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How Can We Evaluate Regeneration in Tourism? Advancing Metrics and Methodologies for a Sustainable Transformation

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Abstract

This study investigates the progression of regenerative tourism, highlighting the evolution from traditional sustainability models toward initiatives that proactively promote environmental restoration, social equity, and economic development. The discussion is rooted in Regenerative Development Theory and examines the critical need for developing comprehensive metrics and indicators. These tools are essential for assessing the impacts of regenerative tourism initiatives, allowing for a nuanced understanding of their contributions to environmental sustainability, social well-being, and economic prosperity. Through a conscientious methodology development and validation process, this work aims to provide stakeholders with the means to accurately evaluate and enhance the regenerative effects of tourism practices. The findings underscore the significance of regenerative tourism in guiding the industry towards a more sustainable and transformative future, offering valuable insights for policymaking, practical interventions, and the direction of future research.

Keywords: Regenerative Tourism; Sustainable Development; Environmental Restoration; Social Equity; Economic Benefits.

A. INTRODUCTION

Regenerative tourism represents an evolutionary step beyond sustainable tourism, aiming to mitigate negative impacts and actively enhance environmental, social, and economic conditions (Bellato et al., 2023). This concept broadens the scope of tourism's role in society, positioning it as a catalyst for positive change. Regenerative well-being focuses on the restoration of ecosystems, the promotion of community well-being, and the enhancement of economic viability, all of which result in a net positive impact (Chapman & Speake, 2011). It challenges the tourism industry to rethink its operations, strategies, and goals, encouraging practices that contribute to the health and resilience of local communities and the planet (Della et al., 2017).

The significance of measurement and evaluation in regenerative tourism cannot be exaggerated. Developing robust metrics and indicators is crucial for assessing the effectiveness of regenerative practices (Hashmi & Zonah, 2024). Such tools enable stakeholders to quantify the environmental, social, and economic benefits of tourism activities, providing empirical evidence to support policy decisions and industry practices. Without these metrics, it would be challenging to distinguish between genuinely regenerative initiatives and those that claim sustainability without substantive impact (Higgins-Desbiolles et al., 2019). Therefore, creating and applying these evaluative tools are foundational to advancing regenerative tourism as a credible and impactful approach (Lak et al., 2020).

Research in regenerative tourism thus sets ambitious objectives. One primary goal is to develop comprehensive evaluation tools capable of capturing the complex impacts of tourism activities. These tools must measure environmental restoration efforts, social equity improvements, and economic benefits (Ye et al., 2024). By doing so, the research seeks to provide a holistic understanding of regenerative

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tourism's effects, ensuring that initiatives contribute positively to all facets of host communities and environments (Yang et al., 2024). This involves a careful process of identifying relevant metrics and constructing methodologies that accurately reflect the regenerative potential of tourism practices (Wang et al., 2024).

Achieving these objectives requires a multi-disciplinary approach, drawing on insights from environmental science, social science, economics, and beyond. Researchers must navigate the challenges of creating scientifically rigorous and applicable indicators in diverse tourism contexts (Ortiz-de-Montellano et al., 2023). This endeavor demands collaboration among scholars, practitioners, communities, and policymakers, leveraging a wide range of expertise to ensure that the developed tools are valid, reliable, and adaptable (Nocca & Girard, 2018). Ultimately, the success of this research lies in its ability to produce actionable insights that guide the tourism industry toward more regenerative practices (Luong et al., 2024).

B. LITERATURE REVIEW

Regenerative Development Theory (Lyle, 1996) serves as the conceptual backbone for regenerative tourism, drawing inspiration from a spectrum of disciplines, including ecology, sociology, and economics, to reimagine the potential of tourism (Bellato et al., 2023; Chapman & Speake, 2011). This theory posits that tourism should not only aim to minimize harm but actively contribute to the restoration and rejuvenation of ecological systems, the empowerment of local communities, and the promotion of sustainable economic practices (Ortiz-de-Montellano et al., 2023; Wang et al., 2024). It challenges conventional tourism models by advocating for practices that restore natural habitats, enhance biodiversity, and support the capacity of ecosystems to regenerate themselves (Della et al., 2017; Hashmi & Zonah, 2024). Moreover, it emphasizes the importance of creating sustainable livelihoods for local populations, ensuring that tourism development contributes positively to host communities' social fabric and economic resilience. Regenerative Development Theory (Luong et al., 2024; Nocca & Girard, 2018), thus, provides a holistic framework that transcends the sustainability paradigm, advocating for a transformative approach to tourism that benefits all forms of life and fosters a harmonious relationship between humans and nature (Higgins-Desbiolles et al., 2019; Lak et al., 2020).

In the domain of regenerative tourism, the theories of evaluation and measurement play a crucial role in substantiating the claims of regenerative impacts and guiding the implementation of regenerative practices (Yang et al., 2024; Ye et al., 2024). Systems theory, for instance, offers a lens through which the interconnectedness of tourism activities and their effects on environmental, social, and economic systems can be understood (Bellato et al., 2023; Della et al., 2017). It underscores the importance of considering the tourism sector as part of a more extensive ecological and societal system, necessitating metrics that reflect these complex interactions. Stakeholder theory further enriches this perspective by highlighting the interests and values of those affected by tourism development, from local communities and businesses to environmental advocates and policymakers (Chapman & Speake, 2011; Hashmi & Zonah, 2024). This theory underscores the need for inclusive evaluation processes that accommodate diverse stakeholder perspectives, ensuring that the benefits of tourism are equitably distributed. Meanwhile, the triple bottomline framework provides a structured approach to measuring tourism's performance across three critical dimensions: environmental sustainability (Higgins-Desbiolles et al., 2019; Luong et al., 2024), social equity, and economic viability. These theories and frameworks lay the groundwork for developing comprehensive evaluation tools to capture regenerative tourism's multifaceted impacts, facilitating evidence-based decision-making and policy formulation (Lak et al., 2020; Nocca & Girard, 2018).

Integrating Regenerative Development Theory with robust evaluation and measurement theories offers a promising path forward for the tourism industry. By grounding regenerative tourism practices in solid theoretical frameworks, researchers and practitioners can develop nuanced metrics and indicators that accurately assess the regenerative impacts of tourism (Ortiz-de-Montellano et al., 2023; Yang et al., 2024). These tools facilitate a deeper understanding of the complex dynamics and empower stakeholders to make informed decisions that align with regenerative principles. Ultimately, the synergy between regenerative development theory and evaluation methodologies paves the way for a new era of tourism that champions ecological restoration, social justice, and economic inclusivity (Wang et al., 2024; Ye et al., 2024). As the tourism industry embraces these innovative approaches, it has the potential to transform into a powerful agent for positive change, contributing to the health and vitality of our planet and its inhabitants.

C. RESEARCH METHOD

Developing a rigorous methodology for evaluating the impacts of regenerative tourism necessitates carefully selecting metrics and indicators that holistically capture its environmental, social, and economic dimensions (Ye et al., 2024). This process begins with a comprehensive literature review and stakeholder engagement to ensure that the selected metrics align with the core principles of regenerative tourism. Environmental restoration metrics might include biodiversity, ecosystem resilience, and land regeneration, whereas social equity indicators could assess community engagement, cultural preservation, and equitable economic distribution (Yang et al., 2024). Economic benefits, on the other hand, could be evaluated through metrics such as local employment rates, income levels, and sustainable business growth. Employing qualitative and quantitative measures to garner a nuanced understanding of regenerative tourism's impacts is imperative. Qualitative data gathered through interviews and participatory appraisals can provide deep insights into community perceptions and cultural values. Quantitative data, on the other hand, can offer measurable evidence of environmental and economic changes obtained through surveys, ecological assessments, and financial analysis (Ortiz-de-Montellano et al., 2023). Incorporating a diverse array of stakeholder perspectives and grounding metric selection in scientific evidence ensures that the evaluation framework is comprehensive, relevant, and capable of capturing the multifaceted impacts of regenerative tourism (Lak et al., 2020).

The design of tools and methodologies for data collection and analysis in regenerative tourism research is a complex but critical endeavor. Developing new tools requires an innovative approach that combines traditional research methods with emerging technologies and participatory techniques (Wang et al., 2024; Ye et al., 2024). Surveys and interviews remain foundational tools for gathering quantitative and qualitative data, respectively, but their design must be carefully tailored to address the specificities of regenerative tourism. Participatory appraisal techniques, such as community mapping and focus group discussions, can facilitate the active involvement of local stakeholders in the research process (Bellato et al., 2023; Della et al., 2017), enriching the data with their insights and experiences. Ecological assessments, field observations, and remote sensing technologies are essential for measuring environmental restoration efforts (Higgins-Desbiolles et al., 2019; Luong et al., 2024). In designing these methodologies, researchers must consider the scalability and adaptability of the tools to different contexts, ensuring that they are applicable across a range of regenerative tourism initiatives. The development process should be iterative, allowing for the refinement of tools based on preliminary findings and stakeholder feedback (Ortiz-de-Montellano et al., 2023; Yang et al., 2024).

Validating the reliability and applicability of developed metrics and tools is critical in ensuring their effectiveness in diverse contexts. This involves a series of tests and pilot studies to assess the metrics'

ability to accurately and consistently measure the intended impacts (Della et al., 2017). Validity testing ensures that the tools accurately capture the essence of regenerative tourism's benefits, while reliability testing evaluates the consistency of results across different periods and settings. Methods such as testretest reliability, inter-rater reliability, and construct validity are crucial in this phase (Chapman & Speake, 2011). Moreover, applying these metrics and tools in case studies spanning various geographic and cultural contexts can provide valuable insights into their adaptability and utility. Gathering feedback from both researchers and stakeholders involved in these pilot studies can further refine the evaluation framework, enhancing its relevance and efficacy (Higgins-Desbiolles et al., 2019; Lak et al., 2020). Through rigorous validation and reliability testing, the developed metrics and tools can become robust instruments for assessing the regenerative impacts of tourism, contributing significantly to the field's advancement and the practical implementation of regenerative tourism practices (Lak et al., 2020; Nocca Girard, 2018).

Research Design and Execution

In the research design and execution phase for studies on regenerative tourism, careful consideration must be given to case study selection and sampling, data collection strategies, and methods for data analysis and interpretation. Each step is crucial for ensuring that the research outcomes are robust, reliable, and applicable to various contexts as follows:

Case Study Selection and Sampling

The selection of case studies or sample populations is foundational to the research process, directly influencing the validity and generalizability of the findings. Criteria for selection should prioritize diversity in geographical location, scale of tourism operations, and community involvement to ensure a comprehensive understanding of regenerative tourism's impacts across different settings (Della et al., 2017; Hashmi & Zonah, 2024). Factors such as the ecological significance of the area, the socio-economic context, and the maturity of regenerative tourism practices should be considered. Stratified sampling techniques can be employed to ensure representation across different categories, while purposive sampling may be utilized to select cases with specific characteristics of interest. This approach facilitates the examination of the developed metrics and tools across various contexts, enhancing the research design's robustness and the findings' applicability (Ortiz-de-Montellano et al., 2023; Wang et al., 2024).

Data Collection Strategies

Data collection in regenerative tourism research requires meticulous planning to navigate logistical, ethical, and methodological challenges. Logistically, researchers must account for the accessibility of sites, the availability of participants, and the allocation of resources. Ethically, it is paramount to secure informed consent from participants, respect local customs and norms, and ensure that research activities do not adversely affect the communities or environments studied (Higgins-Desbiolles et al., 2019; Lak et al., 2020). Methodologically, data collection strategies must be tailored to the specificities of each case study, employing a mix of quantitative and qualitative methods to capture the multi-dimensional impacts of regenerative tourism. Surveys, interviews, participant observation, and ecological assessments are among the techniques that can be utilized, each chosen based on its suitability to answer the research questions and its feasibility within the operational context of the study (Ortiz-de-Montellano et al., 2023; Wang et al., 2024).

Data Analysis and Interpretation

Analyzing the data collected from regenerative tourism research involves a combination of quantitative and qualitative methods to ensure a comprehensive understanding of the findings, such as statistical analysis, regression analysis, and factor analysis (Bellato et al., 2023). Descriptive statistics are essential for examining relationships and trends within quantitative data. For qualitative data, thematic analysis is a powerful tool for identifying patterns and insights related to regenerative tourism's social and cultural dimensions (Chapman & Speake, 2011). Triangulation of findings from multiple data sources and methods is critical for enhancing the validity of the research. This approach allows researchers to corroborate evidence from different angles, providing a more nuanced and reliable picture of regenerative tourism's impacts. Moreover, critical reflection on the data and its implications for theory and practice is necessary for drawing meaningful conclusions and recommendations (Ortiz-de-Montellano et al., 2023). By systematically analyzing and interpreting the data, researchers can contribute valuable knowledge to regenerative tourism, informing policy, practice, and future studies

D. RESULTS AND ANALYSIS

The culmination of rigorous research into the regenerative impacts of tourism activities brings forth significant implications and applications for policy-making and practical interventions in the tourism sector. Findings from the regenerative impacts of tourism enrich the academic discourse and provide a pragmatic blueprint for the sustainable evolution of tourism practices.

Policy and Practice Recommendations

Research findings emphasizing the regenerative approaches to tourism can profoundly influence policy-making and practical interventions within the sector. With empirical evidence of regenerative tourism's environmental, social, and economic benefits, policymakers are better positioned to draft policies promoting these practices (Wang et al., 2024; Ye et al., 2024). Such policies might include incentives for tourism operations demonstrating measurable regenerative impacts, regulations protecting and restoring natural ecosystems, and frameworks ensuring equitable economic benefits for local communities. For practitioners, the research highlights effective strategies and best practices for implementing regenerative tourism initiatives (Ortiz-de-Montellano et al., 2023; Yang et al., 2024). Recommendations may involve adopting sustainable supply chain management, enhancing community engagement and participation, and investing in restoring natural habitats. By integrating these research findings into policy and practice, stakeholders across the tourism sector can contribute to a more sustainable, equitable, and regenerative tourism future (Table 1) (Lak et al., 2020; Nocca & Girard, 2018).

Future Research Directions

Despite advancements, regenerative tourism research is ripe with opportunities for further exploration. One critical area involves addressing gaps related to the long-term impacts of regenerative tourism practices, requiring longitudinal studies that span several years or even decades. Future research could also delve into the comparative effectiveness of different regenerative practices across various ecological and cultural contexts, providing insights into the adaptability and scalability of these approaches. Methodological improvements, such as developing more sophisticated tools for measuring regenerative impacts or integrating novel data collection techniques, could enhance the precision and depth of future studies. Additionally, exploring the interplay between regenerative tourism and emerging global challenges, such as climate change and social inequality, could yield valuable perspectives on the role of tourism in addressing these critical issues.

Contribution to Theory and Practice

Exploring regenerative tourism's impacts contributes significantly to the field's theoretical framework and practical applications. Theoretically, this body of research enriches our understanding of

how tourism can transcend traditional sustainability models to actively contribute to the regeneration of ecosystems, communities, and economies. It challenges existing paradigms and invites a reevaluation of tourism's fundamental purposes and potential (Higgins-Desbiolles et al., 2019; Luong et al., 2024). Practically, the research provides a robust foundation for developing metrics, tools, and methodologies that can guide the implementation of regenerative tourism practices (table 1). These contributions pave the way for more effective and impactful tourism strategies and inspire continued innovation and exploration in pursuing a regenerative future (Chapman & Speake, 2011; Hashmi & Zonah, 2024).

Table 1. Steps and Examples in Researching Regenerative Tourism

Phase	Steps	Examples
1. Conceptual Framework Understanding	 Study the foundations of Regenerative Development Theory. Explore how evaluation and measurement theories apply to tourism. 	 Coral reef restoration projects in the Islands/beaches Global Sustainable Tourism Council's criteria Eco-tourism development in forest-based destinations Community-based tourism in a developing country
2. Methodology Development	 Conduct a thorough literature review to identify existing research. Engage with stakeholders for insights and validation. Select appropriate metrics for evaluating environmental restoration, social equity, and economic benefits. 	 Recognized Database for review articles on regenerative tourism. Interviews with eco-lodge operators in the tourist destinations Biodiversity metrics in the forest Social equity indicators in urban renewal projects in the cultural/mega city
3. Tool Design and Data Collection	 Integrate both traditional research methods and innovative technologies for comprehensive data collection. Conduct ecological assessments to measure environmental impacts. 	 App for tracking visitor experiences in ecotourism spots Online surveys for assessing tourist satisfaction in cultural sites. Fieldwork for ecological impact in the coral reef system Remote sensing for land use changes in national parks

4. Validation and Reliability Testing

- Implement pilot studies to test the feasibility and effectiveness of selected metrics.
- Collect and incorporate feedback from diverse stakeholders to refine tools and methodologies.
- Pilot study on water quality improvement in coastal areas
- Community feedback sessions in townships
- Reliability testing of wildlife observation data in National Parks
- Validity checks on cultural impact assessments in Indigenous communities
- Urban sustainability projects in the mega city
- Rural ecotourism initiatives in the Mountains
- Conservation tourism in the Islands
- Cultural heritage tourism
- Policy briefs for promoting sustainable practices in Islands.
- Longitudinal studies on community benefits in tourism
- Comparative studies of regenerative practices among different nationality contexts
- Methodological advancements in socioeconomic impact measurement
- Essays on Integrating Indigenous Knowledge
- Guidebooks for local operators on sustainable practices
- Theoretical papers on regenerative tourism frameworks
- Case study compilations of successful regenerative initiatives
- Online forums for sharing research findings on sustainable living
- International sustainability conference presentations
- Collaborative research projects on climate change impacts on tourism

5. Research Design and Execution

6. Implications and

Applications

- Carefully select a diverse range of case studies for in-depth analysis.
- Plan data collection strategies, considering logistical, ethical, and methodological challenges.
- Develop policy recommendations based on research findings.
- Identify areas for future research to further the field of regenerative tourism.

7. Contribution to Theory and Practice

- Reflect on how the research contributes to the broader theoretical framework of regenerative tourism.
- Translate research findings into practical applications and recommendations for the industry.
- Encourage ongoing refinement of regenerative tourism practices based on
 - Foster collaboration across disciplines and with industry

research outcomes.

8. Continuous Improvement and Future Research

stakeholders to expand	 Development of cross-
research impact.	disciplinary courses on
	sustainable tourism

Source: Author Own Elaboration (2024)

CONCLUSION

The advancement of research in the measurement and evaluation of regenerative tourism emerges as a critical endeavor for the sustainable evolution of the tourism industry. Through the development of nuanced metrics and indicators, this research provides the foundational tools necessary to assess and amplify the positive impacts of tourism on environmental restoration, social equity, and economic vitality. These evaluative tools enable a deeper understanding of the regenerative capacities of tourism activities but also offer a quantitative and qualitative basis for policymaking, strategic planning, and operational adjustments within the tourism sector.

The potential of these developed metrics and indicators lies in their ability to guide the tourism industry's transition towards practices that do more than merely minimize harm. Instead, they encourage a proactive approach to tourism development to rejuvenate ecosystems, empower local communities, and foster sustainable economic growth. These research outcomes support the argument for a shift in how tourism is conceptualized and practiced globally by providing a means to quantify and articulate the benefits of regenerative tourism.

Lastly, pursuing rigorous research in the measurement and evaluation of regenerative tourism stands as a beacon for the industry's future. It underscores the importance of adopting and refining regenerative practices, not as an alternative but as a necessity for sustainable and ethical growth in the tourism sector. As the industry moves forward, the continuous improvement and application of these metrics and indicators will be vital in navigating the complexities of tourism's relationship with our planet and its inhabitants (Ortiz-de-Montellano et al., 2023; Wang et al., 2024). The collective efforts of researchers, policymakers, practitioners, and communities in advancing this field of study contribute to the theoretical and practical advancements in tourism and align with the broader goals of sustainable development and ecological stewardship.

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