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Article

Budgeting and Financial Planning in the Management Accounting System of Non-State Higher Education Institutions: Problems and Solutions

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Abstract: This study investigates weaknesses in the current budgeting practices of non-state higher education institutions, including over-reliance on a single revenue source, a disconnect between financial planning and management accounting, and the absence of a responsibility centre framework. An integrated budgeting model grounded in responsibility centre principles with real-time variance tracking across all units is proposed.

Keywords: Management accounting, budgeting, financial planning, responsibility centers, non-state higher education, performance indicators, strategic budgeting, cost management.

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1. Introduction

To In the increasingly competitive education market, non-state higher education institutions (hereinafter referred to as HEIs) operate as independent economic entities. Under such conditions, ensuring the long-term sustainability of an institution has become directly dependent on the quality of financial management. In this regard, the budgeting system, recognized as a leading instrument of management accounting, assumes key importance [1].

A review of the literature indicates that foreign scholars such as Colin Drury (2018), Charles T. Horngren et al. (2015), and Robert S. Kaplan and David P. Norton (2008) interpret budgeting not only as a planning tool, but also as a mechanism for organizational control and strategic coordination. Among local researchers, Mirzaev (2021) and Tursunov (2022) have developed specific methodologies for cost management in educational institutions in Uzbekistan. However, empirical studies addressing the systemic weaknesses of budgeting systems specific to non-state HEIs remain insufficient in the existing academic literature [2].

The scientific novelty of this research lies in the fact that it systematically substantiates, for the first time, an integrated budgeting model for non-state HEIs based on responsibility centres and its alignment with the management accounting system. The practical significance of the study is reflected in the system of recommendations designed for the direct implementation of the proposed model [3].

- The objective of the research is to identify systemic shortcomings in budgeting and financial planning practices in non-state HEIs and to propose an improved model based on responsibility centres.
- To achieve this objective, the following tasks have been set:

- to critically analyze the existing budgeting practices;
- to develop a methodology for measuring efficiency based on profitability indicators [4];
- to describe the responsibility centres model and present its adaptation to the HEI environment;
- to substantiate the quantitative and qualitative outcomes of implementing strategic budgeting [5].

Methodology

The research was conducted during 2022–2025 based on the experience of five non-state higher education institutions in Uzbekistan. To form the information base, the following methods were employed: documentary analysis of institutional financial statements; semi-structured interviews with management personnel (n=24); observation of the budgeting process; and comparative analysis of budget documents.

The following analytical indicators were applied to assess budgeting practices:

the income source diversification index;

the level of cost segmentation;

the integration coefficient of budgeting and management accounting systems;

the frequency of applying variance analysis.

To measure efficiency, a system of profitability indicators widely used in international practice was adopted as evaluation criteria, including gross margin, net profit margin, Return on Assets (ROA), and Return on Equity (ROE), as suggested by Eugene F. Brigham and Joel F. Houston.

In developing the responsibility centres model, the four-component classification proposed by Atkinson et al. was utilized: cost centres, revenue centres, profit centres, and investment centres. During the adaptation of the model to the HEI structure, the focus group method was also applied. The focus group included the finance director, deans, and management accounting specialists.

For data processing, descriptive statistics, trend analysis, and the comparative matrix method were employed. To ensure reliability, the obtained results were reviewed and validated by three independent experts.

Results

Weaknesses of Existing Budgeting Practices. During the course of the research, eight systemic weaknesses in the budgeting systems of the institutions were identified and systematized in Table 1.

Table 1. Empirical Analysis of the Budgeting System in Non-State Higher Education Institutions (HEIs).

No.	Area	Current State	Identified Problem	Consequence	Recommended Measure
1	Revenue Planning	Reliance on tuition fee payments	Lack of source diversification	High financial risk	Develop additional revenue streams
2	Cost Planning	Aggregated budget structure	No departmental segmentation	Low efficiency	Implement the Activity-Based Costing (ABC) method
3	Budget Control	Partial monitoring	Variance analysis is not conducted	Financial losses	Introduce systematic variance analysis
4	Systems Integration	Operates independently	Not linked with management accounting	Poor decision quality	Implement Enterprise Resource Planning / Business Intelligence platforms

5	Strategic Planning	Short-term oriented	Long-term prospects are ignored	Slow development	Integrate Key Performance Indicators and forecasting
6	Investment Evaluation	Intuitive decision-making	Return on Investment (ROI) is not calculated	Inefficient use of resources	Introduce investment analysis
7	Analytical Capacity	Limited capability	No data analytics	Subjective decisions	Create a BI dashboard
8	Monitoring Frequency	Periodic review	No real-time data	Delayed response	Establish a real-time monitoring system

Among the identified problems, the most widespread was the absence of segmentation in cost planning, which was observed in all five institutions. The dependence on a single source of revenue—tuition fee payments—raised the level of financial risk to nearly twice the acceptable threshold [6].

Efficiency Analysis Based on Profitability Indicators. Significant differences in efficiency were identified among the institutions (see Table 2).

Table 2. Profitability Indicator-Based Efficiency Model.

Indicator	Calculation Formula	Economic Meaning	Impact on Management Decisions
Gross Margin	Gross Profit / Revenue	Level of profitability of core operations	Determines the direction of cost optimization
Net Profit Margin	Net Profit / Revenue	Overall financial performance	Revises the cost structure
Return on Assets (ROA)	Net Profit / Total Assets	Efficiency of resource utilization	Justifies investment decisions
Return on Equity (ROE)	Net Profit / Equity	Degree of attractiveness for investors	Balances the capital structure

In institutions demonstrating high efficiency, the net profit margin was recorded within the range of 50–65%. It was found that these institutions maintained cost segmentation for each department and generated revenue through at least three different income streams. Conversely, in low-efficiency institutions, the share of period expenses exceeded 70% of total expenditures, which significantly reduced the Return on Assets (ROA) indicator as well [7].

Budgeting Model Based on Responsibility Centres. The model developed as a result of the research presents the following structure (see Table 3).

Table 3. Proposed Budgeting Model Based on Responsibility Centres.

Responsibility Centre	Budget Type	Key Performance Indicators (KPIs)	Scope of Responsibility
Faculties and Departments	Cost Budget	Cost ratio, efficiency coefficient	Optimize expenditures within the established limits
Marketing and Admissions Department	Revenue Budget	Number of admitted students, tuition revenue	Achieve targeted revenue indicators
Educational Programs	Profit Budget	Profitability ratio, net profit margin	Ensure the financial performance of each program
Rectorate and Strategic Management	Investment Budget	Return on Assets (ROA), Return on Investment (ROI), long-term growth index	Ensure capital allocation and alignment with strategic objectives

The proposed model operates on the basis of a five-stage cycle: (1) revenue forecasting – formed based on the number of students and tuition fee amounts; (2) cost planning – limiting expenditures by responsibility centres; (3) consolidated budgeting – preparation of the overall financial balance; (4) real-time monitoring – immediate identification of variances; and (5) decision-making – introducing corrective actions based on analytical results [8].

This cycle is closed at the level of responsibility centres, meaning that each centre is fully accountable for the outcomes of its own activities [9].

Discussion

The findings of the research indicate that the existing budgeting systems are largely limited to operational functions and do not sufficiently serve as instruments of strategic management. This conclusion is consistent with the management control systems theory proposed by Robert N. Anthony and Vijay Govindarajan (2007), which states that an effective system gains strategic value only when it not only records costs but also links them to the decision-making chain [10].

The advantage of the responsibility centres–based model is reflected in its dual-directional capability. The first aspect is the clear allocation of financial responsibility, whereby each division is accountable not only for its expenditures but also for its economic outcomes. This aligns with the principle of financial accountability described by Kenneth A. Merchant and Wim A. Van der Stede (2017). The second aspect is the improvement in data quality: budget data disaggregated by divisions expands the informational basis for managerial decision-making [11].

At the same time, it is necessary to note the limitations of the study. First, the sample size (five institutions) relatively limits the generalizability of the findings. Second, in the implementation of the proposed model, organizational culture and employees' technological literacy remain important factors; however, these variables were not measured within the scope of this research. Third, although the system of profitability indicators adequately reflects financial outcomes, it does not encompass non-financial indicators such as educational quality, scientific publications, and social impact—an area that may serve as a promising direction for future research [12, 13].

Compared with international experience, it has been found that the responsibility centres model has been successfully implemented in non-state universities in Asia, as reported by Lee and Tai (2020), increasing institutional efficiency by 18–24%. In the context of Uzbekistan, however, the level of financial infrastructure and the spread of Enterprise Resource Planning systems remain relatively low, which necessitates the gradual implementation of this model [14, 15].

The following indicators may be established to assess the practical outcomes of strategic budgeting:

Table 4. Expected Outcomes of Strategic Budgeting.

No.	Type of Outcome	Description	Quantitative Indicator	Measurement Period
1	Revenue Stability	Reducing financial risk through improved forecasting accuracy	Risk index decreases by 20–30%	Within 12 months
2	Cost Optimization	Identifying and reducing excessive costs through segmentation	Period expenses decrease by 10–15%	Within 18 months
3	Resource Efficiency	Allocating financial resources to highly profitable areas	Return on Assets (ROA) increases by 5–8 percentage points	Within 24 months
4	Financial Stability	Proactive liquidity control	Current ratio reaches an optimal level	Within 6 months

5	Decision Quality	Management based on analytical data	Incorrect investment cases decrease by 40%	Within months	36

Conclusion

Based on the results of the conducted scientific research, the following conclusions have been drawn: The existing budgeting system in non-state higher education institutions (HEIs) remains largely at the operational level, with weak integration into strategic planning and management accounting. Dependence on a single source of revenue and the absence of cost segmentation reduce the quality of financial management. The system of profitability indicators—gross margin, net profit margin, Return on Assets (ROA), and Return on Equity (ROE)—functions as a reliable tool for measuring financial efficiency in non-state HEIs. It was empirically confirmed that highly efficient institutions maintain a net profit margin of around 50–65%. The integrated budgeting model based on responsibility centres ensures a clear allocation of financial responsibility and enables real-time variance analysis. This strengthens the evidence-based foundation of managerial decision-making. The implementation of strategic budgeting is expected to produce measurable outcomes within 12–36 months, including a reduction in the risk index, a decrease in costs, and an increase in Return on Assets (ROA). Recommendations for future research: It would be appropriate to enrich the developed model with non-financial indicators such as education quality indices, graduate employment rates, and scientific research performance. In addition, studying the institutional factors affecting the implementation of Enterprise Resource Planning systems remains an important scientific and practical issue.

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