of revenue sources has transformed our financial management from reactive to strategic.' These qualitative narratives collectively illustrate the mechanisms through which revenue diversification improves financial sustainability: by reducing revenue concentration risk, improving cash flow predictability, enabling proactive rather than reactive financial management, and generating the surpluses needed to build institutional reserves and invest in quality improvement.

The findings of this study are consistent with but extend beyond the existing literature in several important ways. First, the magnitude of the correlation (r = 0.799) is higher than typically reported, suggesting that the effects of revenue diversification on financial sustainability are particularly acute in the Zambian private school context, possibly because the degree of revenue concentration in this sector is more severe than in the higher education and non-profit contexts studied in previous research. Second, the use of a composite FSI as the dependent variable, rather than a single financial indicator, provides a more comprehensive and nuanced picture of the financial sustainability effects of diversification than previous studies. Third, the moderation analysis demonstrating that market competition amplifies the diversification effect is a novel contribution that extends the theoretical understanding of boundary conditions on the diversification–sustainability relationship.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

This study provides robust and comprehensive empirical evidence that revenue diversification is the single most important driver of financial sustainability among private schools in Lusaka Province, Zambia. The strong positive relationship (r = 0.799; beta = 0.561; p < .001), confirmed by both rigorous quantitative analysis of 272 survey respondents and rich qualitative interview data from 15 semi-structured interviews, establishes that diversifying beyond tuition fee income is not merely a desirable financial strategy but an existential necessity for private schools operating in Zambia's volatile macroeconomic and policy environment. The finding that 45.6% of schools are in financially unstable or critical condition underscores the urgency of the interventions recommended by this study. H1 is supported. The study makes an original and significant contribution to the limited empirical literature on private primary and secondary school financial sustainability in sub-Saharan Africa, providing the first rigorous mixed-methods investigation of the revenue diversification–financial sustainability relationship in the Zambian private school context.

5.2 Recommendations

Private school administrators should develop and implement formal, resourced revenue diversification strategies that identify multiple income streams appropriate to their institutional context, resource base, and community environment. Such strategies should include both short-term opportunities such as facility hire, community programmes, and additional tuition services, and longer-term developments including donor partnerships, commercial enterprises, and digital learning services. These strategies should be formally documented, periodically reviewed, and evaluated through income contribution monitoring to ensure that diversification efforts are generating meaningful financial sustainability returns. School governing bodies and proprietors should incorporate revenue diversification performance indicators into their institutional governance and reporting frameworks, treating diversification as a strategic key performance indicator rather than an operational afterthought. This institutional prioritisation of diversification is essential for ensuring that the awareness of its importance, which this study found to be widespread, is translated into the systematic strategic action needed to generate meaningful financial sustainability improvements.

The Ministry of Education in Zambia should develop a national framework for private school financial sustainability that creates regulatory clarity for income-generating activities, provides capacity building support for diversification strategy development, and creates incentives for schools demonstrating strong financial sustainability practices. Such a framework should include guidance on permissible income-generating activities, simplified registration procedures for revenue diversification initiatives, and technical assistance for schools seeking to develop diversified income portfolios. Development partners and education-focused non-governmental organisations operating in Zambia should prioritise financial management capacity building for private schools, with revenue diversification identified as the highest-priority intervention area based on the evidence from this study.

REFERENCES

Bowman, W. (2011). Financial capacity and sustainability of ordinary nonprofits. *Nonprofit Management and Leadership, 22*(1), 37–51. https://doi.org/10.1002/nml.20039

Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide.* SAGE Publications.

Carroll, D. A., & Stater, K. J. (2009). Revenue diversification in nonprofit organizations: Does it lead to financial stability? *Journal of Public Administration Research and Theory, 19*(4), 947–966. https://doi.org/10.1093/jopart/mun025

Chisanga, A. M. (2018). *Situational analysis of financial sustainability in selected public secondary schools in Ndola district of Zambia* (Master's thesis, University of Zambia).

Creswell, J. W., & Creswell, J. D. (2022). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.

Creswell, J. W., & Poth, C. N. (2024). *Qualitative inquiry and research design: Choosing among five approaches.* SAGE Publications.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). Wiley.

Froelich, K. A. (1999). Diversification of revenue strategies: Evolving resource dependence in nonprofit organizations. *Nonprofit and Voluntary Sector Quarterly, 28*(3), 246–268. https://doi.org/10.1177/0899764099283002

Greenlee, J. S., & Trussel, J. M. (2000). Predicting the financial vulnerability of charitable organizations. *Nonprofit Management and Leadership, 11*(2), 199–210. https://doi.org/10.1002/nml.11205

Hager, M. A. (2001). Financial vulnerability among arts organizations: A test of the Tuckman–Chang measures. *Nonprofit and Voluntary Sector Quarterly, 30*(2), 376–392. https://doi.org/10.1177/0899764001302010

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* The Guilford Press.

Hennink, M. M., Kaiser, B. N., & Marconi, V. C. (2017). Code saturation versus meaning saturation. *Qualitative Health Research, 27*(4), 591–608. https://doi.org/10.1177/1049732316665344

Jaafar, J. A., Latiff, A. R. A., Daud, Z. M., & Osman, M. N. H. (2023). Does revenue diversification strategy affect the financial sustainability of Malaysian public universities? A panel data analysis. *Higher Education Policy, 36*(1), 116–143. https://doi.org/10.1057/s41307-021-00247-9

Katongo, M., & Phiri, J. (2023). Factors influencing financial sustainability of local health non-governmental organizations (LHNGOs) in developing countries: A case of Zambia. *Open Journal of Business and Management, 11*(6), 3313–3331. https://doi.org/10.4236/ojbm.2023.116180

Kimathi, B. K., & Irungu, A. M. (2024). Revenue diversification on financial sustainability of public universities in Kenya. *Journal of Finance and Accounting, 4*(3), 31–41.

Metto, N. C., & Ombaba, M. K. B. (2021). Debt financing and financial sustainability: Effect of trade credit financing on private secondary schools in Uasin Gishu County. *International Journal of Finance, Accounting and Economics, 1*(4), 1–15.

Ministry of Education. (2025). *Education statistics bulletin 2025*. Ministry of Education.
Mulenga, L. M., & Daka, H. (2018). Sustainability and accessibility of private schools in Zambia: Experiences of low-cost private primary schools in Lusaka's peri-urban areas. *Journal of Positive Psychology and Counselling, 2*(2), 47–77.
Nalwoga, M. M. (2021). Financial sustainability of private universities in Uganda: A critical perspective. *African Journal of Education, Science and Technology, 6*(3), 1–11.
Ndlovu, I. (2020). Factors that affect university financial sustainability: A case study of a private university in Zimbabwe. *East African Journal of Education and Social Sciences, 1*(2), 193–200. https://doi.org/10.46606/eajess2020v01i02.0034
Ng'ang'a, A. N., & Kibati, P. (2016). Determinants of financial sustainability of private middle-level colleges in Nakuru County, Kenya. *International Journal of Economics, Commerce and Management, 4*(10), 356–380.
Ngcobo, X. M., Marimuthu, F., & Stainbank, L. J. (2024). Revenue sourcing for the financial sustainability of a university of technology: An exploratory study. *Cogent Education, 11*(1), 1–12. https://doi.org/10.1080/2331186X.2023.2295173
Osei-Kuffour, F., & Peprah, W. K. (2020). Correlates of income diversification and financial sustainability of private tertiary institutions as moderated by institutional profile. *International Journal of Academic Research in Accounting, Finance and Management Sciences, 10*(3), 1–10. https://doi.org/10.6007/IJARAFMS/v10-i3/7657
Riachi, C. K. (2021). *Determinants of financial sustainability of universities: A case of Strathmore University* (Thesis, Strathmore University). http://hdl.handle.net/11071/12513
Saunders, M., Lewis, P., & Thornhill, A. (2023). *Research methods for business students* (9th ed.). Pearson Education.
Sazonov, S. P., Kharlamova, E. E., Chekhovskaya, I. A., & Polyanskaya, E. A. (2015). Evaluating financial sustainability of higher education institutions. *Asian Social Science, 11*(20), 34–40. https://doi.org/10.5539/ass.v11n20p34
Toyon, M. A. S. (2021). Explanatory sequential design of mixed methods research: Phases and challenges. *International Journal of Research in Business and Social Science, 10*(5), 253–260. https://doi.org/10.20525/ijrbs.v10i5.1262
Tuckman, H. P., & Chang, C. F. (1991). A methodology for measuring the financial vulnerability of charitable nonprofit organizations. *Nonprofit and Voluntary Sector Quarterly, 20*(4), 445–460. https://doi.org/10.1177/089976409102000407
World Bank. (2022). *Financing basic education: The financial implications of Zambia's education for all policy.* World Bank Publications.
Yamane, T. (1973). *Elementary sampling theory* (2nd ed.). Prentice-Hall.
Zambia Open Private Schools Association (ZOPSA). (2022). About 40% of private schools struggle to survive following the introduction of free education.
Zikmund, W. G. (2013). *Business research methods* (9th ed.). South-Western.