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The Effectiveness of Budget Ceiling Limit Control on Budget Absorption Accuracy and Program Performance in a Public University: Evidence from Universitas Negeri Semarang

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Abstract
Financial autonomy requires public universities to strengthen budgetary discipline while ensuring that allocated resources deliver measurable institutional results. This study examines the association between a development-program budget ceiling limit-control mechanism and two outcomes at Universitas Negeri Semarang, Indonesia: budget absorption accuracy and program performance indicator achievement. A quantitative cross-sectional design was employed using questionnaire responses from 20 individuals involved in budget management and development-program implementation, complemented by document review. Each construct was measured using six four-point Likert-type items. Descriptive statistics, diagnostic tests, and two separate simple linear regressions were reported. Limit control was positively associated with budget absorption accuracy ($B = 1.235$; $\beta = 0.852$; $t = 6.908$; $p < 0.001$; $R^2 = 0.726$) and with program performance indicator achievement ($B = 1.029$; $\beta = 0.829$; $t = 6.284$; $p < 0.001$; $R^2 = 0.687$). These findings suggest that disciplined release of budget allocations, based on program review and authorization, is associated with stronger perceived financial execution and performance alignment. Because the evidence is drawn from a small, single-institution, cross-sectional sample and self-reported outcomes, the results should not be interpreted as proof of causality or independently verified improvements in actual financial performance. The study highlights a practical management mechanism for connecting institutional budget controls with performance-oriented governance.

Keywords: *budget ceiling; limit control; budget absorption; performance-based budgeting; higher education governance*

INTRODUCTION

The expansion of managerial and financial autonomy in higher education has increased universities' responsibility to align resources with strategic priorities. Public institutions are expected not only to comply with expenditure limits but also to demonstrate that their spending generates educational, research, and institutional outcomes. In Indonesia, Government Regulation No. 36 of 2022 established Universitas Negeri Semarang (UNNES) as a state university with legal-entity status, strengthening the relevance of institution-level financial governance. This organizational context creates a particular need for expenditure authorization, monitoring, and evidence-based budget release.

Budget control should not be understood solely as a restriction on spending. When properly designed, it can connect program selection, administrative readiness, implementation schedules, and performance accountability. International public-budgeting guidance emphasizes transparent processes and links between budget decisions and public results (OECD, 2019). The internal-control perspective similarly treats authorization, information, monitoring, and risk management as mutually reinforcing elements of organizational governance (COSO, 2013). For universities, these principles imply that both financial execution and non-financial achievement should be considered when

evaluating budget management. UNNES applies a mechanism referred to locally as the development-program budget blocking system (Sistem Blokir Anggaran Pengembang), described here as budget ceiling limit control. Operating units submit development proposals; a development team reviews the proposals; leadership considers the recommendations; and the planning and finance function releases the authorized budget ceiling for approved activities. The annual development priorities include education, student affairs, research and innovation, and institutional reputation. Such a sequence may reduce premature expenditure and improve alignment with institutional targets, although it could also introduce administrative delay if controls are poorly coordinated.

Existing performance-management literature argues that financial measures alone provide an incomplete account of organizational success (Kaplan & Norton, 1992). This creates a rationale for evaluating both budget absorption accuracy and program outcomes in one framework. At the operational level, evidence about how a controlled-release mechanism relates to these two outcomes remains useful, especially in an autonomous public-university setting. The present study investigates two hypotheses: H1, stronger perceived implementation of budget ceiling limit control is positively associated with budget absorption accuracy; and H2, stronger perceived implementation is positively associated with program performance indicator achievement. The contribution is a focused empirical examination of a specific internal budget authorization mechanism across a financial and a non-financial performance dimension.

METHOD

This study used a quantitative, cross-sectional survey design at Universitas Negeri Semarang in 2026. The analytical unit was an individual involved in managing development-program budgets at the unit or university level. The underlying research report identifies 20 valid respondents. The report does not provide a detailed sampling frame, response rate, or probability-sampling procedure; therefore, inference is limited to the observed respondent group rather than the university population or other institutions.

Primary information was obtained using a questionnaire and supplemented with institutional documentation. Three composite measures were analyzed: budget ceiling limit control (X), budget absorption accuracy (Y1), and program performance indicator achievement (Y2). The reported scoring procedure used six items per variable, each rated on a four-point Likert scale, producing possible total scores of 6–24. Higher scores denote stronger agreement with the respective construct. The original study provides aggregated statistical outputs but does not reproduce the complete item wording or evidence of instrument reliability and construct validity. Accordingly, the measures are discussed as respondents' perceptions and should not be equated automatically with audited budget absorption or independently measured program outcomes.

The analysis combined descriptive statistics and two simple ordinary-least-squares linear regressions: $Y1 = \alpha1 + b1X + \varepsilon1$ and $Y2 = \alpha2 + b2X + \varepsilon2$. Model outputs included regression coefficients, t statistics, p values, multiple correlation coefficients, and coefficients of determination. The source report also assessed residual normality using one-sample Kolmogorov–Smirnov tests, deviations from linearity, and heteroskedasticity using regressions on residual magnitudes. The study applied a nominal 5% significance threshold. Because each regression contains only one predictor, multicollinearity is not a substantive concern. Statistical associations are presented without causal claims.

RESULTS AND DISCUSSION

All three variables had 20 valid responses. Reported average scores were relatively high on the possible 6–24 scale. The budget ceiling limit-control construct had the highest mean (22.30), followed by program performance indicator achievement (21.60) and budget absorption accuracy (20.90). For the limit-control measure, 16 respondents (80%) were in the highest response category, compared with 13 respondents (65%) for each outcome. These distributions indicate favorable perceptions, while the broad interpretation of a composite score as "strong agreement" should be treated cautiously because the published categorization intervals are not perfectly consistent with their stated interval calculation.

Table 1. Descriptive statistics

Variable	N	Minimum	Maximum	Mean	SD
Budget ceiling limit control (X)	20	15	24	22.30	2.43
Budget absorption accuracy (Y1)	20	13	24	20.90	3.52
Program performance indicators (Y2)	20	15	24	21.60	3.02

Source: Research report, SPSS output (2026).

The reported residual normality tests yielded p = 0.122 for the budget absorption model and p = 0.085 for the program performance model. Neither test rejected a normal-residual distribution at the 5% level; however, non-significance is not affirmative proof of normality, particularly with only 20 observations. Deviations from linearity were also non-significant (p = 0.884 and p = 0.373, respectively). The heteroskedasticity checks reported p = 0.778 and p = 0.650. Although these results do not flag major violations in the reported tests, diagnostic power may be low in a small sample.

Table 2. Regression estimates and hypothesis testing

Outcome	B (SE)	β	t	p	R	R^2	Adjusted R^2
Budget absorption accuracy	1.235 (0.179)	0.852	6.908	<0.001	0.852	0.726	0.711
Program performance indicators	1.029 (0.164)	0.829	6.284	<0.001	0.829	0.687	0.669

Source: Research report, SPSS output (2026). The source prints "0.000" in the significance column; this is expressed conventionally as p < 0.001 rather than as an exact zero probability.

The first regression produced an estimated equation of Y1 = −6.647 + 1.235X. The positive coefficient was statistically significant (t = 6.908, p < 0.001), providing support for H1 as an association within the sample. Its R^2 of 0.726 indicates that 72.6% of the observed variation in self-reported budget absorption accuracy was accounted for by the single-predictor fitted model. The remaining 27.4% was not explained by this model. The second regression produced Y2 = −1.336 + 1.029X. Its positive slope was likewise statistically significant (t = 6.284, p < 0.001), supporting H2 as an association within the sample. The R^2 value of 0.687 indicates that 68.7% of the variation in self-reported program performance indicator achievement was accounted for by the model, with 31.3% remaining unexplained. These percentages are descriptions of model fit and should not be interpreted as causal contributions. The strong positive relationship between the budget ceiling limit-control score and the budget absorption accuracy score is consistent with the proposition that a staged authorization process can improve the predictability of expenditure execution. Under the mechanism documented at UNNES, proposed activities are reviewed before financial access is opened. This sequence may make authorized activities clearer to budget users and can encourage planning within approved ceilings. Such features are compatible with the emphasis on control activities and monitoring in the COSO (2013) framework.

Nevertheless, accurately timed budget absorption cannot be established solely from a perception survey. A stronger evaluation would compare planned and actual disbursements by month or quarter, record approval-to-release turnaround times, and examine whether unspent balances represent savings, postponed execution, or implementation barriers. The present findings are therefore best understood as evidence that respondents who assessed limit control more favorably also assessed budget absorption accuracy more favorably. The second relationship indicates that budgetary control is associated with perceived achievement of program performance indicators. Conceptually, requiring the review of objectives before releasing funds can encourage program owners to identify deliverables and align proposals with university priorities. In this respect, a budget control may operate not merely as a financial gate but also as a managerial checkpoint that connects spending authorization to strategic implementation. The integration of financial and performance indicators echoes the multidimensional measurement argument developed by Kaplan and Norton (1992).

Still, the distinction between compliance and performance matters. A program may satisfy its ceiling restrictions without producing strong educational or research outcomes. Conversely, a delayed disbursement may reflect appropriate risk mitigation rather than poor management. Future monitoring should therefore combine financial metrics, timeliness, outputs, and outcome quality. Explicit performance milestones would also help evaluate whether the mechanism supports university objectives associated with international reputation and sustainable institutional governance. The findings suggest several operational priorities for UNNES and comparable institutions. First, the criteria for reviewing proposals and opening blocked allocations should be transparent and consistently applied. Second, the limit-control workflow should be connected with financial

information systems to produce a verifiable authorization trail and reduce repeated administrative processing. Third, managers should monitor both disbursement timing and progress against deliverables, rather than maximizing expenditure near year-end. Finally, periodic user training and escalation procedures could reduce the risk that effective controls become unnecessary bottlenecks.

These implications also bear on responsible institutional resource management. Budget transparency and auditable authorization are relevant to accountable institutions, an objective consonant with Sustainable Development Goal 16. Any contribution to Sustainable Development Goal 12, however, would require additional indicators of resource efficiency and sustainable procurement; the present data cannot directly demonstrate such effects. Four limitations are important. First, the sample consists of only 20 respondents from a single university, restricting statistical precision and external validity. Second, the cross-sectional design does not establish temporal order or rule out reverse causation. Third, all three constructs appear to have been assessed by questionnaire, creating potential common-method bias and limiting claims about actual administrative outcomes. Fourth, the source report does not provide questionnaire wording, reliability coefficients, a detailed sampling procedure, or underlying respondent-level data for independent verification. Future research should use larger multi-institution samples, repeated observations, validated measures, actual budget transaction records, and qualitative interviews to examine why and under what conditions controlled release improves results.

CONCLUSION

At Universitas Negeri Semarang, perceived implementation of development-program budget ceiling limit control was positively and significantly associated with both perceived budget absorption accuracy and perceived program performance indicator achievement. The two reported models explained 72.6% and 68.7% of the observed variance in their respective outcomes. Rather than establishing a causal effect, these results offer preliminary institutional evidence that budget authorization discipline and performance-oriented management may reinforce one another. Clear procedures, integrated digital records, and balanced financial and non-financial monitoring are recommended to translate this association into testable governance improvements.

DECLARATION OF GENERATIVE AI

The authors declare that no generative AI or AI-assisted technologies were used in the writing process of this manuscript.

CONFLICTING INTEREST STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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