

A Framework for Governing Non-Educational Revenue Streams through Digital Payment Integration in Philippine Higher Education

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Date Submitted:

August 21, 2026

Date Accepted:

September 14, 2026

Date Published:

October 04, 2026

DOI:

10.5281/zenodo.23142062

ABSTRACT

Auxiliary income streams in Philippine private universities — accommodation services, vehicle access fees, institutional uniforms, venue rentals, and campus food concessions — recovered strongly after the COVID-19 campus closures, yet few institutions have a routine for checking whether that income is retained as margin. A companion study analyzed five academic years of audited records and a survey of 369 students at a private university in Cavite, Philippines, and found that, under universal digital payment adoption, stream-level margins still diverged by 61 percentage points and three of five streams were eroding on margin while growing on revenue. This paper takes those findings as its starting point and asks a practical question: what operating routines would allow a university finance office to detect such drift and act on it? It proposes an

operating model with three components: a transaction-data governance protocol that converts payment records into stream-level cost and margin reports; a quarterly forecast-to-actual cycle governed by explicit trigger rules; and a four-perspective performance scorecard. These are accompanied by role assignments, management regimes matched to each stream's cost structure, and a three-year implementation pathway. Applied retrospectively to the study institution's post-reopening figures, the trigger rules would have flagged the dormitory, parking, and facilities rental streams while all three were still above the 20 percent sustainability floor. The model requires no new payment technology and is designed for finance offices with modest analytical capacity.

Keywords: *auxiliary revenue governance, higher education finance, margin monitoring, early-warning indicators, scorecard monitoring*

INTRODUCTION

University revenues in the Philippines extend well beyond tuition. Auxiliary operations — student housing, campus parking, institutional uniforms and academic regalia, venue rentals, and food concessions — contribute to institutional income in ways that have grown considerably as campuses reopened following the COVID-19 pandemic. For private universities without substantial public funding, these services help fill a financial gap that tuition income alone cannot reliably cover. Despite this, most institutions have no routine process for evaluating whether these services retain their income as margin, for projecting what they will earn, or for integrating them into a coherent financial governance structure (Bayudan-Dacuycuy et al., 2025; Santiago, 2023).

The question of governance has become more urgent as cashless payment systems have taken hold in Philippine campuses. Platforms such as GCash and Maya have largely displaced physical cash in student transactions, generating digital records that, in principle, offer close to real-time visibility into revenue flows

(Susilo & Dizon, 2023). Yet the existence of digital infrastructure does not automatically produce better financial management. A payment platform records what was collected; it does not, by itself, tell administrators what each service cost to deliver or whether its margin is improving or deteriorating.

The empirical side of this problem is reported in full in a companion article (Miciano et al., in press), which analyzed five years of audited auxiliary records and a student survey at a private university in Cavite. That study concluded that cost governance, not the availability of a payment platform, determines whether auxiliary streams remain sustainable, and it outlined a governance architecture at the conceptual level. The present paper does not re-report that analysis. Its contribution is operational: it specifies the routines, roles, decision rules, and implementation sequence through which a university finance office could put such an architecture into practice, and it tests the proposed decision rules against the companion study's published figures.

Literature Review

Philippine private universities have relied on auxiliary services as income buffers for decades, yet the financial governance of these operations has received comparatively little scholarly attention. Bayudan-Dacuycuy et al. (2025) established that Philippine HEIs require distinct financial strategies for academic and non-academic revenue because each responds differently to enrollment changes and institutional cost drivers. Francisco (2025) demonstrated that revenue-generating programs in Philippine universities improve institutional finances measurably, but only when subject to active management oversight. Where oversight is absent, revenue volume alone does not produce financial health. Duran and Mariñas (2025) extended this argument by showing that sustainability frameworks for Philippine institutions must incorporate governance accountability alongside financial and technological innovation.

Research on cashless payment adoption in education has focused primarily on what motivates students and administrators to embrace digital channels. Ease of use, perceived security, institutional support, and peer influence are among the most consistently reported drivers (Jain & Jain, 2025; Ly & Ly, 2024). Palomas (2025) offered one of the few studies linking financial technology adoption to fiscal outcomes in Philippine HEIs, finding a positive association, though the governance conditions enabling that link were not isolated. The companion study qualified this link: at an institution where adoption was universal, margins still varied widely across services, suggesting that any benefit operates through the governance practices built around the platform rather than through adoption itself (Miciano et al., in press). What remains largely undocumented is what those practices should look like in a typical university finance office.

For projecting auxiliary income, regression-based approaches using historical institutional records remain interpretable by non-specialist administrators while offering useful accuracy (Sinuany-Stern, 2021). With short annual series, however, their value lies in revealing the direction and drift of a stream rather than in producing precise point estimates. Performance management practice offers a complementary tool: the balanced scorecard links financial results to the customer, process, and learning conditions that produce them (Kaplan & Norton, 1992). The operating model proposed here combines both, using forecasts as early-warning instruments and the scorecard as the accountability structure around them.

Theoretical/Conceptual Framework

Three theoretical perspectives anchor the operating model. Resource Dependence Theory (Pfeffer & Salancik, 1978) explains why universities pursue auxiliary income in the first place: vulnerability to any single revenue source, tuition foremost among them, drives the diversification of income across auxiliary services. General Systems Theory (von Bertalanffy, 1968) provides the organizing logic for treating the five auxiliary streams as interdependent components of a shared financial system, with digital payment data functioning as the feedback mechanism through which administrators observe and adjust each component; the model's monitoring cycles are designed to close that feedback loop. Contingency Theory (Fiedler, 1964) supports the argument that

governance must be tailored to each stream's financial profile: a dormitory with high fixed costs and occupancy risk requires different interventions than a food concession with high volume and low overhead.

Statement of Purpose

This paper has two objectives: first, to specify an operating model for auxiliary revenue governance in Philippine HEIs that positions cashless payment systems as the data infrastructure for stream-level financial oversight; and second, to illustrate, using the companion study's published post-reopening margins, how the model's trigger rules would have performed at the study institution.

METHODS

Design

The paper follows a design-oriented approach. The operating model was developed by translating each diagnostic finding of the companion study into a governance requirement, and each requirement into a routine, an accountable role, and a decision rule. The model's decision rules were then applied retrospectively to the study institution's published margins to examine whether, and when, they would have raised a flag. No new data were collected for this paper, and no new statistical models were estimated.

Evidence Base

The evidence base is the companion study (Miciano et al., in press), which is derived from the first author's doctoral dissertation. That study used audited revenue and directly attributed expense records for five auxiliary streams covering SY 2020–2021 to SY 2024–2025, obtained from the Office of the Vice President for Finance of a private university in Cavite, together with a stratified proportionate survey of 369 students drawn from nine academic colleges with a combined enrollment of 9,108. Margins in that study are contribution margins, since institutional overhead was not allocated to streams, and aggregate margins are revenue-weighted pooled ratios computed over the three post-reopening years. All figures cited in this paper are taken from the companion study's published tables; the only computations performed here are year-on-year differences in net profit margin, used for the retrospective illustration.

Retrospective Illustration

The trigger rules defined in the operating model were applied to each stream's net profit margin for SY 2022–2023, SY 2023–2024, and SY 2024–2025, and to the portfolio as a whole. For each stream, the analysis records which rules would have fired and in which year. Because the illustration is retrospective and uses annual rather than quarterly data, it demonstrates the logic of the rules rather than validating them prospectively.

Ethical Consideration

The underlying study was conducted with prior institutional authorization, and student participation was voluntary, informed, and revocable without consequence. Financial information is reported only in aggregate, no respondent identifiers appear in any output, and data handling conformed to the Data Privacy Act of 2012 (RA 10173). This paper uses only figures already published in aggregate form.

RESULTS AND DISCUSSION

Diagnostic Findings Carried Forward

Four findings from the companion study define what the operating model must do. They are summarized in Table 1 together with the design requirement each one generates; readers are referred to Miciano et al. (in press) for the full analysis.

Table 1. *Diagnostic Findings from the Companion Study and the Design Requirements They Generate*

Finding (Miciano et al., in press)	Design Requirement
Revenue recovered fully after reopening, and every stream cleared the 20% net-margin floor on a pooled basis (portfolio margin 56.4%), but margins diverged by 61 percentage points, from 86.5% for food services to 25.1% for facilities rental.	Report margins at stream level; a portfolio-level margin hides the weakest stream.
Three of five streams were eroding on margin while growing on revenue: dormitory (58.4% to 47.0%), parking (82.3% to 51.6% in a single year), and facilities rental (33.4% to 20.8%).	Monitor the trajectory of each margin, not only its level.
All 369 surveyed service users paid digitally, so adoption showed no variance; the test of whether usage moderated the expense–revenue relationship was not significant ($p = .648$), a ceiling effect rather than evidence about the technology.	Invest in the use of payment data, not in further adoption; adoption no longer distinguishes strong from weak streams.
Revenue trends were significant for four of five streams; uniform and toga sales followed a cyclical rather than a trending pattern. Projections reached about PHP 116 million by SY 2030–2031, with wide prediction intervals.	Use forecasts as drift detectors rather than point targets, and use cohort-based baselines for cyclical streams.

Note. Margins are revenue-weighted pooled net profit margins over SY 2022–2023 to SY 2024–2025.

A methodological lesson also carries forward. Because campus closure drove some revenue denominators close to zero, averaging yearly margins across the closure years produces extreme values that reflect the size of the denominator rather than the performance of the service (Miciano et al., in press). The operating model therefore requires that margins be reported per period and aggregated only as revenue-weighted pooled ratios, a rule that any institution analyzing data spanning the pandemic should adopt.

The Proposed Operating Model

The Auxiliary Revenue Governance Operating Model assumes that a cashless payment layer is already in place, as it is at most Philippine private universities, and builds three components on top of it. Component 1 converts payment records into stream-level cost and margin information; Component 2 turns that information into forward-looking signals through a quarterly cycle with explicit trigger rules; and Component 3 provides the accountability structure through which results are reviewed. Together they operationalize the transaction-to-decision, forecasting, and scorecard layers of the architecture outlined in the companion study.

Component 1: Transaction-Data Governance

Every auxiliary transaction is tagged at the point of payment with a stream identifier, and every directly attributable expense is coded to the same identifier in the institution's ledger. Platform transaction records are extracted at the close of each month, reconciled with the institution's revenue ledger, and combined with the coded expenses to produce a monthly profit-and-loss statement for each stream. The model does not treat the payment platform as the end goal; it treats the platform's timestamped, auditable records as the raw material for financial governance.

A named data steward within each service unit is responsible for monthly reconciliation and for reporting discrepancies to the Finance Office within one working week. Platform security requirements include encryption of transaction data in transit and at rest, second-factor authentication for account access, and single-use verification codes for payment confirmation, consistent with security guidance for the Philippine digital payment environment, where fraud and account compromise risks have grown alongside adoption (Samonte et al., 2024; Surya et al., 2023). This chain of accountability closes the gap between payment processing and financial reporting that otherwise leaves transaction data institutionally invisible.

Component 2: Quarterly Forecast-to-Actual Cycle with Trigger Rules

Each stream is assigned a rolling forecast calibrated on its own revenue and cost history and refreshed every quarter as new actuals become available. The Finance Office compiles a quarterly Forecast-to-Actual Reconciliation Report comparing projected against realized revenue, expense, and margin for each stream. Because short series produce wide prediction intervals, the model does not judge streams on whether they hit a forecast figure. It judges them against the trigger rules in Table 2, which convert margin levels and trajectories into defined management actions.

Table 2. *Trigger Rules and Required Management Responses*

Rule	Condition	Required Response
T1 Floor breach	Stream net profit margin falls below 20%	Strategic review of pricing, capacity, cost structure, or delivery model within one quarter
T2 Proximity	Margin is between 20% and 25%	Stream placed on a watch list with monthly margin reporting
T3 Sharp erosion	Margin falls by 10 percentage points or more in one period	Cost-driver investigation reported to the Finance Office within one month
T4 Sustained drift	Margin declines in two consecutive periods	Management review of pricing, utilization, and cost structure
T5 Forecast variance	Actual revenue or expense falls outside the forecast's prediction interval	Forecast re-estimated and variance explained in the next quarterly report

Note. Thresholds are proposed starting values and should be calibrated to each institution's cost structure and risk tolerance.

The quarterly cycle also feeds the annual budget. Before each fiscal year's budget is finalized, service managers receive stream-level projections and the year's trigger history as standard planning inputs, so that hiring, procurement, and maintenance decisions rest on realistic income expectations rather than on the assumption that prior-year performance will continue. The practical effect is a shift from discovering shortfalls at year-end to intervening while a stream is still above the floor.

Component 3: Scorecard-Based Performance Monitoring

The third component supplies the accountability structure through which the model's performance is tracked and reported. It adapts the four perspectives of the balanced scorecard (Kaplan & Norton, 1992) to auxiliary revenue management (Table 3).

Table 3. *Performance Scorecard for Auxiliary Revenue Streams*

Perspective	Management Objective	Monitored Indicators	Reporting Frequency
Financial Viability	Keep every stream at or above a 20% net margin and prevent sustained erosion	Net margin and expense ratio per stream; year-on-year revenue and expense change; trigger history; auxiliary contribution to the academic cost base	Every quarter
Service Demand	Sustain utilization and active users per stream	Occupancy and utilization rates for asset-backed services; active users per stream; satisfaction index	Each semester

Operational Efficiency	Reduce transaction friction and billing inaccuracy	Settlement time; reconciliation hours per 1,000 transactions; billing discrepancy rate; uniform stock turnover	Each month
Organizational Capability	Develop staff competence in digital financial tools and security	Share of staff completing platform and cybersecurity training; reported fraud incidents; reconciliation completion rate	Every six months

Financial viability is the primary perspective. Rather than a single target for all services, each stream is held to the 20 percent floor and to the trigger rules, and any stream that triggers T1, or triggers T4 in two consecutive years, is subject to a structured strategic assessment that may consider repricing, right-sizing capacity, outsourcing, or, in extreme cases, discontinuation. The operational efficiency indicators deserve particular attention: they are the measures that would allow an institution to document the processing and reconciliation gains that digital payments are expected to deliver, gains the companion study could motivate but not measure (Miciano et al., in press).

Matching the Management Regime to the Cost Structure

Consistent with Contingency Theory, the model does not apply one management regime to all streams. The companion study found that margins tracked fixed-cost intensity closely: food services roughly doubled its revenue over the three post-reopening years while its expenses rose more slowly, by about 77 percent, so growth lifted its margin; in the dormitory, by contrast, revenue growth came with about eleven points of margin erosion (Miciano et al., in press). Table 4 sets out the regime the model assigns to each type of stream.

Table 4. *Management Regimes by Stream Cost Structure*

Stream Type	Examples at the Study Site	Primary Lever	Key Indicator
Low fixed cost, high turnover	Campus food concessions	Volume growth and supplier cost control	Margin per peso of revenue; supplier cost trend
Inventory-based, cyclical	Uniforms and academic regalia	Cohort-based ordering and inventory control	Margin over the enrollment–graduation cycle; stock turnover
Asset-backed, capital-intensive	Dormitory; venue and facilities rental	Utilization and pricing by occupancy; fixed-cost review	Occupancy or utilization rate; cost per occupied unit or hour
Fee-based access	Vehicle stickers and parking	Alignment of fee schedule with operating cost	Expense step-changes; cost per permit issued

Two implications follow. Asset-backed streams should be judged on utilization rather than receipts, because two halls with identical revenue can differ greatly in margin depending on occupancy and price. Cyclical streams should be compared across their natural cycle rather than year on year, because a single-year fall in margin may reflect the cohort calendar rather than a cost problem.

Retrospective Illustration of the Trigger Rules

Table 5 applies trigger rules T1 to T4 to the published post-reopening margins. Rule T5 could not be applied because quarterly forecasts were not available for the study period.

Table 5. *Trigger Rules Applied to Post-Reopening Net Profit Margins (Percent)*

Stream	SY 2022–23	SY 2023–24	SY 2024–25	Triggers Fired
Dormitory	58.4	53.5	47.0	T4 in SY 2024–25
Vehicle access and parking	86.8	82.3	51.6	T3 and T4 in SY 2024–25
Uniforms and regalia	81.1	57.1	81.9	T3 in SY 2023–24; cleared in SY 2024–25

Venue and facilities rental	33.4	22.2	20.8	T2 and T3 in SY 2023–24; T2 and T4 in SY 2024–25
Campus food concessions	87.7	82.3	89.1	None
Total portfolio	62.6	52.9	54.8	None

Note. Adapted from Miciano et al. (in press), Table III. Year-on-year changes and trigger assessments computed for this paper.

Three observations follow. First, the rules would have flagged the same three streams that the companion study identified as eroding, consistent with its observation that three flags would already have fired (Miciano et al., in press), and they would have done so while every one of those streams was still above the 20 percent floor; facilities rental would have been on the watch list from SY 2023–2024. Second, the portfolio as a whole fired no trigger, because the strong performance of food services offset the decline elsewhere. This confirms that stream-level reporting is not an optional refinement: a finance office monitoring only the aggregate would have seen nothing to act on. Third, the uniform stream fired T3 in SY 2023–2024 and recovered fully the following year, which is consistent with its cyclical revenue pattern. Under the regime in Table 4, that flag would have prompted a check against the cohort cycle rather than a cost intervention, showing why the trigger rules and the cost-structure regimes are designed to be used together.

Implementation Pathway

Ownership of the model rests with a senior finance officer accountable to the Board. Service managers own the performance of their streams and respond to triggers; data stewards in each unit own monthly reconciliation; the ICT office maintains the stream coding and the extraction of transaction data; and internal audit reviews the integrity of the reports annually.

Implementation spans three academic years. Year 1 establishes the data foundation: stream identifiers on all payment channels, expense coding to the same identifiers, monthly stream profit-and-loss statements, baseline forecasts, and scorecard templates; no new payment technology is required where established platforms are already in use. Year 2 activates the cycles: quarterly forecast-to-actual reports, trigger rules with their required responses, semester demand reviews, and monthly reconciliation routines. Year 3 embeds the model in formal financial policy, integrates trigger history into the annual budget calendar, recalibrates thresholds using two years of quarterly data, and conducts the first strategic assessment of any stream that has triggered T1 or repeated T4.

Limitations

The model was developed from the experience of a single private university, and its thresholds are proposed starting values rather than empirically derived benchmarks. The retrospective illustration uses annual data and published margins; it shows how the rules would have behaved but is not a prospective test of whether acting on them improves outcomes. Margins are contribution margins that exclude institutional overhead, and all figures are nominal. Each of these limitations defines a direction for further work.

CONCLUSION

This paper translated the findings of a five-year study of auxiliary revenue at a Philippine private university into an operating model that a finance office can implement. The starting point is that cashless payment infrastructure, however widely adopted, does not by itself tell administrators which services are retaining their income and which are losing ground. At the study institution, every stream was sustainable on a pooled basis after reopening, yet margins differed by 61 percentage points and three streams were eroding while revenue grew (Miciano et al., in press).

The proposed model addresses that gap through three components: a transaction-data governance protocol that produces stream-level profit-and-loss information, a quarterly forecast-to-actual cycle governed by explicit trigger rules, and a four-perspective scorecard, applied through management regimes matched to each stream's

cost structure. Applied retrospectively, the trigger rules flagged the eroding streams while they were still above the sustainability floor, and they showed that portfolio-level monitoring would have detected nothing. With auxiliary revenue projected to rise substantially by SY 2030–2031, institutions that build these routines now will be better placed to keep growth from enlarging a fixed-cost base that a future shock could strand. Future work should test the model prospectively across several Philippine HEIs, calibrate its thresholds empirically, and measure whether its adoption produces margin improvements over a three-to-five-year horizon.

Recommendations

Five recommendations follow from the operating model and the evidence that informed it.

First, universities should formalize the model as institutional policy and assign clear ownership to a senior finance officer accountable to the Board. A governance routine without a named owner is unlikely to survive leadership transitions or competing priorities.

Second, finance offices should report profit and loss for each auxiliary stream at least quarterly, using net profit margin and expense ratio as standing indicators and revenue-weighted pooled ratios for any multi-year aggregate, and should adopt explicit trigger rules that require a defined response when a margin falls, drifts, or approaches the floor.

Third, institutions should prioritize governance infrastructure over platform acquisition. Most Philippine university students already transact through GCash, Maya, or equivalent platforms; the critical investment is in stream coding, data extraction, reconciliation, and reporting routines that connect existing transaction records to financial decisions.

Fourth, administrators should match the management regime to each stream's cost structure: pursue volume growth where fixed costs are low, as in food concessions; judge asset-backed services such as dormitories and venue rentals on utilization rather than receipts; and evaluate cyclical services such as uniforms over their enrollment and graduation cycle.

Fifth, cybersecurity competence should be treated as a governance requirement on the same level as financial literacy. As the volume of institutional digital transactions grows, so does exposure to payment fraud and account compromise, and staff training in platform security, fraud recognition, and incident reporting should be scheduled, tracked, and reported through the scorecard's organizational capability perspective (Laxman et al., 2025; Samonte et al., 2024).

Acknowledgements

This paper is based on the doctoral dissertation of the first author completed at the Graduate School of Business and Management, Philippine Christian University, Manila (2025). The authors express sincere gratitude to the Office of the Vice President for Finance of the host institution for access to financial records, to the student respondents for their participation, and to the Panel of Examiners for their guidance throughout the dissertation process.

Disclosure of related publication. The empirical findings summarized in this paper are reported in full in Miciano, Pao, and Anfone (in press). The present paper develops in operational detail the governance architecture outlined in that article, which noted briefly that three streams would already have been flagged. The explicit trigger rules and their required responses, the management regimes by cost structure, the scorecard specification, the stream-by-stream and portfolio-level retrospective illustration, and the implementation pathway are new to this paper.

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