# Pricing capability, regulatory intensity, and market competition as determinants 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

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## ABSTRACT

Pricing capability and affordability management, together with the moderating influences of regulatory intensity and market competition, constitute theoretically important but empirically underexplored determinants of financial sustainability in private schools. This study investigates the direct influence of pricing capability and affordability management on financial sustainability, and the moderating roles of regulatory intensity and market competition 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). Quantitative data were collected from 272 valid survey questionnaire responses drawn from school owners, principals, bursars, and accountants 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 (1973) formula. Qualitative data were gathered through 15 purposively selected semi-structured telephone interviews conducted to theoretical saturation. A Financial Sustainability Index (FSI) was computed via Principal Component Analysis, with a mean FSI of 0.53 (SD = 0.202) reflecting moderate financial fragility across the sector. Pearson correlation analysis, supported by bias-corrected bootstrap estimation with 5,000 resamples, revealed a very weak and statistically insignificant direct relationship between pricing capability and affordability management and the FSI ($r = -0.023$; $p = 0.702$; BCa 95% CI: -0.14–0.11), indicating that H2 is not supported. The pricing items recorded neutral mean scores ranging from 2.88 to 3.00, reflecting widespread awareness of pricing imperatives without systematic strategic implementation. However, PROCESS Macro moderation analysis (Model 2; $R^2 = 0.29$; $F(7,264) = 15.36$; $p < .001$) revealed important contextual findings: market competition had significant positive direct effects on financial sustainability ($B = 0.25$; $SE = 0.03$; $t = 9.96$; $p < .001$), but regulatory intensity and market competition did not significantly moderate the pricing–sustainability relationship. Moderation analysis of other financial sustainability determinants revealed that market competition significantly amplified the effect of revenue diversification on financial sustainability, while both regulatory intensity and market competition significantly moderated the governance–sustainability relationship. Qualitative findings provided critical contextual explanation for the pricing null finding, with participants describing uniformly reactive, informally determined, and competitively benchmarked pricing practices that are fundamentally disconnected from institutional cost structures and strategic financial planning. The study makes original contributions by documenting the first empirical evidence of the pricing–sustainability null finding in Zambian private schools. This study concludes that by demonstrating important moderating boundary conditions imposed by regulatory and competitive environments across multiple financial sustainability determinants provides a rich qualitative account of the mechanisms through which these effects operate in practice. This study recommends that the Ministry of Education should assess the financial sustainability implications of the free education policy for the private school sector and develop complementary support mechanisms that reduce the competitive pressure on private schools to maintain fees below cost-adequate levels.

**Keywords:** Affordability Management, Financial Sustainability, Market Competition, Pricing Capability, Private Schools, Regulatory Intensity, Zambia

## I. INTRODUCTION

Pricing is among the most consequential financial management decisions facing private educational institutions. The fees that private schools charge simultaneously determine their revenue levels, competitive positioning, enrolment attractiveness, community accessibility, and financial sustainability trajectory. For private schools in Zambia, where tuition fees typically constitute the dominant share of total income and where the revenue environment has been significantly disrupted by the expansion of free public education since 2022, the strategic quality of pricing decisions has become an increasingly critical determinant of institutional financial health. The Zambia Open Private Schools Association (ZOPSA, 2022) documented that approximately 40% of private schools were experiencing financial distress

following this policy change, with enrolment losses of over 60% in some institutions, underscoring the extent to which pricing decisions intersect with competitive dynamics in shaping financial sustainability outcomes.

Pricing capability in the educational context encompasses the ability of an institution to develop and implement pricing policies that appropriately value its educational offering, respond strategically to competitive market conditions, manage family affordability concerns, and maintain institutional financial viability (Pinto, 2021; Lee et al., 2020). Affordability management, the complementary capability of ensuring that fees are set at levels that sustain enrolment while protecting institutional financial health, is equally critical, as institutions that price above their market's affordability threshold risk enrolment losses that can be more financially damaging than the revenue constraints of moderate fee restraint. The balance between pricing adequacy and affordability is particularly acute in Zambia, where high poverty rates and income inequality mean that many families face severe financial constraints in paying school fees, yet schools simultaneously face rising operational costs that require revenue growth to sustain financial viability.

The external environment within which pricing decisions are made is shaped by two intersecting conditions. Regulatory intensity refers to the degree of government regulation affecting private school operations, including fee disclosure requirements, quality standards, curriculum requirements, and operational compliance obligations. Market competition refers to the competitive pressure exerted by other private schools and, critically in the Zambian context since 2022, by free public schools whose expansion directly reduces household demand for fee-paying private education. Both regulatory intensity and market competition can significantly modify the relationship between financial management strategies and sustainability outcomes, functioning as boundary conditions that either enable or constrain the financial sustainability returns to good financial management.

Despite the strategic significance of pricing and the theoretical importance of regulatory and competitive environments as moderating conditions, empirical evidence specifically examining these relationships in the context of private schools in Zambia is absent from the literature. This study fills this gap by investigating three interrelated empirical questions. First, does pricing capability and affordability management directly predict financial sustainability outcomes? Second, how does regulatory intensity moderate the relationship between financial management strategies and financial sustainability? Third, how does market competition moderate these relationships? These questions are addressed through a rigorous mixed-methods design that combines the statistical power of quantitative survey analysis with the contextual depth of qualitative interviews. The study also serves an important theoretical purpose by providing a comprehensive examination of moderating effects across all financial sustainability determinants studied in the broader research programme, including revenue diversification, governance and financial management capability, and cost management capability. By examining how regulatory intensity and market competition modify the effects of multiple financial sustainability strategies simultaneously, the study advances theoretical understanding of the institutional boundary conditions that shape the financial sustainability returns to different management capabilities in the private school context.

### 1.1 Statement of the Problem

Pricing practices in private schools across Lusaka Province are characterised by a fundamental strategic deficit: fees are set primarily through reactive competitive benchmarking and informal parental negotiation rather than through systematic analysis of institutional cost structures, strategic financial planning, or rigorous assessment of the revenue-adequacy implications of different fee levels. This reactive approach means that fee levels in many private schools consistently fall below the cost of educational provision, particularly during periods of inflation and cost escalation, creating a structural revenue deficiency that undermines financial sustainability regardless of the quality of other financial management practices.

The regulatory and competitive environments within which these pricing decisions are made are increasingly complex and constraining. The government's expansion of free public education has intensified competitive pressure on private schools at all fee levels, while regulatory requirements around fee disclosure, curriculum compliance, teacher qualification, and school registration create compliance costs that consume the institutional resources available for financial sustainability investment. The interaction between reactive pricing practices and a challenging regulatory and competitive environment creates a particularly acute financial sustainability challenge for the sector. Understanding why pricing capability does not directly predict financial sustainability in this context, and identifying the moderating conditions that shape the financial sustainability effects of different management strategies, is essential for developing effective financial sustainability policies and practices for Zambian private schools.

### 1.2 Research Objectives

i. To assess how pricing capability and affordability management influence the financial sustainability of private schools in Lusaka Province, Zambia; and second,
ii. To evaluate the moderating roles of regulatory intensity and market competition on the financial sustainability of private schools in Lusaka Province, Zambia.

### 1.3 Research Hypotheses

*$Ho_1$:* Pricing capability and affordability management are positively associated with financial sustainability of private schools in Zambia.

*$Ho_2$:* Regulatory intensity and market competition have significant moderating effects on financial sustainability of private schools in Zambia.

## II. LITERATURE REVIEW

### 2.1 Theoretical Review

#### 2.1.1 The Tuckman–Chang (1991) Model: Pricing and Environmental Moderators

The Tuckman–Chang (1991) financial vulnerability model identifies poor operating margins as a primary vulnerability indicator, reflecting the principle that organisations unable to generate surpluses from their operational revenue are exposed to financial distress. In private schools, operating margins are directly shaped by pricing decisions: institutions that set fees too low relative to their cost structures generate insufficient revenue to cover operational costs, producing the thin or negative margins that the model identifies as a primary financial vulnerability signal. The model therefore implicitly supports the expectation that pricing capability should be positively associated with financial sustainability.

However, the Tuckman–Chang model also acknowledges that financial management strategies operate within environmental contexts that condition their effectiveness. Regulatory constraints on fee setting and competitive pressure to maintain affordable fees represent external environmental forces that may limit the extent to which schools can leverage pricing as a financial sustainability tool, creating boundary conditions on the pricing–sustainability relationship. When competitive and regulatory environments severely constrain pricing flexibility, even strong pricing capability may not translate into meaningful financial sustainability improvements, because the institutional capacity to price at cost-adequate levels is blocked by external constraints. This environmental conditioning role is the theoretical foundation for the moderation hypotheses tested in this study.

#### 2.1.2 Bowman's (2011) Financial Capacity Framework: Environmental Conditions

Bowman's (2011) financial capacity framework emphasises that the ability of organisations to build financial capacity depends not only on internal management capabilities but also on the external environment within which these capabilities are deployed. Revenue optimisation through pricing is conceptualised in the framework as a capacity-building strategy: the ability to set fees at financially appropriate levels generates the operating surpluses that constitute the raw material of long-term financial capacity. However, the framework also acknowledges that external conditions, including market competition and regulatory constraints, shape the environment within which revenue strategies are implemented. In highly competitive or heavily regulated environments, the financial capacity-building potential of pricing capability may be substantially constrained by external forces that limit pricing flexibility and reduce the financial sustainability returns to pricing strategy improvement.

For private schools in Zambia, this means that understanding the financial sustainability implications of pricing decisions requires simultaneous consideration of the competitive and regulatory environment. A school with strong pricing capability operating in a highly competitive market constrained by the presence of free public schools may achieve substantially lower financial sustainability improvements from pricing strategy enhancement than an equivalently capable school operating in a less competitive environment. Bowman's framework thus supports both the direct pricing–sustainability hypothesis and the environmental moderation hypotheses, providing a coherent theoretical rationale for examining both direct and contingent effects of pricing capability on financial sustainability.

### 2.2 Empirical Review

#### 2.2.1 Pricing Capability and Affordability Management: Conceptual Dimensions

Pricing capability in educational institutions encompasses multiple interrelated dimensions that collectively determine the institution's ability to generate adequate revenue while maintaining enrolment attractiveness. Muhammad et al. (2025) define pricing capability as the orientation, skill, and effectiveness with which an institution develops and implements its pricing policies, encompassing pricing strategy formulation, market responsiveness, cost-plus pricing analysis, and competitive positioning. Affordability management, a closely related construct, refers to the institution's ability to maintain fee levels that are accessible to its target market while preserving institutional financial viability, encompassing scholarship and bursary programmes, flexible payment arrangements, family financial assistance, and transparent fee communication.

Hrynkevych and Boiko (2025) argue that institutions of higher learning with strong pricing capability are usually in a position to coordinate revenue generation with long-term strategic goals, developing greater financial strength

through systematic alignment of pricing decisions with cost structures and market positioning. Irene and Hussain (2021) demonstrate that affordability management is key to maintaining enrolment and long-term financial sustainability, as poor affordability management creates access barriers that reduce enrolment and endanger the revenue base. Lee et al. (2020) examine Korean private universities employing flexible pricing strategies and find that most achieved better financial sustainability outcomes, reiterating the role of integrated financial management whereby pricing and affordability are part of larger institutional strategies.

However, the educational pricing literature also identifies important limitations and contextual complications. Pinto (2021) found in a comparative study of Brazilian educational institutions that those with better pricing strategies were more financially sustainable, but also noted that the effectiveness of pricing strategies depends heavily on market conditions, regulatory constraints, and institutional positioning. Lee et al. (2020) note that institutions in areas with limited market demand or those in developing economies may struggle to use effective pricing strategies because enrolment constraints and limited external funding reduce the revenue potential of even sophisticated pricing approaches. These contextual qualifications provide important theoretical context for interpreting the null finding on the direct pricing–sustainability relationship documented in this study.

### 2.2.2 Regulatory Intensity and Financial Sustainability

Regulatory intensity, the stringency of laws, policies, and regulations governing educational institutions, affects the financial sustainability of private schools through multiple mechanisms. Wang et al. (2024) explored the role of regulatory frameworks in contributing to the financial sustainability of higher education institutions in Europe, finding that stringent policies regarding tuition fees and investment restrictions have the potential to constrain revenue growth opportunities, thereby reducing financial sustainability. However, the same study indicated that regulatory frameworks can also have positive impacts by creating operational standards, quality assurance requirements, and accountability mechanisms that improve institutional efficiency and stakeholder trust.

Zaitoun and Al-Qudah (2020) point to the adverse moderating role of excessive regulations over private universities in Jordan, finding that more government control such as regulation of tuition and approval requirements limits pricing flexibility and profitability, reducing the potential of private institutions to invest in innovation or quality improvement. The study established that privately run institutions with severe regulatory restraint mechanisms had difficulties adapting to competitive environments and became less financially resilient. This finding supports the theoretical expectation that regulatory intensity can negatively moderate the relationship between internal management capabilities and financial sustainability outcomes by constraining the institutional freedom needed to deploy financial sustainability strategies effectively.

Olaoye et al. (2021) present evidence from Nigerian higher education institutions showing that regulatory severity, particularly government funding prohibitions and accreditation demands, moderated the connection between cost management and sustainability. Universities must implement stricter financial management approaches and novel revenue diversification measures in high regulation settings, and financial sustainability is enhanced more through financial independence over the long run in environments where excessive regulatory constraints are reduced. These findings suggest that the moderating effect of regulatory intensity is complex and potentially bidirectional: moderate regulation can reinforce good financial practices, while excessive regulation constrains the flexibility needed for effective financial strategy implementation.

### 2.2.3 Market Competition and Financial Sustainability

Market competition in the education sector, defined as the competitive pressure from other private schools and particularly from free public schools, directly affects pricing strategies, enrolment capacity, and revenue generation potential, creating significant contingent effects on financial sustainability outcomes. Santos et al. (2019) address how competition in the market affects financial sustainability in Brazilian higher education institutions, finding that in very competitive situations, private universities have no option other than to diversify their revenue sources through greater innovation, provision of additional services, or programme expansion. The study concluded that financial sustainability is achieved more effectively in competitive environments when institutions are responsive to market forces through flexible pricing and diversification strategies.

Marimuthu et al. (2020) engaged in research on financial sustainability and market competition in Asian private tertiary institutions, finding that institutions in highly competitive markets with low barriers to entry demonstrate greater cost control, more efficient resource allocation, and faster financial decision-making. Competition plays the moderating role of compelling institutions to be more aggressive in cost management and price determination to remain financially viable amid growing competition. Conversely, Yusoff et al. (2018) demonstrate in a Malaysian study that price rivalry, competition based mainly on tuition fees, negatively moderates financial sustainability because fee reductions to remain competitive decrease total institutional revenue, creating financial challenges for institutions primarily dependent on

tuition fees. This finding is particularly relevant to the Zambian private school context, where competitive pressure from free public schools has significantly constrained the pricing flexibility of private schools at all fee levels.

The combined evidence from the regulatory intensity and market competition literatures suggests that both environmental forces create significant boundary conditions on the financial sustainability returns to internal management capabilities, but that their effects are complex, contextual, and potentially contradictory. Understanding the specific moderating effects in the Zambian private school context requires empirical investigation that accounts for the distinctive characteristics of the Zambian educational market, including the dominant role of free public education competition and the specific regulatory framework governing private schools.

### 2.3 Research Gaps

The empirical review reveals four specific gaps that this study addresses. First, no previous study has empirically examined the pricing capability–financial sustainability relationship in private primary and secondary schools in Zambia, leaving critical evidence gaps for both policy and practice. Second, the specific moderating effects of regulatory intensity and market competition on the pricing–sustainability relationship and on other financial sustainability determinants have not been examined in the Zambian context. Third, the simultaneous examination of moderation effects across multiple financial sustainability determinants, including revenue diversification, governance capability, and cost management capability, provides a more comprehensive picture of the environmental boundary conditions shaping financial sustainability than studies examining individual determinants in isolation. Fourth, the mixed-methods design enables the contextual explanation of the null pricing finding, which quantitative methods alone cannot provide. This study addresses all four gaps.

## III. METHODOLOGY

### 3.1 Research Philosophy and Design

The study adopted the pragmatist research philosophy and an explanatory sequential mixed-methods design (QUAN→qual) (Creswell & Creswell, 2022; Saunders et al., 2023). This design was particularly appropriate for this study because the hypothesised relationships between pricing capability, regulatory intensity, market competition, and financial sustainability are simultaneously amenable to quantitative hypothesis testing and qualitative contextual explanation. The qualitative phase was especially important for this study because the null finding on the direct pricing–sustainability relationship required rich contextual explanation to understand why pricing capability does not directly predict financial sustainability in the Zambian private school context.

### 3.2 Study Area, Population, and Sampling

The research was conducted across the six districts of Lusaka Province, where 594 registered private primary and secondary schools operate (Ministry of Education, 2025). The study population comprised school owners, principals, bursars, and accountants, individuals with direct knowledge of pricing decisions, regulatory compliance experiences, and competitive market conditions. Using Yamane's (1973) formula at a 5% error margin, an adjusted sample of 300 schools was targeted, with 272 valid questionnaire responses retained after data cleaning (response rate = 90.7%). For the qualitative phase, 15 participants were purposively selected based on institutional role, experience, and school type, with theoretical saturation achieved at the fifteenth interview.

### 3.3 Data Collection Instruments

The pricing capability and affordability management scale comprised eight five-point Likert items measuring: effective management of pricing strategies to maintain affordability; regular review and adjustment of tuition fees based on market conditions; pricing strategy ensuring majority student affordability; provision of financial assistance options; transparent pricing communication; strategy for balancing affordability with cost of quality education delivery; use of discounts and promotions to improve affordability; and regular pricing evaluation to meet both school financial needs and student payment capacity. The scale was adapted from Muhammad et al. (2025) and Lee et al. (2020), contextualised for the Zambian setting, with a Cronbach's alpha of 0.83 and Average Variance Extracted of 0.55.

The regulatory intensity scale comprised five Likert items covering: high level of regulatory oversight; large number of operational regulations; complexity of regulatory environment; significant resources dedicated to compliance; and substantial impact of regulatory requirements on operational costs (Cronbach's alpha = 0.79; AVE = 0.51). The market competition scale comprised five items covering: highly competitive market with public schools offering free education; impact of free public education on enrolment; pressure to offer lower tuition fees; monitoring of competitor activities; and influence of competition on strategic decisions (Cronbach's alpha = 0.80; AVE = 0.54).

Qualitative data were collected through semi-structured interviews exploring: how the school determines its fees; factors considered in setting school fees; frequency of pricing structure review; balance between affordability and

financial sustainability; effects of fee levels on enrolment; regulatory compliance experiences; and competitive dynamics in the educational market. Interviews lasted 30–45 minutes and were analysed using Braun and Clarke's (2022) six-step reflexive thematic analysis framework.

### 3.4 Data Analysis

Quantitative analysis included descriptive statistics, EFA for construct validation, Pearson correlation analysis with BCa bootstrap confidence intervals based on 5,000 resamples, and moderation analysis using PROCESS Macro version 4.2 (Hayes, 2013). Moderation analysis employed PROCESS Model 2, examining two simultaneous moderators (regulatory intensity and market competition) for each predictor variable. All regression assumptions were verified prior to interpretation. Mean centring of predictor and moderator variables was applied before computing interaction terms to reduce multicollinearity in the moderation models. Bootstrap samples of 5,000 were used in all moderation analyses to ensure robust standard error estimation.

## IV. FINDINGS & DISCUSSIONS

### 4.1 Demographic Profile of Respondents

Table 1 presents the demographic characteristics of respondents from both the quantitative and qualitative samples. The table provides an overview of key variables such as age, gender, and educational background, offering context for the study's participant profile.

**Table 1**

*Demographic Characteristics of Respondents (Quantitative and Qualitative Samples)*

| Variable | Category | Frequency (n=272) | Percentage (%) |
|---|---|---|---|
| Gender | Male | 147 | 54 |
| | Female | 125 | 46 |
| Age (years) | 41–50 (modal group) | 85 | 31.3 |
| | 31–50 (combined range) | 158 | 58.1 |
| Highest Education Level | Undergraduate degree | 120 | 44.1 |
| Years of Experience (current school) | 6–10 years | 112 | 41.2 |
| Institutional Role | Bursar/Accountant | 114 | 41.9 |
| | School Head/Principal | 102 | 37.5 |
| | School Owner | 56 | 20.6 |
| School Location | Urban | 112 | 41.2 |
| | Rural | 80 | 29.4 |
| | Peri-urban | 50 | 18.4 |
| Qualitative Participants | Key informants (diverse roles, experience levels, and school types) | 15 | — |

The sample comprised 147 males (54.0%) and 125 females (46.0%), with the modal age cohort of 41–50 years (31.3%) and 58.1% of respondents aged between 31 and 50 years. Most respondents held undergraduate degrees (44.1%), with 41.2% having 6–10 years of experience at their current schools. By institutional role, 41.9% were bursars or accountants, 37.5% school heads or principals, and 20.6% school owners. School locations were distributed as urban (41.2%), rural (29.4%), and peri-urban (18.4%). The 15 qualitative participants represented diverse roles, school types, and experience levels, ensuring information-rich coverage of pricing decisions and competitive dynamics across institutional contexts.

### 4.2 Financial Sustainability Index Results

Table 2 presents the Financial Sustainability Index (FSI) scores and the classification of private schools based on these results. This table provides an overview of the financial sustainability status of the 272 schools included in the study.

**Table 2**

*Financial Sustainability Index (FSI) and Classification of Schools (n = 272)*

| Indicator | Statistic / Category | Value | Percentage (%) |
|---|---|---|---|
| Financial Sustainability Index (FSI) | Mean | 0.53 | — |
| | Standard Deviation | 0.202 | — |
| FSI Classification (Sazonov et al., 2015) | Normal financial sustainability | 106 | 39 |
| | Unstable financial sustainability | 106 | 39 |
| | Absolute financial sustainability | 42 | 15.4 |
| | Critical financial sustainability | 18 | 6.6 |
| Combined Status | Unstable + Critical | 124 | 45.6 |
| PCA Diagnostics (FSI Construction) | KMO Measure | 0.922 | — |
| | Total variance explained (1 component) | 60.65% | — |
| | Item loadings range | 0.76 – 0.81 | — |

The mean FSI of 0.53 (SD = 0.202) indicated moderate but fragile financial sustainability across the 272 sampled schools. Applying the Sazonov et al. (2015) classification criteria, 39% of schools were classified as having normal financial sustainability, 39% as unstable, 15.4% as having absolute financial sustainability, and 6.6% as experiencing critical financial sustainability. The finding that 45.6% of schools were in financially unstable or critical condition provides the essential backdrop for understanding the significance of the pricing, regulatory, and competitive environment findings. The PCA-derived FSI demonstrated strong psychometric properties, with a KMO statistic of 0.922 and a single component explaining 60.65% of total variance, with item loadings between 0.76 and 0.81.

### 4.2.1 Pricing Capability and Affordability Management Levels

Table 3 provides the descriptive statistics and exploratory factor analysis results for pricing capability and affordability management among the private schools surveyed. The table summarizes key indicators, their statistical properties, and the factor structure underlying these financial management aspects.

**Table 3**

*Descriptive Statistics and Exploratory Factor Analysis for Pricing Capability and Affordability Management (n = 272)*

| Item | Statement (Summary) | Mean | SD |
|---|---|---|---|
| 1 | Strategy balances affordability of tuition fees with cost of quality education | 3 | 0.955 |
| 2 | Pricing strategy ensures majority of students can afford fees | 2.88 | 0.945 |
| 3 | School regularly reviews tuition fees based on cost changes | 2.91 | — |
| 4 | Pricing decisions are guided by structured financial analysis | 2.89 | — |
| 5 | School considers competitor pricing when setting fees | 2.92 | — |
| 6 | Affordability considerations are integrated into pricing decisions | 2.9 | — |
| 7 | School has formal tuition discount or bursary pricing policies | 2.94 | — |
| 8 | Pricing strategy is aligned with long-term enrolment goals | 2.96 | — |
| **Aggregate Statistics** | Overall range (Means) | 2.88 – 3.00 | — |
| **Exploratory Factor Analysis (EFA)** | KMO Measure | 0.952 | — |
| | Chi-square (Bartlett's Test) | 1,560.94 | — |
| | Significance | $p < .001$ | — |
| | Eigenvalue (1st factor) | 5.59 | — |
| | Variance Explained | 69.85% | — |

Descriptive statistics for the eight pricing capability and affordability management items revealed neutral mean scores ranging from 2.88 to 3.00, all falling within the neutral range (2.50–3.49) of the five-point Likert scale. The statement 'The private school has a strategy for balancing the affordability of tuition fees with the cost of delivering quality education' recorded the highest mean (M = 3.00; SD = 0.955), indicating that schools generally acknowledge the balancing challenge they face in pricing decisions. The statement 'The private school's pricing strategy ensures that a majority of students can afford the fees' recorded the lowest mean (M = 2.88; SD = 0.945), reflecting widespread uncertainty about the comprehensiveness of affordability coverage.

The neutral mean scores across all pricing items reveal a distinctive pattern compared to the governance and cost management scales, which recorded means consistently below 2.0. While governance and cost management deficits reflect the absence of capability, the neutral pricing scores reflect awareness without systematic strategic implementation: most schools are aware of pricing as a strategic issue and make some attempt to manage affordability, but do so without the systematic processes, data analysis, and strategic planning that would constitute genuine pricing capability. EFA confirmed the unidimensional structure of the pricing construct (KMO = 0.952; chi-square = 1,560.94; $p < .001$; eigenvalue = 5.59; variance explained = 69.85%), with a single factor explaining approximately 70% of the variance in all eight items.

### 4.2.2 Direct Effect of Pricing Capability on Financial Sustainability

Table 4 presents the results of the Pearson correlation and regression analyses examining the direct effect of pricing capability on financial sustainability (FSI) among private schools. The table highlights the strength, direction, and statistical significance of the relationship between pricing capability and financial sustainability.

**Table 4**

Pearson Correlation and Regression Results for Pricing Capability and Financial Sustainability (FSI)

| Analysis Type | Statistic | Value |
|---|---|---|
| **Pearson Correlation (r)** | Pricing capability vs FSI | -0.023 |
| | p-value | 0.702 |
| | BCa 95% CI | -0.14 to 0.11 |
| | Bootstrap bias | 0.003 |
| | Standard error | 0.06 |
| **Regression Analysis (Direct Effect)** | B | -0.01 |
| | SE | 0.01 |
| | t-value | -0.94 |
| | p-value | 0.35 |
| | 95% CI | -0.04 to 0.01 |
| **Model Summary (Moderation Model)** | $R^2$ | 0.29 |
| | F-statistic | F(7,264) = 15.36 |
| | Model significance | p < .001 |
| **Key Predictor (Control Result)** | Market competition (B) | 0.25 |
| | SE | 0.03 |
| | t-value | 9.96 |
| | p-value | < .001 |

Pearson correlation analysis revealed a very weak and statistically insignificant relationship between pricing capability and affordability management and the FSI ($r = -0.023$; $p = 0.702$; BCa 95% CI: -0.14–0.11). The near-zero correlation coefficient indicates an essentially null relationship between pricing capability as measured and financial sustainability outcomes. The bootstrap results confirmed the stability of this null estimate, with a negligible bias of 0.003 and a standard error of 0.060. The BCa confidence interval from -0.14 to 0.11 includes zero, providing strong evidence that the direct relationship between pricing capability and financial sustainability is not significant in this sample. H2 is not supported.

Multiple regression analysis confirmed the absence of a significant direct effect of pricing capability and affordability management on financial sustainability ($B = -0.01$; $SE = 0.01$; $t = -0.94$; $p = .350$; 95% CI: -0.04–0.01), after controlling for all other predictor and moderating variables. The overall model for pricing capability moderation explained 29% of the variance in financial sustainability ($R^2 = 0.29$; $F(7,264) = 15.36$; $p < .001$), but this explained variance was driven primarily by the direct effects of market competition ($B = 0.25$; $SE = 0.03$; $t = 9.96$; $p < .001$) rather than by pricing capability itself.

### 4.2.3 Moderation Analysis: Regulatory Intensity and Market Competition

Table 5 presents the results of the moderation analysis assessing the effects of regulatory intensity and market competition on the relationships influencing financial sustainability. The table illustrates how these contextual factors interact with key variables to impact the financial sustainability of private schools.

**Table 5**

*Moderation Effects of Regulatory Intensity and Market Competition across Financial Sustainability Relationships*

| Financial Sustainability Path | Moderator | B | SE | t | p-value | 95% CI | Effect Interpretation |
|---|---|---|---|---|---|---|---|
| Pricing → FSI | Regulatory intensity | 0.02 | 0.02 | 0.8 | 0.43 | -0.02 to 0.06 | Not significant |
| Pricing → FSI | Market competition | -0.05 | 0.03 | -1.72 | 0.09 | -0.11 to 0.01 | Not significant |
| Revenue diversification → FSI | Market competition | 0.07 | 0.03 | 2.36 | 0.02 | 0.01 to 0.13 | Significant positive moderation |
| Governance → FSI | Regulatory intensity | 0.08 | 0.02 | 3.51 | < .001 | 0.03 to 0.12 | Significant positive moderation |
| Governance → FSI | Market competition | -0.11 | 0.03 | -3.31 | < .001 | -0.18 to -0.05 | Significant negative moderation |
| Cost management → FSI | Regulatory intensity | 0.04 | 0.02 | 2.01 | 0.05 | 0.00 to 0.09 | Marginal positive moderation |
| Cost management → FSI | Market competition | -0.09 | 0.04 | -2.57 | 0.01 | -0.16 to -0.02 | Significant negative moderation |
| Pricing → FSI (Direct effect) | — | -0.01 | 0.01 | -0.94 | 0.35 | -0.04 to 0.01 | Not significant |
| Market competition → FSI (Direct effect) | — | 0.25 | 0.03 | 9.96 | < .001 | 0.20 to 0.30 | Significant positive effect |

The moderation analysis examining the moderating effects of regulatory intensity and market competition on the pricing–sustainability relationship found that neither moderator had a statistically significant effect on this relationship. Regulatory intensity did not significantly moderate the pricing–sustainability relationship (B = 0.02; SE = 0.02; t = 0.80; p = .430; 95% CI: -0.02–0.06). Market competition also did not significantly moderate the pricing–sustainability relationship (B = -0.05; SE = 0.03; t = -1.72; p = .090; 95% CI: -0.11–0.01). These null moderation findings are consistent with the null direct effect: if pricing capability does not directly predict financial sustainability, the conditions under which this null relationship operates are not significantly shaped by regulatory or competitive environments.

However, market competition demonstrated highly significant direct positive effects on financial sustainability across the pricing model (B = 0.25; SE = 0.03; t = 9.96; p < .001; 95% CI: 0.20–0.30). This direct effect indicates that schools operating in more competitive environments achieve better financial sustainability outcomes independently of their pricing capability, suggesting that competitive pressure serves as an institutional driver of financial efficiency and strategic discipline that independently improves financial sustainability outcomes. This is consistent with the broader institutional economics literature suggesting that competitive pressure drives institutional efficiency improvements across multiple organisational dimensions simultaneously.

Examining moderation effects across all financial sustainability determinants reveals a more differentiated and theoretically important picture. For revenue diversification, market competition was a significant positive moderator (B = 0.07; SE = 0.03; t = 2.36; p = .020; 95% CI: 0.01–0.13), while regulatory intensity was not significant. For governance and financial management capability, both regulatory intensity (B = 0.08; SE = 0.02; t = 3.51; p < .001; 95% CI: 0.03–0.12) and market competition (B = -0.11; SE = 0.03; t = -3.31; p < .001; 95% CI: -0.18 to -0.05) were significant moderators, with regulatory intensity positively moderating and market competition negatively moderating the governance–sustainability relationship. For cost management capability, market competition negatively moderated the relationship (B = -0.09; SE = 0.04; t = -2.57; p = .010; 95% CI: -0.16 to -0.02), while regulatory intensity had a marginally significant positive moderating effect (B = 0.04; SE = 0.02; t = 2.01; p = .050; 95% CI: 0.00–0.09).

### 4.3 Qualitative Findings: Explaining the Pricing Null Finding

The qualitative interviews provided rich contextual explanation for the null finding on the direct pricing–sustainability relationship. Without exception, participants described pricing practices that were reactive, informally determined, and driven by competitive benchmarking rather than systematic cost analysis or strategic financial planning. These accounts explain why pricing capability as measured, which captures awareness of pricing issues and basic affordability management practices, does not translate into financial sustainability improvements in the current institutional environment. Participant 1, a school owner, described the reactive and informal nature of pricing decisions:

"*At our school, we aim at keeping tuition fees at a level that is affordable to the parents but we do not have a well-organised and consistent pricing policy. The determination of fee increases often takes long because of worrying over the possibility of losing students despite increased operations costs. This slackness does not favour revenue development and places a financial burden on the institution, hindering its ability to maintain steady fiscal stability in the long term."* (School owner, 24th Augast, 2025).

Participant 3, a bursar, articulated the specific tension between affordability and financial viability: "*One of the major issues that we are facing is how to balance affordability and the fiscal responsibility of the school. Though we provide flexible payment conditions supporting families, lack of a transparent and strategic pricing structure often interferes with the cashflows. The lag in the collection of fees is a phenomenon that is normal, undermining the capacity to finance daily expenditures, thus affecting the financial sustainability of the private school as a whole"*(Bursar, 24th Augast, 2025). Participant 15, a bursar with eight years of experience, described the competitive constraint on pricing strategy: *"We base our pricing decision-making mostly on reactions to what competitors are charging, not on long-term strategic decisions. Although this strategy is cost-efficient as we are competitive and accessible, it often compromises financial sustainability. The absence of systematic review and timely implementation of tuition fees means inadequacy in raising revenue generation and limits us to invest in quality improvement and maintain the effectiveness of operations"* (Bursar, 24th Augast, 2025).

Participant 8, an administrator, explained how the expansion of free public education had fundamentally altered the competitive dynamics constraining pricing decisions: *"Since the government introduced free education in public schools, we have been unable to raise our fees meaningfully because parents immediately start comparing us to the free alternative. Parents will only pay our fees if they see significant value above what is offered free. This competitive constraint means that even if we wanted to raise fees to cost-adequate levels, we risk losing more in enrolment than we gain in per-student revenue"* (Adminstrator, 24th Augast, 2025). These qualitative accounts converge on a common explanation for the null pricing finding: in the current Zambian private school environment, pricing decisions are so severely constrained by competitive pressure from free public schools, family affordability limitations, and the absence of strategic pricing capability that pricing capability as currently practised does not generate meaningful financial sustainability differentiation across schools. The measurement of pricing capability captures awareness of pricing issues and basic affordability management practices, but the absence of strategic pricing expertise means that awareness does not translate into financial sustainability improvements. This account is consistent with the theoretical prediction of Bowman's (2011) framework that external environmental constraints can prevent internal capabilities from generating financial capacity improvements.

### 4.4 Discussion

The null finding on the direct pricing–sustainability relationship ($r = -0.023$; $p = 0.702$) is the most theoretically significant contribution of this study and requires careful interpretation in the context of the broader empirical literature and the specific characteristics of the Zambian private school sector. The null finding is surprising from the perspective of pricing theory, which consistently predicts that better pricing capability should generate higher revenue and therefore better financial sustainability outcomes (Pinto, 2021; Lee et al., 2020). However, it is theoretically coherent in the context of the Zambian private school market, where competitive pressure from free public schools creates a powerful constraint on pricing flexibility that effectively nullifies the financial sustainability returns to pricing capability improvements.

The theoretical mechanism underlying the null finding can be understood through the lens of both the Tuckman–Chang (1991) model and Bowman's (2011) framework. The Tuckman–Chang model predicts that poor operating margins create financial vulnerability, and that pricing decisions directly shape margins. However, the model also acknowledges that environmental conditions shape the relationship between financial management strategies and vulnerability outcomes. In the Zambian context, the competitive constraint imposed by free public education is sufficiently severe that it prevents even well-developed pricing capability from translating into adequate fee levels, because fee increases above the market's willingness to pay result in enrolment losses that more than offset the revenue benefits of higher per-student fees. This competitive pricing trap nullifies the direct relationship between pricing capability and financial sustainability.

Bowman's (2011) framework provides a complementary theoretical explanation through its emphasis on the environmental conditions that enable or constrain the capacity-building effects of revenue strategies. The framework predicts that pricing improvements generate financial capacity gains when external conditions permit fees to be set at cost-adequate levels. When competitive pressure from free public schools prevents fee adequacy, pricing improvements that maintain affordability may sustain enrolment but fail to generate the operating surpluses needed to build financial capacity. The qualitative evidence from this study directly illustrates this mechanism: schools are aware of the need for strategic pricing and make efforts to manage affordability, but competitive constraints prevent them from setting fees at levels adequate to sustain or improve financial sustainability.

The null finding is also consistent with the evidence presented by Chikoko and Mthembu (2020), who show that educational institutions in sub-Saharan Africa adopt pricing mechanisms to cover government funding shortfalls while aiming to improve educational quality, but face severe constraints on their ability to do so in environments where competitive and affordability pressures dominate pricing decisions. Lee et al. (2020) explicitly note that institutions in developing economies may struggle to use effective pricing strategies because limited demand and external funding constraints reduce the revenue potential of even sophisticated pricing approaches. Ehrmann and Kinzie (2023) argue that affordability management must be considered not only as a revenue-enhancing measure but also as a method of promoting financial sustainability, suggesting that when affordability constraints are binding, institutions may need to pursue financial sustainability through strategies other than pricing optimisation.

The moderation findings across all financial sustainability determinants provide some of the most theoretically important contributions of this study. The differential moderating effects of market competition across different financial sustainability determinants reveal a nuanced picture of how competitive environments shape financial sustainability strategy effectiveness. Market competition positively moderates the revenue diversification–sustainability relationship, amplifying the financial sustainability returns to diversification in competitive environments. This finding suggests that competitive pressure functions as an institutional catalyst for diversification: schools in more competitive markets are incentivised to develop alternative income streams to reduce their dependence on competitively constrained tuition revenue, and those that successfully diversify obtain greater financial sustainability benefits in competitive environments than in less competitive ones.

In contrast, market competition negatively moderates the governance–sustainability and cost management–sustainability relationships. These negative moderation effects suggest that in highly competitive markets, even well-governed and cost-efficient schools may struggle to achieve financial sustainability improvements because competitive constraints on pricing and enrolment limit the revenue potential that good governance and cost management are intended to support. This finding implies a fundamental distinction between financial sustainability strategies that generate direct competitive advantage in difficult markets, such as revenue diversification that reduces dependence on competitively constrained tuition fees, and those that improve efficiency but cannot overcome structural revenue constraints, such as governance improvements and cost management in markets where revenue ceilings are externally imposed.

Regulatory intensity demonstrates positive moderating effects on the governance–sustainability and cost management–sustainability relationships, suggesting that regulatory pressure creates institutional discipline that amplifies the financial sustainability returns to governance and cost management improvements. This finding is consistent with institutional theory arguments that regulatory environments can function as isomorphic forces that drive governance quality and operational discipline in regulated organisations (Ostrower & Stone, 2010). In more regulated private school environments, governance improvements may generate greater financial sustainability returns because regulatory compliance requirements reinforce internal governance practices, creating synergistic effects between regulatory discipline and internal governance quality.

The direct positive effect of market competition on financial sustainability ($B = 0.25$; $t = 9.96$; $p < .001$), independent of its moderating effects, is a particularly striking and practically important finding. It suggests that competitive markets, while constraining pricing flexibility and partially offsetting the returns to governance and cost management, simultaneously drive overall financial sustainability through a direct effect that is likely mediated by the revenue diversification and institutional efficiency improvements that competitive pressure incentivises. Schools in more competitive environments are compelled to develop the financial management capabilities and alternative income strategies needed to survive, with the most capable adapting successfully to achieve better financial sustainability outcomes than their less competitive-environment counterparts who have fewer pressures to innovate.

The qualitative evidence fundamentally changes the interpretation of the null pricing finding from a straightforward 'pricing capability does not matter' conclusion to the more nuanced 'pricing capability cannot generate financial sustainability returns when competitive constraints prevent fee adequacy.' This distinction has important practical and policy implications. It suggests that interventions to improve pricing capability without simultaneously addressing the competitive constraints that prevent fee adequacy are unlikely to generate meaningful financial sustainability improvements in the current Zambian private school market. More effective interventions would address the pricing–sustainability relationship indirectly, by supporting differentiated institutional positioning that reduces competitive vulnerability, by developing alternative income streams that reduce dependence on tuition fees, or by creating regulatory frameworks that support the long-term financial viability of the private school sector alongside the public education expansion.

## V. CONCLUSION & RECOMMENDATIONS

### 5.1 Conclusion

This study provides the first rigorous empirical investigation of pricing capability, regulatory intensity, and market competition as determinants and moderators of financial sustainability in private schools in Zambia. The null finding on the direct pricing–sustainability relationship ($r = -0.023$; $p = 0.702$) is theoretically significant and practically important: it demonstrates that in the current Zambian private school market, competitive constraints from free public education and affordability limitations are sufficiently severe to prevent pricing capability from generating meaningful financial sustainability differentiation across schools. H2 is not supported. The significant moderating effects of market competition across all financial sustainability determinants, and the differential moderating patterns of regulatory intensity, provide important theoretical insights into the boundary conditions that shape financial sustainability strategy effectiveness in the private school context. H5 is partially supported. The study makes original contributions by documenting the pricing null finding, demonstrating differential moderating effects across financial sustainability determinants, and providing a rich qualitative account of the mechanisms through which competitive constraints neutralise the financial sustainability returns to pricing capability in the Zambian context.

### 5.2 Recommendations

Given the null finding on pricing capability, private school administrators should not expect improvements in pricing strategy alone to generate meaningful financial sustainability improvements in the current competitive environment. Rather, pricing strategy improvements should be pursued as part of a comprehensive financial sustainability strategy that simultaneously develops revenue diversification, governance capability, and cost management capability. Within this broader strategy, pricing improvements should focus on developing cost-informed pricing models that ensure awareness of cost-adequate fee levels, even if competitive constraints prevent their immediate implementation; transparent fee communication that maximises perceived value for fees charged; and flexible payment arrangements that improve fee collection rates and reduce the cash flow volatility associated with late payments. Schools should invest in developing understanding of their cost structures and the relationship between fee levels and institutional financial viability, creating the analytical foundation for evidence-based pricing decisions. This cost intelligence can inform advocacy to parents, community members, and regulatory authorities about the financial realities facing private schools, potentially creating the conditions for more financially adequate fee levels over time. Private school associations should facilitate sector-wide pricing benchmarking and cost structure analysis, enabling schools to collectively understand and communicate the financial realities of private education provision.

The Ministry of Education should assess the financial sustainability implications of the free education policy for the private school sector and develop complementary support mechanisms that reduce the competitive pressure on private schools to maintain fees below cost-adequate levels. These mechanisms could include differentiated quality standards that allow private schools to clearly articulate their value proposition relative to public schools, regulatory frameworks that support transparent and cost-informed pricing by private schools, and targeted financial assistance programmes that enable lower-income families to access private education while maintaining school financial viability. The government should also consider the long-term consequences of private school sector financial distress for educational access and quality, recognising that the closure of financially unviable private schools reduces educational capacity and may increase pressure on public schools beyond their service delivery capacity. A financially sustainable private school sector that complements rather than competes with public education is in the national educational interest, and warrants policy support that enables private schools to price at cost-adequate levels while maintaining affordability for target families.

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