

Impact of Dynamic Capabilities on Business Performance in Public Universities

Cindy Paola Garay Suárez¹, Marisol Monterroza Guzmán², Álvaro Enrique Santamaría Escobar³

¹*Professor at the University of Sucre*

²*Instructor en Servicio Nacional de Aprendizaje*

³*Professor at the University of Sucre*

Abstract

The objective of this work was to analyze the incidence of the dynamic capacities of absorption, learning, innovation and adaptation in the business performance of a public university in Colombia. To this end, a quantitative methodology with qualitative complementarity was used, framed in a descriptive-correlational design of a cross-sectional and non-experimental type. In the results, the scale or rating scale technique was applied, which facilitated statistical analysis with non-parametric tests, specifically using the Rho Spearman correlation coefficient. The findings showed a significant relationship between prioritized dynamic capabilities and business performance. In addition, the quantitative results were complemented with a qualitative analysis based on a similarity matrix and the Jaccard coefficient. It is concluded that there is a moderate positive correlation between dynamic capabilities and business performance. Likewise, opportunities for improvement in management and strategic planning were identified, which suggests the need to strengthen key skills to enhance institutional competitiveness.

Keywords: Dynamic Capabilities, Business Performance, University of Sucre, Senior Management, Skills.

JEL: M12, M14

¹ Magister in business administration. <https://orcid.org/0000-0002-6323-6999> Professor at the University of Sucre - Colombia. cindy.garay@unisucra.edu.co

² Magister in business administration. <https://orcid.org/0009-0000-9596-0677> National Learning Service -Sena- Colombia. marisolmonterrozag@hotmail.com

³ PhD in Social Sciences. <https://orcid.org/0000-0002-7710-5973> Professor University of Sucre - Colombia. alvaro.santamaria@unisucra.edu.co

Introduction

In an increasingly competitive educational environment, higher education institutions face the challenge of adapting and evolving to ensure their sustainability and academic excellence. The University of Sucre is no stranger to this reality, so it is essential to understand how the dynamic capacities (DC) of absorption, learning, innovation and adaptation affect its organizational performance. This study seeks to analyze this relationship, contributing to the development of essential managerial skills for both senior management and its management team, with the purpose of consolidating the university as a competitive, efficient and quality-oriented institution in the provision of its educational services.

Institutional leadership is a determining factor in the construction of a university's corporate identity, since through its decisions and strategies, an organizational culture is imprinted that defines its positioning in the educational sector (Ferrer & Guijarro, 2007). In this sense, the management of dynamic capabilities allows educational organizations to respond in an agile way to changes in their environment, facilitating the generation, transformation, and exploitation of knowledge, which has a direct impact on their long-term performance (Wang & Ahmed, 2007; Garzón, 2013).

From a theoretical perspective, dynamic capabilities (DC) have been widely studied in the business environment, where they are considered a key element for sustainability and organizational growth. Authors such as Barrios, Olivero, and Figueroa (2020) highlight that these capabilities depend on human talent and their ability to generate innovative responses to market challenges. In the university context, these skills are essential to absorb and apply new knowledge, adapt to changing societal expectations and foster innovation in teaching and administrative management.

The value of this research lies in its contribution to the strategic decision-making of the senior management of the University of Sucre. Through a detailed analysis of the DCs and their impact on organizational performance, it seeks to identify opportunities for improvement in institutional planning and management, to raise the standards of educational quality and improve the satisfaction of the university community.

Methodologically, the study adopts a quantitative approach with qualitative complementarity, using a non-experimental and cross-sectional design. The absence of previous studies that analyze the relationship between DCs and organizational performance in a public university highlights the need for this research, which aims to generate a deeper understanding of how these capacities influence institutional efficiency and competitiveness in the context of universities.

Theoretical Framework

Dynamic capabilities (DCs) represent the ability of organizations to develop, integrate, and reorganize their internal resources to adapt to changes in the environment and generate opportunities for growth. These capabilities are critical to achieving and maintaining a sustainable competitive advantage in highly dynamic markets (Teece, Pisano & Shuen, 1997). The literature has demonstrated their positive impact on business performance (DE), since companies that have them can respond more quickly to market fluctuations. According to this perspective, DCs are classified in terms of sensitivity to the environment, reconfiguration capacity and innovation capacity.

The ability to be sensitive to the environment implies the organizational ability to identify and understand changes in the market and customer needs, which require strategies for surveillance, collection and analysis of information. On the other hand, the ability to reconfigure allows internal resources and processes to be reorganized to adjust to the transformations of the environment, which may include modifications in the organizational structure, technologies or product portfolio. Finally, innovation capacity focuses on the generation of new products, services, and processes, supported by creativity, knowledge management, and research and development (Teece, 2007).

From a strategic approach, DCs are closely related to the theory of resource-based vision (RBV), which considers that organizations are composed of a set of tangible and intangible resources that determine their success (Wernerfelt, 1984). In this context, a company's ability to transform these resources into competitive advantages lies in its ability to adapt and efficiently manage its dynamic capacities (Zapata & Mirabal, 2018). Likewise, organizational knowledge, as an intangible asset, plays a key role in the construction of sustainable advantages, since it is developed from social interactions and learning processes (Polanyi, 1967).

The literature suggests that DCs allow organizations to remain competitive in environments of accelerated change, as they facilitate the identification of opportunities, strategic decision-making, and continuous innovation (Augier & Teece, 2007; Peteraf, Di Stefano & Verona, 2013). DC theory complements resource and capability theory, emphasizing that competitive advantage depends not only on the possession of valuable resources, but also on the firm's ability to adapt and evolve based on market dynamics (Escandón et al., 2013).

Strategic Management and Dynamic Capabilities

The management of DCs in an organization is based on high-level strategic actions that allow its activities to be oriented towards higher performance. Teece (2012, 2014) emphasizes that these capabilities are essential to detect threats and opportunities, renew processes, and promote innovation, ensuring the sustainability of the business. In this context, Zahra and George (2002) highlight that DCs facilitate the modification of organizational routines to make them more flexible and adaptive, while Winter (2003) points out that these capabilities have the purpose of expanding and transforming entrepreneurial skills in the long term.

In many organizations, despite having efficient processes and competitive products, the lack of training and updating of human talent generates resistance to change, which limits the ability to innovate and respond effectively to the challenges of the environment. To avoid this organizational inertia, it is essential to foster a culture of continuous learning and promote structural changes that facilitate the generation of new competencies (Argote, 2003; Zollo & Winter, 2002).

From a methodological perspective, research on DC in business performance has followed quantitative and qualitative approaches, aligning with the positivist paradigm, which postulates that research is a systematic and controlled process for the study of organizational phenomena (Kerlinger & Lee, 2002). For the measurement of business performance (DE), reference frameworks such as the Ibero-American Model of Excellence in Public Administration Management (2019) and the EFQM Model 2020 (European Foundation for Quality Management) have been used. Both models provide structured criteria for assessing the quality, innovation, and competitiveness of organizations.

The EFQM 2020 Model, for example, has been used by companies and universities to evaluate their performance across key dimensions such as leadership, strategy, innovation and customer orientation. Its implementation has proven to be effective in improving organizational management and fostering a culture of continuous improvement (San Nicolás & del Castillo, 2020). In addition, the Integrated Planning and Management Model (MIPG) has been adopted as a reference in the public sector, providing a comprehensive framework for the evaluation of institutional performance based on indicators of effectiveness, efficiency, quality and satisfaction.

Prioritization of Dynamic Capabilities

DC theory states that organizations must continuously strengthen their capacities for absorption, learning, adaptation, and innovation, as these facilitate their evolution in changing environments (Eisenhardt & Martin, 2000; Zollo & Winter, 2002). According to

Sánchez Peñaflor and Herrera Avilés (2016) and Acosta Prado et al. (2017), the combination of valuable, scarce and inimitable resources gives companies a sustainable competitive advantage, with human talent being a fundamental pillar in this process.

Wang and Ahmed (2007) identify some essential DC to improve organizational performance:

- *Absorptive capacity (CDA_{Ab}): Related to the identification and assimilation of external and internal knowledge, facilitating innovation and competitiveness (Cohen & Levinthal, 1990).*
- *Adaptability (CDA_{Ad}): Essential for companies to adjust their strategy and operation to market conditions, ensuring their survival and profitability (Garzón, 2017).*
- *Innovation capacity (CDA_{In}): Allows the development of products and services aligned with market trends, ensuring value generation and long-term sustainability (Wang & Ahmed, 2007).*
- *Learning capacity (CDA_p): Focused on the acquisition, distribution, and application of organizational knowledge, which facilitates the constant evolution of internal processes (Easterby-Smith & Prieto, 2008).*

Strengthening these capabilities enables companies to respond to market challenges, drive innovation, and achieve superior performance. Rotundo (2020) emphasizes that DCs are decisive in the sustainability of competitive advantage, since they promote the generation of knowledge and the optimization of organizational processes.

In recent studies, Sánchez, Paparella, and Rotundo (2022) highlight that CDA_{Ab}, CDA_p, CDA_{In}, and CDA_{Ad} are directly linked to business performance, as they allow companies to adjust to new conditions and remain relevant in the market. In the same sense, Molano and Campo (2014) emphasize that these capacities facilitate the creation and transfer of knowledge, which increases organizational competitiveness.

Finally, the integration of DCs into business management allows organizations to evolve more quickly and efficiently. According to Helfat (1997), Teece (2012), Davies, and Brady (2016), these capabilities play a key role in identifying and implementing innovative strategies, ensuring that companies adapt to the evolving competitive environment. In this sense, an organization's ability to align its resources, foster innovation, and strengthen organizational learning becomes a decisive factor for its success and sustainability.

Methodology

The present study is framed in a quantitative approach with qualitative complementarity, with a non-experimental design of a descriptive-correlational type and a cross-sectional section.

The objective was to analyze the incidence of dynamic capabilities (DC) on business performance (DE) at the University of Sucre. To this end, structured surveys and semi-structured interviews were applied for information collection.

Research Design and Approach

The research is based on the positivist paradigm, which is based on the observation and empirical measurement of social phenomena (Kerlinger & Lee, 2002). In this context, quantitative methods were used to identify correlations between DC and ED, supported by advanced statistical techniques, such as Spearman's correlation and principal component analysis (Restrepo, 2012). Additionally, a complementary qualitative approach was included to strengthen the analysis through interviews with key actors of the institution.

Population and Sample

The target population was made up of 800 collaborators from the University of Sucre, including teachers and administrators (Directorate of Human Resources Unisucre, 2023). For the application of the survey, a sample of 68 participants was selected, calculated with a confidence level of 95% and a margin of error of 5%, using Monkey software. In the case of the interviews, six members of the university's senior management were approached, selected through an intentional non-probabilistic sampling, based on their strategic role in decision-making (Hernández-Sampieri & Mendoza, 2018).

Data Collection Techniques and Instruments

The main instrument was a structured questionnaire with 59 items distributed in two variables: dynamic capabilities and business performance. The measurement was made using a five-level Likert scale (from "Strongly disagree" to "Strongly agree"). The validity of the questionnaire was ensured through peer review and a pilot test applied to five officials of the institution. Reliability was determined using Cronbach's Alpha coefficient, obtaining values greater than 0.90 in each of the dimensions, which confirms a high internal consistency of the instrument (Chávez, 2006).

Table 1. Cronbach's Alpha Coefficient for each Category

	# Elements	Reliability
Absorption	16	.925
Learning	12	.931
Adaptation	8	.946
Innovation	11	.885
Performance	12	.905

Source: own elaboration

To complement the quantitative analysis, semi-structured interviews were applied to the managers, to explore in greater depth the institutional perception of DCs and their relationship with ED. These interviews consisted of 11 open-ended questions aimed at capturing the strategic vision of senior management.

Data Analysis

The analysis of quantitative data was performed at two levels: *First*, descriptive statistics, using measures of central tendency and dispersion to characterize the study variables (Levin & Rubin, 2004). *Second*, inferential statistics, through the Chi-square independence test and Spearman's correlation, with the aim of evaluating the relationship between DCs and ED. The interpretation of the coefficients was carried out following the criteria established by Barrera (2014), where values close to +1 indicate a strong positive association and values close to -1 reflect an inverse relationship between the variables.

From the qualitative approach, the data obtained in the interviews were subjected to a content analysis with a matrix of similarities and differences, using the Jaccard coefficient to evaluate the overlap and concordance of categories (Bazhenov & Telnova, 2023). Finally, both approaches were integrated through a comparative analysis that allowed the findings to be triangulated and provide a more robust view of the relationship between dynamic capabilities and business performance in the university.

Research Procedure

The methodological process was carried out in three phases. First, the problem statement and the theoretical review were carried out, where the objectives of the research were defined, and a rigorous analysis of the literature was carried out in high-impact scientific databases such as Scopus and ScienceDirect. Subsequently, data collection was carried out, using surveys and interviews, with prior validation of the instruments through pilot tests to ensure their reliability. Finally, the analysis and interpretation of the results was carried out, integrating quantitative and qualitative approaches to generate strategic recommendations aimed at the management of the University of Sucre. In summary, the use of mixed methods allowed a holistic understanding of the phenomenon studied, strengthening the validity of the findings and providing a useful framework for improving performance in the education sector.

Results

The analysis of the data obtained through the application of the questionnaire with a Likert scale allowed us to evaluate the perception of the participants about dynamic capabilities (DC) and business performance (DE) at the University of Sucre. A scale was established for the interpretation of the results, categorizing the responses into levels of compliance ranging from "very low" to "high". The methodology used included the elaboration of frequency tables and the calculation of arithmetic means for each variable and its subdimensions, to obtain a general and comparative view of the data collected.

Table 2. *Measurement scales (Scale)*

Likert Answers	Scales*	Interpretation
Strongly disagree	1,00 - 1,80	Very low
Disagree	1,81 - 2,60	Low
Neither agree nor disagree	2,61 - 3,40	Regular
I agree	3,41 - 4,20	Moderate
Totally agree	4,21 - 5,00	High

Source: own elaboration

Dynamic Capabilities and Business Performance

The findings indicate that 64.7% of respondents consider that senior management has dynamic capabilities, while 29.4% maintain a neutral stance and 5.9% express disagreement. The general arithmetic mean for DCs was 3.61, suggesting a moderate level of compliance, with a standard deviation of ± 0.62 and a coefficient of variation of 17%. It was identified that the absorptive capacity is the most developed, followed by the capacity for learning and adaptation, all classified as moderate. In contrast, the capacity for innovation obtained the lowest score (3.35), placing it in the category of fair, which indicates an opportunity for improvement in creativity and the development of new products or services.

Table 3. *Frequencies by Dynamic Capabilities*

Capabilities	Dynamic capabilities		Absorption		Learning		Innovation		Adaptation	
	f	%	f	%	f	%	f	%	f	%
Strongly disagree	0	0%	0	0%	0	0%	0	0%	0	0%
Disagree	4	5,9%	3	4%	6	9%	12	18%	6	9%
Neither agree nor disagree	20	29,4%	12	18%	15	22%	20	29%	25	37%
I agree	34	50%	36	53%	37	54%	31	46%	29	43%
Totally agree	10	14,7%	17	25%	10	15%	5	7%	8	12%
Category	Moderate		Moderate		Moderate		Regular		Moderate	
Arithmetic mean	3,61		3,86		3,57		3,35		3,54	

Deviation	± 0.62	± 0.65	± 0.67	± 0.69	± 0.69
Coefficient of variation	0.17	0.17	0.19	0.21	0.19

Source: own elaboration

Analysis of Each Prioritized Dynamic Capacity

Absorption Capacity (CDAb)

85.3% of respondents consider that senior management possesses this capacity. However, opportunities for improvement were detected in cooperation with research centers and in the application of the knowledge acquired. The subdimensions evaluated, such as business relations and the collection of external information, were rated at a moderate level.

Table 4. Frequency, Dynamic Absorption Capacity and subdimensions

	CD Absorption		IE*		RCI**		C***		D****	
	f	%	f	%	f	%	f	%	f	%
Strongly disagree	1	1,5%	1	1%	1	1%	1	1%	2	3%
Disagree	2	2,9%	3	4%	2	3%	1	1%	2	3%
Neither agree nor disagree	7	10,3%	15	22%	3	4%	16	24%	9	13%
I agree	39	57,4%	33	49%	38	56%	25	37%	35	51%
Totally agree	19	27,9%	16	24%	24	35%	25	37%	20	29%
Category	<i>Moderate</i>		<i>Moderate</i>		<i>Moderate</i>		<i>Moderate</i>		<i>Moderate</i>	
Arithmetic mean	3.86		3.8		4.04		3.93		3.8	
Deviation	± 0.65		± 0.7		± 0.7		± 0.7		± 0.73	
Coefficient of Variation	0.17		0.19		0.17		0.18		0.19	

*External information, **Relationship with research centers, ***Knowledge, ****Business relationship

Source: own elaboration

Learning Capacity (CDAp)

69.1% of respondents recognize the presence of this ability in senior management. However, the subdimension of knowledge assimilation obtained a regular rating, which shows difficulties in the effective transfer of knowledge to practice. This finding highlights the need to strengthen the integration of learning in institutional management.

Table 5. Frequency, Dynamic Learning Capacity and subdimensions

	Learning CD		*GC		**EC		AC	
	f	%	f	%	f	%	f	%
Strongly disagree	0	0%	1	1%	1	1%	1	1%
Disagree	6	8,8%	6	9%	4	6%	12	18%
Neither agree nor disagree	15	22,1%	16	24%	18	26%	14	21%
I agree	37	54,4%	36	53%	29	43%	35	51%
Totally agree	10	14,7%	9	13%	16	24%	6	9%

Category	Moderate	Moderate	Moderate	Regular
Arithmetic mean	3.57	3.6	3.63	3.38
Deviation	±0.67	±0.47	±0.48	±0.62
Coefficient of Variation	0.19	0.19	0.19	0.23

*Generation of knowledge, **Exploitation of knowledge, ***Assimilation of knowledge

Source: own elaboration

Innovation Capacity (CDIn)

Innovation was the dimension with the lowest score, with an average score of 3.35 and a high dispersion in the responses (coefficient variation of 21%). The lack of consensus around innovation suggests a need to strengthen this capacity through training strategies, incentives, and collaboration between teams.

Table 6. Frequency Dynamic Innovation Capacity and subdimensions

	CD Innovation		R		To		G		C	
	F	%	f	%	f	%	f	%	f	%
Innovation										
Strongly disagree	0	0%	2	3%	1	1%	0	0%	0	0%
Disagree	12	17,6%	14	21%	13	19%	12	18%	14	21%
Neither agree nor disagree	20	29,4%	16	24%	18	26%	25	37%	17	25%
I agree	31	45,6%	30	44%	28	41%	29	43%	33	49%
Totally agree	5	7,40%	6	9%	8	12%	2	3%	4	6%
Category	<i>Regular</i>		<i>Regular</i>		<i>Regular</i>		<i>Regular</i>		<i>Regular</i>	
Arithmetic mean	3.35		3.35		3.34		3.35		3.4	
Deviation	±0.69		±1		±0.77		±0.66		±0.88	
Coefficient of Variation	0.21		0.3		0.23		0.2		0.26	

*Radical innovation, **Architectural innovation, ***Gradual innovation, ***Conceptual innovation

Source: own elaboration

Adaptive Capacity (CDAd)

The highest proportion of neutral responses (36.8%) was recorded, which suggests uncertainty regarding the application of adaptive strategies in the institution. Despite this, the CDAd was placed in the moderate category (mean of 3.54), indicating that senior management possesses a certain degree of organizational flexibility.

Table 7. Frequency, Dynamic Adaptive Capacity and Subdimensions

	CD Adaptation		*EO		**EOGC		CE		AC	
	f	%	f	%	f	%	f	%	f	%
Adaptation										
Strongly disagree	0	0, %	0	0%	0	0%	0	0%	0	0%
Disagree	6	8,8%	10	15%	12	18%	13	19%	6	9%
Neither agree nor disagree	25	36,8%	16	24%	12	18%	16	24%	25	37%

I agree	29	42,6%	36	53%	38	56%	32	47%	30	44%
Totally agree	8	11,8%	6	9%	6	9%	7	10%	7	10%
Category	<i>Moderate</i>		<i>Moderate</i>		<i>Moderate</i>		<i>Moderate</i>		<i>Moderate</i>	
Arithmetic mean	3.54		3.56		3.56		3.49		3.54	
Deviation	±0.69		±0.85		±0.89		±0.92		±0.69	
Coefficient of Variation	0.19		0.24		0.25		0.26		0.19	

*Organizational structure, ** Organizational structure and corporate governance, ***Ability to evolve, **** Ability to adapt

Source: own elaboration

Business Performance (DE)

The analysis of business performance revealed a moderate overall assessment, with differences in the subdimensions evaluated. While the internal process and open systems models scored relatively high (3.74 and 3.79, respectively), human resource management (HR) was classified as fair, with a mean of 3.15. Staff turnover and motivation were identified as critical areas for improvement.

The results also show a significant correlation between DC and ED. The Chi-square independence test yielded p-values less than 0.01 in all dynamic capacities, indicating that these are not independent of business performance.

Table 8. *Frequency of Business Performance at the University of Sucre*

	Performance		Internal Proc		Open System		Rational System		HR	
	f	%	f	%	f	%	f	%	f	%
Strongly disagree	0	0%	2	3%	1	1%	1	1%	3	4%
Disagree	7	10,3%	5	7%	5	7%	9	13%	13	19%
Neither agree nor disagree	20	29,4%	11	16%	12	18%	25	37%	30	44%
I agree	31	45,6%	30	44%	26	38%	22	32%	16	24%
Totally agree	10	14,7%	20	29%	24	35%	11	16%	6	9%
Category	<i>Moderate</i>		<i>Moderate</i>		<i>Moderate</i>		<i>Moderate</i>		<i>Regular</i>	
Arithmetic mean	3.53		3.74		3.79		3.46		3.15	
Deviation	0.71		0.83		0.82		0.78		0.84	
Coefficient of variation	0.2		0.22		0.22		0.22		0.27	

*Internal Process Model, ** Open System Model, ***Rational System Model, ****Human Resources Model
Source: own elaboration

Independence test and Spearman's correlation coefficient

On the other hand, it is observed that the P-value is 0.001, less than 0.05, which gives us a statistical significance with respect to the hypotheses raised, therefore, H_0 is rejected and H_1 is accepted, indicating that there is an association between DC and ED in the University.

Table 9. *Business Performance and Dynamic Capacity Hypothesis*

Variables	Business Performance	
	P value	Independence Test Criteria
Dynamic Capability	p <0.01	The null hypothesis H_0 is rejected
CD absorption	p <0.01	The null hypothesis H_0 is rejected
Learning CD	p <0.01	The null hypothesis H_0 is rejected
CD Innovation	p <0.01	The null hypothesis H_0 is rejected
CD adaptation	p <0.01	The null hypothesis H_0 is rejected

Source: own elaboration

Likewise, Spearman's correlation (0.71) shows a moderate positive relationship between both variables.

Table 10. *Correlation, Spearman's Rho*

Spearman's Rho Correlations

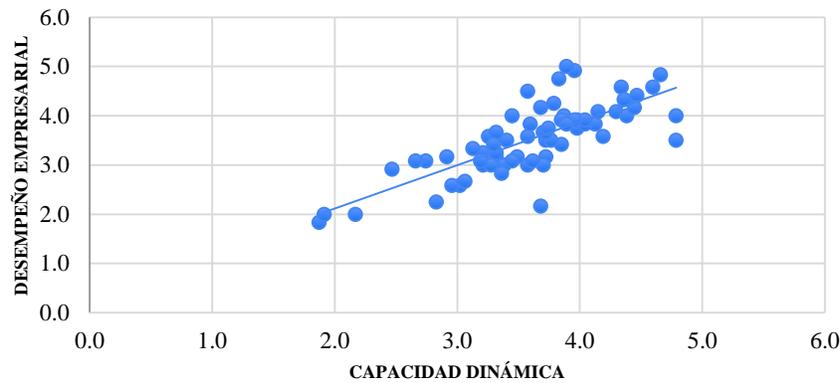
	CD*	CDAB**	CDAP***	CDIN****	QTY*****	
Spearman's Rho	OF*	0,71	0,57	0,71	0,60	0,74

DE Business Performance CD*Dynamic CDAB Capacity Dynamic Absorption Capacity**CDAP***
Dynamic Learning Capacity CDIN Dynamic Innovation Capacity****CDAD Dynamic Adaptation
Capacity*****

Source: own elaboration

Figure 1 shows the dispersion of points of the DC and SD variables, where it is observed that there is no evident distance between them, in the same way, it is observed that all of them follow an ascending linear behavior, which helps to corroborate the direct and significant correlation.

Figure 1. *Point Scatter Diagram Variable Dynamic Capabilities and Variable Business Performance*



Comparative matrix vs Jaccard similarity coefficient

In the qualitative analysis, applying a comparative matrix, similarities were identified regarding the perception of dynamic capacities (DC).

Regarding the Absorption Capacity (CDA_b), the directors recognized the existence of a certain level of collaboration with the academic and productive sector, although they pointed out opportunities to strengthen these links. The need to establish strategic alliances in applied research and economic development projects was highlighted. In addition, it was evident that the university has mechanisms to identify opportunities and threats in its environment, which reflects a focus on risk management and adaptation to changes in the education sector.

In relation to the Learning Capacity (CDA_p), it was identified that the management has skills in the creation and assimilation of knowledge, which is reflected in the training of personnel and institutional accreditation. However, there were differences in the perception of the degree of appropriation of these tools, with some managers expressing the need to strengthen knowledge management within the university.

The responses regarding Innovation Capacity (CDA_i) indicate that senior management has innovative competencies and focuses on optimizing processes and obtaining new resources. Areas in which further development is required were identified, such as innovation in the provision of educational services, social projection and institutional management. The need to strengthen strategies that promote the application of innovation in these areas was highlighted.

It was determined around Adaptability (CDAd), that the university has shown some flexibility to adjust to changes in its environment, although the need to modify its organizational structure to face new challenges was identified. It was noted that the hierarchical structure has remained without significant changes for an extended period, so adjustments are required to allow for greater adaptability and operational efficiency.

The Business Performance analysis showed moderate compliance in terms of organizational management. Opportunities for improvement in internal coordination, academic community satisfaction, and optimization of administrative processes were identified. In addition, the need to strengthen staff motivation was highlighted, which would contribute to improving job stability and efficiency in institutional management.

Analysis of Similarities in Perceptions

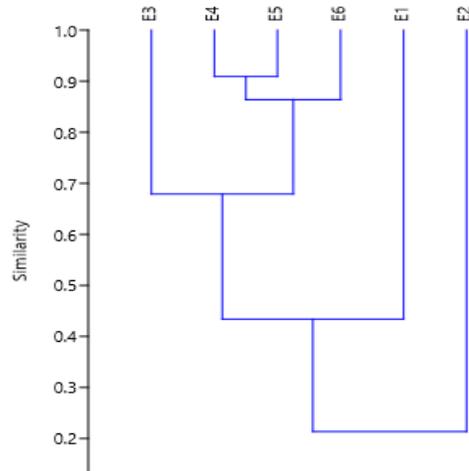
The application of the Jaccard coefficient allowed us to identify patterns of similarity in the responses of the managers. A high level of agreement was observed among some participants, which may indicate a shared view on DCs. However, differences were also evident in the perception of other managers, which suggests the existence of different interpretations of the institutional reality.

The results showed a high similarity in responses among some managers (e.g., E4 and E5, and E5 and E6, see Figure 5). This could indicate a general agreement in their perceptions of dynamic capabilities. However, it could also suggest the presence of bias or a possible lack of knowledge of the subject on the part of these managers.

On the other hand, the responses of E1 and E2 showed a relatively more distant similarity, indicating differences in their perceptions. According to this analysis, these responses were closer to the institutional reality. This suggests that while some managers may have similar (and possibly incorrect) perceptions about dynamic capabilities, there are others whose perceptions are more aligned with institutional reality.

Importantly, the Jaccard coefficient is only a measure of similarity and cannot determine the accuracy or validity of the answers. Therefore, although the results provide valuable information on the perceptions of managers, the researchers' knowledge about the conceptualization of DC and the institutional reality was crucial.

Finally, this study offers an interesting insight into managers' perceptions of dynamic capabilities. However, the findings underscore the need for greater awareness and understanding of the issue among them to ensure that their perceptions are aligned with institutional reality.



Source: E*: Experts

The lines of action proposed for the University of Sucre to obtain superior business results must tend to be implemented actions aimed at the application of the MIPG, prioritizing the following elements:

- Involve elements of strategic planning and direction, considering their mission prospectively in accordance with their medium and long-term goals.
- Evaluate business performance indicators to verify their effectiveness.
- Design the strategic plan established in the human talent management policy, to strengthen the incentive system for administrative and teaching staff and career programs.
- Strengthen the internal information system to support mission processes and quality assurance in such a way as to recognize achievements, results, and impacts and the implementation of the suggestions made in the self-evaluation, peer evaluation, and recommendations of the CNA with the aim of strengthening continuous improvement.

Discussion

The findings of the research show that dynamic capabilities (DC) have a significant impact on business performance (DE) of the University of Sucre, confirming what Teece, Pisano and Shuen (1997) postulated, emphasizing that the ability of organizations to adapt and transform is key to maintaining sustainable competitive advantages. The moderate positive correlation identified between DC and ED suggests that higher education institutions can

improve their performance through the strengthening of strategic skills such as absorption, learning, innovation, and adaptation (Wang & Ahmed, 2007).

In specific terms, it was identified that the absorptive capacity is the most developed in the university, which agrees with Cohen and Levinthal (1990), who argue that the ability to acquire and apply external knowledge facilitates innovation and competitiveness. However, innovation capacity obtained the lowest score, evidencing the need to strengthen creative processes and the generation of new services, which is consistent with Garzón (2017), who points out that innovation is essential for institutional sustainability.

On the other hand, leadership and human talent management emerged as determining factors in the relationship between CD and ED. While some studies underscore the importance of participatory leadership in strategic decision-making (Zapata & Mirabal, 2018), the results suggest that there are gaps in the alignment between the perception of employees and managers, which could limit the effectiveness of organizational management. Likewise, it was identified that staff turnover and low motivation are challenges in human resource management, which coincides with Peña Rivas and Villón Perero (2018), who emphasize that job satisfaction has a direct impact on productivity and talent retention.

From the methodological perspective, the triangulation of data made it possible to contrast the perceptions of senior management and employees, reinforcing the validity of the results and aligning themselves with Denzin (1978) and Morse (1991), who highlight the importance of combining qualitative and quantitative approaches to obtain a more complete picture of the phenomenon studied. In this sense, differences in the perception of infrastructure and knowledge management reflect the need for more effective organizational communication strategies (García-Morales & Martín-Rojas, 2020).

In summary, the results show that DCs have an impact on institutional competitiveness, but their development is uneven in the university. It is recommended to strengthen the capacity for innovation and improve the motivation of staff through training strategies, incentives and participation in decision-making, which would make it possible to close the gaps identified and consolidate a management model based on learning and continuous improvement.

Conclusions

The present study confirms the positive relationship between dynamic capabilities and business performance at the University of Sucre, highlighting the importance of these capabilities for organizational sustainability. The empirical evidence obtained shows that the

strengthening of the DCs of absorption, learning, adaptation and innovation favors institutional efficiency and competitiveness.

It was identified that the absorptive capacity is the best developed component, which facilitates the integration of external knowledge into organizational processes. However, the capacity for innovation has a lower level of development, which suggests the need to implement strategies that promote creativity and internal entrepreneurship to enhance institutional differentiation and value generation.

Leadership and human talent management emerge as key elements for the optimization of business performance. Staff turnover and lack of incentives were identified as limitations in organizational management, which highlights the importance of designing strategies aimed at strengthening motivation and retention of human capital. In this sense, the implementation of professional development policies and recognition programs that encourage employee participation is recommended.

The triangulation of the data allowed us to obtain a comprehensive view of the phenomenon studied, validating the need for a mixed approach to analyze the complexity of organizational interactions. Discrepancies in the perception of organizational culture between senior management and employees were identified, highlighting the importance of strengthening internal communication and strategic alignment to improve institutional coherence.

The findings of this study provide an essential framework for university management, highlighting the importance of dynamic capabilities in strategic planning and institutional performance. There is evidence of a positive relationship between these capacities and the competitiveness of the university, which underlines the need to strengthen the competencies of senior management in this area. However, opportunities for improvement are identified, especially in the capacity for innovation, which is undervalued and requires more effective strategies to stimulate creativity and the implementation of novel solutions. Likewise, organizational adaptation needs greater clarity in its application to respond more efficiently to changes in the environment.

The development of human talent emerges as a critical factor, with a significant impact on business performance. The implementation of strategies that promote staff motivation and reduce turnover is essential to consolidate a more efficient and resilient organizational structure. In addition, the alignment between qualitative and quantitative findings reinforces the need to design evidence-based strategies, ensuring informed and effective decision-making.

Given the above, it is recommended to deepen future research on the implementation of innovation and adaptation strategies in the university environment, with the aim of consolidating more flexible management models aligned with the dynamics of the competitive environment. Likewise, it is crucial to strengthen training and awareness in knowledge management, innovation and organizational adaptation to promote a more efficient structure oriented towards continuous improvement.

References

- Acosta Prado, J. C., Garzón Castrillón, M. A., Barrios Hernández, K., Olivero Vega, E., Mendoza Guerra, J. M., Díaz Alonso, R. C., ... & Chivetta Dovalés, L. E. (2017). *Dynamic Capacities: Theoretical Developments and Empirical Evidence*. (Eds) Simón Bolívar University Editions. <https://hdl.handle.net/20.500.12442/8338>
- Argote, L., McEvily, B., & Reagans, R. (2003). Managing knowledge in organizations: An integrative framework and review of emerging themes. *Management science*, 49(4), 571-582.
- Augier, M., & Teece, D. J. (2007). Dynamic capabilities and multinational enterprise: Penrosean insights and omissions. *Management International Review*, 47(2), 175-192. <https://doi.org/10.1007/s11575-007-0010-8>
- Barrios-Hernández, K. D. C., Olivero-Vega, E., & Figueroa-Saumet, B. (2020). Human talent management conditions that favor the development of dynamic capabilities. *Information technology*, 31(2), 55-62.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative science quarterly*, 35(1), 128-152.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities. What are they? *Journal of Strategic Management*, 21(10/11), 1105-1121.
- Escandón, M., Rodríguez, A., Hernández, M. (July-December 2013). The importance of dynamic capabilities in Colombian born global companies. *Bogotá (Colombia)*, 26 (47): 141-163.
- Ferrer, T., & Guizarro, M. (2007). Senior University Management. *Revista venezolana de Gerencia*, 12(38), 218-228.
- Garzón Castrillón, M. A., (2017). The development of dynamic capacities. In *Dynamic Capacities: Theoretical Developments and Empirical Evidence* (Eds) Ediciones Universidad Simón Bolívar. <https://hdl.handle.net/20.500.12442/8338>
- Garzón, M.A. (2015). Dynamic capabilities model. *Revista Dimensión Empresarial*, 13 (1), 111-131.
- Kerlinger, F. N., & Lee, H. B. (2002). *Behavioral Research* (L. E. Pineda & I. Mora, Trans.). Mexico City.

- Peteraf, M., Di Stefano, G., & Verona, G. (2013). The elephant in the room of dynamic capabilities: Bringing two diverging conversations together. *Strategic management journal*, 34(12), 1389-1410.
- Polanyi, M. (1967). The growth of science in society. *Minerva*, 533-545.
- San Nicolás, A., & del Castillo, M. (2020). EFQM 2020 Model: Towards Excellence and Beyond... *Journal of Healthcare Quality Research*, 35(1), 1-3.
- Sánchez Peñafior, S., & Herrera Avilés, M. (2016). Human resources under the approach of the theory of resources and capabilities. *Journal of the Faculty of Economic Sciences: Research and Reflection*, 24(2), 133-146.
- Teece, D. J. (2012). Dynamic capabilities: Routines versus entrepreneurial action. *Journal of management studies*, 49(8), 1395-1401. <https://doi.org/10.1111/j.1467-6486.2012.01080.x>
- Teece, D. J. (2014). The foundations of enterprise performance: Dynamic and ordinary capabilities in an (economic) theory of firms. *Academy of management perspectives*, 28(4), 328-352.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 18(7), 509-533.
- Wang, C. L., & Ahmed, P. K. (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews*, 9(1), 31-51. <https://doi.org/10.1111/j.1468-2370.2007.00201.x>
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic management journal*, 5(2), 171-180.
- Zahra, S. & George, G. (2002). Absorptive capacity: revision, reconceptualization and expansion. *Academy of Management Review* . 27 (2), 185-203
- Zapata Rotundo, G. J., & Mirabal Martínez, A. (2018). Dynamic capacities of the organization: review of the literature and a proposed model. *Administrative Investigation*, 47(121), 0-0.
- Zollo, M. & Winter, S. (2002). Deliberate learning and evolution of dynamic capacities. *Organizational Science*, 13(3), 339-351
- Easterby-Smith, M., & Prieto, I. M. (2008). Dynamic capabilities and knowledge management: an integrative role for learning?. *British journal of management*, 19(3), 235-249.
- Sánchez, M. P. R., Paparella, L. E. S., & Rotundo, G. J. Z. (2022). Theory of Dynamic Capabilities: Contributions and Evolution from the works of David Teece. *Compendium*, 25(48).

- González Molano, C., & Martínez Campo, J. L. (2014). Strategic Management and Business Innovation: Conceptual References. *Business Dimension*, 12(2), 107-116.
- Helfat, C. (1997). Technical Knowledge and Asset Complementarity and Dynamic Capacity Accumulation: The Case for R+D. *Journal of Strategic Management*, 18(5), 339-360
- Davies, A., & Brady, T. (2016). Explicating the dynamics of project capabilities. *International journal of project management*, 34(2), 314-327.