

CORRELATION BETWEEN ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) PRACTICES AND ECOTOURISM IN THE MANAGEMENT OF BRAZILIAN NATIONAL PARKS

CORRELAÇÃO ENTRE AS PRÁTICAS AMBIENTAIS, SOCIAIS E DE GOVERNANÇA (ESG) E O ECOTURISMO NA GESTÃO DE PARQUES NACIONAIS BRASILEIROS

CORRELACIÓN ENTRE LAS PRÁCTICAS AMBIENTALES, SOCIALES Y DE GOBERNANZA (ESG) Y EL ECOTURISMO EN LA GESTIÓN DE LOS PARQUES NACIONALES BRASILEÑOS

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ABSTRACT

Purpose – To analyze environmental, social, and governance (ESG) practices associated with ecotourism in the management of Brazilian National Parks (PARNA), from the perspective of their managers.

Design/methodology/approach – The research adopted a quantitative approach of an exploratory and descriptive nature, using a structured questionnaire (survey) with five-point Likert scale questions. The instrument was sent to the 75 managers of Brazilian National Parks, resulting in 23 valid responses. Data were analyzed using MAXQDA software through Spearman correlation between ecotourism criteria and the environmental, social, and governance axes of ESG.

Findings – The results revealed positive associations between ecotourism practices and the three ESG axes, highlighting very significant and highly significant correlations related to the environmental axis. The analyses indicate that practices involving conservation, environmental education, governance, and social participation can operate in an integrated manner to strengthen public use and the management of National Parks.

Practical implications – The developed instrument has the potential to support ICMBio in structuring a diagnostic tool for ESG practices in National Parks, informing planning, management monitoring, and priority setting for improving public use.

Originality/value – The study expands the discussion on the application of the ESG approach in protected natural areas – a topic still little explored in the literature – by proposing an assessment instrument applicable to the management of Brazilian National Parks.

Research limitations – The results reflect exclusively the perceptions of the participating managers and should be interpreted in light of the response rate obtained. Future research is recommended to adopt data-triangulation strategies, incorporating the perspectives of other stakeholders involved in management and public use.

Keywords: Brazil; Sustainability; Public Use; Conservation Units; Protected Natural Areas

Editorial Information:

Double Blind Review

Submission: 13/03/2026

Sent for Review: 02/06/2026

Accepted for Publication:
08/09/2026

Editor:

Luiz Carlos da Silva Flores

Section Editor:

Ana Paula Lisboa Sohn

Data Availability:

The research data is in the body of the article. The data can be requested from the authors.

RESUMO

Objetivo – Analisar as práticas ambientais, sociais e de governança (ESG) correlacionadas ao ecoturismo na gestão dos Parques Nacionais (PARNA) brasileiros, sob a perspectiva de seus gestores.

Desenho/metodologia/abordagem – A pesquisa adotou abordagem quantitativa, de caráter exploratório e descritivo, utilizando um questionário estruturado (survey) com questões em escala tipo Likert de cinco pontos. O instrumento foi enviado aos 75 gestores dos PARNA brasileiros, obtendo-se 23 respostas válidas. Os dados foram analisados no software MAXQDA por meio da correlação de Spearman entre os critérios de ecoturismo e os eixos ambiental, social e de governança do ESG.

Resultados – Os resultados evidenciaram associações positivas entre as práticas de ecoturismo e os três eixos do ESG, com destaque para correlações muito significativas e altamente significativas relacionadas ao eixo ambiental. As análises indicam que práticas de conservação, educação ambiental, governança e participação social podem atuar de forma integrada no fortalecimento do uso público e da gestão dos Parques Nacionais.

Implicações práticas – O instrumento desenvolvido apresenta potencial para apoiar o ICMBio na estruturação de uma ferramenta de diagnóstico das práticas ESG nos Parques Nacionais, subsidiando o planejamento, o monitoramento da gestão e a definição de prioridades para o aperfeiçoamento do uso público.

Originalidade/valor – O estudo amplia a discussão sobre a aplicação da abordagem ESG em áreas naturais protegidas, um tema ainda pouco explorado na literatura, propondo um instrumento de avaliação aplicável à gestão de Parques Nacionais brasileiros.

Limitações da pesquisa – Os resultados refletem exclusivamente a percepção dos gestores participantes e devem ser interpretados considerando a taxa de retorno obtida. Recomenda-se que pesquisas futuras adotem estratégias de triangulação de dados, incorporando a percepção de outros atores envolvidos na gestão e no uso público.

Palavras-chave: Brasil; Sustentabilidade; Uso Público; Unidades de Conservação; Áreas Naturais Protegidas.

RESUMEN

Objetivo – Analizar las prácticas ambientales, sociales y de gobernanza (ESG) correlacionadas con el ecoturismo en la gestión de los Parques Nacionales (PARNA) brasileños, desde la perspectiva de sus gestores.

Diseño/metodología/enfoque – La investigación adoptó un enfoque cuantitativo, de carácter exploratorio y descriptivo, utilizando un cuestionario estructurado (survey) con preguntas en una escala tipo Likert de cinco puntos. El instrumento se envió a 75 gestores de los PARNA brasileños, y se obtuvieron 23 respuestas válidas. Los datos se analizaron mediante el software MAXQDA aplicando la correlación de Spearman entre los criterios de ecoturismo y los ejes ambiental, social y de gobernanza del ESG.

Resultados – Los resultados evidenciaron asociaciones positivas entre las prácticas de ecoturismo y los tres ejes del ESG, con especial destaque de las correlaciones muy significativas y altamente significativas relacionadas con el eje ambiental. Los análisis indican que las prácticas de conservación, educación ambiental, gobernanza y participación social pueden actuar de forma integrada para fortalecer el uso público y la gestión de los Parques Nacionales.

Implicaciones prácticas – El instrumento desarrollado tiene potencial para apoyar al Instituto Chico Mendes para la Conservación de la Biodiversidad (ICMBio) en la estructuración de una herramienta de diagnóstico de las prácticas ESG en Parques Nacionales, proporcionando elementos para la planificación, el seguimiento de la gestión y la definición de prioridades para la mejora del uso público.

Originalidad/valor – El estudio amplía el debate sobre la aplicación del enfoque ESG en áreas naturales protegidas, un tema todavía poco explorado en la literatura, y propone un instrumento de evaluación aplicable a la gestión de los Parques Nacionales brasileños.

Limitaciones de la investigación – Los resultados reflejan exclusivamente la percepción de los gestores participantes y deben interpretarse teniendo en cuenta la tasa de respuesta obtenida. Se recomienda que futuras investigaciones adopten estrategias de triangulación de datos, incorporando la percepción de otros actores implicados en la gestión y el uso público.

Palabras clave: Brasil; sostenibilidad; uso público; unidades de conservación; áreas naturales protegidas.

INTRODUCTION

The term ESG, an acronym for Environmental, Social, and Governance, has become established as a set of criteria designed to assess the sustainability performance of organizations, governments, and companies (ABNT, 2024; Albitar et al., 2024; Shalhoob & Hussainey, 2022; United Nations [UN], 2004; World Economic Forum, 2020). The concept of sustainable development emerged out of international debates, particularly from the second half of the twentieth century onward, as a response to the socio-environmental impacts generated by industrial and technological production models.

ESG was formally introduced in 2004, with the report *Who Cares Wins*, an initiative of the United Nations Global Compact, which proposed the integration of environmental, social, and governance dimensions into organizational management and decision-making processes (UN, 2004). Internationally, these criteria have increasingly been incorporated into both the private sector and public policy agendas and are regarded as relevant instruments for supporting the achievement of the Sustainable Development Goals (SDGs) (Hassan & Meyer, 2022; Koh, 2024; Plastun et al., 2023).

Although often used interchangeably, the concepts of sustainability and ESG present important conceptual distinctions. Sustainability represents a long-term objective to be achieved through sustainable development practices, whereas ESG comprises the set of criteria that guide organizational decision-making toward achieving that objective (ABNT, 2024).

In the field of tourism, research on ESG remains limited and is primarily concentrated on businesses with established physical infrastructure, such as hotels, casinos, restaurants, and travel agencies (Manzino et al., 2024), while studies on management issues typically focus on economic performance and market competitiveness. According to Hassan and Meyer (2022), there is still a significant research gap concerning the application of ESG criteria in protected natural areas, despite the existence of visitor activities within these environments. The authors further argue that sustainability indicators can support concession processes and improvements in visitor-use management.

Protected natural areas play a fundamental role in biodiversity conservation, the maintenance of strategic ecosystems, and human well-being (Bensusan, 2006; Maretti et al., 2012; Rodríguez-López, Diéguez-Castrillón, & Gueimonde-Canto, 2019). In Brazil, these areas are regulated under the National System of Nature Conservation Units (SNUC), established by Federal Law No. 9,985/2000, which defines the guidelines for the creation and management of Conservation Units (Brazil, 2000). Among the different categories, National Parks (PARNA) stand out for combining the conservation of natural ecosystems with public use activities focused on environmental education, recreation, and ecotourism (Bensusan, 2006; Brazil, 2000).

Despite the existence of management instruments such as management plans, advisory councils, and the Conservation Unit Management Assessment and Monitoring System (SAMGe), significant challenges remain when it comes to evaluating sustainability practices in an integrated and consistent manner across these protected areas. In this context, adopting ESG criteria may contribute to strengthening planning, monitoring, and management assessment processes in Conservation Units.

Accordingly, ESG criteria can significantly enhance the capacity for planning, monitoring, and evaluating sustainability within Conservation Units. Their application in the context of National Parks enables reflection on institutional practices that extend beyond environmental conservation to encompass social and governance dimensions. Given that public use is an intrinsic component of the mission of National Parks, it is essential to adopt indicators capable of assessing management performance and its impacts on biodiversity conservation and society.

International experiences indicate that countries such as the United States and Australia have already incorporated ESG principles into the strategic planning of protected areas (Discovery Parks, 2023; National Park Service, 2024). Nevertheless, studies investigating this approach within protected natural areas remain scarce (Hassan & Meyer, 2022; Manzino et al., 2024).

Against this background, the present study aims to analyze the environmental, social, and governance (ESG) practices associated with ecotourism in the management of Brazilian National Parks from the perspective of their managers. Specifically, the study seeks to: (i) identify the current state of knowledge regarding the relationship between ESG practices and ecotourism in protected areas; (ii) characterize managers' perceptions of the environmental, social, and governance practices adopted in Brazilian National Parks; and (iii) analyze the correlations between ESG practices and ecotourism criteria, discussing their implications for public-use management in Brazilian National Parks. The study is guided by the following research question:

How are environmental, social, and governance (ESG) practices correlated with ecotourism in the management of Brazilian National Parks?

The findings are expected to contribute to advancing the debate on sustainability in the management of protected areas by providing evidence to support the improvement of public policies, capacity-building programs, and planning strategies aimed at public use and ecotourism in Conservation Units.

Furthermore, the study seeks to promote greater integration between environmental conservation, regional development, and social inclusion, positioning ecotourism as a strategic and sustainable approach within Brazil's federal Conservation Units. The following sections present the research methodology, results and discussion, final considerations, and references.

THEORETICAL REVIEW

ESG is an acronym for Environmental, Social, and Governance. The term refers to a set of criteria used to assess the sustainability performance of organizations, companies, and governments by considering practices related to environmental responsibility, social responsibility, and the quality of institutional governance (ABNT, 2024; Albitar et al., 2024; Shalhoob &

Hussainey, 2022; United Nations [UN], 2004; World Economic Forum, 2020). These criteria emerged amid the broader debates on sustainable development, particularly in the second half of the twentieth century, when the socio-environmental impacts of industrial production models began to receive increasing international attention (Boff, 2015; Oliveira et al., 2012).

The concept of sustainable development was consolidated following the United Nations Conference held in Stockholm in 1972 and was later defined as the ability to “meet the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, 1987, p. 54). In this context, ESG gained prominence as an instrument for operationalizing and measuring sustainability practices across institutional sectors.

The concept was formally introduced in 2004 through the report *Who Cares Wins*, published by the United Nations Global Compact, which recommended incorporating environmental, social, and governance criteria into asset management, financial services, and organizational decision-making processes (United Nations, 2004). Since then, ESG has become widely recognized as a reference framework for evaluating the sustainability performance of both public and private organizations (Albitar et al., 2024; Shalhoob & Hussainey, 2022).

The three ESG dimensions represent complementary pillars of sustainability. The Environmental (E) dimension, which has received the greatest attention in the literature, encompasses criteria related to reducing carbon emissions, natural resource use, waste management, biodiversity conservation, and energy efficiency (Hassan & Meyer, 2022; Shalhoob & Hussainey, 2022; World Economic Forum, 2020). The Social (S) dimension addresses issues such as diversity, labor relations, respect for cultural values, and engagement with communities and suppliers (Singal, 2014; Stepanova et al., 2023). Finally, the Governance (G) dimension includes practices related to transparency, institutional ethics, internal controls, accountability, and oversight mechanisms (Huang et al., 2023; Koh, 2024; Shalhoob & Hussainey, 2022).

Within the international policy agenda, ESG criteria have increasingly been adopted by governments and organizations as a strategy to strengthen public governance and contribute to achieving the Sustainable Development Goals (SDGs) (Hassan & Meyer, 2022; Koh, 2024; Plastun et al., 2023). However, the successful implementation of these practices depends on institutional capacity and the effective participation of multiple stakeholders in governance processes (Kuzey et al., 2023; Leal Filho et al., 2016).

In tourism research, studies on ESG remain relatively limited and are concentrated primarily in sectors with well-established physical infrastructure, such as hotels, restaurants, casinos, and travel agencies (Manzino et al., 2024). Expanding this body of research to include other tourism contexts, particularly protected natural areas, represents an important opportunity to advance the field.

Protected natural areas are internationally recognized as essential instruments for biodiversity conservation and the maintenance of ecosystem services (Souza et al., 2019; Zhang et al., 2023). According to the International Union for Conservation of Nature (IUCN), these areas are clearly defined geographical spaces that are legally recognized and managed through effective means to ensure the long-term conservation of nature and its associated cultural values (Borrini-Feyerabend et al., 2017). Currently, more than 300,000 protected areas exist worldwide, encompassing a wide variety of conservation and management categories (UNEP-WCMC, 2025).

In Brazil, these areas are regulated through the National System of Nature Conservation Units (SNUC), established by Federal Law No. 9,985/2000, which defines the legal framework for the creation, implementation, and management of Conservation Units (Brazil, 2000). Among these categories, National Parks (PARNA) occupy a prominent position because they seek to conserve ecologically significant natural ecosystems while simultaneously allowing environmental education, recreation, and ecotourism activities (Bensusan, 2006; Brazil, 2000).

Over recent decades, the management of protected areas has shifted from highly restrictive conservation models toward approaches that recognize public use and social participation as essential components of biodiversity conservation (Irving & Matos, 2006; Maretti et al., 2012). Within this perspective, ecotourism emerges as a strategy capable of reconciling environmental conservation, economic development, and social inclusion, provided that it is properly planned and monitored (Leal Filho et al., 2016; Maretti et al., 2012; Pahrudin, Liu, & Li, 2022).

Ecotourism is defined as a form of responsible tourism conducted in natural areas that promotes environmental conservation while improving the well-being of local communities (TIES, 2015). Within Conservation Units, this activity depends directly on ecosystem integrity and on management practices capable of maintaining an appropriate balance between visitor use and environmental conservation.

Against this backdrop, applying ESG criteria to the management of protected areas has emerged as a promising approach for strengthening sustainability planning, monitoring, and evaluation. Recent studies indicate that adopting ESG principles

can enhance institutional transparency, improve governance quality, and strengthen the integration between environmental conservation and regional development (Hassan & Meyer, 2022; Khalil et al., 2024; Koh, 2024). Moreover, international experiences in countries such as the United States and Australia demonstrate the application of ESG as a strategic planning instrument for protected areas (Discovery Parks, 2023; National Park Service, 2024).

Therefore, examining the relationship between ESG practices and ecotourism in the management of Brazilian National Parks is essential for understanding how these criteria can contribute to strengthening sustainability in Conservation Units while promoting responsible public use.

METHODOLOGY

This study was conducted following the scientific method, adopting a systematic approach guided by a clearly defined research problem, specific objectives, a consistent theoretical foundation, and rigorous ethical and methodological standards. According to Gil (2002), such an approach aims to produce reliable, valid, and verifiable scientific knowledge.

This is an applied research study, as it seeks to understand a practical phenomenon and propose solutions to a concrete management problem, thereby contributing to improving the management of Brazilian National Parks (PARNA). A quantitative research approach was adopted due to its ability to transform numerical data into objective and measurable information, supporting the quantification and generalization of the findings (Lamattina et al., 2024).

To answer the research question, "How are environmental, social, and governance (ESG) practices correlated with ecotourism in the management of Brazilian National Parks?", a survey research design was employed. According to Freitas et al. (2000), surveys are particularly appropriate for investigating "what is happening" within a given context. Data were collected through a structured questionnaire administered electronically.

The questionnaire was developed based on constructs identified in both the scientific and technical literature, including the guidelines established in ABNT PR 2030-1:2024, the World Economic Forum ESG Metrics (2020), and the S&P Global ESG Criteria (2023). Most questions were closed-ended and measured using a five-point Likert scale ranging from (1) Strongly disagree to (5) Strongly agree, enabling the assessment of managers' perceptions regarding ESG practices implemented within their respective protected areas.

Following instrument validation, the research project was registered and authorized through the Biodiversity Authorization and Information System (SISBIO/ICMBio). The questionnaire was distributed individually via e-mail to the managers of all 75 Brazilian National Parks, seeking to survey the entire target population. A total of 23 valid responses were obtained, corresponding to a 30.6% response rate.

Although this response rate represents a limitation of the study, it may be partially attributed to the outdated institutional contact information for several parks and their managers, some of which had not been updated for more than two years. To maximize participation, additional searches were conducted to identify updated contact information through official institutional websites, followed by individual telephone calls to each National Park to reinforce the importance of the research and encourage managers to complete the questionnaire.

Furthermore, although the instrument was designed to identify the existence of ESG-related practices rather than evaluate management performance itself, the findings reflect the perceptions of the managers and therefore represent an institutional perspective on the practices adopted within Brazilian National Parks. Future studies are encouraged to broaden this perspective by triangulating data with information obtained from other stakeholders involved in park management and public use.

Data analysis was performed using MAXQDA Analytics Pro, which enabled integrated processing and interpretation of the quantitative information. Spearman's rank correlation coefficient was employed to examine bivariate relationships among the variables. Correlation strength was interpreted according to the criteria proposed by Dancey and Reidy (2006), whereby coefficients approaching ± 1 indicate stronger associations.

For data visualization and interpretation, statistically significant correlations were graphically represented according to the standard output generated by MAXQDA (2022). Correlations with $p \leq 0.05$ were displayed in gray, $p \leq 0.01$ in light green, and $p \leq 0.001$ in dark green. Variables marked with an asterisk (*) indicated the absence of statistically significant correlations.

This article presents only the very significant ($p \leq 0.01$) and highly significant ($p \leq 0.001$) correlations, as these represent the most robust and meaningful associations for the purposes of the discussion. The remaining statistically significant relationships are presented and discussed in greater detail in the author's complete master's dissertation (Manzino, 2025).

RESULTS AND DISCUSSION

The results presented below correspond to the statistical analysis of Spearman's correlations between the environmental, social, governance, and ecotourism variables in the management of Brazilian National Parks (PARNA), based on the responses provided by park managers.

Although ESG is not an official framework currently adopted by ICMBio in the management of Conservation Units, all respondents were able to evaluate the 37 statements included in the questionnaire, which were distributed across the ecotourism dimension and the three ESG pillars. Data collection resulted in 23 valid responses from the 75 officially recognized Brazilian National Parks, representing a 30.6% response rate.

Overall, the analyses revealed that all three ESG dimensions are positively associated with ecotourism practices, indicating that environmentally responsible management tends to be accompanied by inclusive social practices and strengthened governance structures. This alignment suggests that, when strategically planned, ecotourism functions as a catalyst for institutional and territorial sustainability, reinforcing the strategic role of Brazilian National Parks in promoting sustainable development.

Correlation between Ecotourism and the Environmental Dimension of ESG

The correlations between the environmental dimension and ecotourism indicate a strong association between conservation practices and the strengthening of public-use activities (Table 1). The variables exhibiting the highest levels of statistical significance ($p \leq 0.01$ and $p \leq 0.001$) demonstrate direct interactions between environmental management practices and ecotourism activities.

Table 1. Correlation between Ecotourism Statements and the Environmental ESG Dimension

Significance according to p-values								
Environmental Dimension × Ecotourism		Ecotourism × Environmental Dimension						
		Balance between Visitation and Conservation	Environmental Education	Visitor Carrying Capacity Limits	Regulations for Tourism Service Providers	Practices to Minimize Environmental Impacts	Contribution to Regional Development	Professional Qualification in the Tourism Sector
ESG-Ambiental	Biodiversity Protection	0,261 (p=0,1150)	0,264 (p=0,1118)	0,076* (p=0,3649)	0,584 (p=0,0017)	0,457 (p=0,0141)	0,125 (p=0,2846)	0,061* (p=0,3918)
	Water Use	0,217 (p=0,1598)	0,149 (p=0,2487)	0,525 (p=0,0051)	0,337 (p=0,0577)	0,486 (p=0,0094)	0,223 (p=0,1528)	0,120 (p=0,2920)
	Waste Management	0,059* (p=0,3951)	0,248 (p=0,1273)	0,486 (p=0,0094)	0,400 (p=0,0293)	0,451 (p=0,0155)	0,409 (p=0,0265)	0,303 (p=0,0796)
	Promotion of Recycled Materials and Clean Technologies	0,079* (p=0,3597)	0,372 (p=0,0404)	0,512 (p=0,0063)	0,385 (p=0,0349)	0,540 (p=0,0039)	0,236 (p=0,1393)	0,343 (p=0,0547)

Source: Prepared by the author (2025).

The correlation between service provider regulations and biodiversity protection is strong and highly significant ($p = 0.0017$). This finding indicates that clearer and more consistent guidance for service providers regarding park regulations is associated with greater contributions to biodiversity conservation. Standardizing operational procedures and disseminating best practices among tourism stakeholders reinforce both the educational and conservation roles of protected areas (Souza et al., 2019; Zhang et al., 2023).

A strong and highly significant correlation ($p = 0.0051$) was also observed between visitor carrying capacity limits and water use, demonstrating that public-use planning directly influences the sustainable use of water resources (ABNT, 2024; World Economic Forum, 2020). When visitation remain within the area's carrying capacity, managers can maintain a more sustainable balance between conservation objectives and tourism operations, thereby preventing excessive pressure on park infrastructure and water resources.

In addition, a moderate and highly significant correlation ($p = 0.0094$) was identified between practices aimed at minimizing environmental impacts and water use, suggesting that impact mitigation measures—such as proper wastewater management and the efficient use of natural resources—are integrated into water resource management within National Parks.

The relationship between visitor carrying capacity limits and waste management also revealed a moderate and highly significant correlation ($p = 0.0094$). This result indicates that both visitor numbers and visitor behavior directly influence the effectiveness of solid waste management. Consequently, when visitors comply with waste disposal guidelines, protected areas are better able to maintain efficient and environmentally responsible waste management systems.

Regarding the promotion of recycled materials and clean technologies, strong and highly significant correlations were found with visitor carrying capacity limits ($p = 0.0063$) and environmental impact mitigation practices ($p = 0.0039$). These findings suggest that the successful implementation of sustainable technologies and recycled materials depends on respecting the carrying capacity of protected areas, since overcrowding tends to compromise the effectiveness of these environmental initiatives. Therefore, visitor management represents a fundamental condition for maintaining environmental standards compatible with ecotourism (Bensusan, 2006).

Overall, these findings reinforce that effective environmental management—particularly regarding the rational use of natural resources, the adoption of clean technologies, and the regulation of tourism activities—is essential for strengthening ecotourism within Brazilian National Parks. The interaction between conservation and public use becomes mutually reinforcing when supported by evidence-based management practices aligned with ESG principles (Dudley, 2008; Maretti et al., 2012).

Correlação entre o Ecoturismo e o Eixo Social do ESG

As práticas voltadas à capacitação, geração de renda, voluntariado e educação mostraram correlação com a gestão e o uso público dos Parques Nacionais (Tabela 2). Essas relações permitem compreender de que forma o eixo social do ESG contribui para o fortalecimento do ecoturismo, especialmente quando envolve ações participativas e de desenvolvimento local.

Table 2. Correlation between Ecotourism and the Social Dimension of ESG

		Significance according to p-values						
		Ecotourism						
Social × Ecotourism		Balance between Visitation and Conservation	Environmental Education	Visitor Carrying Capacity Limits	Regulations for Tourism Service Providers	Practices to Minimize Environmental Impacts	Contribution to Regional Development	Professional Qualification in the Tourism Sector
ESG-Social	Regular training	0.189 ($p=0.1934$)	0.304 ($p=0.0790$)	-0.100 ($p=0.3244$)	0.129 ($p=0.2787$)	0.034* ($p=0.4395$)	0.238 ($p=0.1373$)	0.596 ($p=0.0013$)
	Employment and income generation	0.151 ($p=0.2461$)	-0.058* ($p=0.3968$)	-0.093* ($p=0.3363$)	0.689 ($p=0.0001$)	0.420 ($p=0.0229$)	0.160 ($p=0.2332$)	0.397 ($p=0.0303$)
	Volunteer activities	0.450 ($p=0.0156$)	0.415 ($p=0.0245$)	0.021* ($p=0.4629$)	0.299 ($p=0.0832$)	0.023* ($p=0.4594$)	0.199 ($p=0.1818$)	0.571 ($p=0.0022$)
	Educational programs	0.369 ($p=0.0414$)	0.539 ($p=0.0040$)	0.468 ($p=0.0122$)	-0.027* ($p=0.4509$)	0.148 ($p=0.2505$)	0.088* ($p=0.3442$)	0.456 ($p=0.0144$)

Source: Prepared by the author (2025).

A strong and highly significant correlation ($p = 0.0013$) was identified for regular training and professional qualification in the tourism sector. This finding indicates that continuous investment in staff training indirectly strengthens the tourism sector as a whole (Irving & Matos, 2006; Souza et al., 2019). As park personnel become more qualified, they act as knowledge multipliers by providing guidance to tourism service providers and expanding opportunities for professional development through initiatives such as visitor guiding courses and environmental best-practice training.

A strong and highly significant correlation was identified between employment and income generation and the regulations applied to tourism service providers ($p = 0.0001$). This result suggests that, as National Parks create local economic opportunities, they also promote compliance with the standards and best practices required for tourism operations (Pahrudin, Liu, & Li, 2022). Such practices strengthen service providers' sense of belonging and commitment to the protected area, thereby supporting biodiversity conservation.

A moderate and statistically significant correlation was also found between employment and income generation and practices aimed at minimizing environmental impacts ($p = 0.0229$). This data indicates that local economic development can be effectively aligned with sustainable management practices (Maretti et al., 2012).

Volunteer activities showed a strong and highly significant correlation with professional qualification in the tourism sector ($p = 0.0022$). This relationship may be associated with the ICMBio Volunteer Program, which encourages the exchange of knowledge and experience between professionals and volunteers, fostering practical learning and technical capacity building. Such initiatives contribute to improving tourism activities, strengthening community engagement, and enhancing the human capital associated with Conservation Units (Huang et al., 2023; Singal, 2014).

Finally, the correlation between educational programs and environmental education was strong and highly significant ($p = 0.0040$), demonstrating alignment between initiatives aimed at educating visitors and local communities and the environmental awareness activities promoted by Conservation Units (Rodrigues & Abrucio, 2019). This relationship reinforces the educational role of ecotourism and its contribution to strengthening the social dimension of ESG by enhancing visitors' experiences while simultaneously supporting environmental conservation (Cruz, Rodrigues, & Lemos, 2023; TIES, 2015).

Overall, the correlations observed between ecotourism and the social dimension of ESG show that capacity building, income generation, volunteerism, and education are directly associated with strengthening participatory management and fostering local development within Conservation Units (Hasana, Swain, & George, 2022). The presence of strong and statistically significant relationships indicates that investment in people – including park staff, tourism service providers, volunteers, and local communities – is fundamental to consolidating socially responsible ecotourism aligned with sustainability principles.

These findings further demonstrate that the social dimension of ESG enhances the effectiveness of ecotourism initiatives by integrating human well-being with environmental conservation and the responsible public use of Brazilian National Parks (Singal, 2014; Stepanova et al., 2023; TIES, 2015).

Correlation between Ecotourism and the Governance Dimension of ESG

The correlations between the ecotourism variables and the governance dimension of ESG (Table 3) indicate that practices such as effective communication, the operation of management councils, the implementation of management plans, regular audits, and organized visitor management directly influence the quality of management and public use in Brazilian National Parks (PARNA). These relationships suggest that the governance component of ESG contributes to strengthening ecotourism, particularly when supported by transparency, continuous monitoring, and participatory planning.

Table 3 – Correlation between Ecotourism and the Governance Dimension of ESG

Significance according to p-values								
Governance X Ecotourism		Ecotourism						
		Balance between Visitation and Conservation	Environmental Education	Visitor Carrying Capacity Limits	Regulations for Tourism Service Providers	Practices to Minimize Environmental Impacts	Contribution to Regional Development	Professional Qualification in the Tourism Sector
ESG-Governance	Accessible disclosure of actions and results	0,260 ($p=0,1158$)	0,133 ($p=0,2725$)	0,179 ($p=0,2074$)	0,605 ($p=0,0011$)	0,511 ($p=0,0064$)	0,417 ($p=0,0240$)	0,417 ($p=0,0237$)
	Council contributes to transparency	0,217 ($p=0,1596$)	0,481 ($p=0,0100$)	0,359 ($p=0,0462$)	0,438 ($p=0,0183$)	0,525 ($p=0,0051$)	0,464 ($p=0,0128$)	0,319 ($p=0,0690$)
	Council evaluation mechanisms	0,241 ($p=0,1336$)	0,183 ($p=0,2022$)	0,037* ($p=0,4330$)	0,573 ($p=0,0021$)	0,571 ($p=0,0022$)	0,499 ($p=0,0076$)	0,460 ($p=0,0136$)
	Management plan updated	0,037* ($p=0,4334$)	-0,102 ($p=0,3218$)	-0,169 ($p=0,2201$)	0,649 ($p=0,0004$)	0,621 ($p=0,0008$)	0,597 ($p=0,0013$)	-0,150 ($p=0,2468$)
	Activities conducted according to the management/visitor plan	-0,058* ($p=0,3955$)	0,056 ($p=0,3998$)	0,008* ($p=0,4851$)	0,563 ($p=0,0026$)	0,412 ($p=0,0255$)	0,288 ($p=0,0916$)	0,102 ($p=0,3219$)
	Activities conducted according to the management/visitor plan	0,548 ($p=0,0034$)	0,243 ($p=0,1315$)	-0,006* ($p=0,4892$)	0,404 ($p=0,0279$)	0,451 ($p=0,0155$)	0,257 ($p=0,1182$)	0,236 ($p=0,1388$)
	Regular audits	0,043* ($p=0,4233$)	0,378 ($p=0,0376$)	0,641 ($p=0,0005$)	0,113 ($p=0,3045$)	0,233 ($p=0,1426$)	0,190 ($p=0,1932$)	0,172 ($p=0,2158$)
	Organized visitor management	0,538 ($p=0,0041$)	0,259 ($p=0,1161$)	0,162 ($p=0,2297$)	0,364 ($p=0,0440$)	0,282 ($p=0,0962$)	0,244 ($p=0,1310$)	0,333 ($p=0,0600$)

Source: Prepared by the author (2025).

The correlation between active communication channels and regulations for tourism service providers ($p = 0.0011$), as well as practices to minimize environmental impacts ($p = 0.0064$), was strong and highly statistically significant. These findings indicate that when National Parks maintain active communication with visitors and local communities, tourism service providers receive clearer guidance regarding park regulations and are more likely to adopt measures aimed at reducing environmental impacts (Buallay, 2022; Shalhoob & Hussainey, 2022; Rodrigues & Abrucio, 2019).

Accessible dissemination of actions and results showed a strong and statistically significant correlation with practices to minimize environmental impacts ($p = 0.0051$). Regular and accessible communication informs visitors, local residents, and tourism service providers about park regulations and carrying-capacity limits, promoting shared responsibility and contributing to the mitigation of environmental impacts (Pahrudin, Liu, & Li, 2022; Bazanini et al., 2020).

Maintaining an active presence through official websites and social media platforms has become essential for ensuring public access to information regarding Conservation Units, including visiting schedules, available services, thematic events, and educational initiatives. Accessible and continuous communication helps inform visitors, local communities, and tourism service providers about visitation regulations and carrying-capacity limits, fostering an educational rather than merely punitive approach. Such communication strategies increase public awareness and contribute to minimizing environmental impacts.

Management councils that contribute to transparency exhibited strong correlations with regulations for tourism service providers ($p = 0.0021$), practices to minimize environmental impacts ($p = 0.0022$), and contribution to regional development ($p = 0.0076$), all of which were highly statistically significant (ICMBio, 2025; ICMBio, 2014; Irving & Matos, 2006).

The representativeness and effectiveness of management councils are central to these relationships and may be assessed through council composition, the frequency of meetings, and the existence of performance goals and monitoring instruments. The participation of non-governmental stakeholders strengthens governance processes and enhances decision-making (Leal Filho et al., 2016). Consequently, the effective performance of management councils directly contributes to establishing regulations and sustainable practices, transforming collective deliberations into concrete management outcomes while fostering regional development.

Council evaluation mechanisms demonstrated strong correlations with regulations for tourism service providers ($p = 0.0004$), practices to minimize environmental impacts ($p = 0.0008$), and contribution to regional development ($p = 0.0013$). As previously observed, council representativeness and functionality are fundamental to these relationships and can be evaluated through council composition, frequency of meetings, and the existence of monitoring instruments and performance indicators.

The effective operation of management councils contributes directly to establishing regulations governing tourism and environmental services; however, their effectiveness depends on how these decisions are communicated, implemented, and monitored (Kuzey et al., 2023). Continuous evaluation mechanisms enable council deliberations to be translated into concrete management outcomes, transforming councils into active agents for sustainability. Furthermore, the better conserved a National Park is, the greater its potential to attract visitors and contribute to regional development, highlighting the strategic role of governance in integrating conservation objectives with public use (Shalhoob & Hussainey, 2022).

The periodic revision of management plans showed strong correlations with regulations for tourism service providers ($p = 0.0026$) and practices to minimize environmental impacts ($p = 0.0255$), indicating that updated management plans provide clearer guidance for service providers while supporting environmental sustainability.

Similarly, activities conducted in accordance with management and/or visitor-use plans exhibited strong correlations with the balance between visitation and conservation ($p = 0.0034$), regulations for tourism service providers ($p = 0.0279$), and practices to minimize environmental impacts ($p = 0.0155$). These findings reinforce that compliance with technical guidelines and management regulations directly influences both the conservation of natural resources and the quality of visitors' experiences. Continuous monitoring of these activities is therefore essential to ensure that they remain aligned with the objectives established in the management plan (Pahrudin, Liu, & Li, 2022; Rodrigues, 2009).

Regular audits showed a strong correlation with visitor carrying-capacity limits ($p = 0.0005$), demonstrating that continuous monitoring reinforces regulatory compliance and visitor-use planning. Frequent audits strengthen management's commitment to environmental protection while increasing the reliability of information related to visitor numbers, infrastructure use, and biodiversity impacts. As emphasized by Khalil et al. (2024) and ABNT (2024), responsible governance requires ongoing monitoring and evaluation mechanisms.

Organized visitor management also showed a strong correlation with the balance between visitation and conservation ($p = 0.0041$), indicating that a structured management approach enhances both visitor experiences and environmental protection. As park management becomes more structured and organized—with clearly defined responsibilities, standardized operational procedures, well-trained staff, and updated management instruments—its capacity to maintain an appropriate balance between biodiversity conservation and positive visitor experiences increases (Ministry of the Environment, 2024; Jiménez-Pérez, 2019; Bensusan, 2006). Such an approach enables visitor-use activities to be planned according to technical criteria, considering carrying-capacity limits, visitor safety, and ecosystem protection.

A high-quality visitor experience depends not only on the scenic beauty of protected areas but also on the way park managers regulate access, communicate regulations, provide adequate infrastructure, and promote shared responsibility for conservation (Koh, 2024; Rodrigues & Abrucio, 2019). These findings demonstrate that structured governance improves administrative performance while strengthening the relationship between society and nature, one of the fundamental principles of ecotourism and sustainability in protected areas.

FINAL CONSIDERATIONS

Selecting ecotourism as the central axis for the correlation analyses proved to be an appropriate approach for proposing practices aligned with the realities of Brazilian National Parks (PARNA) and relating them to the ESG framework. The findings confirmed this approach, as ecotourism practices showed relevant correlations with all three ESG dimensions, albeit with varying degrees of intensity.

Overall, the results indicate that the adoption of ecotourism practices is positively associated with environmental conservation, socioeconomic inclusion, and institutional strengthening. These findings demonstrate that well-planned ecotourism can serve as a driver of both territorial and institutional sustainability, reinforcing the strategic role of Brazilian National Parks in biodiversity conservation and local development.

The results also highlight the potential for adopting management instruments inspired by international experiences, such as ESG indicators and periodic sustainability reports for protected areas. Such initiatives may enhance transparency, support management monitoring, and facilitate evidence-based decision-making, thereby contributing to the continuous improvement of management practices in Brazilian National Parks.

By incorporating the ESG approach into the context of public use, this study provides practical contributions to park management by encouraging managers and technical teams to reflect on planning processes, governance structures, and monitoring practices. The research instrument developed in this study may support the Chico Mendes Institute for Biodiversity Conservation (ICMBio) in developing a diagnostic tool capable of assessing the level of adoption of environmental, social, and governance practices in Brazilian National Parks. Such a tool would enable the identification of strengths, priority areas for improvement, and the monitoring of management progress over time. Consequently, the findings may also contribute to the formulation of public policies and the development of indicators aligned with Brazil's international sustainability commitments.

Future research should focus on: (i) testing and refining the research instrument in other categories of protected areas; (ii) assessing ESG performance over time, thereby enabling ICMBio and its partners to establish indicators, targets, and continuous improvement strategies; and (iii) applying the research instrument to stakeholder groups beyond park managers in order to compare perceptions and broaden the understanding of ESG implementation in protected areas.

In conclusion, this study advances the scientific and technical understanding of the relationships between ESG, ecotourism, and protected area management. It contributes to expanding the debate on the application of ESG principles to public-use management in Brazilian National Parks while encouraging further research and management practices aimed at strengthening sustainability in Conservation Units.

ACKNOWLEDGEMENTS

This research is the result of the Master's Dissertation in Tourism and Hospitality submitted to the Graduate Program in Tourism and Hospitality (PPGTH) at the University of Vale do Itajaí (UNIVALI). The study was supported by the Coordination for the Improvement of Higher Education Personnel – Brazil (CAPES).

REFERENCES

- ABNT. (2024). Prática recomendada ABNT PR 2030-1: Ambiental, social e governança (ESG): Parte 1 – Conceitos, diretrizes e modelo de avaliação e direcionamento para organizações. Associação Brasileira de Normas Técnicas.
- Albitar, K., Nasrallah, N., Hussainey, K., & Wang, Y. (2024). Eco-innovation and corporate waste management: The moderating role of ESG performance. *Review of Quantitative Finance and Accounting*, 63(2), 781-805. <https://doi.org/10.1007/s11156-024-01281-5>
- Bazanini, R., Adra, R. D., Rubero, R. E., Lanix, T. F. C., & Barbosa, C. P. (2020). A teoria dos stakeholders nas diferentes perspectivas: Controvérsias, conveniências e críticas. *Revista Pensamento e Realidade*, 35(2), 43-58.
- Bensusan, N. (2006). *Conservação da biodiversidade em áreas protegidas*. Editora FGV.

- Boff, L. (2015). *Sustentabilidade: O que é – o que não é* (4th ed.). Vozes.
- Brasil. (2000). Lei n. 9.985, de 18 de julho de 2000. https://www.planalto.gov.br/ccivil_03/leis/19985.htm
- Buallay, A. (2022). Sustainability reporting and retail sector performance: Worldwide evidence. *The International Review of Retail, Distribution and Consumer Research*, 32(3), 311-330.
- Cruz, H. S., Rodrigues, C. G. O., & Lemos, C. C. (2023). Aprendizados e desafios da concessão de serviços de apoio à visitação no Parque Nacional da Serra dos Órgãos (RJ). *Revista Brasileira de Ecoturismo*, 16(3).
- Dancey, C. P., & Reidy, J. (2006). *Estatística sem matemática para psicologia: Usando SPSS para Windows* (3rd ed.). Artmed.
- Discovery Parks. (2023). The Discovery Way: Environmental, social and governance (ESG) 2023 year in review. <https://www.discoveryholidayparks.com.au/getmedia/9cd47231-a5dd-4d5c-a969-e7e88e954000/discovery-parks-2023-year-in-review-esg-report.pdf>
- Dudley, N. (Ed.). (2008). *Guidelines for applying protected area management categories*. IUCN.
- Freitas, H., Oliveira, M., Saccol, A. Z., & Moscarola, J. (2000). O método da pesquisa survey. *Revista de Administração*, 35, 105-112.
- Gil, A. C. (2002). *Como elaborar projetos de pesquisa* (4th ed.). Atlas.
- Hassan, A. S., & Meyer, D. F. (2022). Does countries' environmental, social and governance (ESG) risk rating influence international tourism demand? A case of the Visegrád Four. *Journal of Tourism Futures*. <https://doi.org/10.1108/JTF-05-2021-0127>
- Hasana, U., Swain, S. K., & George, B. (2022). A bibliometric analysis of ecotourism: A safeguard strategy in protected areas.
- Huang, C. C., Li, S. P., Chan, Y. K., Hsieh, M. Y., & Lai, J. C. M. (2023). Empirical research on the sustainable development of ecotourism with environmental education concepts. <https://doi.org/10.3390/su151310307>
- ICMBio. (2014). *Conselhos gestores de unidades de conservação federais: Guia para gestores e conselheiros*. <https://www.gov.br/icmbio/pt-br/acesso-a-informacao/participacao-social/guiaconselhos2014.pdf>
- ICMBio. (2025). *Conselho gestor das unidades de conservação federais*. <https://dados.gov.br/dados/conjuntos-dados/conselho-gestor-das-unidades-de-conservacao-federais>
- Jiménez-Pérez, I. (2019). *Produção de natureza: Parques, rewilding e desenvolvimento local*. SPVS.
- Khalil, M. A., Khalil, S., & Sinliamthong, P. (2024). From ratings to resilience: The role and implications of environmental, social, and governance (ESG) performance in corporate solvency. *Sustainable Futures*, 8, 100304. <https://doi.org/10.1016/j.sfr.2024.100304>
- Koh, Y. (2024). The industry – academia gap on corporate governance issues in tourism and hospitality: A critical review and future research suggestions. *Journal of Travel & Tourism Marketing*, 41(1), 3-19. <https://doi.org/10.1080/10548408.2023.2229364>
- Kuzey, C., Al Shaer, H., Karaman, A. S., & Uyar, A. (2023). Public governance, corporate governance and excessive ESG. *Corporate Governance: The International Journal of Business in Society*, 23(7), 1748-1777. <https://doi.org/10.1108/CG-01-2023-0028>
- Lamattina, A. A., Peralta, M. C., Paulino, C. E., & Oliveira, D. S. (2024). Quantificando realidades técnicas de pesquisa quantitativa. Zenodo. <https://doi.org/10.5281/zenodo.13730270>
- Leal Filho, W., Platje, J., Gerstlberger, W., Ciegis, R., Kääriä, J., Klavins, M., & Kliučininkas, L. (2016). The role of governance in realising the transition towards sustainable societies. *Journal of Cleaner Production*, 113, 755-766. <https://doi.org/10.1016/j.jclepro.2015.11.060>
- Manzino, A. R. M. (2025). *Práticas ambientais, sociais e de governança (ESG) correlacionadas ao ecoturismo na gestão de parques nacionais brasileiros: um olhar sob a perspectiva dos gestores* (Dissertação de mestrado). Universidade do Vale do Itajaí. <https://biblioteca.univali.br/acer-vo/248353>
- Manzino, A. R. M., Anjos, S. J. G., Anjos, F. A., & Silva e Cunha, T. (2024). Práticas de ESG em ecoturismo: Uma análise bibliométrica. *Revista Rosa dos Ventos – Turismo e Hospitalidade*, 16(4). <https://doi.org/10.18226/21789061.v16i4p903>
- Maretti, C. C., Catapan, M. I. S., Abreu, M. J. P., & Oliveira, J. E. D. (2016). Áreas protegidas: Definições, tipos e conjuntos – reflexões conceituais e diretrizes para gestão. In: M. C. M. Brito et al. (Orgs.), *Gestão de áreas protegidas: Processos e práticas para o desenvolvimento territorial sustentável* (pp. 331–367). MMA.
- MAXQDA. (2022). *MAXQDA 2022 manual*. <https://www.maxqda.com/help-mx22-stats/correlation>
- Ministério do Meio Ambiente. (n.d.). *Plano de manejo*. <https://antigo.mma.gov.br/areas-protegidas/unidades-de-conservacao/plano-de-manejo.html>
- National Park Service. (2016). *Green Parks Plan: Advancing our mission through sustainable operations*. <https://npshistory.com/publications/climate-change/green-parks-plan-2016.pdf>
- Oliveira, L. R., Medeiros, R. M., Terra, P. B., & Quelhas, O. L. G. (2012). *Sustentabilidade: Da evolução dos conceitos à implementação como estratégia nas organizações*. <https://doi.org/10.1590/S0103-65132011005000062>
- Pahrudin, P., Liu, L. W., & Li, S. Y. (2022). What is the role of tourism management and marketing toward sustainable tourism? A bibliometric analysis approach. <https://doi.org/10.3390/su14074226>
- Plastun, A., Makarenko, I., Huliaieva, L., Guzenko, T., & Shalyhina, I. (2023). ESG vs conventional indices: Comparing efficiency in the Ukrainian stock market. *Investment Management and Financial Innovations*, 20(2), 1-15. [https://doi.org/10.21511/imfi.20\(2\).2023.01](https://doi.org/10.21511/imfi.20(2).2023.01)
- Rodrigues, C. G. O. (2009). *A relação entre as esferas pública e privada na apropriação da biodiversidade*. Universidade de Brasília.
- Rodrigues, C. G. O., & Abrucio, F. L. (2019). Parcerias e concessões para o desenvolvimento do turismo nos parques brasileiros. *Revista Brasileira*

de Pesquisa em Turismo, 13(3), 105-120.

Rodríguez-López, N., Diéguez-Castrillón, M. I., & Gueimonde-Canto, A. (2019). Sustainability and tourism competitiveness in protected areas. *Sustainability*, 11(22), 6296. <https://doi.org/10.3390/su11226296>

S&P Global. (n.d.). ESG scores: Rating company ESG performance. <https://www.spglobal.com/esg/solutions/esg-scores-data>

Shalhoob, H., & Hussainey, K. (2022). Environmental, social and governance disclosure and SME sustainability performance. *Sustainability*, 15(1), 200. <https://doi.org/10.3390/su15010200>

Singal, M. (2014). The link between firm financial performance and investment in sustainability initiatives. *Cornell Hospitality Quarterly*, 55(1), 19-30. <https://doi.org/10.1177/1938965513505700>

Souza, T. V. S. B., Thapa, B., Rodrigues, C. G. O., & Imori, D. (2019). Economic impacts of tourism in protected areas of Brazil. *Journal of Sustainable Tourism*, 27(6), 735-749.

Stepanova, D., Nurgaliyeva, A., Bessonova, T., Chernova, O., Litvinov, A., & Aru, Y. (2023). The influence of active types of tourism on the development of territories and the achievement of ESG principles.

The International Ecotourism Society. (2015). What is ecotourism? <https://ecotourism.org/what-is-ecotourism/>

United Nations. (1987). Report of the World Commission on Environment and Development. <https://digitallibrary.un.org/record/139811>

United Nations. (2004). Who cares wins: Connecting financial markets to a changing world. https://www.unepfi.org/fileadmin/events/2004/stocks/who_cares_wins_global_compact_2004.pdf

World Economic Forum. (2020). Measuring stakeholder capitalism: Towards common metrics and consistent reporting of sustainable value creation. https://www3.weforum.org/docs/WEF_IBC_Measuring_Stakeholder_Capitalism_Report_2020.pdf

Zhang, Y., Wang, Z., Shrestha, A., Zhou, X., Teng, M., Wang, P., & Wang, G. (2023). Exploring the main determinants of national park community management: evidence from bibliometric analysis.

AUTHOR CONTRIBUTIONS

Angelice Raquel Motter Manzino: Conceptualization, literature review, data collection, data analysis, results interpretation, and writing of the final considerations.

Sara Joana Gadotti dos Anjos: Conceptualization, research supervision, and critical review of the manuscript.