

Dynamic capabilities in the tourist companies of the Colombian Caribbean Coast: Case of Cartagena de Indias

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Abstract

Purpose: This article aims to characterize factors of dynamic capabilities and analyze the relationship between them. The case study is particularized for the tourism sector.

Design/methodology: This study has a quantitative approach. Data collection was carried out through a questionnaire applied to a sample of 136 tourism companies on the Colombian Caribbean Coast, specifically in Cartagena de Indias. For the explanation and interpretation of the information collected, multivariate factorial analysis and the Chi-square association test were used.

Findings: This research reveals the association and identification of the dynamic capabilities of innovation, adaptation and absorption with the positive behavior of companies in the tourism sector of the Colombian Caribbean (Cartagena de Indias), thus becoming sources for the optimization of strategic actions that make it possible to take advantage of opportunities and mitigate threats from the dynamic environment. In addition, if these capabilities are combined with each other, they become platforms for the development of new competitive advantages, giving rise to a new dynamic capability: the systemic one.

Research limitations/implications: The study only covers companies in a specific sector and geographic location. Future studies should extend the analysis to their industries and territories.

Practical implications: From a management perspective, it is suggested that those responsible for making decisions in tourism companies articulately implement dynamic capabilities for the development of competitive advantages and the use of their resources.

Originality/value: One of the main contributions of the research is the identification of the systemic capacity for the academic literature of the dynamic capabilities.

Keywords: Absorption, Adaptation, Systemic, Innovation

Jel Codes: L10, M10

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1. Introduction

The origin of the conceptual foundation and development of dynamic capabilities dates back to the ideas put forward by the theory of resources and capabilities initiated by Penrose (1959). After that Grant (1991) proposed that the resource-based theory is generated thanks to the heterogeneity of resources, i.e., organizations have different resource portfolios, which become guarantors of the variability of financial profit among the different companies. Along these lines, the theory of resources and capabilities arises from a set of well-recognized perspectives within the framework of the organization theory: resource-supported vision, knowledge-supported approach, and absorptive and dynamic capabilities (Zapata & Mirabal, 2018). This study focuses on the latter.

These tangible and intangible resources enable the creation of business value strategies (Dess et al., 2011), as well as to originate and preserve competitive advantages based on knowledge, technological developments, competitiveness, productivity, complementary assets, and dynamic capabilities (Porter, 1980; Dess et al., 2011). However, there are different conceptualizations of dynamic capabilities, although theoretical approaches converge in analyzing them as organizational capabilities that allow for the reconfiguration of competencies, skills, and organizational actions in line with the changes stemming from dynamic markets.

Consequently, when markets are highly dynamic, dynamic capabilities must necessarily rely at least on historical knowledge and focus on developing new knowledge in order to promote innovation that will determine the business direction (Eisenhardt & Martin, 2000) toward the achievement of sustainable competitive advantages. This scenario is framed within the existence of a changing environment, shaped by an accelerated technological pace, where the demands of customers are increasingly greater (enlightened consumers). This means that humanity is faced with the challenge of building new sustainable organizational ecosystems that are more intelligent, dynamic, and flexible, attentive to the new and unpredictable rules set by the market, where business differentiation is expressed through the experiences offered by organizations to their customers (Lapicki & Terlato, 2021).

As a consequence, the business scenario is aimed at generating innovative services to attract, retain, and build customer loyalty, so as to establish sustainable relationships that will create long-term competitive advantages (Colgate & Danaher, 2000). Thus, Teece, Pisano and Shuen (1997) proposed that dynamic capabilities constitute the abilities of companies to integrate, build, and reconfigure their internal and external competencies to adapt to rapidly changing environments. Therefore, they reflect the organizational ability to achieve new and innovative forms of competitive advantage, based on value creation strategies.

To this end, resources must have certain qualities, such as being scarce, valuable, unique, and irreplaceable, as well as being tenacious to imitation attempts by competing companies (Barney, 1991; Nelson, 1991; Peteraf, 1993). Thus, to be successful in the market, companies must provide attractive and differentiating services better than those offered by their competitors. For the case under study, organizations, specifically tourism companies, must possess a set of new dynamic capabilities for the market that contribute to the achievement of competitive advantages by generating added value in their services.

A dynamic context requires organizations to build and develop capabilities that change alongside the environment, seeking differentiation, which is becoming increasingly difficult and expanding their strategic actions to improve their services in a market with greater demands, made up of consumers with differentiated needs and expectations (Aguiló & Alegre, 2004). All these scenarios make companies, and specifically those in the tourism sector, propagate a change of strategies in favor of the development of dynamic capabilities deemed a prompt reaction to the changes and demands of the environment.

In their study, Claver, Molina and Pereira (2006) emphasize that the tourism sector has an important scope for the economic community, since it is an industry that creates employment, wealth, and income. It is also the main leisure activity of the present century. It is also believed to be a key source of income for Colombia, as a result of the exchange of tourism products. The growth of the tourism sector has allowed the country to obtain significant foreign currency income or money from tourists, both national and international, which contributes to boost the sector, the economy, and social development (Arena, 2009).

This is especially the case of tourism in the Historical Centers of the cities of Colombia due to the residential, commercial, financial, cultural, and religious features that make them one of the major attractions for visitors, who feel and live a cultural mix between Colombians and themselves. Cities such as Cartagena, Bogota, Medellin, and Cali, are projected to become foreign investment cradles (direct foreign investment in non-mining energy sectors for 2019 was USD 6,899 million), promoting the construction of five-star hotel chains, an accelerated internationalization, and the improvement of business management, with the aim of responding to market demands.

Although this boom in the sector is largely due to the work of the Government of Colombia to promote the country as an international tourist destination under standards of quality and sustainability, the tourism industry in Colombia still requires appropriate public policies to address the direction of the sector, competitiveness, and the organization of agents aiming at: greater regulation of public areas (mainly beaches), increased surveillance in relation to the high costs of the hotel sector, optimize public safety, facilitate and improve access road infrastructure, promote business cooperation in the sector, effectively manage environmental policies, among others (Mendoza, 2012).

Similarly, the tourism industry deserves the recognition of its dynamic capabilities because they establish a relationship between the resources and capabilities used for the dynamic introduction in the markets, with greatly changing environments such as tourism, marked by the organizational need to renew its competencies to achieve coherence that will adjust to the environment (Garzón, 2015).

Another important aspect to highlight is the sensitivity of the dynamic aspect of the tourism market, as it constitutes an essential factor for its renewal and improvement (Theory of dynamic capabilities, Teece et al., 1997). Considering that organizations design strategies and seek to generate value in their tourism products through dynamic capabilities, the following question arises: If it is considered that organizations develop strategic plans that seek to generate differentiation in their tourism services through the support of their business capabilities, what are the factors associated with dynamic capabilities that contribute to the processes of tourism companies on the Colombian Caribbean Coast, in the case of Cartagena de Indias?

In this regard, Gutiérrez (2013) conducted a research work with 100 companies making up the Candelaria tourism network in Bogota/Colombia. The author found that the operations and economic activities developed by the companies are directly impacted by the presence of the dynamic capabilities of innovation, adaptation, and absorption, thus identifying a greater influence of the dynamic capabilities of innovation and adaptation. The results of this research help support the following hypothesis: Tourism companies of the Colombian Caribbean Coast (Cartagena case) generate and integrate dynamic capabilities to face the challenges of volatile markets.

Therefore, the purpose of this work is to characterize factors associated with dynamic capabilities in a sample of 136 companies of the Colombian Caribbean Coast, as well as to analyze the relationship between absorptive, innovative, and adaptive capabilities and the tourism developments of companies. The dynamic capabilities theoretical model that is presented is an added value of the study and the model is based on the articulation of adaptation, absorption, and innovation capabilities, resulting in systemic thinking (systemic capability) framed in the development of strategies, competitive advantages, value proposition, and differentiation of the products offered in service portfolios.

2. Theoretical considerations

2.1. Dynamic capabilities

The word “dynamic” refers to renewing capabilities and being coherent regarding changes in the environment, while “capability” was introduced by Barney (1991), Barney, Ketchen and Wright (2011), and Wernerfelt (1984), who highlights the significant role of strategic management in adapting, integrating, and re-configuring organizational competencies both internally and externally, based on the theory of resources and capabilities.

Teece et al. (1997) describe “dynamic capabilities” as a subset of competencies or skills that enable companies to develop new products and processes, to respond to changing market situations. For Eisenhardt and Martin (2000), dynamic capabilities are rooted in organizational and strategic processes such as product development, decision making, alliances, among others, through the management of resources in order to design strategies that promote added value.

According to Zahra and George (2002), dynamic capabilities provide companies with a mechanism for the reconfiguration of their resources and adaptability to dynamic environments aimed at achieving competitive advantages. For Helfat and Raubitschek (2003), cited by Gutiérrez (2013, p. 75), dynamic capabilities are the “ability of companies to innovate and adapt to changes in technologies and markets, including the ability to learn from mistakes.” For Acevedo and Albornoz (2019), dynamic capabilities constitute strategic activities aimed at fostering the competitiveness of companies in changing environments. In general, two large groups can be found in terms of dynamic capabilities: one that is based on skills or abilities, led by Teece; and another, led by Nelson and Winter (1982) that considers them as routines or processes (Eisenhardt & Martin, 2000; Helfat et al., 2007; Winter, 2003; Lavie, 2006).

Taking into account the literature review, two theoretical perspectives are determined, those of routines or processes and those of skills or abilities. Thus, the dynamic capabilities of this study and of the referenced theoretical model are shown below, which were determined after a conjugation and relation process to create four dynamic capabilities: absorption, innovation, adaptation, and systemic.

2.1.1. Absorption dynamic capability

The pioneers of the definition of absorption dynamic capability were Cohen and Levinthal (1990), who conceived it as an internal component of organizations, which analyzes the different factors of internal and external knowledge, setting the amount of external knowledge that companies manage to own according to the current knowledge (Garzón, 2015). Likewise, absorption capability is deemed an essential pillar to create dynamic capabilities in many economic sectors (Zahra & George, 2002), due to the influence they exert on the fundamental purpose and sustainable competitive advantages of a given industry.

Zahra and George (2002), in turn, introduced four (4) complementary aspects to the theoretical foundation of absorption dynamic capability—acquisition, assimilation, transformation, and exploitation of knowledge. These aspects respond to the need for companies to identify and acquire external knowledge that enables its interpretation, processing, and exploitation; combining it with organizational procedures, competencies, and routines to optimize the functions and management of innovation in organizations.

According to Garzón (2015), absorption capability is the business ability to identify, assimilate, and exploit knowledge produced in the environment. Thus, it becomes an organizational skill favoring the recognition of the value of new information coming from outside in order to include it in the structural processes of organizations.

Along the same lines, Garzón (2016) concludes that absorption dynamic capability refers to the competence of an organization to recognize, locate, and acquire critical knowledge for its actions from external sources. Therefore, companies must have certain tacit knowledge shared with new knowledge, and different knowledge enabling effectiveness and creativity when using new knowledge as elements for continuous control and analysis of the environment in order to identify opportunities and threats in it. In addition, absorption dynamic capability contributes to the improvement of innovation results and organizational learning processes that result in obtaining competitive advantages through the recognition and acquisition of external knowledge for its

subsequent integration and transformation in companies' structural functions and processes (Zapata & Hernandez, 2018). This capability is closely related to the ability to understand the external environment and make sense of it, which was called "sensing" by Teece (2009) and is also related to exploration (March, 1991; Håkansson, Eskildsen, Argote, Mønster, Burton & Obel, 2016).

2.1.2. Innovation dynamic capability

Camisón and Villar (2014) stated that the ability to innovate products is based on the skill to develop both new and improved products and insert them into the market, and Mendoza (2017) considers that this ability is made up of two major skills—imagination and will. Imagination brings creativity, and constitutes the action factor. But innovation involves implementing routines in organizations that help configure a larger portfolio and for product design to be eco-friendly. Likewise, Camisón and Villar (2014) stated that process innovation is characterized by the entrepreneurial capacity to absorb key technologies and the ability to implement actions that minimize operation costs within the framework of efficiency and environmental protection.

Thus, process innovation—the characterization of less-explored markets, the discovery of supply chains, and the boost and improvement of new organizational routines—through the meshing of strategies (Wang & Ahmed, 2004; Garzón, 2015) influence the dynamism and productivity of factors in the long term, increasing the welfare of stakeholders (Petit & Teece, 2021).

In addition to the above, Wang and Ahmed (2007) emphasized that in the manufacture of new products and process innovation; strategic management must be aligned with all the administrative and productive structures of companies. Therefore, innovation capability explains the existing relationship between organizational resources and capabilities, which can be seen in the portfolio of new products seeking to meet the expectations and ongoing demands of highly dynamic markets through the efficient allocation and use of resources, which allows taking advantage of the opportunities that the market offers, focusing on a successful vision (Sánchez, Cervantes & Peralta, 2016) focused on the customer.

2.1.3. Adaptation dynamic capability

Burnard, Bhamra and Tsinopoulos (2018) stated that the adaptation dynamic capability is the one that organizations use to respond to the different situations of the changing environment and is subject to companies' ability to change, learn, and reconfigure their resources in order to assertively act according to the dynamics of the environment by developing and applying new knowledge. Adaptation dynamic capability significantly contributed to the optimization of resources within companies, so that they can cope with known and current changes brought about by challenging work scenarios. Also, this capability serves as a guide for organizations in the process of generating adequate structural strategies (Garzón, 2018).

Therefore, adaptation lies on the idea of seizing opportunities coming from the dynamic market, making organizations to activate their strategies and competencies to reconfigure their resources and processes in the interest of ensuring survival in the environment and maximizing their economic profits (Teece et al., 1997; Wang & Ahmed, 2007; Teece, 2007; Garzón, 2015, Polo García, De-Pablos-Heredero & Blanco Jiménez, 2020). If companies have an optimal adaptation dynamic capability, this automatically contributes to the development of other dynamic capabilities and helps assimilation and appropriation of new knowledge by organizations in dynamic environments to become a source of sustainable competitive advantages (Teece et al., 1997; Teece, 2000) and a useful mechanism for the adaptation of companies to the new conditions imposed by the environment (Eichholz, 2014; König, Graf-Vlachy & Schöberl, 2021; Koronis & Ponis, 2018; Mendoza & Monsalve, 2021).

2.1.4. Systemic dynamic capability

The concept of systemic thinking is determined as a primary space for building organizations that bring together the other disciplines: shared vision, mental models, team learning, and personal mastery to achieve their potential (Senge, 1990) in a logical association of learning, theory, and experience.

Consequently, each discipline is a portion that converges into a whole. Senge (1990) proposed that “by emphasizing each of the other disciplines, systemic thinking continually reminds us that the whole can exceed the sum of the parts” (p. 6). Thus, a system is thought of as a whole and, therefore, it cannot be separated into parts independent of each other, since its internal properties would be wasted. This premise supports the understanding of the role of management as the management of interconnection between the sums of the parts of the system (Ackoff, 2002).

In this regard, Tejada and Peña (2009) conceive integrated management as the harmonizing element between the external and internal environment with the purpose of forging transparency in the management and coordination of companies including sustainable actions in favor of the environment, corporate social responsibility, and stakeholders. The systemic structure in companies conceives the connection between the parts that integrate it, as the relationship of all with all for the achievement of a common goal. However, the lack of cohesion between the parts could lead to the unavoidable and premature failure of companies. Therefore, the improvement of functions in organizations depends largely on their systemic operations and thinking. These factors help identify complex problems and improve the coordination of effective strategies when faced with external situations (Herrscher, 2010).

In addition, systemic thinking favors organizations because it effectively impacts process optimization, goals' achievement, and creative and comprehensive planning that enables them to anticipate the transformations of the environment, relying on the cooperation of all stakeholders who contribute to systemic solutions resulting from administrative problems (García and Alvarado, 2017) for the collective benefit, thus converging in full system performance.

2.2. Model proposed

A theoretical model of dynamic capabilities is proposed (see Figure 1) showing the articulations and relationships of the elements of dynamic capability models expressed in the core constructs (see theoretical considerations): adaptation, innovation, absorption, and the emergence of systemic capability. These capabilities are usually found in the organizational routines and strategic processes of tourism companies, which make them necessary to face dynamic and competitive environments, and in turn, when combined, they enable companies to develop circular strategies aimed at creating value propositions, differentiation, and competitive advantages in order to obtain enhanced financial performance.

The circular input and output flows presented in the model by means of the arrows in the direction from the environment and the companies to the dynamic capabilities, indicate how they impact on the link they have with the dynamic capabilities to respond to dynamic markets. A differentiating aspect of the model is the triggering of systemic thinking represented in the systemic capability, since organizations and their capabilities form a system.

Based on the foregoing literature review, it was determined that the proposed theoretical model can adjust to the dynamic context of tourism companies as it describes the dynamic capabilities of: adaptation, absorption, and innovation and systemic capability.

- Adaptation capability: Tourism companies in Cartagena take advantage of the opportunities that the natural and physical environment offers them; so, Cartagena (walled city) and its historic center are the leaders of the sun and beach product. Its historical and architectural heritage have positioned the city in the national and international market as an exclusive tourist destination. It has become a sustainable tourist destination and a UNESCO-declared World Heritage Site.

- Absorption capability: The acquisition and assimilation of external knowledge by tourism companies has led to the adoption of new strategies for the promotion and sale of tourism services that not only include the business context, but also the positioning of Cartagena as a touristic city.
- Innovation capability: Cartagena and its tourism companies have turned innovation and technology into fundamental factors for the development of tourism activities. Digitalization, large hotel investments, and sustainable tourism, as well as the creation of tourist communities and smart tourism have fostered a dynamic oriented toward innovation capability.
- Systemic capability: If tourism companies seek to be competitive and obtain good results, it is necessary to articulate and combine dynamic capacities, i.e., they must be seen as part of a whole or system and not segmented.

The four types of capabilities described above help companies face dynamic scenarios through the structural actions inherent to the functional business processes, employing strategies and tangible and intangible resources to develop sustainable competitive advantages that seek differentiation and value proposition of the services they offer (Meñaca, Cazallo & Medina, 2017; Barney, 1997; Miranda, 2015).

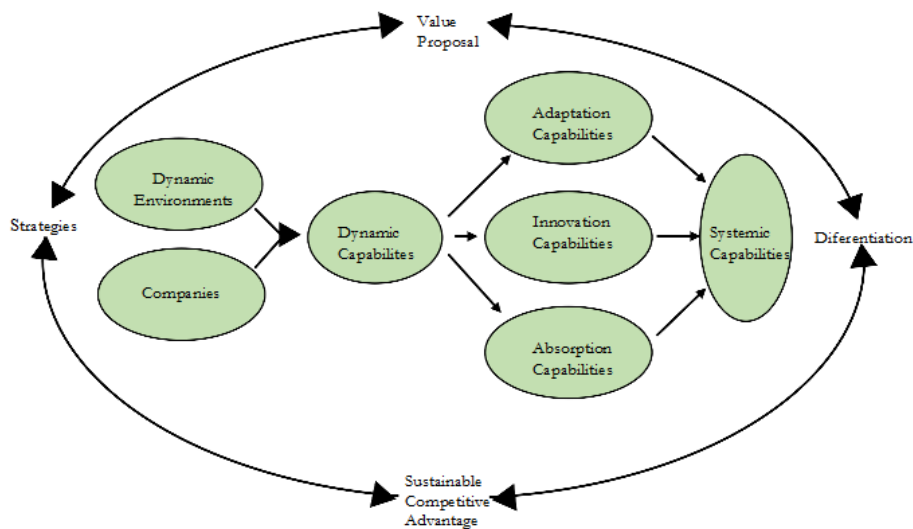


Figure 1. Theoretical model of the dynamic Capabilities of companies

3. Materials and methods

The research was based on a non-experimental and cross-sectional design. The information was collected at a single point in time in order to identify the typology of the variables and interrelation at a given time (Hurtado, 2010; Hernández, Fernández & Baptista, 2014). The statistical analysis was carried out using the SPSS statistical package version 22, using the exploratory factor analysis method to characterize factors of dynamic capabilities in the tourism sector of the Caribbean Coast in Colombia, case of Cartagena de Indias. Likewise, the Chi-square statistic (χ^2) was used with a confidence level of 95% and a significance level of 5%; processes were applied to the sample of 136 companies to analyze the relationship between the dynamic capabilities and the dynamic capabilities of the tourism sector.

3.1. Data collection

To collect the information, a questionnaire including 28 items (questions) was designed, and the construction of items (see Table 1) was based on adapting the following scales accepted in the literature on dynamic capabilities —absorption capability (scale by Flatten, Engelen, Zahra & Brettel, 2011) which includes items related to knowledge acquisition and assimilation; adaptation capability (scale proposed by Gibson and Brikshaw, 2004) which assesses how business management motivates employees to challenge organizational routines, respond to environmental challenges, and identify market opportunities; innovation capability (Akman & Yilmaz scale, 2008), which captures factors inherent to business innovation such as company competencies based on internal innovation processes, product innovation, and understanding of external factors in order to apply them in a

novel way; and systemic capability, which is based on the theory proposed by Senge (1990) on systemic thinking (fifth discipline), which permanently reminds us that the whole exceeds the sum of the parts. The scales were adapted to the Colombian Caribbean context according to the results of the pilot test previously applied, whose reliability was 0.94 (Cronbach's Alpha coefficient).

Dimensions	Components	Code	Items
Absorption	Education level of the human resource	C1	P1-P2
	Feedback on the work done	C2	P3-P4-P5
	Company interaction	C3	P6-P7
	Client feedback	C4	P8
Innovation	New tourism services	C5	P9-P10-P11
	New technological tools	C6	P12
	New market segments	C7	P13
	Value added to service offered	C8	P14-P15
Adaptation	No. Of Market Plans	C9	P16-P17-P18
	No. of strategic Alliances with the sector	C10	P19-P20
	Competition in the sector	C11	P21-P22-P23-P24-P25
	Technological variety	C12	P26-P27
Systemic (Dummy variable)	Systemic thinking integrated by capabilities (absorption, adaptation, and innovation)	C13	P28

Table 1. Dynamic Capabilities and Elements

The companies were selected taking into account that they operate in sustainable tourism destinations, according to the Sectoral Technical Standard NTS-TS-001 and the business classification established by the Chambers of Commerce of Colombia regarding companies engaged in tourism-related activities, considering the following: lodging and accommodation facilities, restaurants, bars and nightclubs, money exchange offices, travel agencies, jewelry stores, touristic transportation, and handicrafts (the latter were not included in the research, since they did not provide information). The questionnaire was applied to the managers and directors of the companies in person and printed physically (database, Chamber of Commerce of Cartagena). The implementation of the entire questionnaire took two months. The companies surveyed demanded to keep their names confidential. Table 2 shows the determination of the proportional sampling applied to the companies involved in tourism activities.

Proportional Sampling	Formula: $n_j = N_j / N * n$	Total	%
Lodging and accommodation facilities	$n_1 = 136/210*90$	58	42.6%
Restaurants	$n_2 = 136/210*40$	26	19.11%
Bars and nightclubs	$n_3 = 136/210*45$	29	21.3%
Money exchange offices	$n_4 = 136/210*15$	10	7.3%
Travel agencies	$n_5 = 136/210*6$	4	2.94%
Jewelry stores	$n_6 = 136/210*4$	2	1.47%
Touristic transportation	$n_7 = 136/210*10$	7	5.14%
Total sampling		136	100%

Table 2. Proportional sampling of companies with tourism activities

Of the total number of companies surveyed, 42.6% correspond to lodging and accommodation facilities, while only 1.47% of the firms were jewelry stores (see Table 2). The reliability of the questionnaire was assessed through the analysis of internal relevance by calculating Cronbach's Alpha coefficient, which yielded high inter-item reliability of 0.98%.

3.2. Methodology

The data collected with the implementation of the instrument were treated by means of an Exploratory factor analysis, based on the analysis of variances for standardized data, in order to validate the convergence of the variables that group in each of the five statistical factors using the SPSS V22 statistical package.

Regarding the association coefficient (the Chi-square statistic), we proceeded to calculate the expected frequencies (E) for each capacity, taking the total of rows and columns of the observed frequencies (O), and applying a simple rule of three against each observed value, thus calculating the statistic.

4. Results analysis

4.1. Factor analysis

Table 3 indicates both the averages and standard deviations for each question. The question with the highest mean was P1 with a standard deviation of 0.972, while P28 had the lowest mean with 0.73 (dummy variable).

Descriptive Statistics			
		Mean	Standard Deviation
P1	Exploits the knowledge of its human talent.	4.20	.972
P2	Takes advantage of the training capabilities of its work team.	4.14	1.055
P3	Promotes dialogue spaces with the different agents involved in the organizational processes (suppliers, customers, and employees).	3.60	1.150
P4	Gives feedback to its employees in order to inform the results of their work performance.	3.69	1.208
P5	Incentivizes employees who have collaborated with strategies for the improvement of tourism products.	3.71	1.241
P6	Holds social events that allow interactions with other companies in the tourism sector.	2.63	1.310
P7	Attends meetings with other companies in the tourism sector to share their experiences.	2.60	1.351
P8	Suggests improvements in organizational processes based on the recommendations of customers.	3.85	1.092
P9	Improves the tourism products offered.	3.82	1.229
P10	Develops new tourism products on its own initiative.	3.43	1.380
P11	Offers tourism products that are different from those offered by its competitors.	3.40	1.362
P12	Accesses new information and communication technologies.	4.03	1.011
P13	Seeks to enter a new market segment.	3.39	1.123
P14	Innovates in management processes.	3.33	1.193
P15	Creates tourism products that provide added value to customers.	3.60	1.278
P16	Carries out advertising activities aimed at promoting tourism in the domestic market.	3.79	1.330
P17	Develops advertising strategies focused on promoting tourism in the international market.	3.18	1.497
P18	Visualizes new market opportunities for the commercialization of its products.	3.66	1.130
P19	Creates strategic alliances with the different agents in the tourism sector (tourists, suppliers, other companies, clients, etc.).	3.15	1.274
P20	Creates new strategic alliances with the agents involved in the production process (suppliers or allies).	3.15	1.241
P21	Includes its tangible assets to take advantage of business opportunities.	3.90	.953
P22	Identifies opportunities offered by the external environment.	3.82	.988
P23	Imitates competitor's business activities to increase sales.	2.82	1.282
P24	Takes references from the competition in the tourism sector to adapt business processes.	2.82	1.349
P25	Imitates competition regarding the tourism products offered	2.82	1.384
P26	Takes advantage of technological advances in its functional processes.	4.10	.988
P27	Suggests the use of technological tools to address the competitiveness of the tourism sector.	4.13	.985
P28	Systemically coordinates (encompasses the whole) its dynamic capabilities.	.73	.447

Table 3. Score of the dynamic capabilities' questionnaire

Kaiser-Meyer-Olkin test for sampling adequacy		.904
Bartlett's test of sphericity	Approx. Chi-square	3100.180
	df	378
	Sig.	.000

Table 4. Kaiser–Meyer–Olkin (KMO) and Bartlett's Test

Table 4 shows Bartlett's sphericity tests and the Kaiser–Meyer–Olkin (KMO) sample adequacy test. The determinant of the correlation matrix yielded a value of zero (0), indicating that the degree of non-correlation of the variables is very high. This value is confirmed by the significance of Bartlett's test of sphericity ($P < 0.000$), which indicates that there are significant relations between the variables, thus rejecting the null hypothesis of non-correlation between variables. The KMO also yields a value of 0.904, which confirms the use of factor analysis.

Table 5 shows each of the components, their eigenvalue, and the percentage of variance explained after factor rotation. It is evident that five factors explain 72.24% of the variability of the original data, i.e., there are five eigenvalues greater than 1; therefore, five factors taken explain 72.24% of the variance of the original data (Montoya, 2007). The first factor explains 22.088% of the sample variance, the second 17.445%, the third 13.337%, the fourth 10.863%, and the fifth factor 8.507%.

Total explained variance				
Component	Extraction sums of squared loadings	Rotational sums of squared loadings		
	Accumulated %	Total	Variance %	Accumulated %
1	45.259	6.185	22.088	22.088
2	56.617	4.885	17.445	39.533
3	63.504	3.734	13.337	52.869
4	68.541	3.042	10.863	63.733
5	72.239	2.382	8.507	72.239
.
28				

Table 5. Total explained variance

After applying the Varimax rotation method with Kaiser normalization, which minimizes the number of variables with high loads in each factor, we interpreted the rotated component matrix (see Table 6) where each column is a factor and rows show the variables observed, and the coefficients that appear are the factor loads that will express the significance of the correlation between the variable and the factor. Thus, the rotated component matrix enables the interpretation of each factor. In this case, coefficients > 0.6 were selected (see gray shaded cells).

Rotated Component Matrix					
	Component				
	1	2	3	4	5
P2	.799	.184	.088	-.044	.208
P1	.774	.221	-.011	.006	.200
P5	.765	.249	.196	-.175	.005
P4	.722	.376	.266	-.034	.050
P22	.682	-.010	.254	.239	.046
P8	.680	.123	.246	-.038	.164
P21	.636	.317	.070	-.125	.227
P18	.591	.482	.307	.047	.040
P3	.587	.411	.287	-.299	.161
P14	.553	.161	.474	-.072	.160
P13	.481	.463	.427	-.072	.193
P10	.169	.827	.268	-.222	.098
P16	.310	.734	.073	-.253	.168
P17	.165	.722	.447	-.102	.158

Rotated Component Matrix					
	Component				
	1	2	3	4	5
P11	.342	.687	.333	-.164	.118
P28	.225	.652	.062	-.329	.342
P9	.416	.641	.102	-.206	.239
P15	.395	.535	.260	-.224	.336
P7	.140	.118	.870	-.025	.123
P6	.086	.237	.823	-.162	.037
P19	.373	.251	.702	.090	.260
P20	.354	.219	.638	.117	.134
P23	-.009	-.164	-.068	.912	-.044
P24	.012	-.225	.053	.892	-.068
P25	-.092	-.222	-.045	.890	.022
P26	.150	.190	.243	-.038	.831
P27	.236	.226	.181	.006	.817
P12	.503	.328	.006	-.109	.543

Table 6. Rotated Components Matrix

- Factor 1 was named **Relationship between business absorption and adaptation** because it is strongly associated with the educational level of human resources (p1, p2), feedback on work performed (p4 and p5), feedback of customers (p8), and competencies in the sector (p21 and p22).
- Factor 2 is called **Systemic, adaptation, and innovation interrelationship**, this factor is related to p28 which covers systemic thinking, marketing plans p16 and p17, and new tourism services p9, p10, and p11.
- Factor 3 was named **Absorption process and strategic adaptation** as it contains business interaction comprising p6 and p7 and strategic adaptation comprising strategic alliances with the sector represented by p19 and 20.
- Factor 4 was named **Sectoral adaptation**, which corresponds to p23, 24, and p25 and which make up competitiveness in the sector.
- Factor 5 was named **Technological adaptation**, and is strongly related to p26 and 27. These items include aspects linked to technological variety.

Based on the model established, made up of five (5) factors, it is deduced that the dynamic capabilities are interconnected as a system (Zhou & Li, 2010), where the adaptation, innovation, systemic, and absorption capabilities are interrelated and influence the business processes of the tourism sector in the 136 companies studied, contributing measures help the competitiveness of organizations in the markets.

4.2. Inferential analysis of dynamic capabilities in tourism companies

The Chi-square statistic was used to determine whether the variables under study are related to the 136 tourism companies of the Colombian Caribbean Coast under study, or if, on the contrary, they are not related. Based on Table 7, we calculated the expected frequencies (E) for each capacity, taking the total of rows and columns of the observed frequencies (O), and applying a simple rule of three to each observed value, thus, the expected frequencies were calculated (Morales 2008 cited Gutiérrez 2013).

Expected frequencies	1	2	3	4	5
Absorption	20.333	92.333	99.666	172.7	159
Innovation	20.333	92.333	99.666	172.7	159
Adaptation	20.333	92.333	99.666	172.7	159

Table 7. Expected frequencies by dynamic capacity in tourism companies

Subsequently, the Chi-square statistic was calculated (see Table 8). With a significance level of $\alpha = 0.05$ (95% reliability) and 8 degrees of freedom, a critical rejection value for the χ^2 distribution of 15.507 was obtained (see Chi-square distribution table).

Variables	O	E	O-E	(O-E) ^2	(O-E) ^2 /E
Absorption 1	27	20.333	6.667	44.449	2.186
Absorption 2	95	92.333	2.667	7.113	0.077
Absorption 3	82	99.666	-17.666	312.088	3.131
Absorption 4	155	172.7	-17.7	313.3	1.814
Absorption 5	185	159	26	676	4.252
Innovation 1	22	20.333	1.667	2.779	0.137
Innovation 2	86	92.333	-6.333	40.107	0.434
Innovation 3	95	99.666	-4.666	21.772	0.218
Innovation 4	190	172.7	17.3	299.3	1.733
Innovation 5	151	159	-8	64	0.403
Adaptation 1	12	20.333	-8.333	69.439	3.415
Adaptation 2	96	92.333	3.667	13.447	0.146
Adaptation 3	122	99.666	22.334	498.808	5.005
Adaptation 4	173	172.7	0.3	0.09	0.001
Adaptation 5	141	159	-18	324	2.038
Square-Chi Σ = 24.989					

Table 8. Contingency table to study the association between developments in tourism companies in the Colombian Caribbean and dynamic capabilities (absorption, innovation, and adaptation)

With the above data, the χ^2 value was 24.989; therefore, the null hypothesis is rejected, and there is statistical significance of a possible relationship between dynamic capabilities and the processes of tourism companies in the Colombian Caribbean to respond to dynamic markets. Similarly, systemic thinking is present in the progress of companies reflected in the systemic capacity and in the administrative structure.

If the Cramer's coefficient (v) is calculated, which varies between zero (0) and one (1), and measures the degree of association of the variables, the following result is obtained, as shown in equation (1) shown below:

$$v = \sqrt{\frac{\chi^2}{n(\min[r,c]-1)}} = 0.303 \quad (1)$$

This value indicates that there is a relatively low association of 30% between dynamic capabilities and tourism enterprises in the Colombian Caribbean.

5. Discussion

Tourism companies in the Colombian Caribbean, specifically those located in the city of Cartagena de Indias; develop the absorption, innovation, adaptation, and systemic dynamic capabilities. These constitute potential for organizations to coordinate all their competencies, thus harmonizing them in an intelligent structure to manage key resources to face difficult environments, but conceiving a holistic perspective that makes it possible to obtain sustainable competitive advantages through added value for consumers (Meñaca, 2018), also differentiating from competitors, through shared visions channeled in the development of strategies for business survival and success.

The results obtained in this study will confirm the hypothesis that companies of the Colombian Caribbean Coast develop absorption, adaptation, innovation, and systemic dynamic capabilities. The findings obtained are consistent with the referenced theoretical review, which asserts that dynamic capabilities are determining elements to adapt to environmental changes, are sources for the creation of competitive advantages, and allow the development of innovative strategies favoring the improvement of structural processes in companies. They also enable timely adjustments to dynamic changes in the tourism sector, taking advantage of and assimilating both internal and external knowledge (Rudi & Jiménez, 2020).

In this sense, dynamic capabilities usually focus on the relationship with organizational results and progress and with their importance in volatile markets, but emphasize their contributions to both internal and external business factors, which can play in favor or against obtaining potential benefits deriving from the possession of dynamic capabilities (Pérez, Gutiérrez & Balbinot, 2019). That is why the speed or agility in the planning and implementation of competitive actions integrating the external and internal repertoire, become driving forces of

high organizational performance; thus, strategies allow organizations to make rapid adjustments upon the contingencies that occur in the dynamic environment. Along these lines, managers of tourism companies in the Colombian Caribbean are developing dynamic capabilities and streamlining the implementation of their strategies to take advantage of the opportunities that arise in emerging markets (Miranda, 2021).

6. Conclusions

The purpose of this research is to underline the importance of tourism companies in general, and specifically Colombian companies, to continue in the search to generate policies that help their economic growth, competitiveness, and the ongoing and systemic development of their dynamic capabilities. These actions must be carried out hand in hand with governmental public policies with the purpose of implementing regulations that evenly regulate the market, since this type of management helps the sector achieve positive performances and future positioning both in the national and international markets.

To achieve this, tourism entrepreneurs must be in direct contact with different economic associations and local governments to learn about the global behavior of tourism, through tools such as fairs, forums, conferences, and strategic alliances. Moreover, organizations such as the Ministry of Commerce, Industry, and Tourism and the Vice Ministry of Tourism, in alliance with the Chambers of Commerce and other sectors (hotels, transportation, and communications), are urged to set up sectoral roundtables in order to learn about the problems of the tourism sector that may affect its progress. It is expected that these discussion forums will promote the creation of dynamic capabilities, which should become key pillars to face highly dynamic environments.

Moreover, it would be important for company managers to follow up on their production processes in order to measure the impact of their dynamic capabilities and the effect of companies on their stakeholders, developing new business models or continuously improving their processes where dynamic capabilities prevail.

Finally, for future research, in this work it is suggested that other tourist destinations such as museums and handicrafts be included. This was a limitation for the study, since these companies did not provide information that would allow a holistic coverage of the capabilities in this sample segment. Moreover, subsequent studies could include other types of capabilities that complement the systemic conjugation of resources contributing to the progress and business competitiveness of tourist destinations, especially those of the Colombian Caribbean.

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