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SUSTAINABILITY OF THE SALT EDU-TOURISM AREA IN BUNDER VILLAGE, PADEMAWU DISTRICT, PAMEKASAN REGENCY

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ABSTRACT

The salt edu-tourism area in Bunder Village was established to promote local economic development and generate village income by leveraging salt farming as a tourism attraction. However, the initial objectives have not been fully achieved due to declining tourist visits. This study aims to assess the sustainability status of salt edu-tourism across five dimensions—ecological, social, economic, institutional, and infrastructure—and identify leverage attributes to enhance its long-term viability. A quantitative survey approach was employed, involving 30 purposively selected respondents, including tourism managers, residents, and visitors. Data were collected through structured questionnaires and field observations and analysed using the RAPFISH method, incorporating multidimensional scaling and leverage analysis. The results revealed that the overall sustainability of the salt edu-tourism site is categorised as low, with moderate sustainability achieved only in the ecological and institutional dimensions. Key leverage factors include waste management practices, village funding, community engagement, government support, and infrastructure improvements. Compared to previous studies that primarily focused on potential development and socio-economic impacts, this research provides a novel multidimensional sustainability assessment. To improve sustainability, it is recommended to strengthen waste management systems, enhance community participation, secure greater funding, foster strategic collaborations, upgrade infrastructure, and introduce indoor educational facilities. These integrated efforts are crucial to support the future growth and resilience of salt edu-tourism in Bunder Village.

Keywords: *edu-tourism; salt; sustainability; RAPFISH; village development*

INTRODUCTION

Villages play a strategic role in local economic development because their unique natural and socio-cultural resources can be transformed into community-based economic activities. Rural tourism can be a powerful driver of local development—stimulating economic growth, expanding household incomes, and strengthening community participation—particularly when supported by effective local institutions (Lestari et al., 2024). By leveraging

these local resources, community-based tourism generates new income streams and employment opportunities, thereby improving rural livelihoods (Gayo, 2025). Moreover, rural tourism contributes to economic diversification and enhances resident well-being when managed in ways that balance economic, social, and environmental interests (Yanan, 2024).

Salt edu-tourism in Bunder Village, supported by local institution BUMDes Mutiara Sahara, represents an innovative approach to rural tourism development that combines educational experiences with traditional salt production activities. Edu-tourism provides not only recreational value but also contributes to knowledge enhancement and cultural appreciation, which is aligned with global trends toward educational and experiential tourism (Tomasi et al., 2020). However, tourism destinations that rely on natural resources—such as salt ponds—are susceptible to environmental dynamics, including weather variability, pollution, and land degradation, which can affect both resource productivity and visitor satisfaction (Nguyen et al., 2024; Toubes et al., 2020). These challenges highlight the need for systematic and multidimensional sustainability assessments. To ensure long-term viability, tourism development must incorporate ecological, social, economic, institutional, and infrastructural considerations (UNWTO, 2022).

Although several previous studies have discussed the potential, development strategies, and socio-economic impacts of salt tourism in Madura, these studies still have important limitations that prevent them from explaining the long-term sustainability of the destination. First, Wandila & Hariyanto's (2021) study only highlighted the community empowerment aspect during the pandemic but did not assess how ecological, economic, social, institutional, and infrastructure conditions interrelate with each other in the sustainability of salt tourism. Therefore, the study does not provide a complete picture of the destination's readiness to survive in the long term. Second, Susandini & Gunawan's (2023) study emphasised the contribution of salt tourism to improving the community's economy. However, their analysis did not include the institutional and infrastructure dimensions—two factors that are crucial for the operational stability of village-based tourism

destinations. Third, Susandini & Islam's (2022) study, which used a SWOT analysis, only identified general opportunities and challenges but did not provide a quantitative, index-based measurement that could objectively indicate the level of destination sustainability. The SWOT approach also does not allow for the identification of the most influential attributes (leverage attributes) on tourism sustainability. Fourth, other studies, such as Wulandari et al. (2024) and Lestari et al. (2024), still focused on the conceptual aspects and role of Village-Owned Enterprises (BUMDes) in village tourism development, thus not providing a comprehensive analytical framework for assessing the multidimensional sustainability of salt ecotourism.

These limitations indicate that no research has yet been conducted on a comprehensive and measurable sustainability assessment using a quantitative approach which simultaneously combines ecological, social, economic, institutional, and infrastructure dimensions and identifies key attributes that act as leverage factors. This gap is particularly urgent to address because the salt edu-tourism area in Bunder Village has recently experienced declining tourist visits, limited community participation, funding constraints, and infrastructure inadequacies. These challenges, if not analysed using a multidimensional and evidence-based sustainability assessment, may undermine the long-term viability of the destination. Similar concerns have been noted in sustainable tourism literature, where unmanaged village tourism frequently experiences performance decline if sustainability is not rigorously monitored (Sutresna et al., 2019; Utami et al., 2023). Additionally, environmental conditions such as weather variability, waste accumulation, and pollution have direct effects on salt production quality and visitor experience (Romdona et al., 2020; Nguyen et al., 2024). Therefore, a comprehensive sustainability assessment is needed to guide strategic interventions that can strengthen the long-term development of salt edu-tourism in Bunder Village.

Based on these gaps, the research problems addressed in this study are: (1) How sustainable is the salt edu-tourism area in Bunder Village across ecological, social, economic, institutional, and infrastructure dimensions? Moreover, (2) Which attributes serve as leverage factors that

most strongly influence its sustainability?. Accordingly, this study aims to: (1) assess the multidimensional sustainability status of salt edu-tourism; and (2) identify the key leverage attributes that should be prioritised to enhance its long-term sustainability

MATERIALS AND METHODS

Using a quantitative approach, this research was conducted at the Salt Edu-Tourism site in Bunder Village, Pademawu District, Pamekasan Regency, considering that this salt edu-tourism is the only tourist site in Madura that incorporates the salt production educational concept.

A total of 30 respondents were selected using a purposive sampling method, consisting of 3 tourism managers (BUMDes Mutiara Saghara staff and tourism administrators), 7 residents as beneficiaries of the economic impact, and 20 tourists as direct beneficiaries of the edu-tourism. A purposive sampling method was employed because the respondents needed to have direct experience, sufficient knowledge, and involvement in salt edu-tourism operations. According to Etikan, Musa & Alkassim (2016), purposive sampling is appropriate when the study requires information-rich participants capable of providing accurate evaluations. Tourism sustainability assessments often rely on stakeholders who understand destination dynamics, such as managers, residents involved in tourism, and tourists who have experienced the site. The total sample of 30 respondents is considered adequate for rapid appraisal techniques like RAPFISH, which emphasise informed judgment rather than large sample size (Pitcher & Preikshot, 2001; Fauzi & Anna, 2005). Similar tourism sustainability studies using RAPFISH employed 20–40 respondents (Pratama & Umar, 2020; Andronicus et al., 2016). Thus, 30 respondents are methodologically adequate.

Data was collected using observation and a questionnaire. Field observations were conducted to assess the real conditions of the infrastructure (parking areas, accessibility, restrooms, signage), environmental conditions (waste management, land condition), and tourist activities (types of visitor engagement with salt production). The questionnaire was structured based on the determined sustainability dimensions: ecological, social, economic, institutional, and infrastructure **(Table 1).** The data measurement scale used a Likert scale of

0-3 (0 = very poor, 1 = poor, 2 = good, 3 = very good for positive statements, and the reverse for negative statements.

Table 1. Dimensions and Attributes of The Questionnaire

Dimensiona	Attribute
Ecology	Salt land ecosystem; waste pollution; environmental perversion; weather impact; waste management; incidence of disaster
Social	Alternative business; community knowledge; dependence on community; security; conflict; community participation
Economics	New business opportunity; community income; visitor growth; village's own-source revenue; funding; ticket price
Institutional	Legal status; coordination; collaboration; the group responsible; government support; technical and operational guidelines
Infrastructure	Public transportation; parking space; condition of the roads; directional sign; public restrooms; maintenance

Sources: Ko (2005) & UNWTO (2021)

The data was analysed using the rapid appraisal for fisheries (RAPFISH) approach. The RAPFISH method was selected because it enables a rapid, multidimensional, and quantitative assessment of sustainability across ecological, social, economic, institutional, and infrastructure dimensions. Although initially developed for fisheries (Pitcher & Preikshot, 2001), RAPFISH has been widely recognised for its flexibility and applicability to various natural resource–based systems, including ecotourism. Several tourism-focused studies have successfully used RAPFISH to assess destination sustainability, such as in coastal ecotourism (Andronicus et al., 2016), marine tourism areas (Pratama & Umar, 2020), and agrotourism systems (Elvira et al., 2022). These studies demonstrated that RAPFISH can produce clear sustainability indices and identify leverage attributes that guide management decisions. Since salt edu-tourism in Bunder Village is a form of coastal resource–based ecotourism with complex ecological and socio-economic interactions, RAPFISH is particularly suitable for capturing its sustainability profile in a structured and evidence-based manner.

The RAPFISH analysis involves the following steps: (1) identifying the attributes for each selected dimension, (2) assessing the attributes based on an ordinal scale according to applicable sustainability criteria, (3) determining and analyzing the sustainability index based on the scoring, (4) conducting sensitivity analysis (leverage analysis) to identify the attributes that have the most significant impact on tourism sustainability by examining the root

mean square (RMS) values. The larger the RMS value, the greater the attribute's role in the sustainability status of the salt edu-tourism. The leverage attributes were identified based on the highest Root Mean Square (RMS) values for each sustainability dimension, while multidimensional scaling (MDS) was employed to determine the position of tourism sustainability, following the RAPFISH framework developed by Pitcher and Preikshot (2001) and further elaborated by Kavanagh and Pitcher (2004). Through MDS analysis, the stress value and coefficient of determination (R^2) were determined, with a good R^2 value being close to 1. The allowable stress value was less than 0.25. The sustainability index scale ranged from 0 to 100, as shown in **Table 2** below:

Table 2. Index Range and Sustainability Status

Sustainability Scale	Sustainability Category
0.00-25.00	Bad (Unsustainable)
25.01-50.00	Poor (Low sustainability)
50.01-75.00	Adequate (Moderate sustainability)
75.01-100.00	Good (High sustainability)

Source**:** Susanto et al. (2022).

This research adhered to research ethics standards. Prior to participation, all respondents were informed about the research objectives, procedures, and their rights. Informed consent was obtained from every participant. Respondents' confidentiality and anonymity were guaranteed, and participation was completely voluntary. Data were used solely for research purposes and reported in aggregate without exposing individual identities.

RESULTS AND DISCUSSION

The overall sustainability index of 48.04 indicates that salt edu-tourism in Bunder Village remains in a low sustainability category, driven largely by weaknesses in the social, economic, and infrastructure dimensions (**Figure 1).** While the ecological and institutional dimensions show moderate sustainability, the interactions among the dimensions reveal several cause–and–effect patterns that help explain the system's overall performance.

For example, poor infrastructure—particularly limited parking space, inadequate signage, and restricted transportation access—reduces visitor comfort and accessibility. This has contributed directly to declining visitor

numbers, which subsequently affects economic performance, including decreased community income and minimal contribution to village revenue. Prior studies suggest that weak tourism infrastructure commonly leads to reduced destination competitiveness, especially in rural and coastal tourism (Nguyen et al., 2024).

Similarly, the low social sustainability index (35.54) reflects limited community involvement and weak local knowledge about salt edu-tourism. This lack of engagement weakens institutional capacity, as community members play a crucial role in managing visitor services and maintaining security. Studies on rural and community-based tourism consistently show that community participation directly enhances both institutional stability and economic outcomes (Budeanu et al., 2016). Therefore, the weak social dimension in Bunder Village creates a ripple effect across economic and institutional performance.

The ecological dimension, although relatively stronger, is undermined by waste management issues and extreme weather conditions. Waste that accumulates in salt ponds and river estuaries affects both salt production quality and the attractiveness of the site. This environmental degradation can exacerbate declines in visitor numbers, creating additional economic pressure. Similar findings were reported by Toubes et al. (2020), who found that environmental quality is a key determinant of tourist behaviour in nature-based destinations.

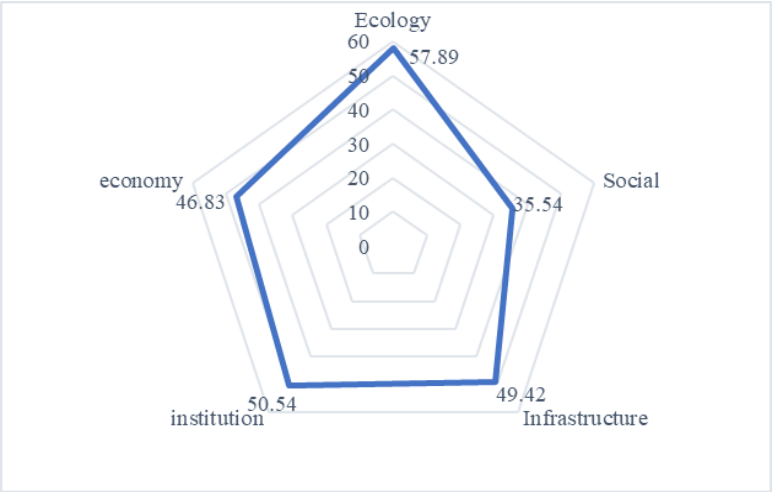

Figure 1. Kite Diagram of Sustainability Index of Salt Edu-Tourism in Bunder
Source**:** Primary Data Analysed, 2024

1. Ecological Dimension

The ecological dimension in the sustainability analysis of salt edu-tourism consists of six attributes: the incidence of natural disasters, waste management, weather impact, environmental preservation, waste pollution, and the condition of the salt land ecosystem. The ecological dimension was categorised as moderate sustainability, meaning that the salt edu-tourism meets expectations in ecological aspects based on the six measured sustainability attributes.

The results of the leverage of attributes analysis in **Figure 2** indicate that three attributes were considered potential leverage points for the sustainability of the ecological dimension: waste management, weather conditions around the tourist site, and waste pollution, as all three had RMS values greater than half of the highest RMS value. Based on these results, improving the conditions of these three attributes can be prioritised in the work programs of the managers to enhance the sustainability of the salt edu-tourism from an ecological perspective.

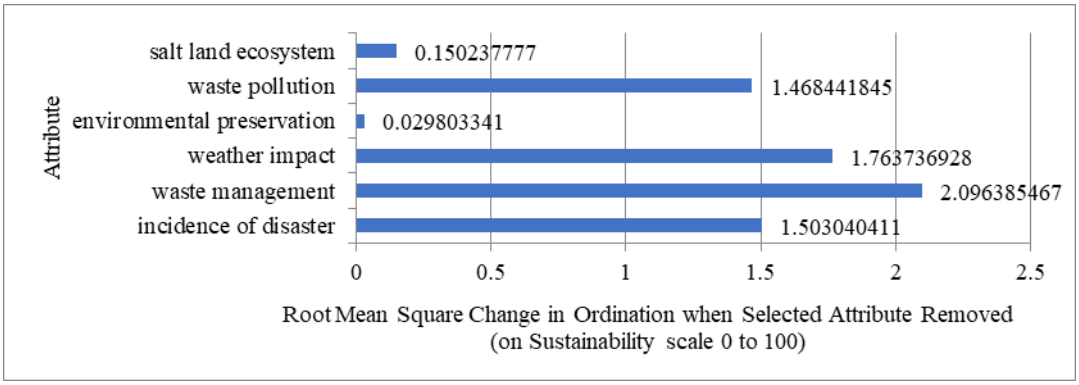

Figure 2. Leverage of Attribute on Ecological Dimensions

Source: Primary Data Analysed, 2024

Most respondents (70 %) indicated that waste in the edu-tourism area is not managed well. The waste in the edu-tourism area not only comes from visitors; it also originates from upstream sources or outside the edu-tourism area, such as debris along the river and the river estuary. The Bunder Village government has four waste management facilities. However, they are used to handle waste from the entire Bunder Village, and there is no waste processing designated explicitly for the salt edu-tourism.

Koliotasi et al. (2023) explain that waste is a cleanliness issue frequently faced in

tourist areas, as it affects the comfort of visitors. Nguyen et al. (2024) also stated in their research that environmental aspects, including cleanliness, influence sustainable tourism. In addition to impacting visitor comfort, the presence of waste in the salt edu-tourism area—particularly in the ponds, along the river, and at the river estuary—also affects the cultivation process and the quality of the salt. Romdona et al. (2020) noted that salt ponds contaminated with waste lead to increasingly yellowing traditional salt production, which is suspected to result from waste pollution. The accumulation of waste along the coast poses a threat of salt contamination with microplastics. Therefore, to ensure sustainability, waste must be managed in an environmentally friendly manner, such as by reducing the amount of waste generated from both consumption and production activities, recycling, and reusing materials that can still be utilised (Rachmasari et al., 2022). The second attribute that can serve as a leverage point for the sustainability of the ecological aspect is the weather. The weather at the tourist site tends to be hot due to its proximity to water and the characteristics of the salt land, which require heat. Salt production is highly dependent on dry and sunny weather (Pambudi et al., 2021). High temperatures can lead to discomfort for tourists, who may choose to avoid outdoor activities or even shorten their visit duration. This can directly impact the number of visitors and the revenue generated from the edu-tourism (Toubes et al., 2020). One alternative strategy to address this issue is to develop educational programs or presentations about the salt production process in a cool indoor setting. This way, visitors can enjoy educational experiences while being sheltered from the hot weather (Yanuar et al., 2024).

Social Dimension

The social dimension in the sustainability analysis consists of six attributes: the level of community participation, the incidence of conflicts, the level of security, the level of dependence on the surrounding community, the level of community knowledge, and alternative business opportunities. Figure 1 shows that the sustainability of the social dimension was categorised as low sustainability (with an index of 35.54), indicating that the development of salt edu-tourism in social aspects does not meet the sustainability criteria for the six measured attributes. The leverage of

attributes analysis reveals that there are three attributes considered potential leverage points for the sustainability of the social dimension: community dependence, security level, and community knowledge (**Figure 3**).

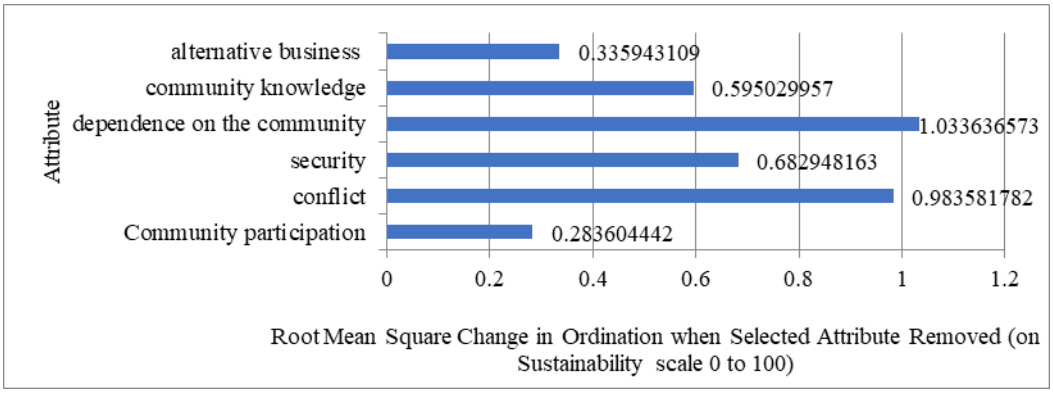

Figure 3. Leverage of Attribute on Social Dimensions

Source: Primary Data Analysed, 2024

Aris et al. (2018) explain that community dependence on tourism activities can have a positive impact on tourism sustainability, as it encourages residents to protect tourist areas from damage and to actively participate in promoting the area, both directly and indirectly, such as by providing exemplary service to tourists. Maulana et al.(2024) noted that tourism can create dependence among local communities by providing new job opportunities, which can lead to an improved standard of living and help preserve local identities. The salt edu-tourism in Bunder Village has already been able to create job opportunities for residents, such as establishing small and medium enterprises (SMEs) around the tourism area, while emphasising the identity of the salt-producing region. However, this has not yet had a significant impact on increasing the income of the community. Therefore, the community's dependence on salt edu-tourism remains low and requires priority attention to enhance that dependence so that residents become interested and engaged in advancing the salt edu-tourism.

The second leverage attribute of the social dimension is security. Junensih & Ratnawili (2021) state that the level of security influences tourists' decisions to visit, as a good security level will encourage visitors to consider coming. Respondents perceive that the security in the vicinity of the edu-tourism area is inadequate. This security concern is related to several incidents of tourists losing items, such as helmets, jackets,

and even motorcycles. Essentially, these losses are often due to the negligence of tourists, such as failing to park their vehicles in the designated parking areas.

The third leverage attribute of the social dimension is community knowledge. The knowledge of the surrounding community significantly influences the sustainability of edu-tourism and the number of visitor arrivals. With their knowledge, residents can actively participate as tourism ambassadors and manage resources more effectively (Devi et al., 2022). Communities with an understanding of edu-tourism tend to be more actively involved in tourism activities and support initiatives that promote sustainability, such as conservation and environmental preservation. This active participation can extend the lifespan of the tourist destination. When residents are actively engaged, they can take on roles in managing the tourist destination, helping to maintain its sustainability, preserving local culture, and enhancing the visitor experience. Such involvement fosters a deeper connection with the tourist destination, enhances its resilience to challenges, and ensures long-term success (Kim et al., 2021). Communities well-informed about the potential and value of edu-tourism can also serve as tourism ambassadors (Chancellor et al., 2021). They can provide accurate and engaging information to tourists, ultimately increasing the number of visitors (Tomasi et al., 2020).

2. Economic Dimension

The economic dimension in the sustainability analysis consists of six attributes: ticket prices, funding levels, contribution to the village's own-source revenue (PAD), visitor growth, contribution to community income, and the creation of new business opportunities. The economic dimension is categorised as low sustainability (with an index of 46.83), meaning that the economic dimension is considered to inadequately meet sustainability criteria based on the six measured attributes. The leverage of attributes analysis identifies five attributes that could serve as leverage points for improving the sustainability of the economic dimension: the level of funding from the village government, ticket prices, visitor growth, increased community income, and contribution to village revenue (**Figure 4**)

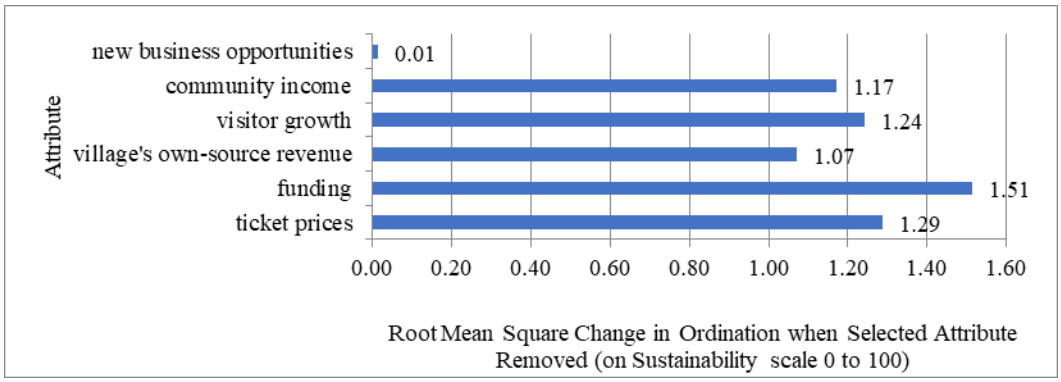

Figure 4. Leverage of Attribute on Economic Dimensions

Source: Primary Data Analysed, 2024

The salt edu-tourism is managed by the village government through the village-owned enterprise (BUMDes), with part of the funding for operations and the provision of facilities coming from village funds. The government allows the use of up to 20% of village funds for BUMDes. The funding for BUMDes by the village government of Bunder currently only reaches 15% of the village funds. According to respondents, this amount is still considered small and insufficient, and they believe it needs to be increased.

The second leverage attribute for the sustainability of the economic dimension is ticket pricing. Ticket prices are an important consideration for edu-tourism managers because people are more likely to visit if the tickets are affordable or if the price matches the value they receive. The ticket price for the salt edu-tourism is Rp. 5,000. This affordability is a positive feature of the salt edu-tourism. Research by Rizdiyanti et al.(2022) shows that the more affordable the ticket price, the higher the visitor satisfaction. However, for some people, the nominal ticket price is not an issue, as the price is often associated with the perceived value of a product or service. A higher perceived benefit leads to positive customer experiences. When the perceived value is high, consumers will continue using the product (Tan & Le, 2023).

The third attribute is the number of visitors. The number of visitors to the salt edu-tourism has been declining, although the number of tourists visiting a destination can have a significant impact on sustainable tourism (Rizaldi et al., 2024). However, an increase in visitors can also lead to environmental degradation, including pollution and pressure on natural resources, if not

appropriately managed (Yusuf, 2020). Sustainable tourism requires careful planning and management to balance the benefits with the protection of the environment and local culture (Haribudiman et al., 2023).

The fourth attribute is the increase in community income. Tourism is seen as having a positive impact on improving the welfare of local communities (Vitriani et al., 2017). Tourism can increase community income through new business opportunities such as small and medium enterprises (SMEs) (Silooy & Imamah, 2020). The impact of tourism activities on the community's economy includes a 33% increase in income after engaging in the tourism sector (Makmun et al., 2021). However, SME operators around the salt edu-tourism site are not yet satisfied with the income impact they have experienced.

The fifth attribute is the contribution to village income. Tourism is one of the sectors with the potential to increase village-generated income (Leonandri & Rosmadi, 2018). However, the salt edu-tourism activities have not yet been able to contribute to the village's income. The revenue generated from tickets and parking is still used to cover the operational needs of the edu-tourism site.

3. Institutional Dimension

Institutions play a crucial role in supporting the sustainability of edu-tourism because well-established institutions can ensure sustainable resource management and maintain a balance between environmental, social, and economic aspects (Simkova et al., 2023). A strong institution can provide policies, regulations, and support for environmental education, conservation, and local community involvement (Uzulmez et al., 2023). The sustainability of the institutional dimension is measured by six attributes: technical and operational tourism guidelines, government policy support, the group responsible for tourism management, collaboration with other parties, coordination among stakeholders, and legal status.

The sustainability index of the institutional dimension falls into the fairly sustainable category (Figure 1). **Figure 5** shows that there are two attributes that can serve as leverage to enhance the sustainability of the institutional dimension: the level of government policy support for tourism

activities and collaboration with other parties. The managers of edu-tourism feel that several policies are not yet supportive of the sustainability of edu-tourism, such as policies related to improving tourism infrastructure, developing tourist attractions, promoting tourism, training and developing tourism human resources, and refining tourism regulations.

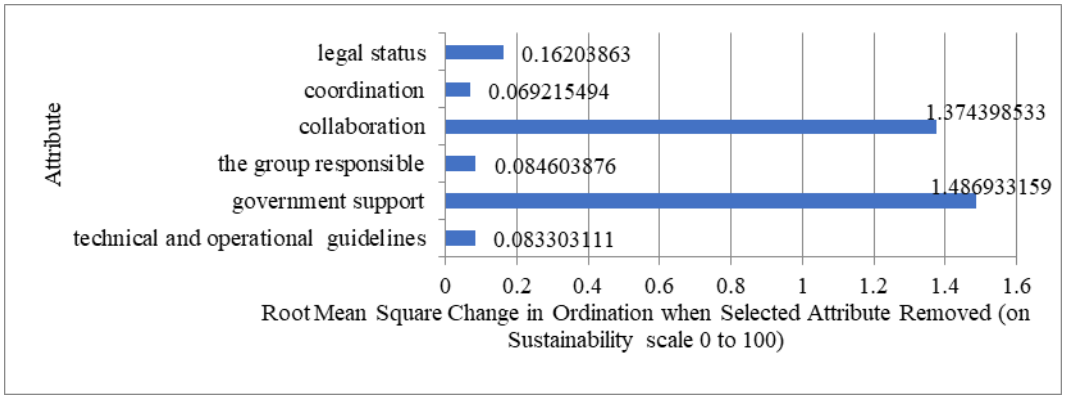

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Figure 5. Leverage of Attribute on Institutional Dimensions

Source: Primary Data Analysed, 2024

Salt edu-tourism is relatively new, and collaboration with large companies has not yet been established. However, the management is open to students exploring and assisting in the development of edu-tourism. The management of beach-based tourism is still relatively simple, so to enhance the effectiveness and sustainability of the management, collaborations are being made with various parties, including the community and the government. This collaboration includes not only funding but also community empowerment activities and outreach programs (Ribawati, 2022). The development of salt tourism in Madura can be optimised through cooperation between academics, government, entrepreneurs, and the community (Susandini & Islam, 2022).

Infrastructure Dimension

Infrastructure plays a crucial role in supporting the sustainability of edu-tourism by enhancing accessibility, facilitating communication, and providing the necessary facilities (Boers & Cottrell, 2007). Well-developed infrastructure ensures that managers, tourists, and local communities can engage effectively, thereby creating a positive environment for sustainable tourism practices (Hesna et al., 2023).

The infrastructure dimension in the sustainability analysis consists of six attributes: the maintenance condition of the edu-tourism area, the availability of

public restrooms, the presence of tourist directional signs, the condition of the roads leading to the tourist site, the availability of parking spaces, and the availability of public transportation. The infrastructure dimension is categorised as low sustainability (**Figure 1**). The majority of respondents believe that the condition of the edu-tourism salt area is incomplete and poorly maintained. This result is consistent with the findings of Susandini & Islam (2022), which state that the facilities and infrastructure provided for the salt edu-tourism in Bunder Village are still minimal.

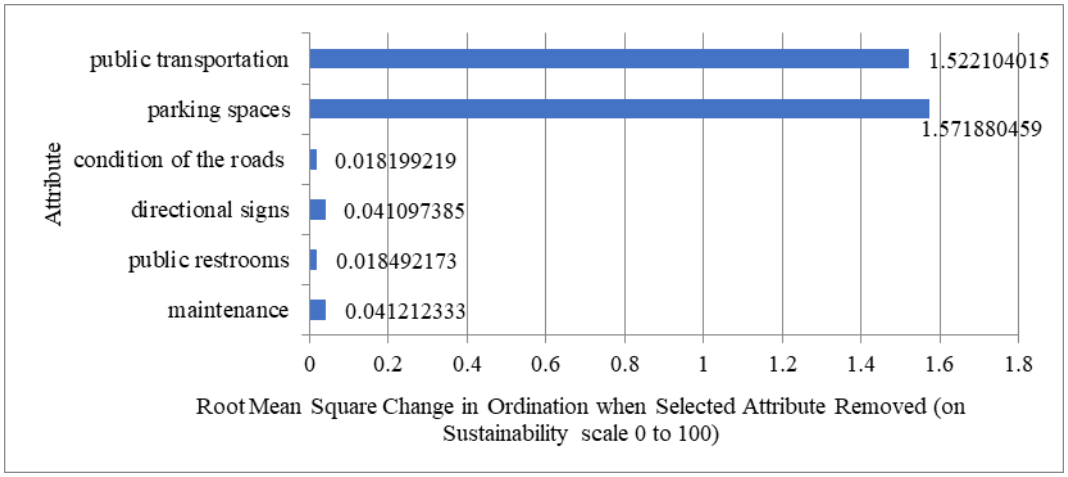

Figure 6. Leverage of Attribute on Infrastructure Dimensions

Source: Primary Data Analysed, 2024

Figure 6 shows that there are two attributes considered to be leverage points for sustainability: the availability of parking spaces at the tourist site and the condition of public transportation. The parking area provided is only for motorcycles, while private vehicles such as cars are parked along the salt edu-tourism road. Parking is one of the essential facilities needed by managers for tourists, allowing visitors to fully enjoy their sightseeing activities (Widyarini & Sunarta, 2018). The condition of public transportation to the salt edu-tourism is limited to minivans because the road leading to the site can only accommodate one truck for transporting salt and one motorcycle, making it impossible for tourist buses to enter. According to Saragih et al. (2023), accessibility is a supporting factor that facilitates visitors' access to tourist locations, including the availability of public transportation. Public transportation, such as buses, is not available to reach the tourist site;

however, private vehicles, including minivans, can enter the area as the road conditions are relatively good.

CONCLUSIONS

The salt edu-tourism in Bunder Village, Pademawu District, Pamekasan Regency is categorised as low sustainability. Based on the sustainability of its dimensions, the ecological dimension is considered moderate sustainability, while the economic, social, and infrastructure dimensions are deemed low sustainability. The institutional dimension is categorised as moderate sustainability.

The leveraging attributes for the ecological dimension are waste management, weather conditions, and waste pollution. For the economic dimension, the leveraging attributes include village funding, ticket prices, promotion, community economics, and contributions to village income. The leveraging attributes for the social dimension are community dependence, conflict incidence, and security levels. The institutional dimension's leveraging attributes are government policy support and cooperation with other parties. The leveraging attributes for the infrastructure dimension are parking facilities and public transportation.

To improve the sustainability of the salt edu-tourism area in Bunder Village, several efforts are recommended. Waste management facilities should be enhanced to maintain ecological balance, while community engagement needs to be strengthened through training and empowerment programs. Financial support from village funds or external partnerships should be increased to ensure operational sustainability. Strategic collaborations with academic institutions, the private sector, and government agencies are also necessary to drive innovation and infrastructure development. Furthermore, tourism facilities such as parking areas, signage, and public amenities must be improved, and indoor educational exhibits should be introduced to enhance visitor comfort during extreme weather. These integrated efforts are essential to ensure the long-term viability and positive economic, social, and environmental impacts of salt edu-tourism.

This study has limitations. This study relies on stakeholder perceptions, which may introduce subjectivity, although this is inherent to RAPFISH-based methods. The cross-sectional design cannot

account for seasonal variations or policy changes influencing tourism performance. Future studies should employ longitudinal approaches, larger samples, and additional dimensions such as cultural and technological sustainability.

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