

CHALLENGES AND OPPORTUNITIES ASSOCIATED WITH COST MANAGEMENT TO IMPROVE THE PERFORMANCE OF FAMILY-OWNED EDUCATIONAL INSTITUTIONS IN CABINDA**¹Maria Valentina Buca Baza Mavungo and ^{2,*} Paulo Deco**¹Business Management, Faculty of Economics, Universidade 11 de Novembro, Angola²Faculty of Economics, Universidade 11 de Novembro, Angola**Received 18th July 2025; Accepted 20th August 2025; Published online 19th September 2025**

Abstract

This article, *Challenges and Opportunities Associated with Cost Management to Improve the Performance of Family-Owned Educational Institutions in Cabinda*, aims to address the research question: why can the challenges and opportunities associated with cost management improve the performance of family-owned educational institutions in Cabinda? As a preliminary assumption, it was hypothesized that such challenges and opportunities, when well understood and leveraged, have the potential to significantly contribute to the improvement of organizational performance in these institutions. To validate these assumptions, we set out to measure the performance indicators associated with the cost management practices of the family-owned institution *Colégio Bueia e Filhos*, located in the municipality of Cabinda. This was supported by data collection techniques, namely structured interviews, complemented by specific instruments such as activity sheets, cost driver maps, and budget structuring frameworks. Additionally, the activity-based costing (ABC) system and benchmarking were applied. Due to limitations in the financial data of other institutions, benchmarking focused primarily on budget management practices. The results, analyzed in conjunction with the theoretical framework, revealed that improving cost management contributes to greater financial predictability and control, enhanced profit margins, better-informed strategic decisions, increased market competitiveness, and expansion capacity. These findings confirm the initial hypothesis that identifying the challenges and opportunities associated with cost management improves the performance of family-owned educational institutions in Cabinda.

Keywords: Challenges and opportunities, Cost management, Activity-based costing, Benchmarking, Institutional performance.

1. INTRODUCTION

Family business represents the convergence of two distinct systems: the family and the business. This does not necessarily mean that a family business is composed exclusively of family members; external professionals can also be part of the organization (Celestino & Rocha, 2021). This concept reflects the complexity of managing family-owned educational institutions, particularly in a context like Cabinda, where such businesses play a crucial role in providing education but face substantial challenges related to cost management and performance improvement. Family-owned educational institutions, predominantly managed by family members, bring a dynamic that blends family ties with business decisions, which can result in both advantages and complications for financial and administrative management. In the specific context of Cabinda, these private educational institutions face a challenging economic environment, characterized by scarce resources, limited access to credit, and the constant need to adapt to new social and educational demands. Efficient cost management is therefore a determining factor for the performance of these organizations. When strategically implemented, it can represent an opportunity to improve the quality of services offered and ensure the financial sustainability of the institutions, allowing them not only to survive but also to expand their operations and meet the growing demand for quality education. Furthermore, the application of appropriate financial management techniques can help minimize waste, optimize available resources,

and ensure that investments are directed toward areas that provide the highest return in terms of organizational performance and teaching quality.

Problem statement

It is estimated that family-owned businesses controlled and managed by families account for nearly 80% of the global market (DUARTE, 2004). This assertion highlights the importance of family businesses worldwide, as the overwhelming majority of companies in the global market are family-owned. However, Junior (2007) emphasizes that conflict is a characteristic of family businesses, as heirs or family members often confuse management with ownership, believing they have inherited a property rather than an institution to be managed. Family-owned private educational institutions in Cabinda play a crucial role in providing access to education, filling gaps left by the public sector. However, these institutions face significant challenges related to cost management, which compromise both their financial sustainability and organizational performance. Among the most critical factors is the family dynamic, characterized by internal conflicts over resource allocation, disagreements regarding investment priorities, and, above all, power struggles for institutional leadership. The lack of a well-defined succession plan exacerbates instability, creating uncertainty about the strategic direction of the institution. Conflicts among family members, often motivated by personal interests or by unequal perceptions of authority and responsibility, hinder the establishment of consensus. These tensions result in fragmented decisions, inefficient resource allocation, and, in many cases, financial losses that compromise the institution's

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operations. Additionally, external factors, such as rising operational costs (salaries, infrastructure maintenance, and acquisition of educational materials), combined with the need to keep tuition fees affordable for the local community, place even greater pressure on management. On the other hand, there are opportunities that could be leveraged, such as implementing modern financial control systems, training family managers, and creating governance mechanisms to mediate conflicts and ensure continuity of operations.

In view of the above and due to its particular relevance, the following research question was raised: why can the challenges and opportunities associated with cost management improve the performance of family-owned educational institutions in Cabinda?

2. COST MANAGEMENT IN EDUCATIONAL INSTITUTIONS

Nowadays, businesses face the challenge of becoming competitive in the market. One way to achieve a competitive advantage is through strategic cost management. Companies must set their prices by considering incurred costs and the prevailing market prices in which they operate (MARTINS, 2010).

Barros, Conceição, Ayres, and Lima (2019) emphasize cost management as an essential tool of cost accounting, whose primary purpose is to provide strategic information for planning, controlling, and developing activities. By highlighting the importance of intelligent expenditure management, this perspective aligns with a practical vision of resource optimization, which is essential for the sustainability of institutions. The contribution of this approach lies in promoting informed decisions aimed at balancing costs with operational efficiency.

According to Peter, Martins, Pessoa, and Peter (2003), variations appear in advisory, complementary, and supplementary units. Regarding the number of units, there are also variations in the financial resources allocated to each of them. This structural similarity greatly facilitates the generalization and application of a common cost accounting methodology across units.

The approach of Peter, Martins, Pessoa, and Peter (2003) highlights the existence of variations in advisory, complementary, and supplementary units, affecting the financial resources allocated to each. The mentioned structural similarity facilitates the application of a common methodology for cost accounting, suggesting a uniform and generalizable approach. This observation underscores the importance of a standardized structure in financial management, allowing for greater efficiency and consistency in cost analysis processes.

According to the same authors, the primary concern of a cost system should focus on managing fixed costs, as they represent the largest portion of expenses in higher education institutions, which, according to Leone (2002), are essential for planning and decision-making. Higher education management institutions can identify various types of costs, such as per-student costs, teaching costs, research costs, extension costs, and costs of extension units, among others.

According to the Monte São Accounting Institution (2024), cost management in schools is a constant challenge for

educational managers striving to balance teaching quality with the financial sustainability of the institution. In a scenario where resources are limited and the demand for quality education is growing, it is essential to adopt effective strategies to reduce operational expenses without compromising educational excellence.

The same institution emphasizes that the first step toward effective cost management is conducting a detailed financial diagnosis. This involves analyzing all operational expenses and identifying areas where costs can be reduced. Strategic financial planning should be established, with short-, medium-, and long-term goals, to ensure the financial sustainability of the school without compromising teaching quality.

According to Oneit (2022), effective cost control in educational institutions requires:

1. **Surveying costs:** The best way to start controlling costs is to conduct a thorough survey of all current expenditures, recording and categorizing each one. It is essential to know the monthly and annual operational costs of the school, considering everything from teachers' hourly rates to expenses for cleaning, electricity, water, office supplies, etc. This provides a clear view of the different costs the institution incurs and their respective impact.
2. **Financial planning:** Good financial planning enables accurate forecasting of costs and revenues. It is crucial to ensure that the institution has sufficient funds to cover all expenses while making necessary investments to increase revenues.
3. **Monitoring cash flow:** Efficient cost control also requires daily monitoring of the institution's cash flow, tracking both inflows and outflows. This allows managers to maintain better control over financial movements, identify main sources of revenue and costs, and anticipate future expenses and losses.
4. **Investing in delinquency control:** Delinquency significantly affects school cash flow and cost control. Therefore, it is essential to implement measures such as maintaining communication channels with parents, using effective collection systems, and offering alternatives for debt renegotiation, including installment payments and diversified payment options.

In general, all authors agree on the need for detailed financial planning and rigorous monitoring of operational expenses, emphasizing that strategic cost management is fundamental to organizational sustainability and success. However, each author adds specific insights: Barros et al. (2019) and Peter et al. (2003) highlight the importance of fixed costs, while Oneit (2022) and Monte São (2024) expand the discussion to include cash flow control, delinquency management, and the application of innovative practices for resource optimization.

2.1 Main Components of Cost Management

To optimize the cost function of the process, it is essential to identify and understand the main components involved. These components include:

Direct materials

Goods not intended for resale but incorporated directly into a transformation process to create a new product. They are

usually identifiable in the finished product, as they constitute the dominant material in it and are of high significance (Deco & Gomes, 2024).

Direct labor

Personnel expenses within a company can be classified as costs or expenses. Remuneration of staff involved in producing goods and services is considered a cost, while staff involved in administrative and commercial activities is classified as an expense. Direct labor refers to personnel time directly involved in producing a specific good or service, which can be quantified and assigned to different products or services without apportionment. Labor shared across multiple goods or services, whose allocation cannot be determined at the time, is classified as indirect labor (DUTRA, 2017).

Indirect costs and departmentalization

Indirect costs are allocated to different cost objects using allocation criteria. Horngren, Foster, and Datar (2003) apud Dutra (2017) identify four dominant allocation criteria:

1. **Cause and effect**- resources are consumed proportionally to the results achieved.
2. **Benefits received**- allocation based on the advantages obtained by cost accumulation units.
3. **Equity** – allocation based on negotiation agreements rather than technical factors.
4. **Absorption capacity**- costs are assigned according to the cost object's ability to bear them.

2.2 Cost Management in Family-Owned Institutions

Cost accounting is currently a fundamental tool for managers in decision-making. One of the main weaknesses in family business management is the absence or fragility of accounting and cost systems (NASCIMENTO, 2009).

Cost management plays a key role in decision-making, collecting and reporting relevant data to align expected results with the company's objectives. Ineffective management may lead to charging values that do not reflect reality; thus, cost accounting information is essential for guiding management. Family heads often fail to utilize this tool to manage household or institutional finances effectively.

A family institution is one whose origin and history are linked to a family or which maintains an active family member in administration (BERNHOF, 1991). This highlights the ongoing influence of family structures on organizational management, affecting culture, decision-making, and administrative dynamics.

2.3 Organizational Performance vs. Cost Management

The relationship between organizational performance and cost management is fundamental for sustainability and growth in educational institutions. Achieving a balance between operational efficiency and financial optimization requires practices that evaluate the relationship between costs incurred and outcomes achieved. In this context, defining and monitoring performance indicators is essential, as they provide clear insights into operational effectiveness, enabling

identification of improvement opportunities and better-informed strategic decisions.

Qualitative indicators generally reflect the voice, feelings, thoughts, and practices of research participants and cannot be widely replicated except in culturally homogeneous cases (Minayo, 2009) apud (Governo Do Estado Do Paraná, 2015).

- a) Qualitative indicators express subjective perceptions related to social reality, such as quality of life, dignified work, and social welfare.
- b) Quantitative indicators can be expressed in numbers and percentages, based on counts, statistics, and concrete empirical data.

Performance indicators reflect measurable characteristics of products, services, processes, and operations used by organizations to evaluate and improve operational performance, customer satisfaction, and progress toward common goals (Fonseca, Lourenço & Allen, 1997). Their objectives include:

- Measuring customer satisfaction and needs
- Monitoring organizational progress
- Analyzing production and service processes statistically
- Tracking improvement plan implementation
- Comparing organizational performance with competitors

In educational institutions, key performance indicators include: approval and completion rates, dropout rates, student satisfaction, cost per student, teacher-student ratio, employability, academic performance, faculty qualification, classroom occupancy, and research and extension indicators (Governo Do Estado Do Paraná, 2016).

2.4 Relationship Between Cost Management and Organizational Performance

The concept of strategy was incorporated into management accounting to address criticisms regarding the relevance of accounting information (Johnson & Kaplan, 1987 apud Vizzotto *et al.*, 2019). Strategic cost management emerged to meet the need for continuous productivity improvement.

Cost management and organizational performance are intrinsically linked, particularly where efficiency and financial sustainability are crucial, as in educational institutions. According to Omie (2014), effective cost management offers multiple advantages across all business areas:

- a) Greater financial predictability and control – Provides a clear view of fixed and variable expenses, facilitating long-term planning.
- b) Improved profit margins – Identifies areas to save costs without compromising product or service quality, enhancing reinvestment and growth potential.
- c) Better-informed strategic decisions – Enables decisions based on accurate cost data, from daily operations to major expansion initiatives.
- d) Greater market competitiveness – Efficient cost management allows leaner operations and competitive pricing without sacrificing profitability.
- e) Expansion capacity – Controlled finances allow informed expansion decisions, mitigating financial risks in launching new products, services, or entering new markets.

2.5 Opportunities for Improving Cost Management

As previously discussed, cost management is a crucial element for the sustainability and competitiveness of organizations, especially in challenging contexts such as family-owned educational institutions. Several opportunities exist to enhance cost management, contributing to operational efficiency and maximizing results.

a) Implementation of Information Technologies

With intelligent systems, the organization can be viewed as a whole while simultaneously addressing distinct units. Accounting is one of the areas that benefits most from new technologies, ranging from programs specifically designed for recording operations to accounting software generating all legal and management reports required by organizations (Oliveira & Malinowski, 2017).

The authors note that with technological assistance, the accounting area can handle numerous routines quickly and efficiently, such as accounting entries, trial balance preparation, general ledger and journals, fiscal books, balance sheets, income statements, inventory control, subsidiary ledger management, accounts receivable and payable management, asset management, personnel administration, payroll processing, timekeeping automation, management accounting, budgeting, and other activities.

b) Partnerships and Collaborations

Partnerships and collaborations can serve as strategic tools to improve cost management by enhancing operational efficiency and reducing expenses.

Outsourcing represents an organizational decision to rely on external suppliers for goods and services rather than performing them internally, aiming to achieve greater efficiency and expected results (CURY, 2012).

According to Serra (2006), one objective of outsourcing is cost reduction, i.e., when market prices are lower than internal costs, while also benefiting from specialized professionals, thereby increasing productivity and quality.

In the context of family-owned businesses, partnerships and collaborations are particularly valuable, as these organizations often face limitations in financial, human, and technological resources. Outsourcing, as highlighted by Serra (2006), provides an opportunity to reduce costs and enhance efficiency, especially in areas where the family business may lack technical expertise or adequate resources to perform certain functions internally.

c) Training for Competency Development in Management

Organizations that incorporate competency management are results-oriented. They use it to plan, select, develop, reward, evaluate, and analyze the competencies necessary to achieve objectives and broaden organizational vision (Corrêa & Ribeiro, 2014 apud Magalhães *et al.*, 2020, p. 30).

Guimarães *et al.* (2001) apud Corrêa & Ribeiro (2014) suggest a management model linking performance and competency, integrating monitoring and planning activities.

Numerous studies demonstrate that when human capital is effectively developed, maintained, and reinforced, it enhances organizational outcomes and business performance. Organizations that value employee knowledge and skills are better equipped to adapt to market changes, and this adaptability is a key determinant of organizational competitiveness (MAGALHÃES *et al.*, 2020, p. 31).

3. METHODOLOGY

According to Tamo (2012), the choice of methodology depends on the object of study and the researcher's paradigmatic orientation, allowing the selection of positivist, post-positivist, or constructivist procedures, either alternatively or exclusively. In other words, within a single study, there are no inherent contradictions or incompatibilities between methods, including quantitative and qualitative approaches. Researchers may adopt methodological pluralism or triangulation, combining diverse methods and approaches.

Considering the phenomenon under analysis and the objective of examining the challenges and opportunities related to cost management for improving performance in family-owned private educational institutions in Cabinda, a mixed-method approach, combining qualitative and quantitative methods, is recommended.

By integrating qualitative and quantitative approaches, mixed-method research enables a detailed analysis of subjective perceptions while validating results with numerical data, providing a more robust and reliable understanding of the phenomenon. Techniques such as interviews and document analysis offer deeper insight into the experiences and perspectives of managers and staff, while quantitative analyses allow measurement and comparison of relationships between variables. The independent variable determines and influences the dependent variable. It represents the cause whose effects are investigated, manipulated by the researcher to explore the phenomenon. Conversely, the dependent variable relates to phenomena or factors influenced by the independent variable. These factors may appear, disappear, or vary as the independent variable is introduced, removed, or modified objectively. This approach provides a comprehensive framework for understanding cost management complexity and its impact on organizational performance improvement.

3.1 Operationalization of Variables

Silvestre and Araújo's explanation was expanded by Marconi and Lakatos (2008), who define the independent variable (X) as that which determines and influences the dependent variable. It is the causal factor manipulated by the researcher to study the phenomenon. The dependent variable (Y) relates to phenomena or factors to be explained or discovered as a result of the independent variable's influence. These factors may change according to the researcher's interventions. In this study, Cost Management is the independent variable, while Performance Improvement constitutes the dependent variable. This framework aims to analyze the inherent challenges and opportunities in cost management to understand its impact on improving the performance of family-owned private educational institutions in Cabinda. It establishes a cause-and-effect relationship where cost management acts as the determining factor and performance improvement as the resulting outcome.

3.2 Data Integration and Analysis

Integrating data obtained through structured interviews and mapping instruments was fundamental for applying the Activity-Based Costing (ABC) method. Combining activity lists, direct and indirect cost mapping sheets, and time allocation data allowed not only the identification of direct costs but also an understanding of how indirect costs and time dedicated to each activity impact the overall institutional budget for Colégio Bueia & Filhos. This process ensured accurate cost allocation and provided a clearer view of resource consumption. Moreover, these instruments helped identify critical points in cost management. For instance, academic and financial management activities, along with theoretical classes, were identified as the most resource-intensive, which aligns with the institution's focus on technical health courses requiring a robust teaching and management structure. Through detailed data analysis, it was possible to propose adjustments and improvements in cost management processes, helping Colégio Bueia & Filhos optimize resources and enhance operational efficiency. In summary, the instruments employed during data collection were essential to ensure precise and effective ABC method application. The combination of activity lists, cost mapping sheets, and time-tracking enabled detailed cost analysis and identification of critical areas requiring attention. Coupled with structured interviews with the Director, this provided a robust data foundation for fair and efficient cost allocation, aligning the analysis with the institution's strategic objectives and enabling effective ABC implementation, offering valuable insights for financial management.

3.3 Integration of Theory and Practice

For the purpose of cost analysis at Colégio Bueia & Filhos, two methodologies were applied: Activity-Based Costing (ABC) and Benchmarking. The objective was to conduct a detailed assessment of the institution's cost structure, focusing on identifying opportunities for optimization. The ABC system enabled an in-depth analysis of specific costs, taking into account the activities performed to achieve the cost objects of Colégio Bueia & Filhos. Benchmarking was employed to compare the main budget management practices observed in other private educational institutions. This approach provided an overview of best practices in financial management within the educational sector, despite the inability to perform a direct cost comparison due to the lack of specific data from other organizations.

Nursing, Clinical Analysis, Dentistry, and Pharmacy), including direct costs (such as payment per theoretical class, teaching materials, and consumables) and indirect costs (water, electricity, classroom/equipment maintenance, and security). Through this method, it was possible to calculate the unit cost per product, allowing for a clear analysis of the profitability of each course offered by the institution. Meanwhile, Benchmarking focused on comparing budget management practices, addressing essential aspects such as financial planning, cost control, procedures for preparing and validating expenses, payment methods used, and debt management approaches. This analysis was based on practices observed in other private educational institutions, such as the Mapumar schools and Colégio Jomorais.

Additionally, to identify the main challenges and opportunities associated with cost management, an analysis strategy based on two complementary approaches was outlined:

A qualitative approach was adopted, centered on gathering information from the Director of Colégio Bueia & Filhos through a structured interview. The aim was to capture the manager's perceptions and direct records regarding the challenges faced and the opportunities identified in the scope of planning, cost control, and optimization functions.

A critical assessment of the available information was conducted, especially regarding data whose measurement proved complex for the application of the ABC costing method. This analysis aimed to understand practical limitations in the collection and allocation of resources, as well as to identify inefficiencies or gaps in the institution's budget management structure.

4. RESULTS FOR COST MANAGEMENT AT COLÉGIO BUEIA & FILHOS, LDA

In the specific case of Colégio Bueia, the diversity of courses offered, the different operational structures, and the variability of class hours make it essential to adopt a costing method that provides a fairer and more rational allocation of indirect costs. The traditional approach, based on simplified allocation criteria, tends to obscure the true economic performance of each course, making it difficult to make more accurate academic and financial decisions.

Table 1. Identification of Direct and Indirect Costs

Indirect Costs	Cost Driver	Unit	Cost/Unit	Annual Amount	
Water	Liters consumed	-	-	216 000,00	
Electricity	kWh	-	-	600 000,00	
Classroom maintenance	Amount/Month	-	-	300 000,00	
Equipment maintenance	Amount/Month	-	-	800 000,00	
Security	Salary/Day	365	11 507	4 200 000	
Total				6 116 000,00	
Direct Costs	Cost Driver	General Nursing	Clinical Analysis	Stomatology	Pharmacy
Teaching materials	Number of hours	2 246 400,00	1 123 200,00	604 800,00	518 400,00
Consumables	Number of hours	14 976 000,00	7 488 000,00	2 822 400,00	1 728 000,00

Source: Field research / 2025

The application of Activity-Based Costing (ABC) involved the identification and allocation of direct and indirect costs to the various activities and programs offered by Colégio Bueia & Filhos. The table above summarizes the costs allocated by activity for the different courses at the school (General

4.1 Application of the ABC Costing System

The application of the Activity-Based Costing (ABC) system at Colégio Bueia was carried out using accounting and operational data corresponding to the 2022/2023 academic year.

Table 2. Total Revenue

Cost Object	Tuition Fee	Number of Students	Monthly Total	Annual Total
General Nursing	14 850,00	1449	21 517 650,00	258 211 800,00
Clinical Analysis	14 850,00	708	10 513 800,00	126 165 600,00
Stomatology	14 850,00	369	5 479 650,00	65 755 800,00
Pharmacy	14 850,00	276	4 098 600,00	49 183 200,00
Total		2.802	41 609 700,00	499 316 400,00

Source: Field research (2025)

The primary objective of this process was to identify more accurately the costs incurred in the different activity areas of the institution, allowing a more rigorous analysis of the cost structure per course.

The ABC costing application covered the four courses currently offered at the school, namely: Nursing Technician, Clinical Analysis Technician, Pharmacy Technician, and IT Technician. Through this approach, it was possible to allocate costs to their respective generating activities and, consequently, to the cost objects, enabling a more transparent and substantiated evaluation of the profitability of each course and providing a better foundation for strategic and managerial decision-making.

Table 01 provides a quantitative view of the cost objects within the application of the Activity-Based Costing (ABC) system at Colégio Bueia, referring to the 2022/2023 academic year. It was possible to identify the cost objects and the number of students enrolled in each of the courses offered by the institution, namely: General Nursing Technician, Clinical Analysis Technician, Dentistry Technician, and Pharmacy Technician. It can be observed that the General Nursing course has the largest number of students, totaling 1,449 enrollees, which represents approximately 52% of the overall total. This data suggests that this course constitutes the main cost center of the institution, with a significant impact on the allocation of resources and the distribution of administrative and pedagogical activities.

The analysis of Table 01 was fundamental for the correct delineation of the cost units within the ABC framework, as it allowed for identifying the relative weight of each course in the institution's cost structure and assisted in the strategic decision-making process related to resource optimization and operational efficiency.

4.1.1 – Identification of Activities

Within the implementation of the Activity-Based Costing (ABC) system at Colégio Bueia & Filhos, the rigorous identification of activities carried out at the institution constitutes a crucial step for the structuring and subsequent application of the costing system. This identification aims to map all processes that consume resources and, consequently, should be considered as cost-generating centers, allowing the correct allocation of costs to their respective cost objects. Table 03 presents the activities of the school along with their detailed structure. The activity matrix presented in Table 03 reflects the types of functions performed at Colégio Bueia & Filhos within the context of Activity-Based Costing (ABC) implementation. This classification, which distinguishes between primary and secondary activities, is essential for the correct allocation of costs to activities and cost objects, serving as a foundation for a thorough analysis of the institution's financial performance.

Table 3. Activity Matrix

Classification	Activities
Main Activities (Academic Activities)	Curriculum Planning
	Theoretical Classes
	Practical Classes
Secondary Activities (Administrative Activities)	Internship Supervision
	Academic and Financial Management
	Cleaning
	Security

Source: Field Research (2025)

The primary activities, also referred to as academic activities, correspond directly to the core mission of the school, that is, the teaching-learning process. This category includes curriculum planning, theoretical classes, practical classes, and internship supervision. These activities constitute the central object of educational service delivery and are directly attributable to the value provided to students as products of the educational system. Within the ABC framework, these activities should absorb the costs most directly related to the institution's pedagogical and technical functions, such as teacher salaries, educational materials, laboratory equipment, and travel for internships.

Conversely, secondary activities, or administrative activities, correspond to support functions that, although not directly linked to the production of educational services, are essential for ensuring their full operation. This group includes academic and financial management, cleaning, and security. These activities support the organizational structure and ensure a physical and institutional environment conducive to the development of academic activities. In the ABC model, the costs of these activities should later be allocated among the cost objects (courses) according to appropriate cost drivers, such as occupied physical area, number of students, or usage time.

4.1.2- Cost Typification

Cost typification involves organizing costs according to the structuring activities of the educational and administrative process at Colégio Bueia & Filhos, providing a solid basis for analyzing operational efficiency. This analysis allowed for the identification not only of costs directly associated with educational service delivery such as theoretical and practical classes but also those that, although indirect, are indispensable for the institution's proper functioning, such as administrative management, cleaning, and security.

Table 04 demonstrates an appropriate initial structuring of costs by activity, consistent with the principles of activity-based costing (ABC). The clarity and specificity with which costs were allocated to their respective activities facilitate future analyses of profitability, efficiency, and strategic decision-making based on more realistic and segmented data.

Table 5. Identification and Structuring of Costs by Activity

Activities	Costs
Theoretical Classes	Teachers' salaries
	Electricity
	Teaching materials
	Classroom maintenance and depreciation
Practical Classes	Equipment maintenance and depreciation
	Consumables
	Laboratory maintenance and depreciation
Internship Supervision	GIVA
Academic and Financial Management	Course coordinators
	Administrative staff salaries
	Equipment maintenance and depreciation
	Office consumables
Cleaning	Evaluation and certification
Security	Cleaning staff salaries
	Security staff salaries

Source: Field Research (2025)

Table 6. Workload

Cost Object	Number of Classes	Number of Monthly Hours	Number of Annual Hours
		Classes per Group	Classes per Course
General Nursing	26	3.120	37.440
Clinical Analysis	13	1.560	18.720
Stomatology	7	840	10.080
Pharmacy	6	720	8.640

Source: Field research (2025)

Table 7. Personnel Costs (Direct Labor)

Description	Annual Class Hours; Number of Intern Students; Number of Internship Coordinators	Unit Cost	Amount
Direct Labor (DL)	74.880	1 000,00	74 880 000,00
	749	133,51	100 000,00
	4	80 000,00	320 000,00
Total			75 300 000,00

Source: Field Research (2025)

Table 8. Activity Drivers for Each Product

Activities	Cost Driver	General Nursing	Clinical Analysis	Stomatology	Pharmacy
Theoretical Classes	Time per class	22.464	11.232	6.048	5.184
Practical Classes	Time per class	14.976	7.488	4.032	3.456
Supervised Internship (GIVA)	Enrolled students	428	185	71	65
Supervised Internship (Coord.)	Salary per intern student	1	1	1	1
Academic and Financial Management	Salary/day; number of students	1.449	708	369	276
Cleaning	Salary/day; number of technicians	4	3	2	2

Source: Prepared by the author based on collected data

As observed in Table 05, the General Nursing course has the highest annual workload (37,440 class periods), corresponding to 26 classes with six periods per week. From an economic perspective, this volume justifies a greater allocation of human resources (teachers), teaching materials, infrastructure usage, and consequently, a higher concentration of operational costs. This is followed by the Clinical Analysis course (18,720 periods), Stomatology (10,080), and Pharmacy (8,640), with the differences reflecting not only the number of classes in operation but also the relative demand for each program.

In summary, the structuring of the workload is a key element in the analysis and control of educational costs, serving as a direct link between pedagogical planning and managerial accounting, particularly when adopting an activity-based costing approach. The analysis of Direct Labor (DL) composition presented in Table 7 shows a total volume of 74,880 units associated with the institution's core activities, with a unit cost of 1,000.00 Kz, totaling 74,880,000.00 Kz. Added to this are 749 units related to internship supervision through GIVA, with a unit cost of 133.51 Kz, amounting to 100,000.00 Kz, and 4 units concerning supervision carried out by course coordinators, with a unit cost of 80,000.00 Kz, totaling 320,000.00 Kz.

Thus, the total direct labor cost amounts to 75,300,000.00 Kz. These data highlight that labor remains the main cost component of the institution, reflecting the significant effort allocated to teaching and practical supervision activities, and confirming the need for strict control in managing these resources to ensure the financial sustainability and quality of educational services provided. The table presented highlights the identification and quantification of cost drivers associated with the main academic and administrative activities carried out across the courses offered at Colégio Bueia & Filhos. This exercise represents a crucial step in applying the Activity-Based Costing (ABC) method, enabling a more equitable and representative allocation of indirect costs to the respective cost objects in this case, the courses in General Nursing, Clinical Analysis, Stomatology, and Pharmacy. The correct allocation of indirect costs to the different operational activities constitutes a central step in the Activity-Based Costing (ABC) system, allowing a more precise identification of the institution's cost structure. At Colégio Bueia & Filhos, the indirect costs considered include water, electricity, classroom maintenance, equipment maintenance, and security, which were distributed among the institution's core and support activities.

Table 9. Allocation of Indirect Costs to Activities

Indirect Costs (Overheads)	Theoretical Classes	Practical Classes	Internship Supervision – GIVA	Internship Supervision (Coord.)	Academic & Financial Management	Cleaning	Total
Water	-	-	-	-	43.200,00	172.800,00	216.000,00
Electricity	170.000,00	200.000,00	60.000,00	40.000,00	105.000,00	25.000,00	600.000,00
Classroom Maintenance	150.000,00	150.000,00	-	-	-	-	300.000,00
Equipment Maintenance	225.000,00	300.000,00	-	-	150.000,00	125.000,00	800.000,00
Security	700.000,00	700.000,00	700.000,00	700.000,00	700.000,00	700.000,00	420.000,00

Source: Own elaboration based on collected data

Tabela 18. Total Costs

Activities / Cost Objectives	General Nursing (37,440)	Clinical Analysis (18,720)	Stomatology (10,080)	Pharmacology (8,640)	Totals
Aulas teóricas	25 379 340,00	12 689 670,00	6 832 899,23	5 856 770,77	50 758 680,00
Aulas práticas	20 233 560,00	10 116 780,00	5 447 496,92	4 669 283,08	40 467 120,00
S. estágio	1 685 714,29	728 638,18	279 639,52	256 008,01	2 950 000,00
GAF	27 078 300,00	13 539 150,00	7 290 311,54	6 248 838,46	54 156 600,00
Limpeza	3 695 563,64	2 771 672,73	1 847 781,82	1 847 781,82	10 162 800,00
Segurança	2 508 910,92	1 225 886,081	638 915,203	477 887,79	4 851 600,00
Totals	80 581 388,84	41 071 796,99	22 337 044,23	19 356 569,93	163 346 800,00
Unit Cost	2 152,28	2 194,01	2 215,98	2 240,34	2 181,45

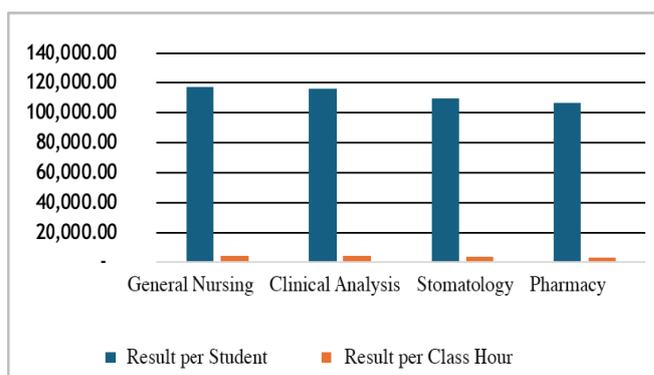
Source: Own elaboration based on collected data

The analysis of the total cost table reveals the budgetary structure of the main pedagogical and operational activities associated with the four courses offered General Nursing, Clinical Analysis, Dentistry, and Pharmacology with costs distributed according to the nature and demands of each training area. The General Nursing course shows the highest absolute expenditure, totaling approximately 80.5 million Kz, reflecting the largest number of enrolled students and, consequently, greater pressure on resources. This situation justifies the need for a larger teaching staff, more classes, and higher operational consumption in both theoretical and practical lessons and internships. Particularly notable are the costs with GAF (27 million Kz), which include administrative and school management expenses, making it the most costly item, followed by theoretical lessons (25.3 million Kz) and practical lessons (20.2 million Kz). For Clinical Analysis, although it has a smaller student body (18,720), total costs exceed 41 million Kz, indicating a higher cost per student than General Nursing. This is due to the specific laboratory requirements of practical activities, which demand expensive consumables and specialized equipment, increasing the costs of practical activities (10.1 million Kz) and complementary services such as GAF (13.5 million Kz) and cleaning (2.7 million Kz). The Dentistry course, with 10,080 students, has total costs of around 22.3 million Kz, reflecting a budgetary structure proportional to the number of students. The costs of theoretical lessons (6.8 million Kz) and practical lessons (5.4 million Kz) follow the same trend, while costs for support services such as cleaning (1.8 million Kz) and GAF (7.2 million Kz) remain high, indicating significant operational demands to maintain teaching conditions. Finally, Pharmacology, with the smallest student body (8,640), shows the lowest total costs among the courses (19.3 million Kz). Nevertheless, the cost per student is the highest (2,240.34 Kz), highlighting that economies of scale are not fully achieved in this course. Costs for theoretical (5.8 million Kz) and practical lessons (4.6 million Kz) are lower than in other courses, but administrative and support service costs (GAF and cleaning) still represent a considerable portion of the budget. Overall, total expenditures reach 163.3 million Kz, with unit costs per student ranging from 2,152.28 Kz (General Nursing) to 2,240.34 Kz (Pharmacology), indicating relative uniformity in per-student spending, with minor variations justified by the technical characteristics of each course.

The largest portion of the budget is concentrated on teaching components (theoretical and practical lessons), while indirect costs including GAF, cleaning, and security also play a key role in ensuring the institution’s sustainable operation.

4.1.3 – Determination of Results

The comparative analysis of revenues, costs, and results by course shows a positive financial outlook for all programs offered by Colégio Bueia, demonstrating a management model that, so far, ensures sustainability and a comfortable operating margin. The Nursing course stands out not only for generating the highest revenue over 258 million Kz but also for the largest net result, exceeding 169 million Kz. This performance is linked to the high number of enrolled students, which allows fixed costs to be spread and economies of scale to be leveraged. The combined total revenue from the four courses amounts to 499,316,400.00 Kz, while total costs represent only 176,954,400.00 Kz, resulting in a global surplus of 322,362,000.00 Kz. This outcome reinforces the importance of strict budget control and maintaining operational efficiency policies, with the surplus potentially being reinvested in infrastructure, faculty qualification, and expansion of the course offerings to continuously strengthen the quality of education provided. The analysis of the result per student and per class hour allows a more refined understanding of the profitability of the courses offered at Colégio Bueia.



Source: Field Research (2025)

Figure 1. Result per Student vs. Result per Class Hour

Tabela 11. Statement of Results

Description	General Nursing	Clinical Analysis	Stomatology	Pharmacy	Total
Income	258 211 800,00	126 165 600,00	65 755 800,00	49 183 200,00	499 316 400,00
Direct Costs	54 799 542,86	27 435 899,60	15 814 279,31	12 184 678,24	110 234 400,00
Indirect Custs	33 420 668,09	16 371 854,39	9 417 635,97	7 509 841,54	66 720 000,00
Total Costs	88 220 210,95	43 807 753,99	25 231 915,28	19 694 519,78	176 954 400,00
Outcome	169 991 589,05	82 357 846,01	40 523 884,72	29 488 680,22	322 362 00,00

Source: Field research (2025)

Table 12. Comparative Summary between Colégio Bueia, Mapumar, and Jomorais

Description	Colégio Bueia	Mapumar	Jomorais
Definition of Cost Centers	No	Yes	No
Main Cost Categories	Salaries and social charges	Salaries and social charges	Salaries and social charges, teaching materials and consumables, maintenance, electricity, and water
Highest Weight Cost in the Budget	Salaries and social charges	Salaries and social charges	Salaries and social charges
Average Fixed Expenses	Between 1 million and 5 million	Between 1 million and 5 million	More than 10 million
Most Significant Variable Expenses	School materials	Unforeseen maintenance	School materials, temporary staff, and unforeseen maintenance
Expense Validation	Yes	No	Yes
Budget Preparation	Yes	No	Yes
Budget Preparation	By cost centers	N/A	By cost centers
Cost Control Method	Financial management software	Electronic spreadsheets	Electronic spreadsheets and manual accounting
Average Collection Period	Up to 30 days	Up to 30 days	Up to 60 days
Average Salary Payment Period	22 days	Up to 30 days	22 days
Average Payment Period for Fixed Expenses	30 days	15 days	15 days
Collection System	Yes	Yes	Yes
Debt Negotiation	Yes	N/A	Yes
Forms of Debt Negotiation	Rescheduling of deadlines	N/A	Rescheduling of deadlines

It is observed that the General Nursing course, in addition to generating the highest total revenue and results, also stands out in terms of unit profitability, with the highest result per student (117,316.49 AKZ) and the highest result per class hour (4,540.37 AKZ). Following are the Clinical Analysis, Dentistry, and finally Pharmacy courses, which show the lowest indicators both per student and per class hour. This structure demonstrates that, although all courses are profitable, scale (number of students) and efficiency in resource utilization significantly impact each course's contribution margin. For example, Dentistry has one of the lowest results per class hour, which can be explained by its high unit cost due to the technical and practical nature of the course, despite the total result still being positive.

4.2. Application of Benchmarking

After identifying and analyzing costs using the ABC method, it becomes relevant to compare the performance of Colégio Bueia against external or internal reference standards in order to evaluate its operational and financial efficiency. This is where benchmarking comes in as a strategic management tool, aiming to identify best practices, establish realistic improvement goals, and promote organizational learning based on exemplary performance. Although the initial intention of this stage was to conduct a direct comparison between Colégio Bueia's cost management and that of other similar institutions, the lack of reliable and available financial data from these entities made a comprehensive quantitative analysis impossible. Nonetheless, benchmarking was applied qualitatively, based on a comparison of the main budget management practices observed in other private educational institutions. This analysis covered essential aspects such as financial planning, cost control, procedures for preparing and validating expenses, payment methods used, and debt management approaches.

5. CONCLUSION

Cost management, as a strategic pathway, has proven to be decisive for the sustainability and repositioning of Colégio Bueia within the technical health education sector. The in-depth analysis of major costs particularly payments for classes (theoretical and practical), consumable materials, and administrative salaries highlighted the structural weight these items exert on the institution's financial health. More than mere numbers, these costs reflect choices, priorities, and operating models that, if not properly monitored and optimized, jeopardize not only the economic balance but also the quality and continuity of the educational services provided. The application of the ABC costing method allowed a new understanding of the institution's internal dynamics by shifting the focus from simple expense recording to comprehension of the true consumption of resources. This model provided a more granular view of educational and administrative activities, enabling the identification of inefficient processes, the elimination of waste, and a more equitable redistribution of expenses across different courses. At the same time, it fostered a culture of accountability and data-driven decision-making, surpassing empirical approaches and bringing the school closer to best management practices. Similarly, the findings relate to Transaction Cost Theory, demonstrating that more structured cost management practices and strengthened internal control processes minimize inefficiencies and reduce costs associated with internal transactions, such as familial conflicts, administrative work, and resource waste. Thus, by integrating theory and practice, the study confirms that investing in sound cost management practices represents a viable and necessary strategy to ensure sustainability and performance in family-owned private educational institutions in Cabinda. Therefore, the research conducted, aimed at studying the challenges and opportunities associated with cost management to improve the performance of family-owned educational institutions, showed

that understanding and properly leveraging the challenges and opportunities inherent to cost management significantly contributes to enhancing institutional performance, in line with the initially formulated hypothesis.

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