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Building Sustainable Tourism in the Serayu Motion Dam Area: A Strategic Review through SWOT Analysis

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Abstrak

Kawasan Bendungan Gerak Serayu sedang mengalami transformasi untuk meningkatkan efisiensi sumber daya dan kesehatan masyarakat dengan mengurangi dampak lingkungan. Hal ini mencakup penerapan model ekonomi hijau, yang meliputi investasi sumber daya dan pengurangan emisi untuk mencegah kerusakan ekologi. Pariwisata berkelanjutan sangat penting untuk melestarikan warisan budaya komunitas lokal sambil mengatasi tantangan lingkungan. Petani di wilayah ini meningkatkan perekonomian keluarga mereka dengan memanfaatkan pranoto mongso dan meningkatkan pendapatan melalui pengelolaan pariwisata. Studi ini bertujuan untuk mengidentifikasi inisiatif pariwisata berkelanjutan di kawasan Bendungan Serayu Motion menggunakan analisis SWOT. Hasil skor IFE menunjukkan bahwa kekuatan wilayah ini meliputi keindahan alam yang unik, perannya ganda sebagai pengelola air dan pembangkit listrik, serta potensi untuk ekowisata. Kelemahan utama adalah manajemen yang kurang memadai, sedangkan peluang utama terletak pada peningkatan infrastruktur transportasi. Kekhawatiran utama adalah persaingan dari destinasi pariwisata alternatif. Situs pariwisata Bendungan Serayu terletak di kuadran V, menunjukkan posisi organisasional yang moderat dengan pendekatan "Hold and Maintain". Strategi yang dirumuskan dari analisis SWOT mencakup integrasi aset budaya lokal dengan inisiatif pariwisata berkelanjutan, memanfaatkan dukungan pemerintah untuk meningkatkan infrastruktur, memperkuat sistem pendukung pariwisata, mengadvokasi keberlanjutan melalui pendidikan dan pelatihan, bersaing dengan resor pesaing, dan memperbaiki manajemen bidang profesional untuk mengurangi dampak lingkungan.

Kata Kunci: Bendungan gerak serayu; SWOT; wisata; lingkungan

Abstract

The Serayu Motion Dam area is being transformed to enhance resource efficiency and public health by mitigating environmental concerns. This entails the implementation of a green economy model, encompassing resource investment and emission reduction to avert ecological damage. Sustainable tourism is essential for preserving the cultural heritage of the local community while addressing environmental challenges. Farmers in the region are augmenting their family economies by utilising pranoto mongso and increasing income through tourism management. This study seeks to identify sustainable tourism initiatives in the Serayu Motion Dam area utilising a SWOT analysis. The IFE score results indicate that the region's strengths encompass distinctive natural beauty, its dual role as a water manager and power plant, and potential for ecotourism. The principal deficit is insufficient management, whereas the principal opportunity is in enhancing transportation infrastructure. The primary concern is competition from alternative tourism destinations. The Serayu Dam tourism site is situated in quadrant V, indicating a modest organisational position characterised by a Hold and Maintain approach. The strategies formulated from the SWOT analysis encompass the integration of local cultural assets with sustainable tourism initiatives, utilising governmental support to improve infrastructure, augmenting tourism support systems, advocating for sustainability through education and training, competing with rival resorts, and refining professional domain management to alleviate environmental impacts.

Keywords: serayu dam; SWOT; tourism; environment

1. Introduction

Tourism is a crucial sector that may drive economic growth, increase municipal revenue, and foster cultural and environmental preservation. The Serayu Gerak Dam area, acknowledged as a nature-based tourist destination in Central Java, holds considerable potential for advancement as a sustainable tourism location. However, insufficient management and negative impacts from tourism, such as environmental degradation and social pressure, provide challenges that necessitate consideration [2,3].

The SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis offers a robust framework for assessing the internal and external conditions of tourism regions and devising pertinent strategies to promote sustainable growth. Sustainable tourism plans seek to guarantee economic, ecological, and social sustainability, while preserving the area's appeal as a premier tourist destination [4,5].

Gerak Serayu Dam exhibits enchanting natural beauty and functions as a vital infrastructure in the Banyumas region, supporting economic and agricultural activities. The dam exhibits a unique appeal by combining recreation, water conservation, and renewable energy initiatives. However, additional obstacles, such as poor infrastructure, ineffective tourism management, and a lack of public awareness about the importance of environmental sustainability, provide significant barriers to the advancement of this tourist destination [6].

The principal benefit of Serayu Gerak Dam is its remarkable natural features, the presence of unique local culture, and its relatively easy accessibility from many locations in Central Java. Conversely, the shortcomings in this sector include the lack of tourist support facilities, such as public bathrooms, dining businesses, and adequate parking spots. The lack of promotion hinders the advancement of this location. Without a defined strategy, this potential cannot be maximised to promote local economic advancement [7,8].

The Serayu Gerak Dam possesses significant potential to develop into a sustainable tourism destination. Global trends demonstrate an increasing interest among tourists in nature-oriented and sustainable tourism. The Indonesian government, through the Ministry of Tourism, has promoted the development of sustainable tourism destinations, including budget allocations for infrastructure support and local community training. However, issues include climate change, competition from other tourist destinations, and environmental degradation due to insufficient regulation must be carefully foreseen [11].

Sustainable tourism development includes economic, social, and environmental factors. Sustainable tourism is expected to provide prompt economic benefits for local communities, such as increased employment opportunities, support for micro, small, and medium enterprises (MSMEs), and revenue diversification. The advancement of tourism can improve public awareness of the importance of cultural and environmental conservation. Efficient management can alleviate the detrimental environmental impacts of tourism, such as plastic waste and habitat damage [2,12].

Strategies based on SWOT analysis can enhance targeted and data-informed planning in the development of the Serayu Gerak Dam. Natural potential can be utilised in conjunction with ecotourism trends to provide an attractive tourism experience for visitors. Conversely, weaknesses such as insufficient infrastructure can be addressed by partnerships with the business sector or financial investment from local government. Environmental hazards can be alleviated through the implementation of rigorous regulations and the instruction of visitors [13].

The SWOT analysis enabled the identification of region-specific developmental needs. In marketing, digital advertising can be utilised to engage both domestic and international tourists. The use of technology, such as applications providing information on tourist destinations, can improve visitor convenience and assist local administration by administrators. This corresponds with technological improvements that progressively influence visitor behaviour in site selection and visitation.

The engagement of local communities is essential for the progression of sustainable tourism. The community functions both as a benefactor and as an active participant in the governance of tourism areas. Community engagement can be accomplished by educating, empowering micro, small, and medium enterprises (MSMEs), and strengthening community-based institutions. This method has proven effective in other community-based tourist sites in Indonesia, such as Penglipuran tourist Village in Bali [2,10].

The realisation of sustainable tourism development at Serayu Gerak Dam is dependent on stakeholder coordination. The government, private sector, community, and academia must cooperate to formulate policies that foster sustainable development. The government can establish regulations and incentives, while the private sector can invest in and advance infrastructure. Academics can provide research that yields data-driven suggestions, while communities play a crucial role in cultural and environmental preservation [4,11].

This research seeks to formulate a sustainable tourism development strategy through SWOT analysis. This strategy will augment the potential of the Serayu Gerak Dam area while providing lasting benefits for local communities and the surrounding environment.

2. Research method

This research used a descriptive qualitative methodology utilising the SWOT (Strengths, Weaknesses, Opportunities, Threats) analytical framework. This method seeks to discern internal and external elements that affect the advancement of sustainable tourism at the Serayu Movable Dam. The research was carried out at the Serayu Movable Dam tourism site in Banyumas Regency.

The research participants were essential stakeholders, comprising business representatives at the dam site and the leader of the Serayu Movable Dam Tourism Awareness Group (Pokdarwis).

Data collection was conducted through the acquisition of both primary and secondary data. Primary data was acquired via comprehensive interviews with regional managers, local residents, and visitors. Secondary data was sourced from governmental reports, literature, scientific journals, and publications pertinent to tourism development and sustainable tourism.

Analysis of internal and external factors. The identification of internal factors (IFE) involves assessing the strengths and shortcomings of the tourism sector. Examples include natural potential, infrastructure, and management. Simultaneously, external factors (EFE) are assessed by analysing possibilities and dangers from the external environment, including global tourist trends and environmental challenges.

Assessment and prioritisation of internal and external influences. Each aspect is assigned a weight according to its significance in the development of the tourism sector. The rating (score) is established to evaluate the condition of the factor, ranging from extremely deficient (1) to very adequate (4).

The results of the weighted SWOT analysis are utilised to ascertain the strategic position of the area through the SWOT matrix. This matrix aids in devising suitable tactics, including the optimisation of strengths and opportunities or the alleviation of weaknesses and dangers.

3. Result and Discussion

The Internal Factor Evaluation (IFE) matrix and External Factor Evaluation (EFE) matrix are essential for identifying a business's internal and external variables. Outlines five stages for constructing the IFE and EFE matrix: identifying key internal or external factors, assigning a weight to each factor on a scale from 0.0 (not important) to 1.0 (very important), rating each key factor from 1 to 4 to assess the effectiveness of the business strategy in addressing these factors, and finally, multiplying the weight of each factor by its rating to derive the weighted value. Subsequently, the weight values of each variable are aggregated to provide the tourism entity total IFE or EFE weight value.

3.1. IFE Matrix (Internal Factor Evaluation)

The Internal Factor Evaluation (IFE Matrix) is a tool utilised to assess a business's internal strengths and shortcomings deemed crucial for its sustainability. Internal business variables can be derived from several dimensions of the enterprise, encompassing production, finance, management, marketing, and human resources. The subsequent text presents an IFE matrix on Serayu Motion Dam tourist.

Table 1. IFE Matrix (*Internal Factor Evaluation*)

No	Factors Strengths	Ranking	Weight (%)	Weight value (R x W)
1	The unique beauty of nature	4	0.165	0.661
2	Convenient accessibility	3.4	0.140	0.478
3	Local Culture	3.6	0.149	0.536
4	Dual function as water manager, power plant, and tourist attraction	4	0.165	0.661
5	Ecotourism Potential	4	0.165	0.661
Weaknesses		Ranking	Weight (%)	Weight value (R x W)
1	Weak management	2.4	0.099	0.238
2	Lack of promotion	1.4	0.058	0.081
3	Low Awareness of the Concept of Sustainable Tourism	1.4	0.058	0.081
Total IFE		24.2	1	3.316

Source: Primary data, 2024

The cumulative weight score of the IFE matrix, derived from the examination of strengths and weaknesses, is 3.316, as indicated in Table 1. The score results indicate that the most significant strength factors are the unique beauty of nature, dual functionality as a water manager, power plant, and tourist attraction, and ecotourism potential, all with a value of 0.661. Conversely, the most prominent weakness factor is weak management, with a value of 0.099. Consequently, the management of the Serayu Dam requires enhancement to adopt a more professional approach by collaborating with business entities with expertise in nature tourism. Managers must also guarantee the involvement of business stakeholders in the vicinity of the tourist attraction to secure their engagement.

3.2. Matriks EFE (External Factor Evaluation)

External Factor Evaluation (EFE Matrix) is a matrix used to determine external factors of Serayu Dam tourism related to opportunities and threats that are considered important for the sustainability of tourism. External factors that can be explored are related to economic, social, political, cultural, demographic, technology and information conditions, and competition. The following is the EFE matrix of Serayu Dam tourism.

Table 2. EFE Matrix (External Factor Evaluation)

No	Factors Opportunities	Ranking	Weight (%)	Weight value (R x W)
1	Nature-based tourism trends	3.4	0.168	0.572
2	Opportunities for collaboration with local communities	3.2	0.158	0.507
3	Improvement of transportation infrastructure	4	0.198	0.792
4	Technology Development	3.2	0.158	0.507
Threats		Ranking	Weight (%)	Weight value (R x W)
1	Competition with other tourist destinations	2.4	0.119	0.285
2	Climate change and natural disasters	2	0.099	0.198
3	Negative impacts of tourism activities	2	0.099	0.198
Total IFE		20.2	1	2.861

Source: Primary data, 2024

According to Table 2, the EFE matrix indicates that the cumulative weight score for opportunities and threats is 2.861. The highest value among the opportunity factors is the Improvement of transportation infrastructure, with a score of 0.792. The most significant threat element is Competition with other tourist sites, rated at 0.285. Consequently, in addition to enhancing access to tourist sites, business stakeholders must identify an effective marketing strategy to sustain the viability of their attractions, preventing consumers from gravitating towards emerging competitors.

3.3. Matriks IE (Internal-External)

The IE Matrix is an Internal-External (IE) Matrix utilised to assess a firm or organization's position in developing future plans. The IE Matrix comprises nine quadrants divided into three categories that represent the organization's status. The cumulative score of the IFE matrix for Serayu Dam tourism is 3.316, whereas the cumulative score of the EFE matrix is 2.861. Consequently, the positioning of Serayu Dam tourism in the IE matrix is located in quadrant V, as illustrated in the accompanying image below.

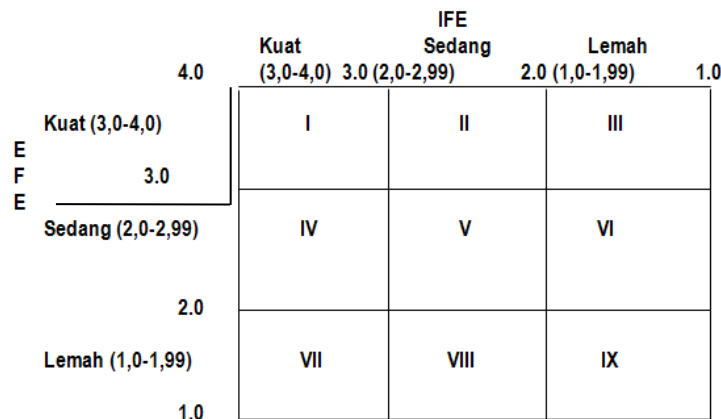


Figure 1. IE Matrix

Based on Figure 1, the Serayu Dam tourism is in quadrant V which shows an average or moderate organizational position, with a Hold and Maintain strategy. This position shows that the company needs to consider strategies in product development plans and employee competencies. A growth strategy with a concentration through horizontal integration of the internal sessions of the Serayu Dam tourism business can be carried out by expanding the market segment by expanding the marketing area and from the external side it can be done by collaborating with similar companies (nature tourism managers), travel, schools, communities, and establishing good relationships with consumers by building effective communication with consumers. In addition, Serayu Dam tourism business actors must also always comply with government regulations, especially the Ministry of PUPR as the owner and manager of the dam.

3.4. SWOT Analysis

Alternative strategies must be formulated for the development of Serayu Dam tourism utilising SWOT analysis. SWOT is employed to develop a corporate strategy that has been carefully determined from many aspects. SWOT analysis is conducted to optimise strengths and opportunities while concurrently mitigating weaknesses and threats. SWOT is a technique for finding elements that elucidate corporate strategy. The internal variables (strengths and weaknesses) and external factors (opportunities and dangers) associated with Serayu Dam tourism comprise:

1. *Strengths*

Strengths are elements that constitute the competitive advantages of a firm. This strength factor denotes a company's capacity to compete and generate profit. The strengths of the Serayu Dam tourism are as follows:

- 1) Natural Aesthetics: The Serayu Movable Dam features picturesque landscapes framed by hills that captivate visitors. (S1)
- 2) Dual Function: This dam serves as a water management system, power generation facility, and tourism destination, enhancing its attractiveness. (S2)
- 3) Accessibility: Strategically situated and readily accessible from surrounding regions of Central Java. (S3)
- 4) Local Culture: The presence of regional traditions and cultures, such as Banyumas performing arts, might serve as an attraction for tourists. S4
- 5) Ecotourism Potential: Possesses an ecosystem conducive to nature-based tourism activities, including trekking, photography, and environmental education. S5

2. *Weaknesses*

Weaknesses are internal elements that contribute to a business's vulnerabilities. The deficiencies of Serayu Dam tourism are as follows:

- 1) Insufficient Promotion: This region is mostly unrecognised due to inadequate promotion, particularly on digital platforms. (W1)
- 2) Management: The integration of tourism management has been inadequate, resulting in suboptimal utilisation of existing potential (W2)
- 3) Insufficient Awareness: Local populations exhibit a lack of understanding concerning sustainable tourism and waste management (W3)

3. *Opportunities*

Opportunities are external factors that can be leveraged to enhance a company's performance. The factors contributing to the tourism potential of the Serayu Dam are as follows:

- 1) Sustainable Tourism Trends: There is a growing demand among tourists in nature-oriented and environmentally sustainable destinations. (O1)
- 2) Collaboration with the Community: Opportunities to engage with local communities in cultivating tourism rooted on culture and indigenous knowledge. Oxygen (O2)
- 3) Enhancement of Transportation Infrastructure: Upgrading roads and transportation facilities in the vicinity might augment accessibility. Ozone (O3)
- 4) Technology Development: Employment of digital apps or platforms for the promotion and dissemination of information to tourists (O4)

4. *Threats*

Threats are external factors that jeopardise a business and might impede its growth. The threat factors associated with tourism at the Serayu Dam are as follows:

- 1) Climate Change: Climate change that may impact the environmental carrying capacity and stability of the area ecosystem. (T1)
- 2) Competition with Alternative Destinations: Numerous tourist locations in Central Java provide comparable attractions. (T2)
- 3) Environmental Impact: Unregulated tourism activities can result in environmental degradation, including water contamination and garbage accumulation. (T3)
- 4) Policy Dependence: Alterations in governmental policies that fail to promote the advancement of sustainable tourism. T4

A business unit inevitably has challenges stemming from several variables, specifically internal and external influences. company units confronting these issues must conduct monitoring activities and company evaluations to rectify hurdles or errors that arise. Consequently, potential solutions for the Serayu Dam tourism are delineated in the SWOT matrix presented in Table 3.

According to Table 3, the suggested tactics derived from the SWOT analysis of Serayu Dam tourism are as follows:

SO (Strengths-Opportunities) Strategy:

- a) Integrate local cultural assets with sustainable tourism practices to draw visitors.
- b) Leverage governmental assistance to enhance infrastructure and market tourist destinations.

Internal Factors	Strengths (S)	Weaknesses (W)	WO
	<ol style="list-style-type: none"> 1. Natural Beauty (S1) 2. Dual Function (S2) 3. Easy Accessibility (S3) 4. Local Cultural Performance (S4) 5. Ecotourism Potential (S5) 	<ol style="list-style-type: none"> 1. Lack of Promotion (W1) 2. Weak management (W2) 3. Low awareness of sustainable tourism (W3) 	
External factors	Strategi S-O	Strategi W-O	
Opportunities (O)	<ol style="list-style-type: none"> 1. Integrate local cultural potential with sustainable tourism trends to attract tourists. (S1, S4, O1, O2) 2. Utilize government support to improve facilities and promote tourist areas. (S2, S3, O3, O4) 	<ol style="list-style-type: none"> 1. Improving tourism support facilities by using budgets from the government or private sector. (W2, O3) 2. Building public awareness of the importance of sustainability through education and training. (W3, O1) 	
Threats (T)	Strategi S-T	Strategi W-T	
<ol style="list-style-type: none"> 1. Climate change (T1) 2. Competition with other destinations (T2) 3. Environmental impact (T3) 4. Dependence on policies (T4) 	<ol style="list-style-type: none"> 1. Utilizing natural beauty and cultural potential to face competition with other destinations. (S1, S4, T2) 2. Developing local regulations to protect the environment from the impacts of tourism activities. (S5, T3) 	<ol style="list-style-type: none"> 1. Improve professional area management to minimize environmental impacts. (W2, T3) 2. Develop diversification strategies to reduce dependence on certain policies (W3, T4). 	

(Weaknesses-Opportunities) Strategy:

- a) Enhance tourist support infrastructure by utilising funding from governmental or private entities.
- b) Enhance public consciousness of the significance of sustainability via education and training.

ST (Strengths-Threats) Strategy:

- a) Leverage natural beauty and cultural assets to contend with other resorts.
- b) Formulate local legislation to safeguard the environment from the effects of tourism activity.

WT (Weaknesses-Threats) Strategy:

- a) Enhance professional area management to mitigate environmental impacts.
- b) Formulate a diversification strategy to mitigate reliance on specific policies.

Table 3. SWOT Matrix
Source: Primary data, 2024

The SWOT analysis indicates that the Serayu Movable Dam possesses significant potential for development as a sustainable tourism destination. This region can be aligned with the growing trend of nature-based tourism by using its inherent natural beauty and local cultural assets. Government assistance and enhanced transit infrastructure present strategic options to address deficiencies, including inadequate supporting facilities and suboptimal promotion [11].

Goodwin [5] asserts that sustainable tourism plans should prioritise the empowerment of local communities and the conservation of the environment. This pertains to the conditions of the Serayu Movable Dam, where community-based management can enhance local understanding on the significance of sustainability. A study by Situmorang et al. [2] indicates that collaboration among government, community, and commercial sector is crucial for the development of community-based tourism destinations.

Nonetheless, challenges like climate change and rivalry with other locations necessitate proactive measures through stringent rules and inventive initiatives. Research by Saputra [11] underscores the significance of legislation in preserving environmental sustainability in tourist regions. Consequently, the administration of the Serayu Movable Dam is recommended to adopt a comprehensive strategy in overseeing the region, encompassing environmental education for visitors and the advancement of digital technologies for promotional purposes.

4. Conclusion

The Serayu Motion Dam has a great deal of potential to become a sustainable ecotourism destination, according to this study. According to the SWOT analysis, the area's development is hindered by inadequate management professionalism and promotional efforts, despite its unique dual position as a power plant and water manager and its remarkable natural beauty. The tourism site is located in quadrant V of the IE Matrix, so a "Hold and Maintain" approach is required. This suggests that building internal capabilities to take advantage of external opportunities should take precedence over aggressive growth.

The developed plans stress integrating local cultural assets with green economic activities in order to achieve sustainable tourism. Leveraging government assistance for infrastructure development, strengthening local populations' capacity through sustainability education, and using professionalism in area management to reduce environmental consequences are all critical steps. These tactics are intended to maintain the destination's ecological integrity while keeping it competitive with other resorts. It is advised that future studies evaluate the strategies' quantifiable economic impact on the welfare of the local community.

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References

- [1] UNWTO. Tourism and sustainable development goals: A global perspective. Available from: <https://www.unwto.org>
- [2] Situmorang R, Johnston R, Scheyvens R. Local participation in sustainable tourism: Challenges and strategies in Indonesian destinations. *Tourism Geographies*. 2020;22(3):489-510.
- [3] Wahyuni H, et al. Environmental challenges in tourism. 2021.
- [4] Bramwell B, Lane B. Sustainable tourism: An evolving global approach. *Journal of Sustainable Tourism*. 2019;27(7):1049-67.
- [5] Goodwin H. Responsible tourism: A global perspective. *Tourism Review*. 2020;75(4):677-90.
- [6] Wijayanti D, et al. Infrastructure challenges in sustainable tourism. 2022.
- [7] Darmawan E, Nugroho P, Prabowo H. SWOT analysis for sustainable tourism development: A case study of Serayu watershed. *Tourism Management Perspectives*. 2022;42:100976.
- [8] Novita L, Ardiansyah R, Utami S. Infrastructure development in sustainable tourism: Case studies in Java. *Sustainable Tourism Research*. 2023;11(2):89-98.
- [9] Ministry of Tourism. Strategic framework for sustainable tourism in Indonesia. *Tourism Development Journal*. 2023;5(1):34-45.
- [10] Suryani A. Community-based tourism development: Insights from Indonesian case studies. *Tourism and Society*. 2022;18(1):22-37.
- [11] Saputra D. Environmental challenges in sustainable tourism. *Journal of Environmental Science and Tourism*. 2021;8(3):201-15.
- [12] Arifin F, et al. Impacts of tourism on ecosystems. 2022.
- [13] Widyastuti M, et al. SWOT in tourism policy. 2023.
- [14] Fauzi M, Handoko F. Digital marketing for sustainable tourism. *International Journal of Tourism Science*. 2021;30(2):50-60.