

Financial Sustainability of Private Islamic Secondary Schools in Indonesia: An Integrative Analysis Using HHI, Educational Investment Theory, and Islamic Education Management

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Abstract:

The financial sustainability of private Islamic senior secondary schools in Indonesia represents a strategic challenge that has received limited scholarly attention through systematic financial sustainability frameworks. This study aims to diagnose the sustainability of financing, analyze the orientation of educational investment, and evaluate budgeting practices through the lens of Islamic Education Management (IEM) at Madrasah Aliyah Mathla'ul Anwar Pameuntasan, Bandung Regency. A qualitative approach with a single case study design was employed; data were gathered through semi-structured interviews with three key informants guided by a structured interview protocol encompassing four thematic domains, field observation, and documentary analysis of e-RKAM data for fiscal year 2025, analyzed using the Miles–Huberman–Saldana interactive model supplemented by Herfindahl–Hirschman Index (HHI) calculations. Findings indicate: (1) revenue concentration formally reaches $HHI = 1.0$ with a 0% operating margin and no financial reserves, signaling a financially vulnerable condition; (2) a critical investment allocation distortion exists between physical infrastructure (19.6%) and teacher professional development (0.5%); and (3) the institution partially fulfills the *amanah* and *shaffafiyyah* principles but remains deficient in the *maslahah* and *istimrar* dimensions. Two testable propositions are advanced, and

this study contributes an integrative, e-RKAM-based diagnostic framework for private Islamic secondary schools within an IEM context.

Keywords: educational investment; e-governance; financial sustainability; Islamic Education Management; Islamic secondary school; revenue concentration.

INTRODUCTION

Private Islamic senior secondary schools (Madrasah Aliyah) occupy an irreplaceable position in Indonesia's Islamic education ecosystem. Data from the Ministry of Religious Affairs (Indonesia, 2008) reveal that of 8,447 madrasah aliyah operating nationwide, more than 90% are privately operated by Islamic foundations or community organizations. This dominance positions private madrasah aliyah as the backbone of Islamic upper- secondary education while simultaneously exposing the depth and structural complexity of the financing challenges they face. Despite their critical role, the financial sustainability of private Islamic educational institutions has become an increasingly urgent concern. Bowman (Bowman, 2011) developed a diagnostic framework encompassing four dimensions: revenue concentration, operating margin, financial reserves, and financial vulnerability. Tuckman and Chang (Tuckman & Chang, 1991) demonstrated that nonprofit organizations exhibiting three or more vulnerability indicators face significantly elevated risk of financial disruption—a finding directly applicable to private madrasah aliyah, which share the structural profile of nonprofits. Zietlow, Hankin, Seidner, and O'Brien (Zietlow et al., 2018) further emphasize that financial sustainability requires deliberate cultivation of reserves, diversified income streams, and long-term financial capacity.

Excessive reliance on the government School Operational Fund exemplifies what Pfeffer and Salancik (Pfeffer & Salancik, 2015) term the single dependency trap within Resource Dependency Theory. Carroll and Stater (Carroll & Stater, 2009) empirically demonstrated that revenue diversification correlates positively with financial stability in nonprofit organizations. From an investment standpoint, Levin and Belfield (Levin & Belfield, 2015) emphasize that the quality of budget management—not merely its volume—determines the impact of educational investment. Human Capital Theory (Becker, 1989; Schultz, 1961) asserts that investment in teacher quality is the primary determinant of student learning achievement, substantiated by Hanushek's (Hanushek, 2003) Meta-analysis and global evidence reviewed by Psacharopoulos and Patrinos (Psacharopoulos & Patrinos, 2018).

Existing scholarship on madrasah financing in Indonesia has been predominantly descriptive and administrative, lacking a systematic application of financial sustainability frameworks (Amaliyah & Giu, 2023; Usman, 2016). More critically, the Islamic Education Management (IEM) perspective—which should serve as the discipline- specific analytical lens—has been confined to normative prescription rather than deployed as an active analytical instrument (Muhaimin, 2015). This dual gap constitutes the foundational motivation for the present study.

This study offers three original contributions. First, it integrates financial sustainability and educational investment frameworks with the IEM perspective into a unified analytical model. Second, it applies the Herfindahl– Hirschman Index (HHI)—conventionally used in industrial economics—to measure revenue concentration in Islamic educational institutions, an application not previously documented in the literature. Third, it employs e-RKAM data as a formally verified primary quantitative source within a qualitative case study design. Specifically, this study aims to: (1) diagnose financing sustainability conditions; (2) analyze educational investment orientation; and (3) evaluate budgeting practices through the IEM perspective at Madrasah Aliyah Mathla'ul Anwar Pameuntasan, Bandung Regency.

Financial Sustainability in Educational Institutions

Financial sustainability, within the context of educational institutions, refers to an organization's capacity to maintain stable financial health while fulfilling its core educational mission over an extended time horizon (Zietlow et al., 2018). Bowman (Bowman, 2011) operationalizes financial sustainability through four diagnostic dimensions: (a) revenue concentration; (b) operating margin; (c) financial reserves; and (d) overall financial vulnerability. Tuckman and Chang (Tuckman & Chang, 1991) established that organizations exhibiting three or more of four vulnerability indicators face significantly elevated risk of financial disruption—a framework

validated by Greenlee and Trussel (Greenlee & Trussel, 2000) and Carroll and Stater (Carroll & Stater, 2009), and directly applicable to private Islamic educational institutions in Indonesia.

Research into organizational health suggests that financial distress rarely happens overnight. Instead, it is usually preceded by specific indicators of vulnerability. Organizations that show weakness in several of these areas simultaneously—such as having low equity, shrinking margins, and concentrated revenue—are at a significantly higher risk of facing major financial disruptions. When these factors align, the institution loses its ability to adapt, often leading to a forced reduction in programs, staffing cuts, or, in the worst cases, permanent closure.

This framework is particularly vital for private Islamic educational institutions in Indonesia, including pesantren, madrasahs, and integrated schools. These organizations often operate under a unique dual mandate: fulfilling a religious and social mission while striving for institutional permanence. In many cases, these institutions serve underprivileged communities, keeping tuition low to remain accessible. However, this social commitment can lead to high financial vulnerability if the foundation relies solely on student fees or the generosity of a few donors. By applying these diagnostic tools, leadership can shift from a "reactive" financial mindset to a "proactive" one. Achieving sustainability in this context does not mean prioritizing profit over education. Rather, it means strengthening the institution's independence through better management of waqf, zakat, and institutional enterprises. By building a solid financial base, these institutions ensure that their mission to provide quality Islamic education remains uninterrupted for generations to come.

Educational Investment Theory

Human Capital Theory posits that investments in knowledge, skills, and productive capacity yield returns measurable at both individual and societal levels (Becker, 1989; Schultz, 1961). Within educational institutions, this theory implies that investment in teacher quality constitutes the most decisive input for student learning achievement—substantiated by Hanushek's (Hanushek, 2003) meta-analysis. Levin and Belfield (Levin & Belfield, 2015) extend this to the institutional level, arguing that the composition of educational investment—not merely its aggregate level—is the analytically critical variable. Psacharopoulos and Patrinos (Psacharopoulos & Patrinos, 2018) confirm that returns to human capital investment remain consistently positive across income levels and institutional settings.

A critical extension of this theory focuses on the specific inputs that determine the success of an educational investment. It is widely recognized that among all institutional factors, the quality of teaching is the most decisive element in shaping student achievement. A highly skilled teacher does not merely transmit information; they enhance the cognitive and non-cognitive abilities of students, thereby directly increasing the "stock" of human capital for the next generation.

However, the effectiveness of this investment depends on more than just the total amount of money spent. The composition of the investment—how resources are allocated between teacher salaries, technological infrastructure, curriculum development, and administrative support—is the most analytically significant variable. For an educational institution to be successful, it must optimize its internal resource allocation to ensure that every dollar spent contributes directly to the enhancement of productive skills.

One of the most enduring findings within this field is the consistency of returns on educational investment. Whether in developed economies or emerging markets, the correlation between human capital accumulation and economic prosperity remains robust. This universality suggests that the principles of human capital are not confined to specific cultural or income settings; they apply across diverse institutional landscapes.

In the context of modern educational management, this means that institutions must view their faculty and students as their most valuable assets. By prioritizing quality over quantity and strategic allocation over aggregate spending, schools can maximize the socio-economic dividends they provide to the community. Ultimately, the continuous refinement of human capital remains the most reliable path toward sustainable development and individual empowerment in an increasingly knowledge-based global economy.

Islamic Education Management (IEM) Principles

Islamic Education Management (IEM) constitutes the disciplinary framework integrating Islamic values into the theory and practice of educational management (Muhaimin, 2015). Five principles are particularly germane to financial management: (a) amanah (trustworthiness and accountability); (b) maslahah (orientation toward maximizing benefit for the entire educational community); (c) istimrar (long-term continuity and

sustainability, as illustrated by QS. Yusuf 12:47–48); (d) adil (justice and proportional allocation); and (e) shaffafiyah (full transparency to all stakeholders). In this study, these principles are deployed as empirically applicable analytical instruments, not merely normative criteria.

At its core, Amanah dictates that every resource possessed by an educational institution is a trust—initially from the community and ultimately from the Creator. In a financial context, this translates to rigorous accountability. It requires that funds be used strictly for their intended purposes, minimizing waste and preventing any form of embezzlement or mismanagement. Amanah shifts the focus from mere "compliance" to a deep-seated internal responsibility to safeguard the institution's assets.

Unlike commercial financial models that prioritize shareholder wealth, IEM is guided by Maslahah. This principle ensures that financial decisions are oriented toward the welfare of the entire educational community—students, teachers, and staff. Whether it is setting tuition rates or investing in new facilities, the primary question is how the expenditure serves the greater good and enhances the quality of the educational experience for all stakeholders.

The principle of Istimrar emphasizes the necessity of foresight and strategic planning to ensure an institution survives across generations. This concept is vividly illustrated by the Quranic narrative of Prophet Yusuf, who advised a strategy of storing grain during years of plenty to survive years of famine. Financially, this means building reserves, avoiding excessive debt, and prioritizing long-term stability over short-term gains, ensuring that the institution remains a perpetual "running charity" (Sadaqah Jariyah).

Justice in financial management involves the fair and proportional distribution of resources. It means ensuring that compensation for faculty is equitable, that underprivileged students receive necessary support, and that funds are allocated based on actual needs rather than internal politics. An 'Adil approach prevents the concentration of resources in a single department, ensuring that every facet of the institution has the means to thrive.

Shaffafiyah demands that an institution operates with an "open-book" philosophy. Transparency is the antidote to suspicion and the foundation of community trust. By being fully transparent about budgets, expenditures, and financial health, an institution empowers its stakeholders—including parents and donors—to feel a sense of ownership and confidence in the leadership. It is important to note that within a professional research context, these principles are not treated merely as abstract religious ideals or "good-to-have" virtues. Instead, they are deployed as empirical analytical instruments.

By using these five pillars as metrics, researchers and practitioners can objectively measure the quality of a foundation's governance. For example, Amanah can be measured through audit reports, Maslahah through student-benefit ratios, and Istimrar through the growth of endowment (waqf) funds. This approach allows Islamic educational institutions to maintain their unique identity while meeting—and often exceeding—global standards of organizational excellence.

Resource Dependency Theory

Resource Dependency Theory (Pfeffer & Salancik, 2015) holds that organizations excessively dependent on a single resource provider become strategically vulnerable as the funder gains leverage to impose constraints, eroding institutional discretion. Froelich (Froelich, 1999) documents organizational isomorphism—the tendency of heavily-dependent nonprofits to mirror their funder's expectations at the expense of internal strategic logic. In private madrasah aliyah, total BOS dependence creates precisely this dynamic: BOS usage guidelines constrain institutional discretion while e-RKAM progressively normalizes BOS as the only "legitimate" revenue stream, reinforcing structural dependency.

The Resource Dependency Theory (RDT) provides a critical lens for understanding the power dynamics between an organization and its environment. At its core, the theory posits that an organization's survival is contingent upon its ability to acquire and maintain resources. However, this necessity creates a double-edged sword: when an institution becomes excessively reliant on a single external provider for its primary funding, that provider gains significant leverage over the institution's decision-making processes. This shift in power can erode an organization's autonomy, as it must align its operations with the demands of the funder to ensure continued support.

This structural dependency often leads to a phenomenon known as organizational isomorphism. This occurs when an institution begins to mirror the structures, expectations, and values of its primary benefactor, even if those elements conflict with its own internal mission or strategic logic. Rather than operating according to its original educational or social goals, the organization adopts a "follow-the-money" approach. Over time,

the institution's unique identity may be diluted as it reshapes itself to fit the mold required by its external resource provider.

In the specific context of private Madrasah Aliyah in Indonesia, this dynamic is clearly visible through the heavy reliance on BOS (Bantuan Operasional Sekolah) funds. This reliance creates a specific set of institutional pressures:

Erosion of Discretion: The rigid guidelines governing how BOS funds can be utilized act as a constraint on institutional autonomy. Madrasah leaders often find that their ability to innovate or address specific local needs is hampered because the funding is strictly "earmarked" for certain standardized expenditures.

Administrative Normalization: The implementation of digital reporting systems, such as e-RKAM (Elektronik-Rencana Kegiatan dan Anggaran Madrasah), serves to formalize and solidify this dependency. By standardizing financial planning around the BOS framework, the system progressively normalizes BOS as the only "legitimate" or "reliable" revenue stream.

The Trap of Uniformity: As madrasahs focus their administrative energy on complying with centralized requirements, they may inadvertently neglect developing independent revenue sources, such as community endowments (*waqf*) or institutional enterprises.

The result is a reinforcing cycle of structural dependency. The madrasah becomes less of an independent community-based institution and more of an administrative extension of the funding agency. While the funds are essential for survival, the "cost" of this resource is a loss of strategic flexibility and a diminished capacity to lead the institution in accordance with its unique vision of Islamic education.

The phenomenon of structural dependency creates a self-perpetuating loop that fundamentally reshapes the madrasah's identity and governance. As the institution aligns its internal processes to meet the rigid reporting requirements and usage guidelines of its primary funding source, it inadvertently surrenders its autonomy. This transition marks a shift from being a community-rooted organization—driven by local needs and unique religious visions—to becoming a de facto administrative extension of the state funding agency. In this state, the madrasah's survival is technically secured, but its mission-driven leadership is replaced by a compliance-driven bureaucracy.

The strategic "cost" of this guaranteed funding is a significant erosion of institutional discretion. When the majority of an institution's energy is consumed by the administrative "normalization" of a single revenue stream, the capacity for local innovation is stifled. The leadership find themselves managing according to a standardized template rather than leading according to their specific vision of Islamic education. This results in a loss of strategic flexibility, where the madrasah can no longer pivot to address the unique socio-religious needs of its specific community because its financial and administrative structures are "locked in" to external mandates.

Ultimately, this reinforcing cycle creates a paradox of stability: the institution is financially "stable" in the short term due to the steady influx of state funds, yet it is strategically "fragile" because it lacks the independent foundations—such as community endowments or diversified philanthropy—necessary to sustain its original character. To break this cycle, the madrasah must move beyond seeing itself as a mere recipient of aid and begin to re-establish itself as a sovereign educational entity, where external funds are a supplement to a robust, community-owned financial base.

METHOD

This study employed a qualitative approach with a single case study design, as conceptualized by Yin (2018) and Creswell and Creswell (Creswell, 2009). This design was selected because the research questions are exploratory- analytical in nature—aimed at understanding and diagnosing a financing phenomenon within a unique institutional context, not testing statistical relationships. Single case study design is justified when the case possesses theoretically significant representativeness (Yin, 2018), a condition met by the profile of the selected institution.

The study was conducted at Madrasah Aliyah Mathla'ul Anwar Pameuntasan (NPSN: 20279976), Kutawaringin District, Bandung Regency—selected purposively as a typical representative of community-based private madrasah aliyah: fully private status, 478 students (31 GTK), Islamic foundation management (Tarbiyah Ikhlas Amal), and high dependence on Dana BOS. Three key informants were selected through purposive sampling based on role relevance and informational capacity: (1) the Principal (Drs. H. Asep Hasan Idris)—policy perspective; (2) the Treasurer (Elida Siriyah Alfiyani, S.Pd.)—technical financial perspective; and

(3) the Senior Teacher and Vice- Principal for Student Affairs (Yufirson, S.Pd.)—budget-user perspective at the learning level.

Data were collected through three complementary techniques. Semi-structured interviews (45–60 minutes per informant) were conducted using a structured protocol encompassing four thematic domains: (a) perceptions of institutional financial sustainability and revenue sources; (b) understanding and practices of educational investment allocation; (c) challenges in budget planning and implementation; and (d) alignment between IEM principles and actual budgeting decisions. Non-participatory field observation and documentary analysis of e-RKAM FY 2025 data complemented the interview data. All field visits were conducted on March 30, 2026. As a member-checking measure, key analytical findings were subsequently communicated to the Principal via structured written summary for confirmation and clarification.

The data collection process was designed to provide a multi-dimensional view of the institution's financial and managerial landscape, utilizing three complementary techniques to ensure depth and accuracy. The primary qualitative component consisted of semi-structured interviews, each lasting between 45 and 60 minutes. These sessions followed a rigorous protocol organized into four thematic domains: the participants' perceptions of financial sustainability and revenue sources; the practical understanding of how educational investments are allocated; the day-to-day challenges of budget planning; and the critical alignment between Islamic Education Management (IEM) principles and actual fiscal decisions.

To ground the subjective insights gained from the interviews, the research incorporated non-participatory field observations and a comprehensive documentary analysis of the e-RKAM (Electronic Planning and Budgeting) data for the 2025 fiscal year. This allowed the study to compare the "espoused" values of the leadership with the "enacted" financial reality recorded in official digital archives. All primary field activities, including interviews and observations, were conducted during a concentrated site visit on March 30, 2026, ensuring a synchronized snapshot of the institution's operations.

Finally, to maintain high standards of academic integrity and validity, a member-checking procedure was implemented. Once the initial data were processed, the key analytical findings were distilled into a structured written summary and shared with the Principal. This step provided a formal opportunity for the leadership to confirm the accuracy of the researcher's interpretations, clarify any potential misunderstandings, and verify that the distilled findings truly reflected the institutional context. This iterative feedback loop ensured that the final analysis was not merely an external critique but a mutually recognized representation of the madrasah's financial and strategic position.

Analysis followed the Miles–Huberman–Saldana (Miles & Huberman, 1994) interactive model through three stages: data condensation, data display, and conclusion drawing. For e-RKAM data, HHI was calculated as $HHI = \sum (s_i^2)$, where s_i is each revenue source's share of total income. HHI Scenario 2 is presented solely as a heuristic illustration; it carries no independent empirical verification and is excluded from all formal analytical conclusions. Data trustworthiness was ensured through four criteria (Team, 2003): (1) credibility via source and technique triangulation complemented by member checking; (2) transferability via thick description; (3) dependability via systematic protocol documentation; and (4) confirmability via e-RKAM as a verifiable empirical anchor.

RESULTS AND DISCUSSION

Revenue Sources and Financing Patterns

Interview and documentary data revealed that the madrasah's financing comprises four components: (1) Dana BOS of IDR 881,600,000 per year—the sole source formally recorded in e-RKAM; (2) student tuition fees, collected regularly but inconsistently; (3) semi-regular foundation support; and (4) unstructured community donations. A convergent pattern emerged across all three informants: BOS constitutes the structural backbone of all formal planning, while other revenue streams are managed informally without integration into budget documents. Analysis of the collected interview and documentary data highlights a fragmented financial landscape within the madrasah, characterized by a reliance on four distinct funding components. The primary pillar is the School Operational Assistance (BOS) fund, amounting to IDR 881,600,000 annually. This state-provided subsidy stands out as the only revenue source formally documented and managed through the electronic budgeting system, e-RKAM. In contrast, the remaining three streams—regular yet inconsistent student tuition fees, periodic financial injections from the governing foundation, and unstructured donations from the local community—exist on the periphery of the institution's formal accounting framework.

A significant convergent pattern emerged from the accounts of all three key informants, revealing a deep-seated structural imbalance in the institution's fiscal management. The BOS fund has effectively become the structural backbone of the madrasah's formal planning and operational activities, dictating the pace and scope of the academic year. Because the other revenue sources are perceived as unpredictable or secondary, they are managed through informal mechanisms and remain entirely unintegrated into official budget documents. This lack of integration suggests that while the madrasah survives on a mix of public and private funds, its strategic and administrative logic is almost entirely captive to the requirements of state funding, leaving a substantial portion of its actual economic activity "off the books" and outside the scope of long-term strategic development.

The Principal (Drs. H. Asep Hasan Idris) described the revenue structure as follows: *"Our main sources of funding are BOS funds, student fees, and support from the foundation. There are also occasional contributions from parents and others for specific activities."* (Principal, March 30, 2026)

The Principal, Drs. H. Asep Hasan Idris, provides a clear articulation of the madrasah's fiscal architecture, which is characterized by a multi-layered yet precarious revenue structure. According to his testimony, the institution operates through a combination of public subsidies, private service fees, and institutional backing. The reliance on School Operational Assistance (BOS) funds represents the state's contribution to basic operations, while student tuition fees serve as the primary internal revenue stream. This is supplemented by the foundation's financial support, which acts as a safety net for broader institutional needs.

Beyond these core pillars, the Principal noted the existence of a more fluid and "occasional" category of income, consisting of contributions from parents and other community stakeholders. These funds are typically tied to specific extracurricular activities or immediate project-based needs rather than general operating costs. This suggests a financing model that is highly dependent on community goodwill and periodic fundraising to bridge the gap between formal state support and the actual costs of providing a comprehensive educational experience. While this diversified approach theoretically provides multiple avenues for income, the ad-hoc nature of parental contributions implies a lack of long-term financial predictability, forcing the leadership to manage the budget with a high degree of adaptability.

When probed about integration of non-BOS revenues into formal planning, the Principal acknowledged this is not currently practiced, as e-RKAM templates are structured around BOS disbursement categories. The Senior Teacher (Yufirson, S.Pd.) elaborated on the practical consequences for instructional quality: *"Funding has been adequate for the basic needs of teaching. However, for more meaningful quality improvement, stronger financial support would certainly be needed."* (Senior Teacher, March 30, 2026)

A significant finding emerging from data condensation is the formal-informal financing gap: actual income sources beyond BOS are not integrated into formal planning documents, precluding comprehensive revenue management. Within the Resource Dependency Theory framework (Pfeffer & Salancik, 2015), this gap exemplifies organizational isomorphism (Froelich, 1999): the institution's planning structure progressively mirrors BOS funder expectations. This finding both extends and corrects Hidayah et al. (Hidayah et al., 2025), revealing e-RKAM's paradoxical side effect of reinforcing BOS-only formal planning.

Budget Structure and Investment Allocation Distortion

The annual BOS budget of IDR 881,600,000 is disbursed in two tranches, equivalent to approximately IDR 1,844,000 per student per year. Budget composition, classified using Levin and Belfield's (Levin & Belfield, 2015) investive-versus- operational framework, is presented in Table 1.

Table 1. BOS Expenditure Composition by Investive/Operational Category

Expenditure Category	Amount (IDR)	%
Routine Operational Expenditure	620,302,600	70.4
Physical Infrastructure Investment	172,982,850	19.6
Human Resources Development	43,475,000	4.9
Curriculum and Systems Investment	43,839,550	5.0
Total	881,600,000	100

Source: e-RKAM data, MAS Mathla'ul Anwar Pameuntasan, FY 2025, classified using Levin & Belfield (2015)

Total investive expenditure reaches 29.5%—approaching the lower bound of the World Bank's (Cerdan-Infantes et al., 2013) recommended range of 30–40%. However, its internal composition reveals a critical distortion: physical infrastructure dominates at 19.6%, while teacher competency development amounts to only 0.5%—equivalent to IDR 145,000 per teacher per year—yielding a 39:1 infrastructure-to-human-capital ratio. This constitutes quantitative evidence of hardware investment bias: a systematic tendency to prioritize visible assets over human capital whose benefits are long-term and abstract. This directly contradicts Human Capital Theory (Becker, 1989; Schultz, 1961) and Hanushek's (Hanushek, 2003) meta-analytic finding that teacher quality is the most decisive educational factor.

The institution's total investive expenditure stands at 29.5%, a figure that superficially appears robust as it nearly reaches the World Bank's recommended threshold of 30% to 40% for sustainable educational development. However, a deeper granular analysis of this spending reveals a profound structural distortion that undermines the long-term educational mission. While the aggregate investment seems adequate, the internal allocation is heavily skewed toward physical infrastructure, which accounts for 19.6% of the total budget. In stark contrast, teacher competency development receives a negligible 0.5%—an allocation that translates to a mere IDR 145,000 per teacher annually.

This creates a staggering 39:1 ratio between infrastructure and human capital investment, providing clear quantitative evidence of what can be termed a "hardware investment bias." This bias reflects a systematic institutional tendency to prioritize tangible, visible assets—such as buildings and facilities—over the intellectual and pedagogical growth of the teaching staff. Physical improvements offer immediate, concrete evidence of progress to stakeholders and donors, whereas the benefits of human capital development are inherently abstract, long-term, and more difficult to measure in the short cycle of an academic year.

This spending pattern represents a fundamental misalignment with the principles of Human Capital Theory. The theory posits that the most significant returns on educational investment are generated not through the accumulation of physical tools, but through the enhancement of the knowledge, skills, and productive capacities of the individuals within the system. By marginalizing professional development, the institution contradicts established meta-analytic findings which consistently demonstrate that teacher quality is the single most decisive factor in determining student learning outcomes. In essence, the current fiscal strategy prioritizes the "container" of education while chronically underfunding the "content," creating a structural bottleneck that likely limits the academic potential of the entire student body.

The Treasurer (Elida Siriyah Alfiyani, S.Pd.) confirmed the prioritization logic applied under resource constraints: *"We try to defer spending that is not yet urgently needed and prioritize needs directly related to the running of the educational process."* (Treasurer, March 30, 2026)

Comparison with Amaliyah and Giu (Amaliyah & Giu, 2023) reveals that although this institution's aggregate investive ratio (29.5%) exceeds that of many private madrasah tsanawiyah (<20%), its distorted internal composition renders the aggregate figure analytically misleading. Evaluating madrasah financing must shift from aggregate investive totals toward scrutinizing compositional alignment with Human Capital Theory—a methodological implication with broad applicability. A comparative analysis reveals a significant paradox in the institution's financial profile. While its aggregate investment ratio of 29.5% is notably higher than that of many private madrasah tsanawiyah, which often struggle to reach even a 20% threshold, this total figure is analytically deceptive. The higher percentage suggests a commitment to growth and quality on the surface, but the underlying data proves that a high volume of spending does not necessarily equate to a high quality of investment. Because the vast majority of these funds are locked into physical assets rather than pedagogical improvement, the institution may be achieving "growth" in a material sense while remaining stagnant in its educational effectiveness.

This finding carries a vital methodological implication for the broader evaluation of school financing. It suggests that researchers and policymakers must move beyond simply measuring aggregate investment totals as a proxy for institutional quality. Instead, the focus must shift toward scrutinizing the compositional alignment of spending. In a framework governed by Human Capital Theory, the primary question is not just how much money is being spent, but whether that spending is directed toward the variables that actually drive student success—most notably, teacher expertise and classroom quality.

Ultimately, an institution that spends 30% of its budget almost entirely on buildings is qualitatively different from one that spends 20% with a balanced focus on staff development and curriculum innovation. Therefore, for private madrasahs and similar educational entities, the true measure of financial health is not the size of the investment, but its strategic distribution. Evaluating financial data through this lens allows for a

much more accurate assessment of whether an institution is truly building sustainable human capital or merely expanding its physical footprint at the expense of its intellectual core.

Financial Sustainability: HHI Analysis

HHI calculations were conducted under two scenarios. Scenario 1 (formal e-RKAM): $HHI = (1.0)^2 = 1.0$, confirming maximum revenue concentration. Scenario 2 (heuristic illustration: BOS $\approx 70\%$, tuition $\approx 20\%$, foundation $\approx 8\%$, donations $\approx 2\%$): $HHI \approx 0.5368$ —excluded from formal conclusions. Table 2 presents both scenarios alongside the established benchmark.

Table 2. HHI Revenue Concentration Calculations

Scenario	HHI	Interpretation
Scenario 1 – Formal (100% BOS)	1.0	Maximum concentration; single-source dependency; financially vulnerable
Scenario 2 – Heuristic Illustration *)	≈ 0.5368	Illustrative only; excluded from formal conclusions
Healthy nonprofit benchmark (Carroll & Stater, 2009)	< 0.25	Adequate diversification; financial resilience maintained

Source: Compiled from e-RKAM data and field interviews, 2026. *) Excluded from formal conclusions. Benchmark from Carroll & Stater (2009).

Even under the heuristic illustration ($HHI \approx 0.54$), the institution would remain vulnerable—more than twice the safe threshold ($HHI < 0.25$). Two additional dimensions are critical: the operating margin is 0% (planned revenue = planned expenditure = IDR 881,600,000); and no formal financial reserve fund exists. Under Tuckman and Chang (Tuckman & Chang, 1991), this institution satisfies at least three of four financial vulnerability indicators—a condition Greenlee and Trussel (Greenlee & Trussel, 2000) classify as carrying significant risk of financial disruption. The institutional financial profile reveals a condition of extreme structural fragility when measured against established diagnostic benchmarks. Using the Herfindahl-Hirschman Index (HHI) as a heuristic measure for revenue concentration, the institution yields a score of approximately 0.54. This figure is more than double the recognized safety threshold of 0.25, indicating a dangerous over-reliance on a single funding stream—the state-provided BOS funds. Such high concentration means that any administrative delay, policy change, or reduction in government subsidies would leave the institution with virtually no fiscal maneuverability.

When these factors are synthesized through the lens of traditional vulnerability frameworks, the institution satisfies at least three out of the four primary indicators of financial risk: high revenue concentration, a lack of an operating margin, and the absence of reserves. This specific combination is classified in academic literature as a state of significant financial vulnerability. It suggests that the madrasah is not merely facing a temporary budget tight spot, but is operating under a structural model that carries a high probability of institutional disruption should any of its external funding conditions shift. This profile serves as a stark warning that current management practices, while compliant with immediate reporting requirements, are insufficient for ensuring long-term institutional survival.

The Treasurer articulated the practical manifestation of this zero-cushion condition: *"The challenge often comes when operational needs arise urgently while some income has not yet come in. That is why budget management must be very careful."* (Treasurer, March 30, 2026). The Principal articulated the institutional aspiration that frames these structural constraints: *"The hope is that there will be a more stable and sustainable source of funding, so that the madrasah can not only survive operationally, but also develop in terms of quality."* (Principal, March 30, 2026). This aspiration precisely captures the distinction between financial stability and financial sustainability as defined by Bowman (Bowman, 2011) and Zietlow et al. (Zietlow et al., 2018)—confirmed by cross-informant thematic convergence.

Integrated Assessment: Financial Sustainability, Educational Investment, and IEM Perspective

Thematic analysis yielded three convergent cross-cutting themes: (a) structural BOS dependency as the normalized institutional condition; (b) hardware-bias allocation logic prioritizing physical visibility over pedagogical effectiveness; and (c) partial IEM fulfillment—vertical accountability maintained but horizontal

community transparency and long-term sustainability planning absent. Table 3 presents the integrated assessment.

Table 3. Integrated Assessment: Financial Sustainability, Educational Investment, and IEM Perspective

Perspective	Dimension	Finding	Status
Financial Sustainability	Revenue Concentration (HHI)	1.0 (formal); ≈ 0.54 (illustrative)	Vulnerable
	Operating Margin	0% – zero-cushion operation	Critical
	Financial Reserves	None available	Not Met
	FS Development Stage	Stability – not yet sustainability	Basic Stage
Educational Investment	Investive/Total Ratio	29.5% – approaching lower ideal bound	Near Adequate
	Physical Infrastructure	19.6% – dominant (hardware bias)	Imbalanced
	Teacher Development	0.5%; IDR 145,000/teacher/year	Critical
IEM Perspective	Amanah	Formal accountability via e-RKAM	Partially Met
	Maslahah	Infrastructure >> Teacher SDM	Not Yet Optimal
	Istimrar	HHI=1; margin=0%; no reserve	Not Met
	Adil	Disproportionate allocation	Needs Evaluation
	Shaffafiyah	Vertical only; community gap	Partially Met

Source: Compiled from e-RKAM data, field interviews, and frameworks of Bowman (2011); Levin & Belfield (2015); Zakiah & Rusdiana (2019)

From the standpoint of *maslahah*—orientation toward the greatest benefit for the educational community—the 39:1 distortion represents a substantive violation: allocating far more to physical infrastructure than teacher development contradicts *maslahah* even if unintentionally. The *istimrar* principle (long-term continuity) is the most threatened: the Quranic narrative of Prophet Yusuf (QS. Yusuf 12:47–48)—setting aside provisions in abundance to prepare for scarcity—substantively parallels the logic of financial reserves (Zietlow et al., 2018). The zero-cushion condition directly contradicts *istimrar*. Regarding *shaffafiyah* (transparency), the institution fulfills it vertically (to Kemenag via e-RKAM) but not horizontally toward the community—a gap that is both ethical and strategic, as community transparency is a prerequisite for mobilizing Islamic philanthropy as a diversification strategy (Mansah, 2020).

The principle of *Istimrar*, or long-term continuity and sustainability, appears to be the most critically threatened. This principle is deeply rooted in the Quranic narrative of Prophet Yusuf, which advocates a strategic "buffer" logic—setting aside surplus in years of abundance to ensure survival in years of scarcity. This divine wisdom serves as a theological parallel to the modern economic necessity of financial reserves. The current "zero-cushion" condition, where every rupiah is spent as soon as it is received, leaves the *madrasah* with no protection against future shocks. Operating without such a safety net directly contradicts *Istimrar*'s mandate, as it risks the mission's sudden collapse if external funding is delayed or reduced.

Finally, the institution's approach to *Shaffafiyah* (transparency) reveals a critical strategic gap. While the *madrasah* successfully fulfills its transparency obligations vertically—reporting strictly to the Ministry of Religious Affairs via e-RKAM—it fails to provide horizontal transparency to the local community and parents. This imbalance is not merely an ethical oversight but a significant strategic error. Broad, horizontal transparency is a fundamental prerequisite for mobilizing Islamic philanthropy; without a clear and open accounting of how funds are used, the community is unlikely to contribute the *waqf*, *zakat*, or donations necessary for a diversification strategy. To move toward true financial health, the institution must bridge this gap, transforming transparency from a bureaucratic requirement into a tool for community empowerment and long-term resilience.

Comparative context strengthens the generalizability of findings. Studies of private Islamic schools in Malaysia document similarly high revenue concentration on single government grant sources, while Malaysian institutions have made further progress in waqf-based endowment integration (Mulyono, 2024). The structural vulnerability pattern observed here thus reflects a broader challenge in financing faith-based educational institutions beyond the Indonesian context.

The inclusion of a comparative perspective significantly bolsters the generalizability of these findings, suggesting that the challenges faced by Indonesian madrasahs are not isolated incidents but part of a wider regional trend. Recent studies of private Islamic schools in Malaysia reveal a strikingly similar pattern of structural vulnerability, where institutions exhibit a high concentration of revenue derived from a single source of government grants. This parallel indicates that across Southeast Asia, faith-based educational institutions often struggle with a "dependency trap" that ties their operational survival to shifting state funding priorities.

However, a key point of divergence lies in the strategic response to this vulnerability. While both Indonesian and Malaysian institutions face high revenue concentration, Malaysian schools have made more significant strides in the integration of waqf-based endowments as a formal sustainability mechanism. By institutionalizing waqf—a traditional Islamic instrument of perpetual charity—as a core component of their financial architecture, these schools are beginning to build a more resilient "third pillar" of income that exists independently of both government subsidies and fluctuating student tuition fees.

This comparative context reveals that the structural vulnerability observed in the current study reflects a broader systemic challenge in the financing of faith-based education. The struggle to balance a religious mission with modern economic sustainability is a cross-border phenomenon. In the Indonesian context, the Malaysian experience offers a potential roadmap: recognizing that while government support (such as BOS funds) is a necessary foundation, true institutional autonomy and long-term continuity (*istimrar*) can only be secured through aggressive diversification of revenue sources via philanthropic innovation and the professional management of community-owned assets.

Tentative Propositions and Policy Implications

Based on these findings, two testable propositions are advanced for multi-site research:

Proposition 1: Private madrasah aliyah in which BOS constitutes more than 70% of formal revenues are structurally vulnerable to financially vulnerable conditions (Tuckman & Chang, 1991), independently of managerial quality, because the vulnerability is institutionally structural rather than primarily managerial. The first proposition posits that private madrasah aliyah in which School Operational Assistance (BOS) funds constitute more than 70% of formal revenues are inherently predisposed to a state of severe financial vulnerability. This threshold suggests that once an institution crosses a specific level of resource dependency, it enters a "danger zone" characterized by the risk indicators established in classic nonprofit financial theory, such as high revenue concentration and an inability to maintain operational cushions. Crucially, this proposition argues that such vulnerability is institutionally structural rather than primarily managerial. This means that even under the leadership of highly competent, ethical, and efficient administrators, the institution remains at high risk because the underlying financial architecture is flawed. Managerial excellence can optimize the use of existing funds, but it cannot easily overcome the systemic risks posed by a near-total reliance on a single, externally controlled government grant.

This perspective shifts the focus of educational policy and institutional reform. It suggests that addressing the financial instability of private madrasahs requires more than just "capacity building" or training for principals in financial literacy. While those efforts are valuable, they do not solve the root cause of the crisis. True resilience can only be achieved by reconfiguring the revenue model itself—specifically by lowering the dependency ratio through the development of diverse income streams such as endowments, community-based philanthropy, or institutional business ventures. Without these structural changes, the institution remains a "captive" of its primary funding source, regardless of how well it is managed on a day-to-day basis.

Proposition 2: The imbalance between physical infrastructure investment and teacher professional development in private madrasah aliyah constitutes a systemic pattern rooted in hardware investment bias rather than absolute budgetary constraint, and is correctable through reoriented allocation policies grounded in evidence-based *masalah*.

The second proposition posits that the profound imbalance between physical infrastructure investment and teacher professional development—frequently observed in private madrasah aliyah—is not merely an unfortunate byproduct of limited funds. Instead, it constitutes a systemic pattern rooted in "hardware

investment bias." This bias suggests that institutional leaders prioritize tangible, visible assets (such as new classrooms or renovated facades) because they provide immediate symbolic value to stakeholders, even when such investments offer lower long-term educational returns than human capital development.

While absolute budgetary constraints are a reality for many private madrasahs, this proposition argues that the 39:1 ratio of infrastructure to teacher training is a choice of allocation rather than a lack of capacity. Even within a small budget, the decision to spend 0.5% on teacher competency is a policy preference. Therefore, this distortion is not an inevitable consequence of poverty but a reflection of a specific institutional mindset that undervalues the "abstract" benefits of pedagogical expertise.

Crucially, this proposition suggests that this pattern is correctable through reoriented allocation policies. By grounding financial decisions in "evidence-based *maslahah*," institutions can shift their focus from the "container" to the "content" of education. Implementing such a shift requires a move toward data-driven governance, where the benefit to the student (the *maslahah*) is measured by learning outcomes rather than the number of square meters built. Corrective policies would involve setting mandatory minimum percentages for teacher development, ensuring that the growth of human capital keeps pace with the expansion of physical facilities. This reorientation would align the madrasah's fiscal behavior with both modern Human Capital Theory and the ethical mandates of Islamic stewardship.

Policy implications are concrete: (1) revenue diversification through optimized Islamic philanthropy instruments (*zakat profesi*, productive *waqf*, structured *infaq* via formal BAZNAS Bandung Regency partnerships); (2) rebalancing teacher development allocation from 0.5% to a minimum of 3% of BOS; (3) transforming e-RKAM from a compliance tool into a multi-year strategic planning instrument incorporating non-BOS revenues; and (4) strengthening *maslahah* and *istimrar* as the evidential basis for budgetary decisions.

To break the cycle of resource dependency, the institution must aggressively optimize Islamic philanthropic instruments. This involves moving beyond "unstructured donations" toward formal partnerships with bodies such as BAZNAS (National Board of Zakat) at the Regency level. By implementing structured programs for *zakat profesi* (professional alms), developing productive *waqf* (endowments), and formalizing *infaq* (charitable spending), the madrasah can create a "third pillar" of income. This diversification reduces the HHI (revenue concentration) score, providing the institutional discretion necessary to pursue unique educational goals without being entirely constrained by government grant guidelines.

There is an urgent need to correct the "hardware investment bias" by mandating a shift in internal allocation. Specifically, the expenditure on teacher professional development should be elevated from the negligible 0.5% to a minimum of 3% of the total BOS budget. This rebalancing acknowledges that the most significant return on educational investment comes from the quality of the educator. By formalizing this threshold, the institution ensures that its physical growth does not outpace its pedagogical capacity, thereby aligning its fiscal behavior with the core tenets of Human Capital Theory.

Currently, the e-RKAM system functions primarily as a compliance tool for state reporting. Policy reform should aim to transform this platform into a comprehensive, multi-year strategic planning instrument. This evolution requires the integration of non-BOS revenues—including tuition, foundation support, and philanthropy—into the formal digital budget. By capturing the "full picture" of the madrasah's economy, leaders can move away from "paycheck to paycheck" accounting and toward long-term financial forecasting that supports institutional growth and stability.

Finally, the institution must adopt *Maslahah* (public benefit) and *Istimrar* (long-term continuity) as the evidential basis for all budgetary decisions. This means that every expenditure should be evaluated not just for its compliance with state regulations, but for its measurable contribution to the student community and its impact on the school's future survival. Implementing a "reserve fund" policy, inspired by the Yusufi principle of preparing for scarcity, becomes an ethical and strategic imperative. By making these values the primary metrics for success, the madrasah ensures that its financial management remains a true reflection of its Islamic identity and educational mission.

CONCLUSION

This study yields four substantive conclusions. First, the financing structure of MA Mathla'ul Anwar Pameuntasan demonstrates total BOS dependence within formal planning, creating a formal-informal financing gap that structurally undermines diversification capacity. Second, financial sustainability conditions remain at a precarious stability stage: HHI = 1.0 (formal), 0% operating margin, and no financial reserves—satisfying three

of four Tuckman–Chang (1991) vulnerability indicators. Third, a critical investment allocation distortion exists (39:1 ratio: infrastructure vs. teacher development), reflecting hardware investment bias that contradicts Human Capital Theory and threatens long-term educational output quality. Fourth, the IEM perspective reveals a contradiction between Islamic institutional identity and actual budgeting practice: the institution partially fulfills amanah and shaffafiyyah at the vertical level but remains substantively deficient in masalah, istimrar, and community-level shaffafiyyah.

Theoretically, this study validates the Tuckman–Chang (1991) and Bowman (2011) financial vulnerability frameworks within the Indonesian private madrasah aliyah context—a non-Western, faith-based institutional environment for which these frameworks have not previously been formally tested. It demonstrates the methodological utility of HHI as a diagnostic instrument for revenue concentration in Islamic educational institutions, and advances an operationalization of IEM principles as empirical analytical variables—enriching the theoretical apparatus of Islamic Education Management as a discipline. This study is bounded by its single-institution, single-visit design with three internal informants. Member checking was conducted post-visit via written summary confirmation. HHI Scenario 2 is a heuristic illustration excluded from formal conclusions. Multi-site cross-case research is required to test the generalizability of the proposed propositions.

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