


Sustainable Tourism Management Strategy at Punaga Beach: A SWOT and AHP Approach for Environmental, Socio-Economic, and Cultural Sustainability

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ARTICLE INFO	ABSTRACT
<p>Article History: Received: 2025-02-03 Accepted: 2025-03-27 Published: 2025-03-30</p> <p>Keywords: Sustainable Tourism; Punaga Beach; Management; Strategy</p> <p>Corresponding author: Ina Nurfitri Email: ina.nurfitri.2307218@students.um.ac.id DOI: 10.34312/jgej.v6i1.30835</p> <p>Copyright © 2025 The Authors</p>  <p>This open access article is distributed under a Creative Commons Attribution-NonCommercial (CC-BY-NC) 4.0 International License</p>	<p>Tourism has developed into an important economic sector with great potential for growth. However, the sustainability of the industry remains a challenge due to issues such as resource exploitation, ecological degradation, and lack of local community involvement. In light of these challenges, sustainable tourism has become a central theme in tourism destination management across Indonesia, including Punaga Beach in South Sulawesi. This study explored the characteristics of sustainable tourism management at Punaga Beach and the factors that influence its success. The study adopted a quantitative approach using the Analytical Hierarchy Process (AHP) and SWOT analysis (Strengths, Weaknesses, Opportunities, Threats). Data were collected through interviews with relevant stakeholders, questionnaires, and field observations. The findings indicate that tourism management at Punaga Beach needs to be strengthened through strategies involving collaboration between the government, local communities, and the private sector. Based on the AHP analysis, the priority factors in sustainable tourism management include improving human resource quality, enhancing facilities, and raising community awareness of environmental conservation. This study provides recommendations for sustainability-based management improvements to achieve more efficient and long-term tourism development at Punaga Beach.</p>
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1. Introduction

Tourism is a vital sector that contributes significantly to the global economy. As industry continues to expand, it has become a primary driver of economic growth in various countries, including Indonesia. According to the World Tourism Organization (WTO) (1999), tourism is defined as travel and temporary stays outside one's usual environment for a consecutive period of less than one year for leisure, business, or other purposes. In 2019, the tourism sector accounted for approximately 10.4% of global GDP and generated over 300 million jobs (Philipp, 2022). In Indonesia, the tourism sector also makes a substantial contribution, comprising nearly 5% of the national GDP.

As an archipelagic country with more than 17,000 islands, Indonesia possesses immense potential for tourism development, particularly coastal tourism, which offers pristine beaches, coral reefs, and rich cultural heritage. Globally recognized destinations, such as Bali, Raja Ampat, and Lombok, have established Indonesia's reputation as a premier tourist destination (Hengky, 2016). However, ineffective tourism management can lead to significant environmental and social challenges, necessitating the implementation of sustainable tourism strategies.

Despite its substantial economic contribution, the tourism industry faces critical sustainability challenges. Many destinations experience environmental degradation, pollution, and negative socioeconomic impacts due to poor tourism mismanagement (Qamruzzaman, 2023). The disparity between financial gains and environmental consequences frequently leads to the excessive exploitation of natural resources, increased carbon emissions, and biodiversity loss (Dwyer, 2023). According to the UNWTO (2022) report, local community participation in tourism is essential for ensuring a more equitable distribution of economic benefits and reducing social disparities. Weak governance frameworks often result in the degradation of coastal ecosystems, beach erosion, and marine pollution (Handiani et al., 2022). Therefore, it is essential to ensure that tourism development adheres to sustainability principles to achieve a balance among economic growth, environmental protection, and social welfare.

Numerous studies have investigated different approaches to achieving sustainable tourism. Sustainable tourism focuses on managing destinations by incorporating environmental, social, and economic factors. It aims to enhance benefits for all stakeholders, while reducing negative effects on ecosystems and local cultures (Buckley, 2012).

In this context, sustainable development, as outlined by the World Commission on Environment and Development (WCED, 1987) (Orsini et al., 2009), signifies development that satisfies current requirements without jeopardizing the capacity of future generations to fulfill their own needs. This principle is particularly relevant in the tourism industry, where sustainable tourism requires long-term strategies that integrate economic development with environmental conservation and social responsibility to ensure lasting benefits for all stakeholders (Bramwell et al., 2016).

Sustainable tourism also requires a balance between tourism growth and the carrying capacity of ecosystems to prevent resource depletion, habitat destruction, and biodiversity loss (Xing, 2024). Furthermore, ineffective tourism management can lead to socioeconomic disparities, widening the gap between local communities and large-scale investors (Nguyen et al., 2024). Today, sustainable tourism not only supports economic growth by creating jobs and increasing regional income but also plays a crucial role in preserving the environment and maintaining social balance within communities (Rajani & Boluk, 2022). Tourism management based on SDGs has also been proven to enhance local community involvement in the tourism industry, improve environmental policies, and support more responsible business practices (Amin, 2022). Therefore, sustainable tourism management is a priority worldwide, including Indonesia. However, despite existing sustainability initiatives, many coastal destinations continue to struggle with policy inefficiencies and weak governance structures, which hinders the effective implementation of sustainable tourism management strategies (Senthilkumar, 2022).

Punaga Beach, located in Takalar Regency, South Sulawesi, is an emerging coastal destination in Indonesia that has significant development potential. Known for its pristine white sand and scenic ocean views, the beach has become increasingly popular among domestic and international tourists. The 2022 report from the Takalar Regency Tourism Office indicated a steady rise in visitor numbers, highlighting its growing attractiveness as a tourism destination. However, Punaga Beach faces major sustainability challenges, including environmental degradation from unregulated tourism activities, waste pollution, coral reef destruction, and declining seawater quality. Additionally, insufficient infrastructure, lack of supporting facilities, and minimal community involvement in tourism management pose significant obstacles to achieving sustainable tourism. Consequently, this study seeks to analyze the key factors influencing tourism management at Punaga Beach and to propose effective sustainability strategies.

Although numerous studies have explored sustainable tourism management, most have concentrated on major tourist hubs, such as Bali and Lombok. There remains a scarcity of research on smaller-scale coastal destinations, such as Punaga Beach. Moreover, while the existing literature emphasizes sustainability principles, limited research has specifically examined the challenges and management strategies needed to achieve sustainable coastal tourism in Indonesia's emerging destinations. Therefore, this study aims to bridge this gap by investigating the factors affecting the sustainability of Punaga Beach and proposing context-specific management solutions.

This study is expected to make both theoretical and practical contributions to sustainable tourism management in Indonesia. Specifically, it identifies key factors affecting coastal tourism sustainability at Punaga Beach. Assess the primary challenges in managing small-scale coastal tourism destinations. Develop sustainable tourism management strategies that balance economic, environmental, and social interests. Support the achievement of Sustainable Development Goals (SDGs), particularly Goal 8 (decent work and economic growth) and Goal 14 (marine ecosystem conservation). By integrating sustainability principles into tourism management, this study seeks to inform policymakers, tourism stakeholders, and local communities on the design and implementation of effective and responsible tourism strategies.

Ensuring the sustainable development of Punaga Beach will safeguard its natural environment and enhance the socioeconomic well-being of local communities. Given Indonesia's reliance on tourism as a key economic driver, sustainable destination management is essential for maintaining tourism's long-term contributions without compromising environmental conservation or local livelihoods. Furthermore, this study aligns with the global sustainability agenda and is expected to serve as a valuable reference for future studies on sustainable tourism in Indonesia.

2. Method

This study employs a descriptive quantitative approach, integrating the Analytic Hierarchy Process (AHP) and SWOT analysis to examine tourism management characteristics based on sustainability principles. The primary objective was to identify the key factors contributing to effective sustainable management at Punaga Beach.

AHP was chosen for its ability to establish a hierarchical structure representing decision-making factors, while assigning quantitative weights to various sustainability-related criteria. This method allows for objective and systematic evaluation of complex factors, facilitating data-driven decision-making in tourism management (Wu et al., 2022). AHP has been widely applied in ecotourism and sustainable tourism research to determine the optimal locations for tourism activities by considering environmental, social, and economic factors. The application of this method ensures a balanced and comprehensive approach to tourism development, while adhering to sustainability principles (Sinulingga et al., 2024).

The viability of the Explanatory Pecking order handle (AHP) strategy in tourism goal administration has been demonstrated through its capacity to assess different choices and include partners. This makes it a comprehensive explanatory instrument for optimizing feasible tourism decision-making. By providing an organized and data-based evaluation system, AHP underpins the improvement of adjusted vital approaches, considering the natural, social, and financial angles in tourism arranging (Braga et al., 2023).

The application of AHP in this study establishes a strong expository for evaluating the key components that impact economic tourism administration methodologies at the Punaga Shoreline. The investigation was conducted at the Punaga Shoreline, which is located in the Takalar Rule, South Sulawesi. This area was chosen because it has extraordinary potential as a common tourism goal, but also faces noteworthy challenges with respect to maintainable administration. By including different stakeholders from local government authorities, tourism managers, local communities, and tourists this area can serve as a representative case study for analyzing sustainability in tourism (Faradish & Asmulianny, 2024).

This study collected essential and auxiliary information to gain a comprehensive understanding of tourism administration on the Punaga Shoreline. Essential information was obtained through organized interviews with key partners, such as neighborhood government authorities, tourism supervisors, agents, and visitor communities. In expansion, an AHP-based survey study was conducted to identify the components needed for economic administration. Another step was to conduct coordinate perceptions within the field to evaluate the natural, socioeconomic, and social conditions in the Punaga Shoreline. In the mean time, auxiliary information were collected from different sources, counting government reports, scholarly diaries, and other significant distributions related to feasible tourism administration. To analyze the information collected, this ponder employs two fundamental examination strategies. AHP and SWOT. The AHP method is used to identify and assign weights to the most influential factors in sustainable tourism management by integrating evaluations from multiple stakeholders (Saaty, 2008). In the interim, SWOT examination is utilized to distinguish inner and outside components that influence the administration of the Punaga Shoreline, counting qualities and shortcomings (which are inner components), and openings and dangers (outside variables). The discoveries from this SWOT examination at that point form the basis for creating a tourism administration technique that is in line with the rule of craving (Nezha et al., 2021).

This inquiry was conducted through an arrangement of efficient stages, beginning with information collection counting organized interviews, AHP-based studies, and field perceptions at the Punaga Shoreline. In addition, a writing audit was conducted to obtain auxiliary information from scholastic diaries, government reports, and other important sources. After all the information was collected, it was handled and analyzed, with the AHP approach utilized to decide the need components, whereas the SWOT examination was connected to all inner and outside conditions.

The comes about of the think about are deliberately displayed in a few fundamental stages. To begin with, a portrayal of the information characteristics is given, counting the respondent profile, tourism patterns, and natural and socio-economic conditions at the Punaga Shoreline. Moment comes about of the AHP-based studies and field perceptions at the Punaga Shoreline. In addition, a writing audit was conducted to obtain auxiliary information from scholastic diaries, government reports, and other important sources. After all the information was collected, it was handled and analyzed, with the AHP approach utilized to decide the need components, whereas the SWOT examination was connected to all inner and outside conditions. The comes about of the think about are deliberately displayed in a few fundamental stages. To begin with, a portrayal of the information characteristics is given, counting the respondent profile, tourism patterns, and natural and socio-economic conditions at the Punaga Shoreline. The results of the AHP investigation are displayed within the frame of a hierarchical structure that displays the most variables at the side of the required weights. Third,

the results of the SWOT investigation are shown in a SWOT framework to recognize the inside and outside variables that impact tourism administration.

The ultimate arrange is the arrangement of a methodology based on the discoveries of the AHP and SWOT investigation, which points to back maintainable tourism administration at the Punaga Shoreline. Through this examination, one can think about centers on the arrangement of a compelling administration procedure to back tourism within the region. Strategic proposals for sustainable tourism management should integrate steps to optimize key variables while addressing existing environmental, social, and economic challenges (Buckley, 2022). With this approach, it is trusted that this consideration can provide important bits of knowledge for partners in creating more viable and sustainable tourism administration on the Punaga Shoreline.

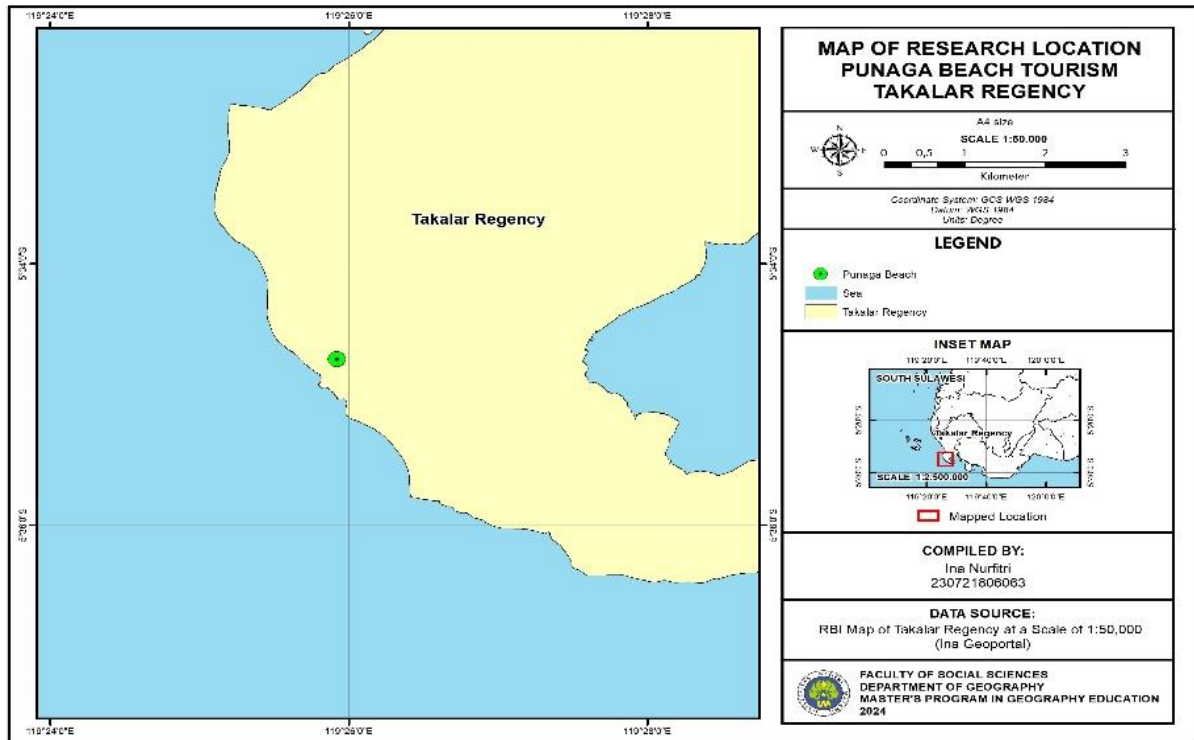


Figure 1. Research Location: Punaga Beach, Takalar Regency

3. Results and Discussion

3.1 Characteristics of Sustainable Tourism Management in Punaga Beach

Punaga Beach is located in Punaga Village, Takalar Regency, and has an area of 100.50 km² (Figure 1). Punaga Village has an area of 15.74 km² and is located less than 50 m above sea level. The Punaga Coastline stretches for 4.32 km², but the natural tourist attraction is <200m long. This beach has great potential for the tourism sector. This study aims to identify the characteristics of management based on the sustainable principles at Punaga Beach. The data show that management focuses on three main aspects: environment, socioeconomic, and culture (Table 1).

Table 1: Characteristics of Sustainable Tourism Management in Punaga Beach

Aspect	Findings	Interpretation
Environment	Beach cleaning activities are conducted periodically by local authorities and volunteers, but waste management remains ineffective due to limited facilities and public awareness.	Environmental sustainability potential is present but requires significant improvements in waste management infrastructure and community engagement to ensure a cleaner ecosystem.
Socio-Economic	Local communities are actively involved in small-scale culinary businesses and tourism-related services such as homestays and	Local economic development is evident, but further empowerment through education and diversification of income sources is

Aspect	Findings	Interpretation
	equipment rentals. However, reliance on tourism as the primary economic driver creates vulnerability to economic fluctuations..	necessary to create long-term economic stability.
Culture	Local traditions and cultural events are actively promoted as tourist attractions, encouraging tourist engagement with the local heritage. However, commercialization risks altering the authenticity of traditions.	While cultural tourism successfully promotes local heritage, a balance between authenticity and commercial interests must be maintained to prevent cultural commodification.

Source: 2024 research results

Existing management shows efforts towards sustainability, but there are still challenges that need to be overcome, such as the lack of supporting facilities and tourist awareness of the environment. Sustainable management in tourism should focus on the principles proposed by (Brundtland, 2017) which suggests a balance between economic, social, and environmental needs in every aspect of management.

One of the main principles of sustainable tourism management is its environmental aspects. Beach cleaning efforts have been carried out from an environmental perspective, but waste management has not been optimal. This demonstrates the potential for sustainability, which requires improved management. According to (Sahyoni, 2022), waste management is a critical element for the sustainability of the tourism environment because unmanaged waste creates significant threats to the ecosystem. Therefore, a better waste management system is required to support the sustainability of the environment. This is in line with the theory put forward by (Brundtland, 2017), which suggests that sustainable tourism must consider environmental aspects by ensuring that natural resources are used wisely without damaging the environment.

The investigation revealed that community waste management approaches in tourist destinations grapple with formidable obstacles, particularly those stemming from insufficient infrastructure and regulatory frameworks. For instance, research conducted in Thailand determined that despite local inhabitants fervently participating in beach cleanups, the lack of proper facilities, coupled with ineffective governmental policies, perpetuated the challenges of burgeoning waste piles that threaten community viability (Wiangnon et al., 2019). Studies conducted in Thailand have underscored the difficulties faced by various local governing entities in their quest to implement effective waste management solutions. This predicament has resulted in an alarming increase in the quantity of unmanaged waste in popular tourist destinations (Pampasit, 2018).

In contrast, surveys carried out in some European Union countries proved that stringent waste management policies would add more strength to the efficiency of waste management systems. Such policies carry more weight than just playing around with community participation in management. According to the results of the study by (Ezeah et al., 2015) tourist destinations in Europe are more successful in mitigating the adverse environmental impacts of tourism if they apply strict regulations regarding waste sorting, recycling, and management. This unequivocally points to the fact that a combination of strong regulations and vibrant community input can be a more effective strategy in the context of sustainable waste management in the tourism industry.

Punaga Beach's biodiversity is a significant point of attraction for visitors. Therefore, it is necessary to implement proper conservation policies to maintain natural beauty and biodiversity. One of the most effective methods of moving towards sustainability is to limit the number of visitors in the area and supply eco-friendly facilities (Ceballos-Lascuráin, 1996). These conservation initiatives have been successful in preserving the equilibrium of coastal ecosystems while raising local community awareness regarding the significance of environmental safeguarding. Furthermore, community-driven approaches to sustainable tourism management can lessen adverse effects on biodiversity and ensure an equitable distribution of economic advantages from the tourism sector among local communities (Senthilkumar, 2022).

Thus, on a socioeconomic scale, the participation of local communities in various activities, such as lodging and gastronomy, forms the nucleus of the social ability to impact the local economy by meeting the aim of community empowerment in tourism. However, the low sharing of locals' first development calls for action towards more inclusive empowerment. Research conducted by (Sahyoni, 2022) proves that enhancing the involvement of local communities can lead to multiple returns while preserving the locus of control plus aspects of cultural identity and welcoming local customs as attractions for tourists.

The sustainable development of tourism must ensure that local communities gain real benefits through active participation in the management and economic benefits of the sector (Sutresna et al., 2019). They emphasized that community-based tourism development can improve socioeconomic resilience and enhance cooperation between governments, local communities, and economic actors. Similarly, Nafidah et al. (2021) argued that community-based approaches can enhance socioeconomic resilience while promoting cooperation among key stakeholders in the tourism industry. Therefore, governments and stakeholders must provide local communities with broader opportunities to participate in all aspects of tourism management.

Although community-based tourism can provide economic benefits, this study also highlights some limitations that need to be addressed. Overreliance on tourism makes local economies vulnerable to visitor numbers and seasonal demand changes. As Nafidah et al. (2021) showed, communities that rely heavily on tourism face significant economic challenges during periods of declining tourist arrivals, such as the COVID-19 pandemic. Similar findings were found in studies in Nepal and Vietnam, where communities that rely entirely on tourism experienced significant financial instability during the low season (Todyog & Alvarado, 2021).

In addition, there are challenges to implementing inclusive community empowerment strategies. Although many studies have highlighted the importance of local participation in tourism sector development (Sahyoni, 2022) the fact remains that the distribution of tourism revenues is often uneven, potentially exacerbating social disparities. In some cases, elite groups dominate tourism-related revenues, while marginalized groups receive only very limited benefits (Hariyadi et al., 2024). These findings suggest that, while community-based tourism can be a valuable tool for economic development, effective policies are needed to ensure an equitable distribution of benefits across all levels of society.

To achieve feasible tourism that can successfully engage nearby communities, an adjusted approach is required. This approach incorporates broadening wage sources other than tourism, creating abilities, and actualizing government arrangements that back financial value. By combining tourism-based opportunities and alternative job methodologies, we are able to create a more grounded financial establishment for neighborhood communities, while lessening reliance on regular traveler streams.

The nearby culture of the Punaga Shoreline has colossal potential as a traveler fascination. Existing conventions have been changed into social resources that are not as alluring to guests, but also contribute to the conservation of social legacy. Agreeing with Dangi and Jamal (2016), culture-based tourism provides two fundamental benefits: advancing the conservation of conventions, and advertising bona fide social encounters with sightseers.

In any case, social administration requires cautious consideration since top commodification can harm its inherent esteem (Shepherd, 2002). To diminish this chance, it is vital to create an administration that maintains a balance between social conservation and financial utilization (Dianty, 2024). This view is in line with the hypothesis communicated in (McKercher & Cros, 2002) which states that feasible social tourism must consider cultural values while still providing financial benefits to neighborhood communities. Cohen (2004) emphasizes the need for an adjusted approach that can ensure social astuteness while supporting tourism improvement.

Social legacy administration within the context of tourism must be carried out with a key approach, since the commodification of conventions has the potential to cause mutilation. Shepherd (2002) cautioned that culture-based tourism regularly dangers the turning of conventional hones into commercial displays that decrease their genuineness. In line with this, Cohen (2004) contends that an intemperate center on monetary pick-up can harm the social meaning of neighborhood conventions. Be that as it may, on the off chance that overseen well, social tourism can be an financial driver as well as a apparatus for legacy conservation (Dianty, 2024). The partnership model proposed in "Cultural Tourism: The Partnership between Tourism and Cultural Heritage Management," emphasizes the significance of joining financial destinations with social preservation, in arrange to guarantee maintainable tourism hones (McKercher & Cros, 2002).

In differentiating to concerns around commercialization, a number of thoughts have appeared that adjusting social expressions to suit traveler desires can contribute to their survival within the cutting-edge time. For example, an investigation in Japan revealed that despite the fact that certain social celebrations have been altered for tourism purposes, these adjustments have actually resuscitated nearby people's interest in conventional hones (Shepherd, 2002). It appears that social tourism, in case overseen shrewdly, can serve as a mechanism for keeping up conventions, or perhaps rather than simply commodifying.

Within the setting of Punaga Beach, the cultural tourism administration should prioritize the dynamic interests of nearby communities. This community-based approach is a successful arrangement to adjust financial and cultural conservation. By enabling local people as key partners within the tourism industry, they will pick up more noteworthy control over how their culture is displayed in this manner, anticipating abuse by people.

In expansion, executing instructive techniques for visitors around the social values of the goals they visit will increase appreciation for the genuineness of neighborhood conventions. In this manner, accomplishing an adjustment between social conservation and financial benefits requires comprehensive key arrangement and dynamic community inclusion..

Existing approaches ought to prioritize community-led tourism activities so that locals have control over the representation and showcasing of their social legacy. In expansion, an administrative system ought to be made that is able to avoid intemperate commercialization, while still permitting versatile procedures to preserve the maintainability of social conventions in the midst of continuous worldwide changes. With this approach, social tourism on the Punaga Shoreline will not be a source of wages for the neighborhood community, but will also contribute to economic social conservation.

3.2 AHP Analysis: Management Priority Factors

Using the Analytic Hierarchy Process (AHP) method, priority factors for the success of sustainable tourism management at Punaga Beach were identified based on input from the local government, local communities, and business actors (Table 2).

Table 2: Management Success Factors

Success Factors	Weight (%)	Important Reasons
Stakeholder Commitment	32,5	Coordination between government, society and the private sector determines the implementation of sustainability.
Tourist Environmental Awareness	25,0	Environmentally conscious travelers can reduce their negative impact on the ecosystem.
Infrastructure and Facilities	23,0	Adequate facilities increase tourist comfort and the attractiveness of the destination.
Cultural Promotion and Education	19,5	Cultural education creates appreciation for local wisdom and supports the preservation of traditions.

Source: 2024 research results

The results of the AHP analysis showed that stakeholder involvement is a key factor in the success of sustainable tourism management. This factor is followed by tourists' environmental awareness, infrastructure, cultural education, and promotion. This finding is in line with the Stakeholder Theory proposed by (Freeman, 2010), which emphasizes the importance of collaboration between various parties and government, community, and the private sector—to ensure the successful implementation of sustainability initiatives.

Within the examination, partner commitment resulted in the most elevated weighting of 32.5%, demonstrating the need for coordination between nearby governments, communities, and commerce performing artists in planning and executing maintainability arrangements. Tourists' natural mindfulness, with a weighting of 25%, plays a vital role in maintaining tourism administration. Sightseers who are mindful of the significance of securing the environment can offer assistance in decreasing negative impacts on coastal biological systems, such as dodging contamination and harm to coral reefs (Gössling et al., 2009).

Another important calculation is the framework and offices, which obtain a weighting of 23% and may be a determinant of traveler consolation, so it can impact the engaging quality of a goal. Advancement and social instruction, with a weight of 19.5%, indicate that understanding nearby culture can increase the appreciation of nearby intelligence and bolster the conservation of conventions. Generally, the results of the AHP analysis illustrate that to attain economical tourism administration, close collaboration between different partners is required as well as expanding mindfulness of the significance of natural and social conservation.

3.3 SWOT Analysis: IFAS and EFAS

The results of the SWOT analysis show a combination of internal and external factors that influence the management of Punaga Beach (Table 3).

Table 3 : Internal factors (IFAS): Management of Punaga Beach

Factor	Weight	Score	Information
Strength: Natural beauty	0.30	3.6	Beautiful views and biodiversity are the main attractions supporting sustainable tourism in this area.
Weakness: Minimal facilities	0.25	2.8	Lack of public toilets, trash bins and other infrastructure needed for tourist comfort

Source: 2024 Research Results

Table 4 : External Factors (EFAS): Management of Punaga Beach

Factor	Weight	Score	Information
Opportunities: ecotourism trends	0.35	3.7	Tourist awareness of sustainable tourism is increasing, thus opening up opportunities for the development of ecotourism on Punaga Beach.
Threats: environmental degradation	0.10	2.6	Uncontrolled tourism activities threaten the coastal ecosystem which can damage the tourist attraction.

Source: 2024 Research Results

The results of the SWOT investigation showed a combination of inner and external variables that impacted the administration of the Punaga Shoreline (Table 4). From an internal point of view, the highest quality of the Punaga Shoreline lies in its natural beauty, which is the most fascination for visitors. Biodiversity and shocking characteristics open up extraordinary potential for ecotourism improvement. Be that as it may, there's a noteworthy shortcoming, specifically the need of critical offices such as open toilets and junk containers, which are required to move forward guest consolation.

From an outside point of view, the greatest opportunity for the Punaga Shoreline is the developing ecotourism trend, where visitors are progressively mindful of the significance of maintainability within the tourism sector. This opens up important opportunities for ecotourism advancement within the Punaga Shoreline range. Be that as it may, the greatest risk that must be confronted is natural debasement due to ineffective overseen tourism exercises, which can possibly harm the coastal biological system.

3.4 Sustainable Tourism Management Strategy

Based on the results of the AHP and SWOT analyses, sustainable management strategies that can be applied to Punaga Beach include the following (Table 5).

Table 5: Management Strategy (SWOT)

Strategy Type	Action Plan
S-O	Integrating natural beauty and ecotourism trends to create a unique attraction
W-O	Raising funds and private collaboration for the development of environmentally friendly tourism facilities
S-T	Establish waste management regulations and conservation zoning to protect ecosystems
W-T	Increasing community participation in management through training and outreach

Source: Research Results 2024

This technique is based on the standards of maintainable administration proposed by (Weaver, 2007), which emphasize the significance of synergies between inner qualities and outside openings in accomplishing supportability within the tourism division. One key viewpoint of this technique is the advancement of naturally inviting tourism offices, counting the development of an open framework that contributes to lessening the negative impacts on the environment (Miller et al., 2007).

To ensure the environment of the Punaga Shoreline, strict controls on squander administration and the implementation of preservation zones should be implemented. This step is exceptionally imperative so that tourism exercises do not harm existing characteristic assets (Gössling et al., 2009). Expanding the capacity of nearby communities in tourism administration will also strengthen the social supportability angle. Preparing

tourism trade administration and instruction on the significance of social and natural conservation will have a more noteworthy positive effect on financial and social support.

4. Conclusion

This research stresses the importance of stakeholder involvement, the development of environmentally friendly infrastructure, and the enhancement of human resource capabilities in guaranteeing sustainable tourist management at Punaga Beach in Takalar Regency. The SWOT analysis revealed that while the area has significant assets, such as its attractive natural surroundings and ability to raise ecological consciousness, it also confronts continuous obstacles, such as inadequate infrastructure and poor institutional coordination. Furthermore, AHP analysis identifies major strategic goals that must be addressed to ensure long-term viability. These include strengthening environmental education, improving tourism infrastructure, and promoting a more integrated and cooperative governance system.

The study's disclosures propose that an arrangement approach that additionally prioritizes characteristic conservation, money-related enhancement, and control collaboration is fundamental for fruitful attainable tourism organizations. Highlighting the importance of prioritizing key exercises, this study underscores the need for a comprehensive and well-structured organizational system that successfully incorporates policymakers and adjacent communities in the decision-making process.

However, one of the main limitations of this study is the lack of longitudinal data, which could provide a more comprehensive picture of trends and the long-term impact of sustainability strategies. This study relies solely on data collected at a single point in time, making it challenging to capture the dynamics and developments that occur over time. Future studies should adopt a longitudinal approach to assess the ongoing effectiveness of sustainability initiatives and capture evolving stakeholder perspectives.

From a practical perspective, policymakers and tourism stakeholders should prioritize the adoption of eco-friendly infrastructure policies and promotion of community-based tourism initiatives to enhance local engagement and economic benefits. Future research should focus on assessing the long-term implications of these strategies in preserving ecological stability, while simultaneously driving regional tourism growth. Additionally, comparative analyses of tourism management models in similar coastal areas could provide valuable insights into best practices and adaptable frameworks for optimizing sustainable tourism governance.

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