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OPERATIONAL EFFICIENCY AS A PILLAR OF SUSTAINABLE GREEN TOURISM DEVELOPMENT

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Abstract:
Green tourism is an approach to destination development that emphasizes the balance between economic growth, environmental conservation, and social sustainability. It ensures that tourism contributes not only to the economy but also to the preservation of natural resources and the empowerment of local communities. In its implementation, operational efficiency plays a crucial role in optimizing tourism activities, ensuring effective resource use, and minimizing environmental impacts. Efficient management of energy, water, and waste, as well as the adoption of environmentally friendly technologies, is essential in supporting sustainable operations. This article examines the role of operational efficiency in strengthening sustainable green tourism development. Using a desk study method, relevant national and international literature was reviewed to provide a comprehensive perspective. The findings indicate that efficiency improves competitiveness, promotes environmentally responsible practices, and supports good governance in tourism management. Furthermore, it enhances transparency and accountability, aligning tourism activities with the Sustainable Development Goals (SDGs). Overall, this study offers a conceptual foundation for developing policies and strategies that encourage efficient, environmentally friendly, and socially inclusive tourism management, thereby ensuring the long-term sustainability of destinations.

Keywords: Operational Efficiency, Green Tourism, Sustainability, Tourism Management, Desk Study

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INTRODUCTION

Green tourism is a tourism development approach that prioritizes a balance between economic growth, environmental conservation, and social welfare. In practice, this concept aims to reduce the negative impacts of tourism on the environment through more efficient and responsible strategies, both in the planning and implementation of tourism activities (Sekmalayi et al., 2024). With increasing global awareness of sustainability and climate change issues, green tourism has become a key direction for the development of today's tourism destinations.

However, in practice, many green tourism destinations face challenges in operational efficiency. Lack of optimal management of resources such as energy, water, and waste management often leads to high operational costs and a decline in service quality (Putri, 2024). Efficiency in the context of green tourism is not only about cost savings, but also about how a destination can operate tourism activities with minimal resource use while still providing maximum economic and social benefits.

Operational efficiency is a crucial pillar in supporting the success of green tourism management. The implementation of environmentally friendly technologies, the use of renewable energy, and a careful management system can strengthen a destination's competitiveness while enhancing its environmental reputation among tourists (Lin et al., 2023). Therefore, studying operational efficiency in the context of green tourism is crucial for developing management strategies that are not only economically effective but also sustainable in the long term.

This study aims to analyze how operational efficiency can become a key pillar in the development of sustainable green tourism. Using a literature review approach, this article reviews relevant national and international literature to develop a conceptual and practical framework for developing efficient and highly competitive green tourism destinations.

The Concept of Operational Efficiency in Green Tourism. Operational efficiency is a crucial component in tourism destination management, particularly in the context of green tourism, which

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demands sustainable resource optimization. Efficiency in this context encompasses not only cost savings but also the destination's ability to minimize the use of energy, water, and other raw materials without sacrificing the quality of tourism services. In this context, efficiency is the foundation for environmentally friendly and long-term tourism management.

According to Lin et al. (2023), hotels that implement sustainability principles in their operations, such as energy efficiency and waste management, have been shown to have more stable financial performance and higher customer satisfaction. This demonstrates that operational efficiency in green tourism provides not only environmental benefits but also economic ones.

Furthermore, Putri (2024) emphasized that efficiency is a key indicator in achieving the Sustainable Development Goals (SDGs) in the tourism sector. Through an efficient approach, tourist destinations can reduce natural resource consumption, reduce waste, and establish more accountable management systems. This aligns with the basic principle of green tourism, which is to create harmony between economic activities and environmental sustainability.

Efficient operational management also requires the adoption of appropriate technology and environmentally-based performance measurement systems. As Yulianthi (2023) noted, differences in the management of local and international chain hotels in Bali demonstrate that the use of green technology systems and environmentally friendly housekeeping practices impact efficiency and a positive image among tourists.

Therefore, the concept of operational efficiency in green tourism is not only oriented within the organization or business actors but also has a broad impact on environmental sustainability and market perception. Therefore, a comprehensive understanding of this efficiency is a key requirement for developing competitive and resilient green tourism destinations.

Efficiency-Boosting Strategies in Environmentally Friendly Management. Implementing operational efficiency in green tourism management requires a strategy that focuses not only on cost reduction but also on strengthening systems that support sustainability principles. This strategy involves integrating various aspects, from the use of green technology, wise resource management, to the active involvement of local communities in maintaining environmental quality.

According to Wibisono et al. (2023), strengthening efficiency in the green tourism industry can be achieved through the implementation of green competitive advantage, an environmentally-based strategy that serves not only as a business advantage but also as a conservation effort. Practices such as energy efficiency, emission reduction, and technology-based waste management have been proven to increase competitiveness while minimizing ecological impacts.

Meanwhile, Tirayoh et al. (2023) noted the importance of implementing green accounting and corporate social responsibility (CSR) as strategies to strengthen operational efficiency in the tourism sector. Financial information that incorporates environmental aspects can help business actors evaluate the effectiveness of operational activities and design environmentally friendly and efficient policies.

The implementation of information technology is also a key driver of environmentally friendly efficiency strategies. Lin et al. (2023) revealed that automated management information systems enable hotels and tourist destinations to monitor energy and water usage in real time and quickly detect potential waste. This provides an advantage in data-driven decision-making to maintain a balance between service and conservation.

Furthermore, local community involvement in environmental management systems is also a crucial strategy. Kusuma et al. (2022) noted that community involvement in green housekeeping practices in Lombok contributed to an 18% increase in operational cost efficiency and increased environmental awareness among local communities. This indicates that operational efficiency cannot be separated from local social and cultural aspects.

Therefore, strategies for strengthening efficiency in green tourism management include a multidimensional approach involving technology, information systems, green finance, and community participation. All of these elements complement each other to create a competitive and sustainable tourist destination.

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The Impact of Efficiency on Destination Competitiveness and Sustainability. Operational efficiency in green tourism not only serves as a resource-saving tool but also has a significant impact on increasing the competitiveness and sustainability of tourist destinations. Destinations that operate efficiently tend to be more adaptable to change, have lower operating costs, and produce minimal environmental impact, all of which contribute to a positive image among tourists and stakeholders.

According to Serio et al. (2025), the implementation of consistent, efficiency-based environmental policies has been shown to increase tourist arrivals in Europe significantly. These policies create the image of environmentally conscious destinations, which is currently a top preference for global tourists. In this context, efficiency is not only an internal organizational factor but also an external attraction.

A study by Wang and Luo (2024) in China showed that green productivity in the tourism sector is influenced by effective energy management and carbon emission reduction. Destinations that successfully optimize these two aspects experience improvements in sustainability indices and market preference for eco-friendly tourism. This demonstrates that operational efficiency has a direct impact on long-term sustainability. Furthermore, research by Si and Tang (2024) in the Yellow River region confirms that low-carbon tourism development yields significant efficiency gains in land, water, and energy use without compromising economic value. Efficiency in this context creates a tourism system that is resilient to climate change and market fluctuations.

Beyond the environmental aspect, Yulianthi (2023) states that hotels in Bali that implement green practices experience increased occupancy rates and customer loyalty. Efficiency built through sustainable management systems makes these destinations more trusted and attractive to tourists, especially those from the environmentally conscious segment.

Overall, operational efficiency not only provides financial benefits but also strengthens competitiveness and extends the life cycle of a tourist destination. Efficiency is part of a destination's reputation, an indicator of sustainability, and a key differentiating factor in the global competition of the green tourism sector.

Managerial Innovation and Green Accounting as Drivers of Efficiency. In addition to technical and participatory strategies, managerial aspects and accounting innovation also play a crucial role in supporting operational efficiency in the green tourism sector. The implementation of green accounting practices serves not only as a financial recording tool but also as a management control system for directing operational activities in line with sustainability principles.

Sunarta et al. (2024) demonstrated that the application of green accounting in the Balinese hotel industry has proven effective in improving business efficiency and serving as an effective environmental control tool. Through this approach, hotel managers can monitor energy consumption, waste production, and environmental costs in a more structured manner, thus supporting more sustainability-oriented decisions.

Meanwhile, Zhang et al. (2022), in their study of the Yellow River region in China, confirmed that efficiency in green tourism is strongly influenced by technological innovation, management quality, and the education level of the surrounding community. Eco-efficiency increases with support for green investment and strengthening human resource capacity. This demonstrates that efficiency stems not only from technical optimization but also from managerial system updates and organizational learning.

Thus, a managerial approach based on green accounting and operational system innovation is a crucial dimension in building comprehensive efficiency in the green tourism sector. The combination of financial control, institutional strengthening, and the use of smart technology will accelerate the transformation towards an environmentally friendly and globally competitive tourism destination.

METHODS

This study employs a **desk study approach**, focusing on an extensive review of relevant national and international literature. Data were obtained from scientific journals, policy reports, and institutional publications related to operational efficiency and sustainable tourism development. The collected materials were analyzed qualitatively to identify recurring themes, best practices, and conceptual

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linkages among economic, environmental, and social aspects of green tourism. This approach allows for a comprehensive understanding of how operational efficiency contributes to sustainable tourism management and policy formulation.

RESULT AND DISCUSSION

Green tourism, as a development approach that prioritizes sustainability, demands efficiency in the operational management of destinations. Operational efficiency in this sector includes efforts to optimize resources such as energy, water, and other raw materials to ensure tourism activities continue without significantly impacting the environment. This research demonstrates that efficiency not only functions as a cost control measure but also serves as a foundation for maintaining long-term sustainability and increasing the competitiveness of tourist destinations.

In the first discussion, operational efficiency is positioned as a crucial pillar in a green tourism system. Efficiency is not only interpreted as an effort to achieve internal savings, but also as a tool to strengthen market confidence in ecologically responsible destinations. A study by Lin et al. (2023) emphasized that energy efficiency and effective waste management can improve the financial performance and reputation of green hotels. Meanwhile, Putri (2024) highlighted that resource savings directly contribute to achieving the SDGs targets in the tourism sector.

Strategies for strengthening efficiency in environmentally friendly management are also a key focus in this discussion. Wibisono et al. (2023) introduced the concept of green competitive advantage, which combines efficiency with environmentally-based innovation as part of a destination's strategic advantage. Tirayoh et al. (2023) added that green accounting-based financial information and CSR involvement can support accountability and sustainable planning in the tourism industry. Furthermore, the role of information technology in monitoring energy consumption and waste in real time has also proven effective in increasing efficiency, as explained by Lin et al. (2023).

Furthermore, operational efficiency has a significant impact on the sustainability and competitiveness of tourist destinations. Research by Serio et al. (2025) and Wang and Luo (2024) shows that destinations implementing environmentally efficient policies experience increased tourist flows and higher sustainability indices. Furthermore, research by Si and Tang (2024) shows that a low-carbon approach can optimize resource use and increase a destination's resilience to climate change. These findings are reinforced by Yulianthi (2023), who noted increased occupancy rates in green hotels due to efficiency and a positive image among tourists.

Overall, operational efficiency is not only an indicator of a destination's internal performance but also a significant differentiating factor in shaping the competitive advantage and resilience of green tourism destinations. Efficiency integrated with a sustainability approach will have a positive impact on environmental sustainability, community welfare, and the economic sustainability of the tourism sector itself.

On the other hand, the implementation of efficiency is also closely related to measurable economic and environmental benefits. Kholijah (2024) emphasized that green business practices in the tourism industry not only provide financial benefits but also positively impact reputation and tourist loyalty. Implementing efficiency through energy savings and systematic waste management creates sustainable added value.

Internal support for efficiency also needs to be strengthened by managerial awareness. A study conducted by MDPI (2022) in Montenegro showed that tourism industry players' attitudes and understanding of green accounting remain challenges to efficient decision-making. Without a paradigm shift and ongoing training, efficiency will be difficult to internalize into daily business practices.

A concrete example of successful community-based efficiency is demonstrated by Kusuma et al. (2022) through the implementation of green housekeeping in several hotels in Lombok. The program not only reduced operational costs by 18% but also increased community involvement in maintaining the cleanliness and environmental quality of the destination. This demonstrates that operational efficiency can be strengthened through strategies based on local culture and participation.

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CONCLUSION

Operational efficiency is a key foundation for developing sustainable green tourism. Through optimal resource management, efficiency not only provides economic benefits for tourism businesses but also contributes to environmental preservation and improving the quality of life for local communities. Literature studies indicate that efficiency can be achieved through the implementation of environmentally friendly technologies, measurable management systems, and community involvement in sustainability-oriented management practices.

Various studies also confirm that efficiency integrated with environmental strategies such as green accounting, CSR, and green housekeeping can increase destination competitiveness and attract tourists who are increasingly concerned about sustainability issues. However, the success of efficiency in the context of green tourism is heavily influenced by internal factors such as management commitment, technological readiness, and industry players' awareness of environmental values. Therefore, synergy between technical, social, and institutional aspects is necessary to ensure efficiency becomes an integral part of the green tourism system.

Therefore, operational efficiency is not merely a managerial strategy but a crucial pillar in creating tourist destinations that are not only economically competitive but also ecologically sustainable and socially inclusive.

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