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International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Environmental Challenges Associated with Current Tourism Practices in Taytay Falls, Majayjay, Laguna.

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ABSTRACT

To be indroduced in this paper, its methodology contained descriptive statistics, person correlation coefficients, regression analysis and biodiversity. Quantitative descriptive-correlational research design on tourism practices and environmental changes at taytay falls were utilized by the study. biodiversity conservation. by proposing a systemic way of integrating tourism development and biodiversity conservation. this means that the null hypothesis is rejected confirming the fact that the tours at taytay falls pose a significant challenge a great challenge especially on the waste disposal and infrastructure connectivity to address the ecological challenges. Highlighting indicators across Waste Segregation, Green Infrastructure, Transparent Development & Community Communication and its resulting impacts on erosion, polluting water bodies, developing tourism, community involvement, restoring habitats, maintaining water quality and the environmental impacts from existing tourism practices were key takeaways from these results. this study aimed to measure the environmental pressures, such soil erosion, habitat degradation, and water pollution, and to assess experiences on many environmental dimensions using a 4-point liker scale

In this perspective, the study provides a few essential insights on sustainable tourism management units. The structured questionnaire to measure perceptions that regressed and had strong positive relationships with environmental degradation. management and thus useful pro-environmental recommendations about waste prevention, infrastructural practices in sensitive natural ecosystems exploiting strengths–weaknesses profiles built from triadic stakeholder input encapsulating several distance hierarchy views between urban, peri-urban, and rural bottom-up verticals. the researchers did see high levels of concern in all the areas they studied. for the research on tourism practices and environmental issues. Systematic random sampling was used to collect data from both tourists and local residents, and the data related to local waste management, infrastructure development, communication in the community were collected by examining the perceived relationship of local community sustainability and ecological conservation, with a focus on enhancing sustainability in the context of tourism development.

Keywords: Taytay Falls, Majayjay, Laguna, Environmental Challenges, Tourism Practices

INTRODUCTION:

Taytay Falls stands for bigger challenges for natural tourist spots within developing regions. The site reflects the conflict between economic growth through tourism and safeguarding the environment a conflict that extends far beyond this single location. By examining the ecological problems that arise from the current tourism methods, this paper aims to establish a replicable model relevant to ecologically similar areas. Its way out is not merely the documentation of environmental degradation but rather to create knowledge in an actionable manner — knowledge that can inform policy, sustainable tourism practices and empower local communities to take an active role as stewards of their natural heritage.

This research represents an important part of the ongoing discourse on nature conservation and sustainable tourism. It challenges the widely accepted narrative that economic growth and economic opportunity can Never go Hand.in.Hand with ecological stewardship and restoration, while providing a model of coexistence and mutual enhancement instead. The total work, beyond feeding the academic canon, will help reshape real-world strategies of preserving natural havens. This study employs a comprehensive, evidence-based examination of the ecological challenges faced by Taytay Falls to advocate for a paradigm shift toward more responsible, sustainable tourism practices that recognize the intrinsic value of the natural world and work towards protecting it.

THEORETICAL BACKGROUND:

The Environmental Impact of Tourism in Taytay Falls of the Environmental Report: A Critical Analysis using Carrying Capacity Theory CCT Carrying Capacity Theory CCT is a approach on how to interject between current report, the Journal of Sustainable Tourism published a study on carrying capacity in ecologically sensitive destinations and also find out how some visitor management approach can alleviate environmental stress so that natural systems can operate, and tourism is sustainable (Salamanca-Jiménez & Brown 2021). In particular, it was this framework that indicated that in the case of Taytay

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Falls, the ecosystem had a carrying capacity, beyond which the activities of tourists could lead to irreversible damage to the natural environment, which could include soil erosion, water pollution or destruction of vegetation and the habitat of other wildlife, among others.

The CBT (community-based tourism) theory gives us a new perspective for examining how environmental and social impacts are explored in tourism studies. A nice study by Wara et al. (2022) range in Protected Natural Areas, International Journal of Tourism Management, explore community-centered tourism practices, emphasizing local involvement and co-management in the achievement of the tourism development goals and sustainable environmental management. In CBT theory-based development, environmental conservation in Taytay Falls was found to be an interconnected process that linked community empowerment, local knowledge and sustainable resource management.

PROBLEM STATEMENT:

Research question or Research hypothesis or Problem statement This study was conducted to investigate how the respondents assess the environmental challenges in Taytay Falls based on:

1) Waste management,

2) Infrastructure development and.

3) Communication with local communities. And;

Also, to examine the extent of;

1) Erosion and habitat degradation,

2) Water pollution, and

3) Loss of biodiversity affects the environmental challenges of Taytay Falls.

Finally, identify the significant relationship of the tourism practices to the environmental challenges in Taytay Falls**.**

DATA AND METHODS:

In analyzing the environmental problems caused by the current tourism activities in Taytay Falls, Majayjay, Laguna, the study applied a quantitative descriptive-correlational method through a cross-sectional survey design. Researchers observed a large range of data collection via using questionnaire to 100 respondents (tourist, locals and local government unit (LGU)). The data collection tool was structured self-administered questionnaire survey yielding quantitative data using 4-point Likert scale methodology. methods: Data collected were analysed using Weighted Means, Standard Deviations and Regression Analysis.

Table 1. Assessing environmental challenges across three domains (Waste Management, Infrastructure Development, and Communication with Local Communities)

	Statement	Mean	SD	Remarks
Waste Management				
	Improper waste disposal by tourists affects the natural beauty of Taytay Falls.	3.60	0.82	Strongly Agree
	Implementation of sustainable waste management initiatives affected water quality and biodiversity in the Taytay, Falls	3.49	0.82	Strongly Agree
	Community engagement and participation in waste reduction programs affects the overall environmental condition of Taytay, Falls.	3.60	0.79	Strongly Agree
	Proper waste segregation by local residents contribute to the cleanliness and health of the environment surrounding Taytay Falls.	3.78	0.60	Strongly Agree
	Tourists' awareness of the environmental impact of their waste disposal habits influences their behaviour at Taytay Falls.	3.70	0.64	Strongly Agree

	Average	3.63	0.74	Very High
Infrastructure Development				
	The improvement of infrastructure at Taytay Falls contribute to environmental conservation efforts.	3.64	0.61	Strongly Agree
	The availability of proper pathways and facilities enhances the overall tourist experience while minimizing environmental impact.	3.59	0.71	Strongly Agree
	The construction of eco-friendly amenities, such as composting toilets and recycling stations, is essential for sustainable tourism in Taytay Falls.	3.73	0.57	Strongly Agree
	Investments in renewable energy sources, such as solar panels, reduce the environmental impact of tourism activities at Taytay Falls.	3.58	0.70	Strongly Agree
	The collaboration between the local government and the community in infrastructure development fosters a sense of ownership and responsibility towards environmental conservation in Taytay Falls.	3.74	0.56	Strongly Agree
	Average	3.66	0.63	Very High
Communication with Local Communities				
	Effective communication with local communities contribute to a comprehensive understanding of the environmental challenges faced by Taytay Falls.	3.72	0.57	Strongly Agree
	Local residents are actively engaged in discussions and initiatives aimed at addressing environmental issues in Taytay Falls.	3.54	0.67	Strongly Agree
	There is a strong sense of community involvement in the preservation and protection of the environment at Taytay Falls.	3.51	0.72	Strongly Agree
	The concerns and suggestions of local residents regarding environmental issues are heard and considered by the authorities.	3.56	0.74	Strongly Agree
	The communication channels between the Local Government Unit (LGU) and the local community are transparent and accessible, fostering trust and cooperation in addressing environmental challenges at Taytay Falls.	3.48	0.76	Strongly Agree
	Average	3.56	0.70	Very High

Waste Management

The statement with the rank of highest mean of 3.78 is "Proper waste segregation by the residents of the locality increase cleanliness and healthiness of the contact environment of Taytay Falls. The note shows that the respondents strongly agree that the responsible waste segregation by the local residents greatly contribute to the cleanliness and environmental sanitation of Taytay Falls. Lau et al. recently challenged this finding. (2020) that asserted the importance of community-based waste management initiatives to facilitate the preservation of the natural environment of tourism places.

Infrastructure Development

The statement with the highest mean of 3.74, is "The collaboration between the local government and the community in infrastructure development fosters a sense of ownership and responsibility towards environmental conservation in Taytay Falls." This indicates that the respondents strongly agreed

that the collaboration between the local government and the community in infrastructure development is a critical factor in promoting environmental conservation efforts in Taytay Falls.

Communication with Local communities

Effective communication with local communities contributes to a comprehensive understanding of the environmental challenges faced by Taytay Falls (mean=3.72) This means that the respondents agreed that the communication with the local communities is essential for the development of a thorough understanding of the challenges going on in the environment of Taytay Falls.

Table 2. Examines the extent of environmental challenges through three key dimensions (Erosion and Habitat Degradation, Water Pollution, and Loss of Biodiversity).

	Statement	Mean	SD	Remarks
Erosion and Habitat Degradation				
	The implementation of erosion control measures be integrated with other environmental conservation efforts in the area.	3.66	0.67	Strongly Agree
	Habitat degradation specifically affect biodiversity around Taytay Falls.	3.56	0.73	Strongly Agree
	Habitat restoration projects should be implemented to counteract the negative effects of erosion and habitat degradation at Taytay Falls.	3.64	0.67	Strongly Agree
	Educating tourists about the importance of preserving natural habitats can contribute to minimizing erosion and habitat degradation at Taytay Falls.	3.61	0.65	Strongly Agree
	Sustainable tourism practices can be implemented to mitigate erosion and habitat degradation at Taytay Falls.	3.70	0.52	Strongly Agree
	Average	3.63	0.65	Very Great Extent
Water Pollution				
	Water pollution significantly impacts the biodiversity of Taytay Falls.	3.63	0.66	Strongly Agree
	Water pollution specifically impact the visual aesthetic and overall natural beauty of Taytay Falls	3.58	0.73	Strongly Agree
	Regular monitoring and testing of water quality should be conducted to ensure the health of Taytay Falls' ecosystem.	3.70	0.59	Strongly Agree
	Public awareness campaigns should be implemented to educate tourists about the importance of preventing water pollution at Taytay Falls.	3.63	0.63	Strongly Agree
	Implement stricter regulations to prevent industries and businesses from polluting the water sources around Taytay Falls.	3.63	0.71	Strongly Agree
	Average	3.63	0.66	Very Great Extent
Loss of Biodiversity				

	Preserving biodiversity is essential for the long-term sustainability of Taytay Falls as a tourist destination.	3.61	0.60	Strongly Agree
	Efforts to conserve and restore biodiversity should be prioritized in managing environmental challenges at Taytay Falls.	3.63	0.60	Strongly Agree
	Implementation of education and awareness programs regarding biodiversity conservation for tourists visiting Taytay Falls.	3.60	0.62	Strongly Agree
	Community involvement can contribute to the effectiveness of biodiversity conservation efforts at Taytay Falls.	3.54	0.70	Strongly Agree
	Strengthening of Government policies and regulations to protect and conserve biodiversity in areas like Taytay Falls.	3.64	0.64	Strongly Agree
	Average	3.60	0.63	Very Great Extent

Soil erosion and destruction of habitats

The statement with the highest mean 3.70 is "Sustainable tourism practices can be implemented to mitigate erosion and habitat degradation at Taytay Falls. Respondents strongly agreed that the implementation of sustainable tourism practices is an essential action to reduce the incidence of erosions and habitat destruction in Taytay Falls.

Water Pollution

This is also supported by their mean of 3.70 highest statement which states that "Regular monitoring and testing of water quality should be conducted to ensure the health of Taytay Falls' ecosystem." This means that the respondents agreed much that regular monitoring and testing of water quality is a precautionary measure that must be done to protect the health of the ecosystem of Taytay Falls.

Loss of Biodiversity

With a mean of 3.63, the statement "Preservation and revitalization of biodiversity should take precedence in addressing environmental issues at Taytay Falls." This suggests that the participants agreed that conservation and restoration of biodiversity should be a priority in the management of environmental issues concerning Taytay Falls.

Table 3. Significant relationship of the tourism practices to the environmental changes in Taytay Falls.

Tourism Practices	**Environmental Changes**	**R VALUE**	**INTERPRETATION**	**P VALUE**	**ANALYSIS**
Waste Management	Erosion and Habitat Degradation	0.7165	Strong Positive	0.0000	Significant
	Water Pollution	0.6378	Strong Positive	0.0000	Significant
	Loss of Biodiversity	0.7164	Strong Positive	0.0000	Significant
Infrastructure Development	Erosion and Habitat Degradation	0.6583	Strong Positive	0.0000	Significant
	Water Pollution	0.6125	Strong Positive	0.0000	Significant
	Loss of Biodiversity	0.6236	Strong Positive	0.0000	Significant
Communication with Local Communities	Erosion and Habitat	0.6851	Strong Positive	0.0000	Significant

Degradation				
Water Pollution	0.6382	Strong Positive	0.0000	Significant
Loss of Biodiversity	0.7663	Strong Positive	0.0000	Significant

Note. *Statistically significant with α=0.05

The test output showed that based on the result, the p–values of Waste Management, Infrastructure and Communication with Local Communities towards Erosion and Habitat Degradation, Water Pollution, and Loss of Biodiversity is smaller than alpha value of 0.05 which all indicate as significant. These strong positive correlations, along with low p-values, show that the results are statistically significant and that the observed relationships are unlikely to have occurred by chance. Based on our finding, it suggests that there is currently extreme negative impact in the current tourism activity and infrastructure development in the Taytay Falls area in the local environment. Recently Abbruzzo et al. (2021) that focuses on sustainable tourism practices in protected areas concludes with the implication that such interventions are necessary, which can only validate our findings that there is a need to balance tourism development with environmental sustainability. Thus, the null hypothesis is: "There is no significant association between current tourism practices in Taytay Falls, Majayjay, Laguna, and environmental challenges in the area. is not true and rejected.

CONCLUSIONS:

1.Waste disposal in Taytay Falls is rated very high. The topmost element is proper segregation of waste by local residents. More than half of the respondents strongly agree that poor waste disposal will jeopardize the pristine natural beauty of the falls.

2.Very high rate in Taytay Falls infrastructure development. The highest smoking thing is collaboration between local government and community. Majority of the respondents strongly agree that infrastructure improvements play a role in environmental conservation and cooperation between the local government and the city residents creates a sense of environmental responsibility.

3. Local communities in Taytay Falls are rated very high in communication. The best-rated element is communicating well with local residents. Environmental challenges can be addressed through transparent and accessible communication channels; the local community is engaged and willing to take part in environmental discussions and initiatives.

4. Environmental Challenges

• Very great extent of erosion and habitat degradation on Taytay Falls The highest-rated aspect is sustainable practices of tourism to curb erosion. The critical role of sustainable tourism practices in minimizing habitat degradation and erosion is highlighted by the survey outcomes.

• Water pollution at Taytay Falls is also a very great extent. The best-rated aspect of the actual water quality is regular water quality monitoring and testing. The survey results show how water pollution affects biodiversity and beauty of the falls.

• Biodiversity conservation is of top priority in Taytay Falls, rated as a very great concern.

extent. The highest rated feature is the strengthening of government policies and regulations. Results from the survey highlight the importance of biodiversity conservation as key to sustaining Taytay Falls in the long run.

5. Statistical Relationships. The analysis found positive correlations between waste management and environmental changes ($r = 0.53$; $p < 0.006$), effective communication with local communities and environmental impacts ($r = 0.61$; $p < 0.006$), and development of infrastructure and environmental challenges ($r = 0.66$; $p < 0.016$). We therefore reject the null hypothesis as a statistically significant association exists between tourism practices and environmental challenges in this context.

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