

# Value drivers for management and value generation: Financial analysis in a Higher Education Institution

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**ABSTRACT** **Objective.** To describe, from a value management perspective, the impact of applying operational value drivers and microvalue drivers in a Private Higher Education Institution located in Medellín, Colombia. **Methodology.** This is qualitative research framed as a descriptive case study. It employs three stages to identify, determine, and propose value drivers for generating and managing value within the institution. Tools used for data collection included: (i) A reporting table to determine institutional microvalue drivers; (ii) financial statements from the last three years, and (iii) a report and recommendation for implementing value drivers within the organization. **Results.** The results showed it does not effectively build value despite the Private Higher Education Institution generating surpluses. Moreover, the institution's performance analysis reveals that operational and non-operational expenses have grown at rates that overshadow revenue growth, contributing to a value erosion as indicated by negative Economic Value Added across the observed period. **Conclusions.** The study concludes that while the institution is profitable, it struggles with value creation due to onerous asset costs relative to net surpluses. The findings indicate potential medium to long-term liquidity issues due to inefficient working capital management and increased delinquency rates, suggesting that profitability and liquidity drivers are not optimally managed.

**KEY WORDS** Operational value drivers, Microvalue driver, Value management, Value generation, Private Higher Education Institution.

## Impulsores de valor para la gestión y la generación de valor: análisis financiero en una institución de enseñanza superior

**RESUMEN** **Objetivo.** Describir desde la perspectiva de la gestión del valor el impacto de la aplicación de los impulsores de valor operativo y los impulsores de micro valor en una institución de educación superior privada ubicada en Medellín, Colombia. **Metodología.** El estudio aplica una investigación cualitativa enmarcada en un estudio de caso descriptivo realizado en tres etapas con el fin de identificar, determinar y proponer impulsores de valor para generar y gestionar valor dentro de la institución. Las herramientas utilizadas para la recolección de datos incluyeron: (i) una tabla de informes para determinar los impulsores de micro valor institucionales; (ii) los estados financieros de los tres últimos años y (iii) un informe y recomendaciones para implementar impulsores de valor dentro de la organización. **Resultados.** Los resultados demostraron que, a pesar de generar excedentes, la institución no crea valor de forma efectiva. Además, el análisis del rendimiento de la institución revela que durante el período observado los gastos operativos y no operativos han crecido a tasas que opacan el crecimiento de los ingresos, lo que se traduce en una disminución del valor tal como lo evidencia un valor económico añadido negativo. **Conclusiones.** El estudio concluye que, aunque la institución es rentable, se enfrenta a dificultades para generar valor como consecuencia de los costos onerosos de los activos en relación con los excedentes netos. Los resultados indican posibles problemas de liquidez a mediano y largo plazo debido a una gestión ineficaz del capital circulante y al aumento de las tasas de morosidad, lo que sugiere que los impulsores de rentabilidad y liquidez no se están gestionando de forma óptima.

**PALABRAS CLAVE** impulsores del valor operativo, impulsor del micro valor, gestión del valor, generación de valor, institución privada de enseñanza superior.

## Impulsores de valor para gestión e geração de valor: análise financeira em uma instituição de ensino superior

**RESUMO** **Objetivo.** Descrever, sob a perspectiva da gestão de valor, o impacto da aplicação de impulsores de valor operacionais e micro drivers de valor em uma instituição de ensino superior particular localizada em Medellín, Colômbia. **Metodologia.** O estudo aplica uma pesquisa qualitativa enquadrada em um estudo de caso descritivo realizado em três etapas com o objetivo de identificar, determinar e propor drivers de valor para gerar e gerenciar valor dentro da instituição. As ferramentas utilizadas para a recolha de dados incluíram: (i) uma tabela de relatórios para determinar os impulsionadores de micro valor institucional; (ii) as demonstrações financeiras dos últimos três anos e (iii) um relatório e recomendações para implementar drivers de valor dentro da organização. **Resultados.** Os resultados mostraram que, apesar de gerar excedentes, a instituição não cria efetivamente valor. Além disso, a análise do desempenho da instituição revela que durante o período observado as despesas operacionais e não operacionais cresceram a taxas que ofuscaram o crescimento das receitas, resultando numa diminuição do valor, evidenciada pelo valor económico acrescentado negativo. **Conclusões.** O estudo conclui que embora a instituição seja lucrativa, ela enfrenta dificuldades na geração de valor em decorrência dos onerosos custos dos ativos em relação aos excedentes líquidos. Os resultados indicam potenciais problemas de liquidez a médio e longo prazo devido à gestão ineficaz do capital de giro e ao aumento das taxas de incumprimento, sugerindo que os impulsionadores da rentabilidade e da liquidez não estão a ser geridos de forma otimizada.

**PALAVRAS CHAVE** drivers de valor operacional, driver de micro valor, gestão de valor, geração de valor, instituição de ensino superior privada.

## Introduction

Organizations today face an enormous challenge to position and maintain themselves in the market. Increasingly, applying strategies to generate value becomes a challenge for small and medium-sized companies (González, 2011). In words of Peralta et al. (2020), the high rise of digital information and technological development requires each organization to apply strategies to remain and position itself over time. For this reason, this study presents an understanding and conceptualization of value drivers and their relationship and differentiation with the generation and management of value.

After carrying out a detailed analysis of the reality faced by a Private Higher Education Institution, where this research was applied, it was determined that there is a need to implement operational value drivers and micro value drivers that contribute to the generation and management of the value of this organization. However, this phenomenon impacts all organizations, particularly those that have not been studied as much from this perspective as those that provide higher education in Colombia. Therefore, this study proposes the following research question: How does the application of operational value drivers and micro value drivers in a Private Higher Education Institution located in Medellín (Colombia), affect value management?

In concordance with this question, the main objective of this study was to describe, from value management, the effect of the application of operational value drivers and micro value drivers in this private institution. To achieve this goal, the specific objectives were executed as follows. First, the researchers identified the micro value drivers present in the institution. Then, they determined the operational value drivers present. Finally, they proposed actions that allow managing the institution's operational and micro value drivers. The theoretical-conceptual approach focused on different concepts and theories such as micro value and value drivers (García, 2003; Jiménez y Rojas, 2016), value management (Correa et al., 2018), and value generation (García, 2003).

From this perspective, the application of operational drivers and microvalue drivers becomes a fundamental pillar for the generation of value, understanding this generation as those processes contextualized to the reality of the organizations to align all strategies with the strategic direction of the company to the increase in its value (García, 2003; González, Restrepo y Chamorro, 2022; Higueta et al., 2021).

This research was consolidated as a descriptive case study (Schoch, 2020; Tatalcha, Montenegro y Chamorro, 2023), and framed within the qualitative research paradigm (Finol y Vera, 2020). This systematic process sought three stages to achieve its objectives. It becomes a precedent to understand the drivers and microdriver values aimed at generating profitability, positioning, and generating value in, for, and with the society that involves this institution. This study impacted the internal and external communities of the organization, becoming a base element to continue understanding this reality with other higher education institutions that wish to apply value management in their internal and external contexts.

The analysis of this research reveals a fundamental situation in the Private Higher Education Institution under study. Although the institution manages to generate surpluses, it fails to build value effectively. This finding raises a significant discrepancy between generating revenue and creating long-term sustainable value. Therefore, a key recommendation is more effective asset management to generate liquidity. This involves thoroughly evaluating the operational and microvalue drivers used in the institution's administration. In this way, this study shows the need to identify specific areas, such as collection management and collection of accounts receivable, where the efficiency and effectiveness of these inducers can be optimized to generate a positive impact on the creation of value.

Considering this research is based on a qualitative approach and a descriptive case study, it may be valuable to complement these findings with future quantitative research. A more quantitative analysis could provide numerical data and more detailed metrics to evaluate the relationship between value drivers and effective value generation in the institution. As Polanía et

al. (2020) stated, this quantitative information can provide a more precise and quantifiable understanding of improving efficiency and value generation in the educational institution.

Firstly, the theoretical conceptions and literature review are presented, highlighting the importance of value drivers as essential tools for organizational stability and growth. Then, the article displays the results, which show that despite generating surpluses, the institution faces significant challenges in sustainable value creation. Finally, the conclusions and recommendations are framed around the need to improve operational cost management and working capital productivity to enhance long-term value generation.

### Theoretical conceptions and literature review

The relationship between employee/ employer, company/society, and company/ environment, among other aspects that involve organizations, become elements that merit a detailed analysis, where not only profits are created, but 'Value' in such a way that they guarantee permanent and long-term benefits. This is one of the most prominent challenges organizations face today. Value generation became an element that determines the success or failure of any organization (Crispieri, 2019).

However, it is necessary to ask about these components that define value. For example, what is a micro value driver? How do these elements impact value management? How does value management impact organizations? These and other questions will be addressed in this theoretical section that offers a brief description and theoretical conception of value drivers for value management and generation.

Following the perspective proposed by García (2003), value drivers are those elements that motivate the company to achieve higher goals and objectives and simultaneously commit the company to creating value. However, to use these drivers, each organization must understand them as a valid control tool for the interpretation, measurement, and quantification of data to show differences from one period to another, analyze the

causes of any financial problem in the organization, redesign and take actions (Narea y Guamán, 2021; Martínez et al., 2022).

Based on these statements, Jiménez and Rojas (2016) justified that value drivers guarantee the stability and positioning of an organization regardless of its size. For them, these analysis tools become essential elements of comparing and measuring trends. According to the authors, all entrepreneurs should understand the need to manage based on plans and goals. To do this, they need to understand and use value drivers as support instruments for decision-making, the analysis of information sources in the design of strategies, and the calculation and orientation of the company towards the creation of value.

In concordance with these debates, Narea and Guamán (2021) have argued that value drivers make it possible to evaluate the economic and financial condition of the company, thus facilitating the making of appropriate decisions that contribute to the creation of business value. Furthermore, according to Pinzón et al. (2022), value drivers are indicators that can show the essential components of the business operation, elements that, due to their mutual causal interactions, explain the reasons behind financial changes, whether an increase or decrease in numerical data.

In this way, value drivers play a fundamental role in evaluating financial and operational health and interpreting results, thus facilitating effective decision-making. Therefore, today's main challenge for companies' strategic and financial management lies in the union of efforts in interpreting value drivers contributing to analyzing the fundamental elements of business operations to generate business value (Pinzón et al., 2022).

Thanks to the previous contributions, Oliveros and Vargas (2017) identified nine factors that any company can use as key indicators of value generation: Earnings Before Interest Taxes Depreciation and Amortization —EBITDA—; Working Capital Productivity —PKT—; Growth-Inducing —PDC—; Productivity of Fixed Assets —PAF—; Profitability of Net Assets —RAN—; Return Over Equity —ROE—; Free Cash Flow —FCF—; Return On Assets —ROA— and Total Operational Efficiency —EOT—.

## **Value indicators/value generation**

These drivers' application, management, and administration become essential elements to generate 'Value.' Thus, value drivers could be understood as the strategies applied in an organization to analyze and act about a particular financial and economic problem and the generation of value as the result of these actions that impact all actors in the organization. This idea is supported by Wasserman (2014), who maintained that the generation of value is the objective to which all organizations aspire. This concept goes beyond purely financial aspects and covers all company areas, from production to senior management. The purpose is to increase the value of the organization through various strategies in both administrative and operational management, resulting in obtaining stability, growth, and profitability. This positive approach has a beneficial impact on both internal and external actors of the economic entity.

Following these ideas, Tokusaki (2013) proposed that value generation covers a broader scope than the mere induction of value. It is about creating value for shareholders and all stakeholders directly or indirectly related to a company's operations, from employees to the community and the environmental environment in which it operates.

Similarly, Correa et al. (2018) maintain that value generation is the achievement of the fundamental financial objective that represents a change in the conventional management approach. According to their perspective, value generation promotes the creation and execution of strategies that evaluate and improve all business activities to satisfy the expectations of shareholders and other interest groups.

The use of value drivers, to generate value provides those who access the information and interested parties with a clear direction on where they should direct their efforts and strategies that are being implemented by the management of the institution (Correa et al., 2018). However, a question still arises to guide this theoretical discussion. How do value drivers affect value generation and management?

According to García (2003) perspective, value management involves a series of processes that seek to align all employees with the company's strategic direction so that, when making decisions, they contribute to the constant increase in the organization's value. This means value management cannot be separated from the drivers neither the microdrivers of value. This management approach becomes a coherent system designed to generate value in any institution by ensuring this connection.

## **Relationship between value chain and micro value drivers**

Following the perspective presented by García (2003), value micro drivers are indicators that adapt to the specific characteristics of a company and are linked to the improvement of both operational and financial drivers. As previously discussed, these microvalue drivers are critical in ensuring consistency throughout the organizational system, especially in operations and finance. Additionally, they reflect how the company capitalizes on its skills and capabilities to address market conditions. This presents an opportunity to analyze the relationship between microvalue drivers and each organization's value chain, thus ensuring a performance evaluation process aligned with this chain activities.

To analyze this relationship, García (2003) proposes the understanding of this phenomenon from five fundamental elements: supply; operations; distribution; sales and service; finally, the marketing that is done in the organization. These elements are accompanied by five other essential elements that provide a response and financial strengthening to organizations; thus, he proposes the analysis of: (i) human resources administration as a fundamental element that guarantees the well-being of the entire organization; (ii) information technologies as an opportunity to systematize and establish a connection with the internal and external public to the organization; (iii) the relationship with the state as a commitment to attend to the social and economic development of the country; (iv) innovation as a possibility to respond to the new challenges that the contemporary world presents to the institution; finally, (v) finances as an element that will reach the organization when these elements are fully guaranteed.



This contribution by García (2003) shows that, for the generation of value in any organization, there must be a system that responds uniformly from the micro value drivers to elements that transcend only

the economic productivity of the organization. Below is the relationship table between the value chain, competencies, and micro value driver:

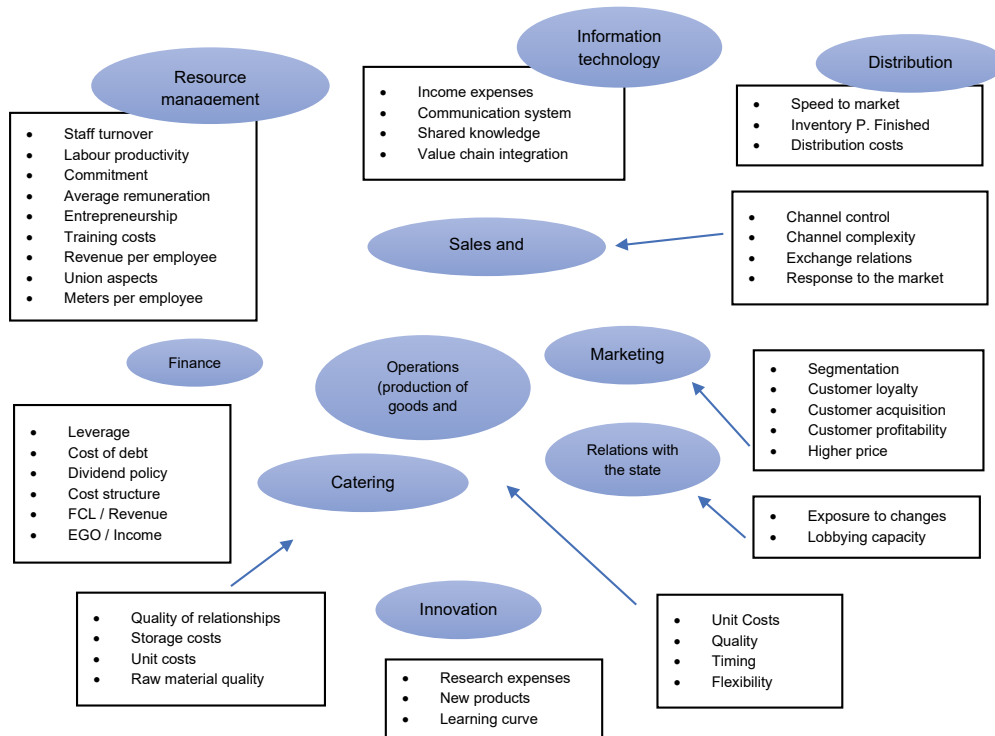


Figure 1. Relationship between value chain, competencies, and micro drivers. Source: author own elaboration.

Considering these theoretical and conceptual approaches, the need to consolidate research that addresses the different economic sectors of the country is evident, particularly those that have not been explored within the area of micro value drivers for the generation and management of value (Tobón, Urquía y Cano, 2023). One of those little explored sectors has been the educational sector, particularly that of higher education institutions. For this reason, this research is constituted as a contribution to this sector, hoping to contribute with elements that allow the understanding and application of operational value drivers for better institutional development.

## Methodology

A qualitative approach supports this research. This methodology was determined because a delimited and concrete study problem is posed through quantitative variables that intentionally aim to “constraining information, conducting accurate measurements of the variables in the study, and maintaining focus” (Hernández, Fernández y Baptista, 2014, p. 10). Likewise, it was determined to use this qualitative study following the ideas of Sandoval (1996), who argued that this type of research is multicycle. This implies that we repeat the formulation, design, or redesign stages several times and execute information and analysis

collection processes on multiple occasions. In this investigative process, there was a similar cycle: the microvalue drivers present in the institution were identified to define the operational value drivers through a financial analysis of the last three years and finally, propose actions that allow managing the operational value drivers and micro value drivers in this organization.

Starting from the singularities of this research and recognizing that this was a specific study with a private higher education institution, the descriptive case study was used to guide this research. Authors such as Sabino (2014) and Schoch (2020) maintain that descriptive case studies use systematic criteria that reveal the structure or behavior of the phenomena under investigation, thus providing systematic information that can be compared with other sources. This means that the description of value inducers and micro drivers in this research required a specific understanding of where the context served by the institution was analyzed.

For the design and implementation of the research, the specific objectives were considered as guides for each of the actions of the study. For this reason, the micro drivers of value present in the institution were identified at first. As expressed by Maldonado (2020), this exercise requires an analysis of the channels the organization uses to contact the internal and external factors that make it up. For this research, the institutional website was mainly analyzed. For this purpose, a report table was created to determine the institutional micro drivers. In a second moment, researchers sought to determine the operational value drivers that the institution had; for this, a financial analysis of the last three years was carried out. This activity served as input to contextualize and read the company's current reality and propose the third

moment of this study, whose specific objective was to propose actions that allow managing the institution's operational value drivers and micro value drivers. It is worth clarifying that, for the structure of the results presented in this work, the study of Ramírez, Rojas and Jiménez (2017) is considered. Next, the cyclical process applied in research is explained in detail.



**Figure 2.** Moments and research design. Source: author own elaboration.

## Results

The following table compares the comprehensive income statement between 2020-2021 and 2021-2022, highlighting the most significant variations in operating income, cost of sales, operating expenses, operating profitability, and net profitability.



**Table 1.** Comprehensive Income statement of a Private Higher Education Institution of Medellín

Private Higher Education Institution								
Comprehensive Income Statement								
Operational income	2020	2021	Variation	% VAR	2021	2022	Variation	% VAR
Educational services	96'927775	102'260639	5'332864	5.50 %	102'260639	113'279446	11'018807	10.78 %
<b>Total income from education</b>	<b>96'927775</b>	<b>102'260639</b>	<b>5'332864</b>	<b>5.50 %</b>	<b>102'260639</b>	<b>113'279446</b>	<b>11'018807</b>	<b>10.78 %</b>
<b>Missional costs</b>								
Teaching cost	41'243714	40'047820	-1'195894	-2.90 %	40'047820	47'690178	7'642358	19.08 %
Service contracts	726208	723587	-2621	-0.36 %	723587	218699	-504888	-69.78 %
Indirect costs	37'378557	38'073283	694726	1.86 %	38'073283	35'561144	-2'512139	-6.60 %
Depreciations	244934	264885	19951	8.15 %	264885	580631	315745	119.20 %
Amortization	2'047221	2'075812	28591	1.40 %	2'075812	2'702370	626558	30.18 %
<b>Total missional costs</b>	<b>81'640633</b>	<b>81'185386</b>	<b>-455247</b>	<b>-0.56 %</b>	<b>81'185386</b>	<b>86'753020</b>	<b>5'567634</b>	<b>6.86 %</b>
Total gross surplus	15'287142	21'075253	5'788111	37.86 %	21'075253	26'526425	5'451173	25.87 %
<b>Operational expenses</b>								
Administration expenses	8'770315	10'379836	1'609522	18.35 %	10'379836	12'439768	2'059932	19.85 %
Depreciations	1'330846	1'153442	-177404	-13.33 %	1'153442	824853	-328588	-28.49 %
Selling expenses	3'823938	4'488548	664611	17.38 %	4'488548	5'080487	591938	13.19 %
<b>Total operational expenses</b>	<b>13'925098</b>	<b>16'021826</b>	<b>2'096729</b>	<b>15.06 %</b>	<b>16'021826</b>	<b>18'345108</b>	<b>2'323281</b>	<b>14.50 %</b>
<b>Total operational surplus</b>	<b>1'362044</b>	<b>5'053426</b>	<b>3'691382</b>	<b>271.02 %</b>	<b>5'053426</b>	<b>8'181317</b>	<b>3'127891</b>	<b>61.90 %</b>
Non-operating income	7'397056	6'762869	-634187	-8.57 %	6'762869	6'832364	69495	1.03 %
<b>Total Non-operational expenses</b>	<b>5'963001</b>	<b>8'786513</b>	<b>2'823512</b>	<b>47.35 %</b>	<b>8'786513</b>	<b>11'906623</b>	<b>3'120110</b>	<b>35.51 %</b>
Net Surplus	2'796098	3'029782	233684	8.36 %	3'029782	3'107058	77276	2.55 %

Note: Expressed in thousands of Colombian pesos.

Source: author own elaboration.

In the comprehensive income statement for the years 2020, 2021, and 2022, growth in operating surpluses is evident in absolute values of \$ 3'691382 and the percentage of 271.02 % in the years from 2020 to 2021; this is mainly due to the increase in operational income by 5.50 % and the decrease in missional costs and operational expenses of 14 %. Likewise, the growth of operating surpluses of \$ 3'127891 and in percentage value of 61.90 % in the years from 2021 to 2022 due to the increase in income by 10.78 %, and the decrease in indirect costs by 6.60 %. Next, we relate the asset profitability.

### **Return On Assets —ROA—**

Financial analysis is of utmost importance and refers to the indicators related to profitability, which show us the management carried out by management to maximize economic and financial resources.

In Table 2, it can be determined whether the administration carried out by the institution was effective in maximizing operating income and optimizing mission-related costs and operational expenses about the production process of net operating assets.

**Table 2.** ROA of a Private Higher Education Institution of Medellín

ROA	Net surplus for the year		
	Net operating assets		
Component	2020	2021	2022
Net surplus for the year	2'796098	3'029782	3'107058
Net operating assets	119'108737	123'073090	124'246589
<b>Total operational profitability of the asset</b>	2.35 %	2.46 %	2.50 %

Note: Expressed in thousands of Colombian pesos.

Source: author own elaboration.

In the previous table, it can be seen that during the years 2020 to 2021, the operational ROA of the institution improved, going from 2.35 % in 2020 to 2.46 % in 2021, and then to 2.50 % in 2022. This increase would indicate better performance in investment in net operating assets.

However, an increase in operating assets is noted during the 2021-2022 period, demonstrating a greater use of investment in surpluses. Despite this, a problem is evident in controlling operating expenses in 2021, as they grew by 15.06 % compared to 2020. In addition, non-operational expenses increased by 47.35 % in 2021 compared to 2020.

In 2022, missional costs increased by 6.86 %, and operational and non-operational expenses increased by 50 % compared to 2021. Although operational income showed positive growth of 5.50 % in 2021, and 10.78 % in 2022, the institution needed to optimize operating expenses since they increased by 14.50 % compared to the previous year. Thus, although there were improvements in the operating profitability of the asset and an increase in operating income, it is essential to address the control of operating expenses to ensure more efficient and sustainable financial management.

On the other hand, Table 3 analyzes the Return Over Equity —ROE— of the institution in the period 2020-2022.

**Table 3.** ROE of a Private Higher Education Institution of Medellín

ROE	Net surplus for the year		
	Net		
Component	2020	2021	2022
Net surplus for the year	2'796098	3'029782	3'107058
Net	57'019974	60'049756	63'156814
<b>Total operational profitability of equity</b>	4.90 %	5.05 %	4.92 %

Note: Expressed in thousands of Colombian pesos.

Source: author own elaboration.

Regarding the ROE, the most significant growth occurred in 2021, with a profitability of 5.05 %, compared to 2020, which was 4.90 %; and in 2022, with a profitability of 4.92 % presenting an approximate decrease of 0.13 % from the previous period due to the increase in operational and non-operational expenses of 50.01 %. This behavior negatively impacts the performance of assets and the ability to maximize the surpluses

of the institution. This situation can hinder the reinvestment of surpluses in improving its social mission and the institution's infrastructure.

#### **Weighted average Cost of Capital —CK—**

In this study, it is crucial to compare the ROE, the CK, and cost of equity ratios. The analysis of the calculation CK of the institution is provided below.

**Table 4.** Weighted average CK of a Private Higher Education Institution of Medellín

Weighted average CK			
Concept	Amount	Participation percentage	Weighted CK
Passive	61'089775	49.17 %	6.38 %
Equity	63'156814	50.83 %	6.10 %
<b>Total active</b>	124'246589	100.00 %	12.48 %

Note: Expressed in thousands of Colombian pesos.

Source: author own elaboration.

The calculation of the weighted average CK resulted in 12.48 %. When contrasted with the ROE for the years 2020, 2021, and 2022, it is evident that is below the CK, which represents an unattractive

indicator for potential partners or investors. For this reason, Table 5 shows a comparative analysis between the ROE and the weighted average cost of capital of the institution.

**Table 5.** ROE vs. CK of a Private Higher Education Institution of Medellín

Indicator	2020	2021	2022
ROE	4.90 %	5.05 %	4.92 %
CK	12.48 %	12.48 %	12.48 %

Source: author own elaboration.

According to the comparative table of the financial information related to the ROE and the weighted average CK in the years 2020 to 2022, it can be concluded that the institution failed to generate value during this period. This is because the costs related to the operation of its assets exceeded the profitability of its equity, destroying value.

The institution needed to generate added value from 2020 to 2022. This is mainly because both the weighted CK and the cost of equity were higher than the operating ROA and the ROE.

**Table 6.** Comparison of ROA and ROE vs. value creation % of a Private Higher Education Institution of Medellín

Year	ROA	ROE	CK	Cost of equity
2020	2.35 %	4.90 %	12.48 %	12.00 %
2021	2.46 %	5.05 %	12.48 %	12.00 %
2022	2.50 %	4.92 %	12.48 %	12.00 %

Source: author own elaboration.

By analyzing and comparing the results of operating ROA and operating ROE about the CK, it is evident that the institution is destroying value. This is because the CK and the minimum rate required by partners or investors is 12 %, which exceeds the previously analyzed indicators. When we refer to the generation of value, it is essential to link it with the Economic Value Added —EVA—, described according to García (2003) as the disparity between operating profits after taxes and the financial expense associated with the use of assets by the company. This indicator allows us to evaluate

whether the educational institution is generating value. In this case, despite generating surpluses, a value generation is not observed since the cost of its assets and equity exceeds the ROA and the ROE.

Additionally, Operating Income or UODI for the years 2020-2022 was calculated using data from the financial statements of the institution, specifically the Comprehensive Income Statement. Next, the EVA was calculated using the net operating assets and the institution's capital cost.

**Table 7.** Calculation of the UODI of a Private Higher Education Institution of Medellín

Comprehensive Income Statement			
Concept	2020	2021	2022
Net educational services income	96'927775	102'260639	113'279446
Missional costs	79'348478	78'844689	83'470019

<b>Comprehensive Income Statement</b>			
<b>Concept</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
<b>Gross surplus</b>	<b>17'579297</b>	<b>23'415950</b>	<b>29'809427</b>
Administration expenses	8'770315	10'379836	12'439768
Selling expenses	3'823938	4'488548	5'080487
<b>EBITDA</b>	<b>4'985044</b>	<b>8'547566</b>	<b>12'289172</b>
Depreciation	1'575780	1'418327	1'405484
Amortization	2'047221	2'075812	2'702370
<b>Operating profit</b>	<b>1'362043</b>	<b>5'053427</b>	<b>8'181318</b>

Note: Expressed in thousands of Colombian pesos.

Source: author own elaboration.

The UODI, is examined from 2020 to 2022, and significant changes are observed from 2020 to 2021. During this period, a notable growth of 271 % is recorded, mainly driven by increased service revenues, education and reduced missional costs. It is essential to mention the reduction of expenses because, during the COVID-19 pandemic, educational institutions were forced to quickly adapt to virtual classes to guarantee the continuity of learning. This transition to online education brought several changes, including a notable reduction in operating costs. By not requiring additional physical infrastructure, such as classrooms and meeting spaces, as well as decreased expenses for essential

services such as electricity and water, educational institutions have managed to optimize their financial resources, which significantly impacted the sector.

With the calculation of EVA, is evaluates the generation of value by the entity, considering the CK used. The EVA is calculated by subtracting the CK from the economic benefit obtained. It would be relevant to carry out additional analysis to determine the EVA during the years 2020-2022 and evaluate how the entity generated value about its CK in that period, as shown below in Table 8.

**Table 8.** Calculation of EVA of a Private Higher Education Institution of Medellín

<b>Concept</b>	<b>EVA</b>		
	<b>2020</b>	<b>2021</b>	<b>2022</b>
UODI	1'362043	5'053427	8'181318
Net operating assets	119'108137	123'073090	124'246589
CK	12.48 %	12.48 %	12.48 %
VA= UODI -Net operating assets *CK	-13'502652	-10'306095	-7'324656

Note: Expressed in thousands of Colombian pesos.

Source: author own elaboration.

In the previous table, it is observed that the EVA of the institution in the period 2020-2022 did not add value since the profitability of the RAN was lower than the CK. Although the educational institution generates surpluses, the performance of the EVA is

not favorable. This macro driver of value is linked to the institution's ability to generate cash flows and thus cover its commitments to suppliers, creditors, and employees. This could cause difficulties in the institution's cash flows in the medium term.

**Table 9.** EVA from the net surplus of a Private Higher Education Institution of Medellín

Concept	2020	2021	2022
Net surplus	2'796098	3'029782	3'107058
Net operating assets	119'108137	123'073090	124'246589
CK	12,48%	12,48%	12,48%
EVA= Net surplus-Net operating assets *CK	-12'068597	-12'329740	-12'398916

Note: Expressed in thousands of Colombian pesos.

Source: author own elaboration.

The previous table shows variations in the EVA based on the net surpluses and the operational profitability of the institution assets in 2020-2022. These results are unfavorable since they indicate that the entity has destroyed value during these three years because the operating ROA was lower than the CK in all the analyzed periods. This situation has a short-term negative impact on the entity's ability to generate positive cash flows.

According to those above, it is essential to calculate and analyze the working capital, the Net Working Capital Operating —KTNO—, and its productivity in the institution. These macro drivers of value are closely linked to cash flows, efficiency in the accounts receivable turnover, debt level, operating leverage, merchandise inventories, and payments to suppliers.

**Table 10.** KTNO of a Private Higher Education Institution of Medellín

Concept	KTNO		
	2020	2021	2022
Customer accounts receivable	9'268254	14'447593	21'309281
Inventory	293298	172460	337943

Note: Expressed in thousands of Colombian pesos.

Source: author own elaboration.



The previous table shows an increase in the KTNO during the 2020-2022 period, both in accounts receivable related to educational services and in the inventories of materials and medications of the Veterinary Clinic and branded products own of the University. Additionally, it is essential to examine the accounts payable to supplier's, component to

determine the KTNO. This allows the institution to understand how much capital is necessary to maintain its operations in the short term. Therefore, it is necessary to consider the performance of the KTNO of the institution in the period 2020-2022, which is reflected in Table 11.

**Table 11.** KTNO of a Private Higher Education Institution of Medellín

Concept	KTNO		
	2020	2021	2022
Customer accounts receivable	9'268254	14'447593	21'309281
Other accounts receivable	1'458944	713186	486307
Inventory	293298	172460	337943
Suppliers	1'212879	2'137055	1'999232

Note: Expressed in thousands of Colombian pesos.

Source: author own elaboration.

The evolution of KTNO exhibits a positive trend in the years 2020-2021, reflected in the increase in credit sales and, consequently, in the amounts pending receivable. Likewise, in the 2021-2022 period, a positive variation in the KTNO is reflected

due to a significant increase in accounts receivable and a decrease in accounts payable to suppliers. Consequently, Table 12 shows the behavior of the inducer of productivity of working capital —PKT—.

**Table 12.** PKT of a Private Higher Education Institution of Medellín

Concept	PKT		
	2020	2021	2022
KTNO	9'807617	13'196184	20'134299
Sales	96.927.775	102.260.639	113.279.104
<b>PKT %</b>	<b>10.12 %</b>	<b>12.90 %</b>	<b>17.77 %</b>

Note: Expressed in thousands of Colombian pesos.

Source: author own elaboration.

The determination of the value indicator, known as PKT, offers an evaluation of the performance and efficiency of the institution in the administration of its KTNO. This is done to take advantage of and optimize its resources in the short term. The previous table shows that in 2020, the institution required 10.12 % of each peso sold to support its operations. However, in 2022, this figure has increased to 12.90 %, which indicates a more significant financial effort on the part of the entity and suggests less efficient management of resources.

It is essential to emphasize that the effectiveness in the management of KTNO is manifested through the result of the PKT. The closer this indicator is to one, the greater the entity's efficiency and

productivity in using its resources in the short term. Based on this analysis, evaluating the entity's growth-inducing becomes essential.

### ***Growth-Inducing –PDC–***

In the case of the institution, this value indicator provides information about whether the entity's growth is generating value for the benefit and improvement of the community in general. The objective is for the surpluses to be reinvested in improving the quality of education and acquiring new technologies and infrastructure. This will contribute to the institutional development and the economic and social sustainability of the institution.

**Table 13.** PDC of a Private Higher Education Institution of Medellín

Concept	PDC		
	2020	2021	2022
EBITDA	5.14 %	8.36 %	10.85 %
PKT	10.12 %	12.90 %	17.77 %
<b>PDC %</b>	<b>0.50 %</b>	<b>0.64 %</b>	<b>0.61 %</b>

Source: author own elaboration.

According to the table, during 2020-2022, an unfavorable growth situation was evident since the results obtained were less than one. This implies that the growth could have been more notable; the entity required more significant financial resources instead of releasing cash flows. Consequently, the institution lost value during those years, indicating that it did not adequately operate the KTNO. It did not demonstrate efficiency or implement clear and effective policies to manage and control it, which would have allowed it to obtain better cash flows in its operating cycle.

## **Conclusion**

It can be stated that the entity generates profits, but needs to build value since the cost of its assets is

too onerous for the net surpluses. That is, cash flows are favorable, but in the medium and long term, there could be problems in generating liquidity and meeting the payment of its obligations.

A deterioration in the productivity of working capital is evident over time. In each period, a more significant amount of cash is required to maintain the entity's operation. To illustrate, in 2020, 10 pesos of money were necessary for every 100 pesos of sales. However, in the 2022 period, this indicator has increased to 17.77 %. In this last period, more outstanding working capital or cash flow is required to maintain the entity's operation. This observation is based on the high portfolio levels, which indicates poor management and efficiency in collecting and collecting these resources.

Consequently, delinquency has experienced an increase of 47.49 % between 2021 and 2022. Once

the drivers and macro drivers were applied and analyzed in the institution during the periods 2020, 2021, and 2022, it was observed that the entity registers surpluses. Nevertheless, its drivers and macro drivers of profitability and liquidity need to be optimally managed in the institution. The limited generation of cash flows in these periods could lead to inefficiencies and additional costs in managing its working capital and fulfilling its commitments with suppliers and creditors in the short or medium term.

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