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TURISMO Y SOSTENIBILIDAD EN CLAVE ECOLÓGICA: PRÁCTICAS DE ECOTURISMO RESPONSABLE EN DESTINOS EMERGENTES DEL CARIBE COLOMBIANO TOURISM AND SUSTAINABILITY IN AN ECOLOGICAL KEY: RESPONSIBLE ECOTOURISM PRACTICES IN EMERGING DESTINATIONS OF THE COLOMBIAN CARIBBEAN

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RESUMEN

Este estudio tiene como propósito explicar las prácticas de ecoturismo responsable como un factor clave para la sostenibilidad en el municipio de Valledupar, Cesar. La población estuvo conformada por representantes de entidades públicas del sector turístico, agencias de ecoturismo, operadores turísticos y actores comunitarios. Se realizó un muestreo no probabilístico intencional, y se aplicó un cuestionario estructurado tipo Likert. Los resultados evidencian una articulación deficiente entre las políticas ambientales locales y las prácticas operativas de las empresas turísticas, aunado a una escasa adopción de tecnologías limpias y bajos niveles de formación ambiental entre los distintos actores del sector. Asimismo, se identificaron iniciativas comunitarias con alto potencial de desarrollo, que podrían fortalecerse mediante la implementación de estrategias integradas de ecoturismo. Se plantea la necesidad de diseñar e implementar modelos estratégicos de sostenibilidad que respondan a las particularidades del contexto local.

PALABRAS CLAVE: Ecoturismo, Sostenibilidad, Turismo Responsable, Desarrollo Local, Medio Ambiente.

ABSTRACT

This study aims to explain responsible ecotourism practices as a key factor for sustainability in the municipality of Valledupar, Cesar. The population consisted of representatives from public entities in the tourism sector, ecotourism agencies, tour operators, and community stakeholders. The sampling method adopted was purposive non-random and structured Likert-type of questionnaire. The findings indicate that there is a poor correlation between local environmental policies and the activity of tourism companies, as well as the low uptake of the clean technologies and low rates of environmental education among different players in the sector. In the same manner, community projects that have a good development potential were also identified which can be enhanced in terms of application of the integrated ecotourism strategies. The study highlights the need to design and implement strategic sustainability models that respond to the specific characteristics of the local context.

KEYWORDS: Ecoturismo, Sustainability, Responsible Tourism, Local Development, Environment.

1. INTRODUCTION

Tourism has been recognized in the global context as an essential driver of economic and social development, representing approximately 10% of the world's GDP and generating one in ten jobs, as reported by the World Tourism Organization (UNWTO, 2022). However, its exponential growth has had widespread and significant environmental impacts; these range from the overexploitation of natural resources to the degradation of fragile ecosystems and the carbon emanated from transport and the infrastructures themselves for tourism activity (United Nations Sustainable Development Group and United Nations Environment Programme, 2020)

In this sense, the link between tourism and the environment has been prioritized by international organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Environment Programme (UNEP), as well as by the Economic Commission for Latin America and the Caribbean (ECLAC), from which a series of guidelines have been proposed in order to promote tourism management that minimizes its negative impact on the environment and, on the contrary, exploits to the maximum the economic and social benefits of tourism activities worldwide (UNESCO World Heritage Centre, 2022).

Based on the problems described above, the concept of sustainable tourism has become visible at the global level, supported by international legal frameworks such as the Quebec Declaration (2002), the Sustainable Tourism Charter (1995), the 2030 Agenda and the Sustainable Development Goals (SDGs), especially SDG 8 (decent work and economic growth) and SDG 12 (responsible production and consumption). With these initiatives, these instruments were implemented as a trigger for public policies that could promote the development of an ecological culture focused on the conservation of biodiversity, the efficient management of natural resources and the activation of local communities for decision-making. However, the real application of these principles is still being harmed by important obstacles, with emphasis on developing nations, prevented by the need to adopt a conventional tourism model; coupled with the lack of incentives to adopt sustainable ways of acting (Boley & Green, 2016)

Framed in this context, ecotourism management is presented as a key strategy to address the adverse effects of mass tourism and promote a development model where the trinomial is balanced: green economy, society and environment. In this regard, Bonilla et al. (2021) conceive this management as a situated strategic process, based on the planning, organization, control, and monitoring of tourism

activities carried out in natural environments, with the intention of regulating adverse environmental effects, making the most of its benefits for local communities. This environmental social responsibility strategy guarantees the coordination of efforts by governments, companies and communities to ensure the long-term sustainability of tourism activities. In the same line of thought, Boley and Green (2016) point out that ecotourism management goes hand in hand with the protection of biodiversity and the consolidation of local green economies through sustainable or conscious tourism.

Concomitant with the sustainable development of the tourism sector, it is evident that in the academic research field, the urgency of reconciling economic growth with social equity and the preservation of the environment has been extensively debated. According to Hall and Gössling (2021), sustainable tourism must promote its maximum added value, while minimizing adverse externalities for the environment and local cultures. This reality requires the adoption of responsible management strategies, such as the reduction of the consumption of non-renewable resources, the promotion of sustainable mobility and social control. Accordingly, Bramwell and Lane (2012) argue that this approach should be linked to the principles of the circular economy, with the aim of revaluing resources and reducing waste.

From the systematic review of the literature on the variables under study, it has been shown that in the Latin American context, specifically in Brazil, Costa Rica, Chile and Mexico, ecotourism management models have been adopted based on environmental certifications such as the EMAS (*Eco-Management and Audit Scheme*) scheme conceived by the European Union as a voluntary system aimed at the evaluation, management and optimization of environmental performance; as well as, to the ISO 14001 standard requiring: (a) Periodic internal environmental audits, (b) Publication of a verifiable and transparent environmental statement, (c) Strict legal compliance, and (d) Active participation of employees; This strategic action has led to organizational success, materialized both in preserving biodiversity and in the diversification of regional economies.

In the same order, it was evident that Costa Rica has established a strategy of regenerative tourism policies that combines environmental education, innovative technology and conservation. On the other hand, Brazil has experienced economic benefits from Amazonian ecotourism, but suffers from tensions due to the lack of adequate environmental regulation. In this analysis, it cannot be ignored that Mexico has made progress in the adoption of tourism

certifications, but there are still challenges in waste management and the effective inclusion of rural communities (IUCN, 2018; Instituto Brasil Rural, 2022; Ministry of Tourism of Mexico, 2020; ISO, 2021)

At the national level, Colombia has declared ecotourism as a strategic priority within the National Tourism Development Plan 2022–2026, adopting a territorialized and inclusive vision. However, recent research points to persistent gaps between the design and implementation of environmental and tourism policies. Among the main problems are deficient territorial planning, the absence of sustainability indicators and the low participation of communities in ecotourism projects. In addition, a large part of the companies in the sector have not adopted environmental management standards or promote environmental education processes among workers and visitors, which weakens the institutional framework that should sustain ecotourism (MinCIT, 2022; MADS, 2023).

In the Colombian Caribbean, and particularly in the municipality of Valledupar, this situation is particularly critical. Despite its valuable natural resources – such as the Sierra Nevada de Santa Marta and the Guatapurí River – efforts to consolidate an ecotourism model have been partial and lack a comprehensive vision of sustainability. Institutional reports point to deficiencies in green infrastructure, regulation, oversight and community participation. Similarly, it is presumed that the absence of effective articulation between public institutions and private actors could lead to redundant efforts, lack of cohesion and a low appreciation of the ecotourism potential of the territory. Likewise, the lack of coordination between government entities and private operators has generated duplication, disarticulation and a waste of the ecotourism potential of the territory.

Within the above-described setting, this study will explain what responsible ecotourism practices entail in terms of sustainability in the developing destinations within the Colombian Caribbean to guide its analysis within the context of the municipality of Valledupar, Cesar. This research aims at making an addition to a more comprehensive and systemic body of knowledge on ecotourism management on local settings with regard to its relevance in the shift towards more inclusive, responsible and sustainable tourism paradigms. It is also designed to come up with recommendations in this context to enhance governance, facilitate active involvement of the communities and make Valledupar an excellent ecological example within the Caribbean area and national levels which will encourage equitable tourism

development that is resilient and dedicated to protecting the environment.

Responsible ecotourism practices and sustainability from an ecological perspective

It is now recognised that responsible ecotourism practices are an important tool that can be used to decrease the negative effects of tourism in ecologically sensitive areas as well as improve social, cultural and economic advantages, particularly in the areas of high environmental sensitivity (Blanco, and De Esteban, 2016). The given type of tourism is a development of the traditional one, as it focuses on the conservation of natural and cultural heritage; and the active involvement of communities in decision-making.

Consistent with such an epistemological stance, ECLAC (2023) suggests an integrated approach to sustainable tourism development that will ensure:

1. Long-term viability and competitiveness of tourism, promoting equitable economic benefits for local communities.
2. Implementation of responsible environmental practices.
3. Adaptation of organizational and institutional infrastructure to climate change, conserving ecosystems and strengthening environmental education.
4. Stresses the need to safeguard and promote the cultural diversity of tourist destinations.
5. Promote coordination between public, private and community actors, within a framework of participatory and transparent governance.

In the same vein, Santos and Luque (2015) point out that "the implementation of sustainability can be motivated by the possibility of obtaining a competitive advantage, generating resources, improving reputation or introducing competencies and capabilities within the organization" (p. 23). This reasoning underlines that sustainable management for organizations in the tourism sector should not be reduced to environmental impact, but also strengthens their legitimacy and competitive advantage within the local, national and international market.

In line with the above, it is urgent to address sustainability in the tourism sector in a comprehensive way by exploring economic, social, environmental and cultural aspects, thus guaranteeing sustainable environmental management and territorial development, as opposed to the aggressive attitudes of people who only focus on satisfying their needs to the detriment of the common good (Iaquinto, 2018)

Based on the above, there is an urgent need to establish smart tourist destinations, where

technological innovation and environmental-social sustainability are interconnected for a balanced, sustainable and sustainable tourism development in the long term. This collective strategic action requires the integration of components such as smart governance and environmental sustainability in the processes of evaluating competitiveness and in the dynamics between tourist destinations. Likewise, the need to analyze to what extent applications based on geolocation, typical of Smart Tourist Destinations (DTI), can represent a risk for users, and how these possible impacts could impact on the trust and performance of tourism service providers (Ramírez et al., 2024).

Another research reference in Latin America is the collaborative study published by García-Londoño and Roldán-Clarà (2024) where they address dimensions related to ecotourism, such as: sustainable and nature tourism, emphasizing community participation, equity in the distribution of benefits, together with environmental and social sustainability. In this regard, they warn that many ecotourism initiatives appeal to the discourse of sustainability without complying with the principles that they require. They also point out the absence of solid regulatory frameworks and effective control mechanisms, consequently leading to "the proliferation of *greenwashing* practices, in which the ecological becomes a marketing strategy rather than an operational conviction" (p.25). Indeed, this economic and sociocultural phenomenon acquires relevance in emerging destinations such as those of the Colombian Caribbean, where there is evidence of an unfavorable symbiosis between ecotourism potential and structural problems linked to informality, non-participation of local actors in decision-making, environmental deterioration and the absence of a deep-rooted ecological culture (Alonso-Almeida, 2015).

In relation to the sustainability variable *in an ecological key*, studies such as that of Valenzuela Rubio (2017) and García-Londoño and Roldán-Clarà (2024) point out that it must permeate all the processes of the tourism system in a transversal way, from the design of the products to the final consumption. Valenzuela Rubio states that "environmental sustainability indicators must go beyond regulatory compliance and include ethical, social and ecological dimensions, which allow for a comprehensive evaluation of the impact of tourism practices on local ecosystems" (p. 7). This view introduces an ethical and holistic approach that goes beyond the logic of mitigation to move towards a perspective of environmental regeneration, opting for the defense of environmental protection as the guiding axis of responsible tourism, assuming ecotourism as an effective strategy for the conservation of biodiversity and environmental education; as well as criticizing

tourism practices that affect habitats and species, even under sustainable labels.

In the same vein, Stukalo et al. (2018) argue that sustainable tourism should not only be understood as an environmental obligation, but also as a competitive advantage in the global economic scenario. They also argue that sustainable tourism should be conceived not only as an ecological obligation, but also as a strategic advantage within the context of the global economy. Seen in this way, the promotion of sustainable tourism from a comprehensive perspective involves articulating various levels of multi-scale cooperation, incorporating key elements such as environmental resilience and the long-term sustainability of emerging destinations. This approach proposes a macrostructural vision that links the local with the global in the construction of more responsible and adaptive tourism models.

In short, at a global level, there is an urgent need for a commitment to comprehensive tourism management based on an ecological sustainability approach, considered relevant given that by properly managing ecotourism, it is contributing to environmental conservation and local, national and international social and economic development; together with the promotion of regenerative tourism focused on repairing ecosystems in emerging destinations through the active involvement of all agents and social actors with an interest in environmental and social restoration (Ramírez et al., 2024; García-Londoño & Roldán-Clarà, 2024; Alonso-Almeida, 2015; Valenzuela Rubio, 2017; Stukalo et al., 2018)

Specifically in the Colombian context, it is pertinent to highlight the work carried out by the Yarumo Blanco Community Association, constituting an outstanding example of responsible ecotourism that articulates ecological sustainability with community development in an effective way. It is geographically located in the upper basin of the Otún River, in Risaralda. It is recognized as a community organization that has been working for more than fifteen years in favor of the conservation of the environment and the promotion of ecotourism activities aimed at generating direct and tangible benefits for collective empowerment by integrating local knowledge and sustainable practices. Similarly, these types of organizations focus on an integrative approach to participatory governance and social innovation (El País, 2024; FONTUR, 2022).

However, despite all these advances and theoretical agreements, it is noted with concern that the implementation of responsible ecotourism still faces significant challenges. An example of this

reality can be seen in Costa Rica, known as a model country in sustainable tourism, where accelerated tourism massification has generated tensions between the discourse of sustainability and the reality of ecological overload in recent years. Researchers such as Stein and Jampol have warned that tourism, if not strictly regulated, can lead to negative impacts on biodiversity and host communities. In his words, "more controlled and truly responsible tourism is essential to guarantee environmental sustainability and prevent social deterioration" (El País, 2024).

In the same direction, regulatory ambiguity and the lack of specific regulatory frameworks have allowed an indiscriminate use of the term ecotourism in various countries, opening the way to *greenwashing* strategies in which ecological values are invoked without support in concrete actions. In view of this, Siegle (2009) highlights the urgency of establishing clear and verifiable parameters to identify true ecotourism, which must be "nature-based, educational, managed in an environmentally sustainable way and actively contribute to the conservation of natural sites" (p. 1).

Consequently, it becomes imperative that public policies and strategies in the tourism sector incorporate rigorous certification systems, verifiable impact indicators, and permanent monitoring mechanisms that allow the authenticity of ecotourism practices to be assessed. Only in this way will it be possible to strengthen visitor confidence, guarantee environmental justice for local communities and move towards real, transparent and verifiable tourism sustainability.

2. MATERIALS AND METHODS

From an empirical-analytical epistemological perspective, based on the positivist paradigm, this research is part of the quantitative approach, whose purpose is to explain causal relationships between observable and measurable variables through the rigorous use of deductive logic and tools of inferential statistics (Gadea et al. 2019; Ñaupas et al., 2014). Under this line of thought, the study is aimed at establishing how responsible ecotourism practices affect sustainability in an ecological key in the emerging destinations of the Colombian Caribbean, with special emphasis on the municipality of Valledupar, Cesar.

Following this methodology, the design adopted corresponds to an explanatory, observational and cross-sectional study, developed in the field, that is, in the natural environment where the investigated phenomenon occurs (Bernal, 2016). This type of

study allows not only to describe the behavior of the variables analyzed, but also to identify possible causal relationships between them, without manipulating the observed elements. As Hernández and Mendoza (2018) point out, explanatory studies within the quantitative approach seek to understand the factors underlying social phenomena, in this case, the dynamics associated with the management of ecotourism and its articulation with environmental sustainability criteria.

The study population was made up of ten (10) representatives of public entities in charge of managing tourism in the municipality of Valledupar, fifteen (15) tour operators, fifteen (15) managers of legally constituted ecotourism agencies, and thirty (30) community actors involved in the development of local ecotourism, which totals seventy (70) participants. Hence, there was a non-probabilistic sampling of an intentional nature as it was necessary to possess key informants with specific knowledge and first-hand experience in the phenomenon being studied (Mendez, 2020). The selection strategy was based on the institutional membership, professional career in the sector and engagement in sustainable tourism programmes/projects, which formed a representative population census.

The survey technique was used to collect data with the help of a structured questionnaire, a five-point Likert scale (1: strongly disagree; 5: strongly agree) that has 42 items. Among them, twenty-four (24) were designed to evaluate the variable responsible ecotourism practices and eighteen (18) the variable sustainability in an ecological key. The instrument has been developed on the basis of the conceptual indicators derived in the theoretical framework, and then modified with the help of the validation procedure on the judgment of six (6) experts in the tourism, sustainability and methodological design. The Alpha coefficient of the questionnaire was calculated to find how reliable it is, and it was found to be 0.91, the value of which is good enough to be classified as high internal consistency, which is satisfactory in social studies with explanatory methods (Hernandez and Mendoza, 2018).

This was done with the help of the inferential statistics, to establish correlations, the effect of prediction and the level of statistical significance between variables used. In this regard, Pearson correlation coefficient and linear regression analysis were to be performed, which relies on the nature of the hypotheses developed. This methodological choice responds to the purpose of obtaining generalizable conclusions that contribute to strategic

decision-making in the local tourism sector, based on valid, reliable and contextualized empirical evidence.

Null hypothesis (H_0):

There is no significant relationship between responsible ecotourism practices and ecological sustainability in the tourism sector of the municipality of Valledupar, Cesar.

Alternative hypothesis (H_1):

There is a significant relationship between responsible ecotourism practices and ecological sustainability in the tourism sector of the municipality of Valledupar, Cesar.

3. RESULTS AND DISCUSSION

The results obtained in this research derive from the inferential statistical treatment applied to the data collected through the previously validated instrument, with the purpose of analyzing the relationship between responsible ecotourism practices and sustainability in an ecological key in the

tourism sector of the municipality of Valledupar, Cesar. In coherence with the empirical-analytical approach and the explanatory design that guided the study, statistical techniques such as Pearson's correlation coefficient and the linear regression model were applied. These tools made it possible to establish the degree of association, direction, and strength of the link between the variables under analysis.

The design of the methodological strategy allowed a strict interpretation of the results, by locating persistent patterns of behavior that enrich the empirical explanation of the object of study. In addition, the results provide quantitative evidence of interest for the development of public policies and intervention strategies aimed at promoting sustainable development tourism in emerging scenarios such as the Valledupar area. In this way, the usefulness of inferential statistics as a support material for decision-making in the management of ecotourism as well as in territorial planning with an environmental approach is once again confirmed.

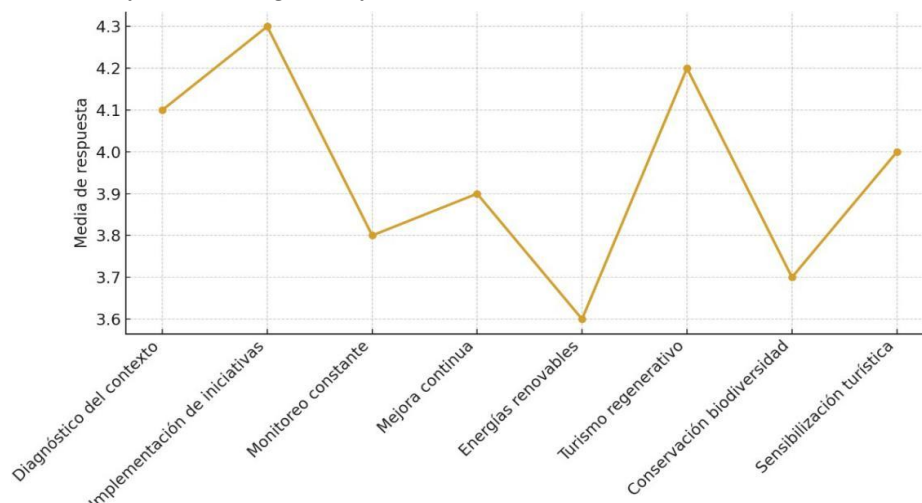


Figure 1: Variable: Responsible ecotourism practices. Behavior of the subjects as indicated.

The statistical processing of the data showed significant differences between the indicators that make up the variable *Responsible ecotourism practices*, as determined by the single-factor ANOVA test. This analysis confirmed that the means corresponding to the different indicators are not homogeneous ($p < 0.05$), which indicates that the participants expressed varied perceptions of the dimensions evaluated. Consequently, Tukey's Post Hoc test was applied, which allowed grouping the indicators into subsets with significantly higher means compared to others, thus validating the existence of differentiated patterns within the set of responses.

According to the processed data, the indicators that obtained the highest averages were:

Implementation of ecotourism initiatives ($\bar{x}=4.3$), Regenerative tourism ($\bar{x}=4.2$) and Diagnosis of the ecotourism context ($\bar{x}=4.1$). This finding indicates that these practices are positively rated by the local players in the industry. The identified trend aligns with what Robina et al. (2021) and Santos and Luque (2015) say, according to which strategic planning, defined by the use of specific interventions adjusted to the situation, has a positive effect on the environmental and social management of a tourism activity. Similarly, Bonilla et al. (2021) emphasize that any successful ecotourism project should start with a comprehensive analysis of the environment, which apparently is identified and appreciated by the participants of the current study.

In contrast, the indicators that were located in the lowest percentage values were: Use of renewable energies ($\bar{x}=3.6$), Biodiversity conservation ($\bar{x}=3.7$) and Constant monitoring ($\bar{x}=3.8$). These scores reflect relevant gaps in environmental monitoring; as well as in the incorporation of clean technologies within local tourism practices. These results reveal a disconnect between the principles of ecotourism proposed by authors such as Boley and Green (2016) and their applicability in emerging tourist destinations. For the aforementioned authors, the conservation of ecosystems together with the use of clean energy, constitute essential foundations for the development of sustainable ecotourism destinations. However, the findings suggest that its implementation seems to be hampered by persistent structural limitations, such as the absence of institutional stimuli or the limited availability of specialized technical capacities.

From the analysis of the dimensions that structure the variable under study, it is shown that Phases of ecotourism management obtained $\bar{x}=4.03$, surpassing the dimension: Application of ecostrategies, which reached a slightly lower average of 3.88. This difference shows that, although the processes of diagnosis, planning, and continuous improvement have an acceptable minimum of consolidation, significant gaps persist for the technical execution of specific ecological strategies. Among them, the efficient use of renewable energy and the systematized development of awareness programs for actors and communities in the tourism sector stand out.

In contrast to the findings found, authors such as Hall and Gössling (2021) and Ramírez et al., (2024) warn that any effective environmental policy requires the support of an adequate budget and infrastructure; together with institutional capacities and implementation mechanisms at the local and/or national level. They also reveal the existence of a

marked gap between normative discourse and operational practice, particularly in critical areas such as active ecosystem conservation and the adoption of innovative energy solutions. In line with this epistemological position, Robina et al. (2021) urge that these components must be strengthened if the goal is to adopt a comprehensive model of tourism management that authentically responds to the principles of sustainability with an ecological key.

In a contextual way, the findings made it possible to identify the existence of an ecotourism management model that is still in the consolidation phase. Even though there is evidence of preliminary progress in aspects concerning strategic planning and the participation of social actors and interest groups; persisting in the organizations under study, significant challenges in the incorporation of environmental technologies, establishment of permanent monitoring mechanisms and in the effective integration of the biocultural approach. This situation corresponds to what is stated in the Colombian Tourism Sector Plan 2020, which warns that the strategies applied in the Cesar region with an emphasis on Valledupar, lack a solid articulation between sustainability, social participation and technological development, as fundamental axes of ecotourism (Gobernación del Cesar, 2023).

From these findings, it is clear that there is an urgent need to formulate public policies aimed at technical and institutional strengthening, in order to reduce the distance between the formal design of ecotourism practices and their effective materialization in the territories. Likewise, it is necessary to strengthen environmental awareness strategies and community training processes, so that ecotourism management does not depend exclusively on hierarchical structures, but emerges as a dynamic process, driven from the social bases and adapted to local realities.

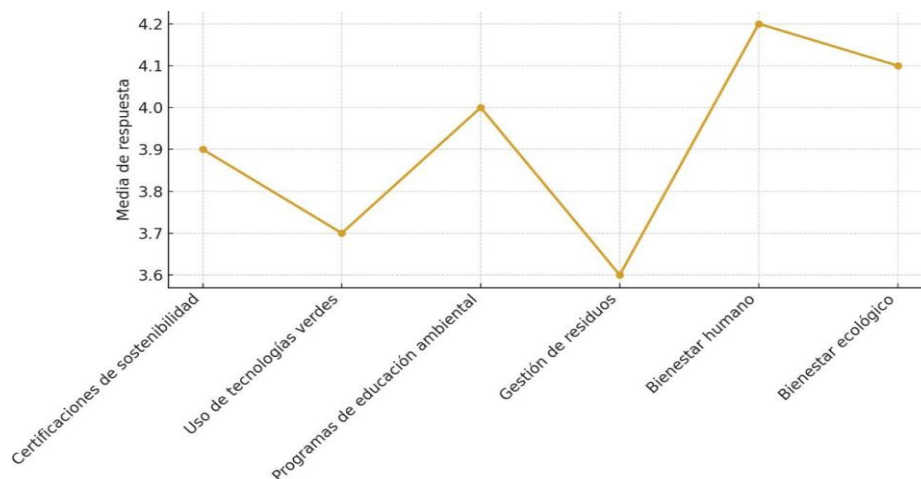


Gráfico 2: Variable: Sustainability in an ecological key. Subjects' behavior by Indicated.

The data analysed reflect significant differences in the perception of the participants with respect to the indicators that make up the Sustainability variable in an ecological key. The one-factor ANOVA test confirmed the heterogeneity in the responses obtained ($p < 0.05$), which justified the application of Tukey's Post Hoc analysis. The latter allowed the identification of groups of indicators with significantly different means, revealing differentiated patterns in the assessment of the evaluated components.

Among the indicators with the highest scores, Human well-being ($\bar{x} = 4.2$) and Ecological well-being ($\bar{x} = 4.1$) stood out, both belonging to the dimension Strategic indicators, which together reached ($\bar{x} = 4.15$). This result suggests that the actors of the tourism sector in Valledupar recognize sustainable development as an integral process, which contemplates both the quality of life of the communities and the health of the ecosystems. This vision coincides with the approach of Hall and Gössling (2021), who argue that tourism sustainability must harmonise social justice, environmental balance and economic profitability. Similarly, the information confirms what was identified by Alonso-Almeida et al. (2015), where sustainability is constrained not only to the regulatory or operational levels, but also to produce tangible and positive effects in the destination lands.

Unlike the poorest ranked indicators, Waste Management ($\bar{x}=3.6$) and Use of green technologies ($\bar{x}=3.7$) received the lowest percentage values in the variable, both falling in the dimension Adoption of sustainable practices which gave an average score of 3.80. This disparity implies a large disparity in the difference between the environmental discourse that is assumed in the tourism planning and the capacity to do sustainable practices at the operational level. According to Valenzuela Rubio (2017), effective environmental management in the tourism industry cannot be achieved only by regulatory frameworks, but proper infrastructure, technologically trained staff, and organizational culture that should correlate with the concepts of sustainability. The low scores are indicative of the fact that in Valledupar, these circumstances are not yet well established or supported by the existence of public policies that support them.

This deficiency is all the greater when we take into account the ecological and cultural charm of the municipality, the richness of which is expressed in the assets of Sierra Nevada de Santa Marta and the Guatapuri River. In spite of these strategic resources, the statistics indicate that the sustainability policies have been applied in disproportional manner. The

areas of weakness in waste management and the implementation of clean technologies are consonant with what is revealed by the Tourism Sector Plan (2023), which cites that in the future destinations of the Colombian Caribbean, it remains evident that there are significant gaps in the aspect of investing in green infrastructure and environmental education programs.

The most considered dimension, Strategic Indicators, is a demonstration of the increased awareness of the beneficial impact of ecotourism on the quality of life and environmental protection, which is an ecotourism symbolic capital, and can be mobilized. Nonetheless, strategic aspirations may not be translated into an empirical counterpart unless the structural foundation that would ensure the successful application of these practices is established, as Bramwell and Lane (2012) caution.

Thus, the findings require critical interpretation: despite the positive attitude to the ecological sustainability, which is not yet applied to the real operational measures, the results are positive. Therefore, technical support programs, green financing, environmental certification incentive, and modified waste management planning are needed. This is the only manner that will unify an ecotourism culture that can clearly formulate strategic principles with sustainable practices on the territorial plane.

The comparative study of the variables Responsible ecotourism practices and Sustainability in an ecological key made it possible to find reflexive correlations between them, which proved their convergent and divergent relations in the practice of the tourism sector of Valledupar, Cesar. The inferential tests (ANOVA and Tukey) along with the critical theoretical analysis enabled us to confirm that there was a positive evaluation of both variables which is a progress in the direction of sustainable and responsible tourism models.

Structural differences can however be seen. The variable Responsible ecotourism practices showed more mean in the dimension Phases of ecotourism management ($\bar{x}=4.03$) in comparison with Application of ecostrategies ($\bar{x}=3.88$), which proves that planning and diagnostic processes are more unified than the operational strategies, as the use of renewable energies or environmental awareness. Sustainability variable in an ecological key, conversely, revealed an inverse tendency, with Strategic Indicators dimension recording the maximum mean of the research ($\bar{x}=4.15$), and Adoption of sustainable practices achieving the poorest result 3.80 which implies an ideal understanding but lack of a specific implementation.

The implication of this contrast is that the management activities, in Valledupar, are more progressive compared to those directly related to the aspect of ecological sustainability. It is explained by the institutional, budgetary and coordination constraints, as it was shown in the Tourism Sector Plan (2023). In the theoretical perspective, Hall and Gossling (2021) describe this as a Latin American tendency to privilege discourses and community involvement at the expense of structural aspects, including environmental innovation and monitoring systems. Another danger that is presented by Bramwell and Lane (2012) is that sustainability becomes a hollow symbolical tool unless it is empirically proven.

Nevertheless, the mean of the majority of indicators around 4.0 points illustrates the environment being favorable to the transformation. The identification of ecotourism as a strategic axis and the intersection of human and ecological well-being is an intangible high value capital. Consistent with these outcomes, Santos and Luque (2015) consider that sustainability in tourism is a continuous effort of building in which the convergence of coherent public policy, social control, and cooperative governance should take place. This strategic move can be linked to environmental resilience in the up-and-coming destinations as it encourages the adoption of practices with minimal impact of the environment, encourage the preservation of the ecosystem and adapt to the climate change.

In order to supplement the analysis, inferential statistical methods were used to test the relationship between the variables. Under this methodology, a strong positive and significant correlation was demonstrated between the variables of Pearson correlation coefficient ($r = 0.78$, $p < 0.01$). In its turn, the use of the simple linear regression model resulted in the coefficient of determination of $R^2 = 0.61$ ($p < 0.01$), which supports the idea that 61 percent of the variability in the ecological sustainability can be described by the use of responsible ecotourism practices.

These results allowed us to accept the alternative hypothesis (H_1) and reject the null hypothesis (H_0), by empirically demonstrating that there is a significant relationship between both variables. This finding coincides with the theoretical postulates of Bonilla *et al.* (2021); Boley and Green (2016), who argue that the planning, execution, and monitoring of ecotourism have a direct impact on both the environmental quality of destinations and the well-being of local communities. Likewise, the guidelines

of the National Tourism Development Plan (2022–2026), which recognizes ecotourism as an articulating axis to achieve the SDGs in environmentally sensitive regions, are validated (National Planning Department, 2023).

Along the same lines, an anomalous finding emerges: the low valuation of indicators such as Constant Monitoring and Waste Management, which is contradictory in an environment with high ecological potential. In correspondence with the theoretical mechanism of the study, this dissonance can be attributed to external factors (structural capital) such as: (a) Institutional weaknesses, (b) Lack of a technical training plan, and (c) Predominantly vertical governance structure, consequently limiting the social appropriation of sustainable principles.

The accomplishment of a quantified expression between responsible ecotourism practices in the sense of the perceived ecological impact is among the major contributions of the study that orders an analytical empirical model that is applicable in new territories. In this light, the presence of ecotourism as cross-cutting axis in order to progress to the Sustainable Development Goals is epistemically and epistemologically reaffirmed, since it is backed by ecotourism training procedures, schemes of environmental certifications, and funding mechanisms based on the territorial requirements (DNP, 2023).

Implications of the findings therefore are that there is a pressing need to develop an integrated model of management that will harmonize the strategic aspects of ecotourism with valid management policies, environmental validation tools and community education approaches. The framework ought to enable the successful integration of sustainability as a key theme of tourism development. Further investigation may be undertaken in longitudinal studies to determine the effects of the medium-term interventions and whether community networks work to sustain an operation or not. Moreover, the comparative studies with other destinations in the Colombian Caribbean would enable highlighting the patterns that could be duplicated and the territorial peculiarities.

4. CONCLUSIONS

The paper has described the effects of responsible ecotourism practices on the ecological sustainability, with emphasis on aspects of emergent situations in the Colombian Caribbean, and specifically on the municipality of Valledupar. Based on the choice of a quantitative methodological approach and in alignment with the established objectives, the following fundamental conclusions emerge:

When analyzing the phases that make up the management of ecotourism aimed at sustainable development, it was evident that the local actors who participated in the study recognize the importance of processes such as diagnosis, planning, monitoring and continuous improvement. These processes are valued for their ability to structure tourist experiences that are coherent with the cultural and ecological reality of the area. In the case of Valledupar, this recognition represents a step towards a more conscious tourism management in tune with the natural and heritage identity of the Cesar region in Colombia.

By identifying the ecostrategies applied in the organizations under study, it was concluded that there is a conceptual appropriation of practices such as: regenerative tourism, environmental awareness and biodiversity conservation. However, their effective application is limited by structural barriers, linked to limited access to the use of clean technologies, weak institutionalization of environmental management, and lack of coordination between institutional actors, these strategies still have transformative potential. It is pertinent to point out that, with the appropriate support from public policies and the necessary investment, Valledupar could become a regional model of sustainable tourism.

Regarding the adoption of sustainable practices within the tourism sector under study, it was evident that most of the initiatives promoted by communities committed to local development and by the private sector lack the technical, financial and regulatory support required to generate significant environmental impacts. This reality highlights the urgency of strengthening institutional capacities and designing incentives that stimulate investment in sustainable tourism activities, facilitating the ecological transition of the municipal and departmental tourism ecosystem.

In closing, the analysis of the strategic indicators

of sustainable development corroborated a significant symbolic valuation of tourism as a key element for human and ecological well-being. This recognition is an essential social resource to promote collective actions, strengthen environmental governance and guide inclusive public policies. Indeed, the subjects surveyed highlighted the potential of tourism to generate decent employment, renew the social fabric and support the preservation of ecosystems, thus constituting a key opportunity to move towards more regenerative, resilient and socially responsible tourism models.

In relation to the general objective of the study, it was shown that there is a direct, positive and statistically significant relationship between responsible ecotourism practices and sustainability in an ecological key in emerging destinations in the Colombian Caribbean. The results of Pearson's correlation analysis ($r = 0.78$, $p < 0.01$) and the simple linear regression model ($R^2 = 0.61$, $p < 0.01$) showed that 61 % of the variability in the perception of ecological sustainability can be attributed to the level of implementation of responsible ecotourism practices in the municipality of Valledupar. This empirical evidence reinforces the strategic importance of promoting these practices as a basis for consolidating a tourism model that is environmentally viable, socially equitable and economically sustainable.

In summary, the study demonstrates that responsible ecotourism, when conceived, managed and evaluated in a comprehensive way, constitutes an effective way to promote the sustainable development of the tourism sector in emerging contexts. This finding not only contributes to enriching the theoretical body around ecotourism, but also offers concrete inputs for the formulation of public policies and territorial strategies aimed at positioning Valledupar as a benchmark for ecological tourism in the Caribbean region and in the Colombian national context.

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