



AGROMIX

pISSN (Print): 2085-241X; eISSN (Online): 2599-3003
 Website: <https://jurnal.yudharta.ac.id/v2/index.php/agromix>

Integrating livestock production and cultural tourism: Development strategy of Tok-Tok Sape on Bawean Island, Indonesia

Puji Akhiroh ^{1*}, Gatot Ciptadi ¹, Agus Budiarto ¹, Adelina Ari Hemiyanti ¹, Ria Dewi Andriani ¹, Ardyah Irsanti R. Putri ¹

¹ Faculty animal science, Universitas Brawijaya, Malang, Indonesia

*Correspondence email: pujiakhiroh@ub.ac.id

Original article

ABSTRACT

Article history

Received : October 25, 2024

Accepted : September 15, 2025

Published : September 30, 2025

Keyword

Tok tok sape;
 Bawean Island;
 Ecotouris;
 Cattle Production;

Introduction: Bawean Island, located in Gresik Regency, East Java, holds a unique cultural tradition in the form of Tok-Tok Sape bullfighting, where Bali and Madura cattle are specially raised for traditional contests. This study aims to analyze the production potential of livestock and the development prospects of Tok-Tok Sape as a cultural and ecotourism attraction. **Methods:** A survey method with structured questionnaires was used to collect primary data from cattle breeders in Tambak and Sangkapura sub-districts, complemented by observations, interviews, and microclimate measurements. Data were analyzed using descriptive statistics and SWOT analysis to identify strategic factors influencing development opportunities. **Results:** The SWOT analysis positioned Tok-Tok Sape ecotourism development in Quadrant I (coordinates 1.47; 0.73), indicating that internal strengths—including cultural uniqueness (5.12 points), active community participation, and high-quality cattle—significantly outweigh weaknesses, while external opportunities such as government support and rising tourist interest (4.48 points) present substantial potential. Based on these findings, an SO (Strengths-Opportunities) Strategy is recommended, which focuses on three key actions: (1) integrating Tok-Tok Sape into broader cultural tourism packages, (2) formalizing event management through professional training and infrastructure improvement, and (3) leveraging government support to promote Bawean cattle as a distinctive breed. The cultural event significantly enhances cattle market value by 20-30% and strengthens local identity. **Conclusions:** Implementing this strategy would not only support cultural preservation but also generate economic benefits for the local community, contributing to rural development and demonstrating how traditional practices can be aligned with sustainable tourism principles to foster community empowerment. The study reflects the importance of maximizing cultural assets through proactive development strategies that balance economic growth with heritage conservation.

Cite this article:

Akhiroh, P., Ciptadi, G., Budiarto, A., Hemiyanti, A. A., Andriani, R. D., & Putri, A. I. R. (2025). Integrating livestock production and cultural tourism: Development strategy of Tok-Tok Sape on Bawean Island, Indonesia. *AGROMIX*, 16(2), 183–192. <https://doi.org/10.35891/agx.v16i2.5699>

INTRODUCTION

The province of East Java is one of the main centers of beef cattle production in Indonesia, with a population of beef cattle exceeding 4.7 million head—nearly half of the national total of approximately 11 million head (BPS, 2023). Sugiarti and Syafriyadi (2024) state that East Java plays a crucial role in achieving national meat self-sufficiency, being the region with the highest population of cattle and beef production in the country. The cattle raised in East Java generally consist of local breeds and their crossbreeds, such as Bali cattle, Madura cattle, Madrasin cattle, and Ongole crossbreeds. In addition to being utilised as a source of meat and labour in the agricultural sector, cattle in this region also carry cultural and entertainment value, as reflected in farm-tourism experiences where livestock and local traditions are part of the attraction (Genovese *et al.*, 2017).

One unique tradition that combines livestock and cultural elements can be found on Bawean Island, located in Gresik Regency. On this island, Bali and Madura cattle are specifically raised for a traditional bullfighting event known as "Tok Tok Sape." This tradition is deeply rooted in the social fabric of the local community and involves many groups of bullfighting enthusiasts from two main sub-districts: Tambak and Sangkapura. Tok Tok Sape is not only a form of entertainment or competition but also serves as a symbol of local cultural identity that strengthens social ties among cattle breeders. According to Chiteyi (2023), bullfighting culture in various parts of the world originated from spiritual

beliefs and has evolved into a medium for entertainment, cultural expression, economic activities, and even political discourse.

There is growing awareness of the importance of preserving local culture and developing economic potential through sustainable tourism. Zali (2018) emphasizes that human attitudes toward livestock are largely influenced by the desire to preserve cultural heritage and traditional beliefs. This aligns with Butler's (1999) assertion that cultural tourism holds strategic value in preserving the identity of local communities. In this context, the Tok Tok Sape tradition has the potential to be developed as an ecotourism attraction, where local cultural practices are integrated with environmental conservation and community economic empowerment. Sucita (2022) identifies several inherent values in this tradition, including aesthetic, cultural, and sacred elements.

Although the Tok-Tok Sape tradition is a strong cultural icon on Bawean Island, academic studies comprehensively analyzing its potential as a sustainable ecotourism attraction are still very limited. Existing research on livestock-based cultural traditions in East Java, such as bull racing in Madura, tends to focus on partial aspects. For example, a study by Misbah *et al.* (2019) only examined the social dimension, while Fauziyah & Hanani (2020) focused on the economic impact.

Consequently, there is a significant research gap, especially in the context of a unique island ecosystem like Bawean. No study has systematically addressed: (1) how the island's environmental carrying capacity and microclimate can support the development of quality livestock without causing ecological degradation; (2) how to design a strategic integration between preserving cultural authenticity and tourism planning to prevent commodification; and (3) how to formulate concrete development strategies that balance economic benefits for local communities with cultural integrity and environmental sustainability. This research is designed to fill these gaps.

Based on this gap, the main objective of this study is to formulate a development strategy model that integrates the Tok-Tok Sape tradition into a sustainable ecotourism framework on Bawean Island. To achieve this objective, this study will specifically: 1). Assess the actual conditions and potential of Tok-Tok Sape as a cultural tourism attraction to map its basic assets. 2). Analyze strategic factors (strengths, weaknesses, opportunities, and threats) that influence its development through a quantitative SWOT approach. 3). Based on the analysis results, formulate operational and applicable strategic recommendations, which are able to maximize economic benefits for the community while maintaining cultural and environmental sustainability.

This research employs a survey method using structured questionnaires to collect data from the Tok Tok Sape cattle population in Tambak and Sangkapura sub-districts. The data collected include the origin of the cattle, age, population structure, phenotypic characteristics, vital statistics, and the resources of the breeders. Additionally, microclimate data from the farming locations were recorded to assess the environmental suitability for livestock development (Mulyani *et al.*, 2017).

To analyze the data, a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis approach with quantitative weighting was used. This method has been widely applied in research on community-based and livestock-based ecotourism development (Fatimah *et al.*, 2020; Satriawan *et al.*, 2021), as it enables researchers to identify internal and external factors that influence strategic success and to formulate evidence-based strategies. In this study, SWOT scores were obtained through the weighted scoring of indicators derived from quantitative survey results and expert assessments. The SWOT analysis results were then linked to regional development policies and sustainable tourism trends to formulate relevant and practical development strategies.

Thus, this research does not solely focus on livestock production aspects but also encompasses social, economic, cultural, and environmental dimensions. The findings are expected to make a significant contribution to the development of livestock- and culture-based ecotourism on Bawean Island, while also improving the welfare of the local community through sustainable resource management (Wearing & Neil, 2009).

METHODS

Place of implementation

This research was conducted on Bawean Island, specifically within two sub-districts: Tambak and Sangkapura, Gresik Regency, East Java Province, Indonesia. The selection of Bawean Island as the research location was based on its rich tradition of Tok-Tok Sape bullfighting and the significant population of Bali and Madura cattle breeds that are well-adapted to the local microclimatic conditions. Bawean possesses distinctive socio-cultural characteristics that remain more authentic and less influenced by external modernization compared to similar traditions on mainland Java. This geographical and cultural isolation has allowed the Tok-Tok Sape tradition to maintain its original form and deep integration with community identity. According to Mulyani, Dariah, and Agus (2017), selecting a study site with distinct cultural and environmental characteristics is crucial for livestock-based ecotourism research, as it influences livestock development potential and cultural sustainability.

Reach stages

The research was carried out in three sequential stages. The first stage was the preparatory phase, which included a literature review, the design of structured questionnaires, and coordination with local livestock groups and community leaders. The second stage involved field data collection, consisting of surveys, observations of Tok-Tok Sape bullfighting events, cattle measurements, and microclimate data recording at each breeder location. Finally, the third stage encompassed data analysis and the preparation of reports, including conducting a SWOT analysis to formulate strategic development plans. The sequence of these stages follows the methodological approach outlined by Wearing and Neil (2009) for ecotourism research development.

Types and data analysis

This study utilized a quantitative-descriptive research approach. The types of data collected included both primary data (e.g., cattle demographics, breeder resources, performance observation) and secondary data (e.g., regional microclimate, cattle population records). Descriptive statistical analysis was applied to summarize characteristics of cattle and breeder profiles.

Furthermore, SWOT analysis was conducted to identify internal strengths and weaknesses, as well as external opportunities and threats, influencing the development of Tok-Tok Sape ecotourism. The SWOT analysis employed a quantitative weighted scoring method involving multiple stakeholder groups to ensure comprehensive and objective assessment. The application of SWOT analysis, as explained by Fatimah, Rachmawati, and Anjani (2020), along with weighted scoring based on stakeholder perceptions (David, 2011), allowed a comprehensive evaluation of strategic potentials.

The weighted scoring procedure was conducted as follows:

1. Stakeholder Identification and Selection: Four key stakeholder groups were identified and engaged in the assessment process:

Cattle breeders and Tok-Tok Sape event participants (n=15)

Community leaders and cultural figures (n=8)

Local government representatives from tourism and agriculture agencies (n=5)

Village officials from Tambak and Sangkapura sub-districts (n=6)

Total: 34 respondents representing diverse perspectives on Tok-Tok Sape development.

2. Weighting and Rating Process: Each respondent was asked to provide two types of scores for each SWOT factor:

Weight (W): Indicating the relative importance of each factor on a scale of 1-5, where:

1 = Not important

2 = Slightly important

3 = Moderately important

4 = Important

5 = Very important

Rating (R): Indicating the current condition or intensity of each factor on a scale of 1-5, where:

For Strengths and Opportunities: 1 = Very weak/low to 5 = Very strong/high

For Weaknesses and Threats: 1 = Very severe to 5 = Very mild/minimal

3. Score Calculation: The final score for each SWOT factor was calculated using the formula: Score = (Average Weight × Average Rating) Where:

Average Weight = Sum of all weights from respondents ÷ Number of respondents

Average Rating = Sum of all ratings from respondents ÷ Number of respondents

Position Determination: The total scores for each SWOT dimension were calculated and plotted on a Cartesian diagram to determine the strategic position:

X-axis = (Total Strengths Score - Total Weaknesses Score)

Y-axis = (Total Opportunities Score - Total Threats Score)

This quantitative approach enhances the objectivity and replicability of the SWOT analysis, as recommended by Phadermrod, Crowder, and Wills (2019).

Data collection method

Several data collection techniques were employed to ensure data richness and validity. Structured questionnaires were distributed to cattle breeders to obtain standardized and quantifiable information regarding their livestock and breeding practices. In addition, field observations were conducted during Tok-Tok Sape contests to record cattle performance, event organization, and community participation dynamics. To triangulate the data, semi-structured interviews were also conducted with key informants, including association leaders and village officials. Qualitative findings from these interviews, particularly regarding cultural perceptions and management challenges, were used to validate and deepen the interpretation of the quantitative data obtained from the questionnaire. This process ensured

a more comprehensive and balanced understanding of the dynamics of Tok-Tok Sape ecotourism development (Jia *et al.*, 2022). The research instrument was tested for validity using the Pearson correlation coefficient method, and all questionnaire items achieved *r*-values greater than 0.30, fulfilling the validity criteria according to Sugiyono (2013).

Sampling method

The sampling approach combined purposive sampling and snowball sampling techniques. Initially, purposive sampling was used to select breeder groups and cattle owners who were actively involved in Tok-Tok Sape competitions, ensuring relevance to the research objectives. Subsequently, snowball sampling was applied, where early respondents recommended additional participants who met the study's criteria. This approach was necessary due to the relatively small and closely knit nature of the Tok-Tok Sape community, consistent with sampling methods for cultural and rural community research as recommended by Lenaini (2021). The dual sampling method ensured a comprehensive representation of the key actors within the cultural ecotourism tradition being studied.

RESULTS AND DISCUSSION

The potential of Tok-Tok Sape bullfighting contest as a cultural tourism promotion, ecotourism, and the superior quality of Bawean cattle

It is time for some cattle breeds found on Bawean Island to be utilized to further enhance the potential of cultural tourism and ecotourism. It is hoped that this concept will align with the concept of permaculture. Gonevise, *et al.*, (2017) stating that the experience on the farm remains an amazing opportunity for a holiday. Permatasari *et al.* (2014) stated that permaculture is a way of managing agriculture and livestock farming that can improve the quality of land while generating income and ensuring sustainability in the future. Thus, in the future, Bawean Island will not only be characterized and known for the presence of the endemic Bawean Deer but will also be recognized for having superior, beneficial, and high-quality Bawean cattle. The main cattle breeds currently identified on Bawean Island include Bali cattle, Madura cattle, and Bekisar cattle (crossbreed cattle with one parent being Bali or Madura cattle), although Brahman crossbred cattle with phenotypic grey-white color are also found, albeit in very limited numbers. According to Mr. Suli, the head of Kelompong Gubug village, who is also a farmer, trader, and the chairman of one of the Tok-Tok Cattle Associations in Tambak District, Bawean, the largest population is currently red cattle or Madura cattle.



Figure 1. Tok-Tok contest activities held in Tambak District, Bawean Island

Figure 1 visually captures the essence of the Tok-Tok Sape contest, which features a physical battle between pairs of bulls before an audience. In the last event observed, 23 pairs of cattle from various breeds—including purebred Bali cattle, Madurese cattle, and their crossbreeds, commonly known as Bawean cattle—competed. Each fight, as seen in the image, lasts between 2 and 20 minutes, with classifications based on body size and performance, with the winner determined by whichever bull leaves the arena first. The contest not only provides a competitive platform for cattle breeders, but also attracts an estimated 1,500–2,000 spectators, including tourists from outside the island, demonstrating its significant appeal as a tourism product. More importantly, its economic impact is significant: according to local breeders, the selling price of cattle that perform well in the contest can increase by 20–30%, indicating a direct economic impact of this cultural activity on the livestock trade.

These quantitative findings confirm Satriawan *et al.*'s (2021) argument that cultural ecotourism creates tangible economic incentives. The 20-30% increase in the price of winning cattle provides direct evidence of how a cultural event can increase the market value of livestock. This figure is even more significant when compared to the economic impact of similar attractions on the Java mainland, where integration with livestock markets may not be as direct as in more closed island ecosystems like Bawean. Furthermore, the attendance of 1,500-2,000 spectators, including tourists from outside the island, confirms the potential of Tok-Tok Sape as an attractive tourism product. This reinforces the findings of Fatimah *et al.* (2020) regarding the attractiveness of livestock-based events and highlights the importance of event management to maximize economic impact not only for livestock farmers but also for local service providers in the surrounding area. The economic multiplier effect extends beyond cattle sales to benefit local food vendors, transportation services, and accommodation providers, creating a comprehensive economic ecosystem around the cultural event.

Previous research has shown that cultural events like bullfighting can serve as strong tourist attractions, especially when integrated with local heritage and livestock traditions (Fatimah *et al.*, 2020; Satriawan *et al.*, 2021). Similarly, in the case of Tok-Tok Sape, the combination of spectacle, tradition, and livestock performance presents a unique form of cultural ecotourism that has yet to be fully optimized. Informal discussions with key figures in Bawean revealed that the diverse cattle breeds on the island hold considerable potential for development in terms of both quality and quantity, for purposes such as trade, livestock production, ecotourism, and cultural tourism.

To further develop Tok-Tok Sape as an ecotourism attraction, strategic steps are needed, such as improving event infrastructure, ensuring spectator safety, providing interpretation for tourists, and integrating the event into local tourism packages. As suggested by Wearing and Neil (2009), sustainable ecotourism should balance community benefit, environmental conservation, and cultural integrity. If properly managed, Tok-Tok Sape could evolve into a signature tourism event that promotes local identity while contributing to the island's economy and environmental awareness.

SWOT analysis results

Rangkuti (2015) explains that SWOT analysis is a systematic process for identifying various strategic factors used to formulate development strategies. This analysis is based on the logic that strengths and opportunities should be maximized, while weaknesses and threats should be minimized simultaneously. This process is essential in formulating mission, objectives, strategies, and policies that reflect actual field conditions, known as situational analysis. The SWOT matrix serves as a key matching tool for aligning internal and external factors to determine strategic direction (David, 2011).

In this study, the SWOT classification was derived from both primary and secondary data obtained through observations, structured interviews, and documentation involving key stakeholders. Each SWOT factor was scored using a weighted quantitative method, where respondents (including cattle breeders, cultural figures, and village officials) evaluated the importance and influence level of each factor using a Likert scale from 1 to 5. The final score for each factor was calculated by multiplying its weight and rating, then summing the results to determine the dominant strategic position. This quantitative approach to SWOT analysis follows the methods used by Fatimah *et al.* (2020) in developing livestock-based ecotourism in Sleman and Satriawan *et al.* (2021) in analyzing cultural tourism in rural Java.

The results of the SWOT classification for the livestock production and Tok-Tok bullfighting ecotourism potential on Bawean Island are presented in the following table:

Table 1. SWOT classification results

No.	Strengths	Weaknesses	Opportunities	Threats
1.	Part of local culture	Contrary to teligious beliefs	Support from government agencies or stakeholders.	The outbreak of livestock diseases.
2.	Tourism destination	Traditional in nature	Community support.	Misuse of the event.
3.	The best selected cattle	Management is not yet professional	Provision of special land.	Not yet widely known by the general public.

Sources: Primary data (2023)

Table 1 presents the key internal and external factors influencing the development of Tok-Tok Sape ecotourism. Internally, the tradition's primary strength lies in its status as an authentic "part of local culture," reinforced by the presence of "best-selected cattle" specifically raised for these events. This cultural rootedness provides a strong foundation for tourism development. However, these strengths are significantly offset by critical weaknesses: the "management is not yet professional" and the perception among some religious figures that this tradition "conflicts with religious beliefs." The qualitative factors identified in Table 1 then serve as the basis for the subsequent

quantitative weighting analysis conducted by stakeholders, the results of which are used to determine strategic positioning and development priorities.

This contradiction presents a classic dilemma in heritage-based tourism development—while cultural authenticity is the core asset, the lack of professional management structures and partial community acceptance can hinder scalability and sustainability. As Wearing and Neil (2009) emphasize, successful ecotourism requires not only authentic cultural resources but also the capacity to manage them in ways that respect both tradition and modern visitor expectations. The religious controversy is particularly significant, as it suggests that community consensus-building will be essential before large-scale tourism promotion can be ethically pursued.

Externally, the opportunities are promising support from government agencies and stakeholders indicates policy-level commitment, while community support (despite the religious concerns) and special land provision demonstrate tangible resources available for development. These opportunities align well with Indonesia's national strategy to develop cultural tourism in rural areas. However, the threats—particularly livestock disease outbreaks and potential misuse of the event (likely referring to gambling or animal welfare concerns)—require proactive risk management strategies.

The interplay between these factors underscores what George, Mair, and Reid (2015) identify as the central challenge of community-based tourism: the need to professionalize management while preserving cultural integrity. For Tok-Tok Sape, this means developing formal organizational structures, safety protocols, and marketing strategies without diminishing the tradition's authenticity or exacerbating existing social tensions.

According to Wearing and Neil (2009), developing ecotourism based on local cultural practices not only increases the economic value of rural communities but also contributes to environmental conservation and cultural preservation. This is further supported by George, Mair, and Reid (2015), who assert that community-based tourism experiences that elevate traditional practices tend to have sustainable positive impacts on rural livelihoods. Additionally, Ramos, Jiménez, and Marqués (2016) found that development strategies rooted in local wisdom can enhance destination differentiation and strengthen tourist loyalty.

Through this SWOT-based approach, the development of Tok-Tok Sape not only reinforces the local cultural identity but also creates new economic opportunities for the community through sustainable tourism initiatives. This is consistent with the perspective of Fotiadis, Vassiliadis, and Piper (2019), who emphasized that culture-driven innovation plays a significant role in improving the competitiveness of tourism destinations.

Before being used for data collection, the research instrument in the form of a questionnaire was tested for validity to ensure that each question accurately measured the intended variables. The validity test was conducted by calculating the product moment correlation coefficient (r_{xy}) between each item score and the total score. Based on the results, all items in the questionnaire recorded r_{xy} values greater than 0.3, indicating that they met the validity criteria (valid) as recommended by Sugiyono (2013). These findings are consistent with the standards of instrument validation in social research, as explained by Taherdoost (2016), who noted that a correlation value above 0.3 indicates an acceptable level of validity for survey-based research. The details of the validity test results are presented in Table 2 below.

Table 2. Validity test

Number of Question	r_{xy}	Validity > 0,3
1 – 3	0,3077-0,7831	Valid
4 – 6	0,3241-0,7176	Valid
7 – 9	0,3154-0,7155	Valid
9 – 12	0,3251 – 0,7234	Valid

Sources: Primary Data (2023)

Table 2 provides an overview of the validity test results for the questionnaire used in this study. The table shows the correlation values (r_{xy}) for the 12 questionnaire items, categorized into four groups: Questions 1–3, 4–6, 7–9, and 9–12. All of the items exhibited correlation coefficients that exceeded the minimum validity threshold of 0.3, as established by Sugiyono (2010), with values ranging from 0.3077 to 0.7831. These results indicate that each of the items is statistically valid, meaning they are accurately measuring the constructs they were designed to assess.

The validity of a measurement instrument is an essential aspect of the research methodology, as it ensures that the data collected truly reflects the perceptions and experiences of the stakeholders being studied. Validity testing, particularly when using Pearson correlation (r), is widely regarded as a crucial step in ensuring the accuracy and reliability of research instruments (Dawson *et al.*, 2018). In this case, the validation of the questionnaire supports the integrity and reliability of the data gathered for the SWOT analysis. Since validity testing directly impacts the quality of

the data, the positive results shown in Table 2 enhance the credibility of the study's findings, confirming that the research instrument effectively captures the relevant variables.



Figure 2. Classification of Production Potential of Livestock and Tok-Tok Sape Bullfighting
Sources: Primary Data (2023)

Figure 2 presents the total score results from the SWOT analysis. It can be seen that the internal factor, Strengths (S), has the highest score (5.12), followed by the external factor, Opportunities (O), with a score of 4.48. Meanwhile, the Weaknesses (W) and Threats (T) factors have lower scores, namely 3.65 and 3.75. The dominance of the Strengths and Opportunities scores clearly indicates that the potential for developing Tok-Tok Sape ecotourism is very large and the most appropriate strategy is an aggressive or pro-growth strategy.

The SWOT scores were obtained using a weighted scoring method, in which each factor was assessed through three analytical stages, involving Likert-scale evaluations by key stakeholders (e.g., farmers, community leaders, tourism actors). This approach quantifies both the significance and intensity of each factor. For instance, Strengths increased steadily from 1.52 to 1.86 across the three stages, reflecting a growing recognition and optimization of local cultural potential. On the other hand, Opportunities peaked in the second stage (1.88) before declining, indicating room for improvement in leveraging external support such as tourism demand and government programs.

Following these findings, the appropriate strategic approach is the SO (Strengths–Opportunities) strategy, which focuses on utilizing internal strengths (such as cultural uniqueness, selected cattle quality, and community support) to seize existing opportunities (like government backing and tourism trends). This aligns with Lopez *et al.* (2022), who argue that bullfighting traditions—when appropriately managed and contextualized—can enhance the image and cultural identity of a destination. Moreover, strategies to improve management professionalism and integrate Tok-Tok Sape into tourism packages can further strengthen its role as a sustainable ecotourism product. The results also support regional policies such as Gresik Regency's development agenda promoting tourism based on local culture and natural resources.

Based on the recapitulation of the SWOT analysis scores, the strength factor ranks first with a total of 5.12 points, followed by the opportunity factor with a total of 4.48 points. This indicates that the strength and opportunity factors hold high values, making the appropriate strategy an SO (Strengths–Opportunities) strategy, which involves utilizing existing strengths to seize available opportunities

1. Strengths:

- a. stage 1 : strengths received a score of 1.52.
- b. stage 2 : the score increased to 1.75, indicating that the strengths within the Tok-Tok Sape ecotourism system became more identified and could be better utilized.
- c. stage 3, strengths reached the highest score of 1.86, indicating that the internal potential in the Tok-Tok Sape culture became the most dominant aspect in the development strategy.

2. Weaknesses:

- a. stage 1, weaknesses received a score of 1.20.
- b. stage 2, the score slightly increased to 1.40, indicating that although there was an increase in awareness of the weaknesses, traditional and non-professional management still posed a major challenge.
- c. stage 3, weaknesses decreased with a score of 1.05, which may indicate efforts to address these challenges through various management strategies.

3. Opportunities:

- a. stage 1, opportunities scored 1.65.
- b. stage 2, the score increased to 1.88, showing that external opportunities such as government support and tourist interest were becoming more significant and could be optimized.
- c. stage 3, the score for opportunities decreased to 0.95, possibly indicating that although potential existed, there were limitations in fully utilizing these opportunities in the final stage of the analysis.

4. Threats:

- a. stage 1, threats received a score of 1.35.
- b. stage 2, threats slightly increased with a score of 1.45, indicating greater awareness of the risks that could affect the success of ecotourism, such as livestock disease risks.
- c. stage 3, threats decreased to a score of 0.95, possibly due to strategies that successfully mitigated the potential impact of these threats.

Total SWOT scores show that Strengths (5.12) and Opportunities (4.48) are the two dominant factors in the development of Tok-Tok Sape ecotourism. This suggests that a strategy focusing on leveraging strengths and opportunities (SO strategy) is highly suitable for optimizing this potential. Lower scores for Weaknesses (3.65) and Threats (3.75) indicate that although there are weaknesses and threats, they can be addressed with the right strategies. The strategy resulting from this analysis is the SO (Strengths-Opportunities) strategy, which recommends utilizing internal strengths to seize external opportunities, such as further developing Tok-Tok Sape as a cultural tourism attraction with government support and improving management quality. Lopez et al (2022) bullfighting can enhance the image and cultural identity of a tourist destination. It is essential to identify events and festivals that are an intrinsic part of its culture and to analyze whether they have the potential to become tourist attractions or if it would be better to support and promote them.

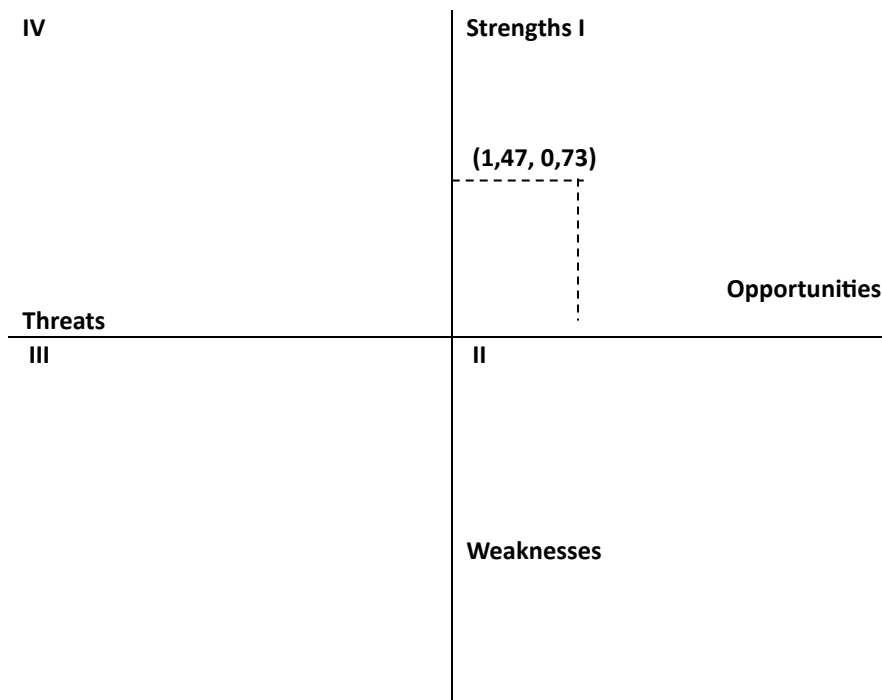


Figure 3. Coordinates of Quadrant I SWOT Analysis

The coordinates (1.47; 0.73), which are the result of calculating the difference between the total scores (X-axis = Strengths - Weaknesses; Y-axis = Opportunities - Threats), as shown in Figure 3, indicate the position of the Tok-Tok Sape bullfighting ecotourism development strategy in Quadrant I of the SWOT matrix. A value of 1.47 on the X-axis (obtained from 5.12 - 3.65) reflects a strong internal position, where internal strengths such as cultural uniqueness, active community participation, and the presence of quality livestock significantly outweigh internal weaknesses. Meanwhile, a value of 0.73 on the Y-axis (obtained from 4.48 - 3.75) indicates that external opportunities, including government support, increasing tourist interest, and the availability of development land, outweigh potential threats, although the difference between opportunities and threats is moderate.

According to Panagiotou (2003), SWOT matrix quadrants provide essential guidance in strategic decision-making by linking internal capabilities with external environmental conditions. Positioning in Quadrant I emphasizes an aggressive strategy, where organizations or communities are encouraged to maximize their strengths to exploit available opportunities. Similarly, findings by Phadermrod, Crowder, and Wills (2019) highlight that entities located in the Strengths-Opportunities quadrant should adopt a growth-oriented approach, leveraging cultural assets, social capital, and market trends to drive sustainable development.

Furthermore, in the context of tourism development, Prayag (2016) emphasized that cultural uniqueness and strong community involvement are critical drivers of destination competitiveness. Thus, the strategic position of Tok-Tok Sape bullfighting ecotourism in Quadrant I suggests a strong foundation for promoting Bawean Island as a distinctive and sustainable cultural tourism destination. It also highlights the importance of proactively enhancing cultural experiences, professionalizing event management, and integrating community empowerment efforts to sustain long-term growth.

This strategic positioning supports the principle outlined by Gurel and Tat (2017), who stated that entities in Quadrant I must adopt proactive strategies, aiming for expansion, innovation, and the creation of competitive advantages based on their intrinsic strengths and favorable external trends.

This positioning implies that Tok-Tok Sape has a solid foundation and high potential to be developed into a sustainable ecotourism attraction by leveraging its internal strengths to capture external opportunities. According to Garcia *et al.* (2024), economic motivation is the primary reason why many cattle farms are turning to tourism, and this is highly relevant in Bawean’s context. By improving event management, safety protocols, marketing strategies, and integrating Tok-Tok Sape into local tourism packages, this tradition can evolve into a culturally rich and economically beneficial tourism product.

Therefore, the recommended SO (Strengths–Opportunities) strategy involves capitalizing on Bawean Island’s cultural assets and livestock heritage, supported by external factors such as government programs and increasing demand for authentic, experience-based tourism. This approach is not only aligned with sustainable tourism principles but also contributes to local economic empowerment and cultural preservation.

Table 3. SWOT matrix for Tok-Tok Sape ecotourism development strategy

Internal Factors	Strengths	Weaknesses
External Factors	The Tok Tok Sapeh activity is already part of the local culture, it has become a distinctive tourist destination in Indonesia that is legal, The cattle quality is selected and prepared in the best way.	There are religious figures who believe the activity conflicts with their beliefs, The management is still traditional, The management is not yet professional.
Opportunities	SO Strategy	
Support from government agencies or other stakeholders, Support from the local community for the Tok Tok Sapeh activity, Special land provision for Bawean cattle.	<ul style="list-style-type: none"> • Cultural Integration and Tourism Development: The Tok Tok Sape bullfighting is deeply rooted in local culture, and with strong community and government support, it can be promoted as a unique cultural tourism attraction. This would leverage the cultural strength of Bawean and attract tourists, enhancing local economic growth through ecotourism. • Improving Livestock Quality: The existing high-quality cattle used in the bullfighting events can be further promoted as a unique breed from Bawean. With the provision of special land and resources for cattle breeding, this can lead to enhanced livestock production, meeting both cultural and commercial goals. 	
Threats		
The presence of livestock diseases., Misuse of the Tok Tok Sapeh activity.	<ul style="list-style-type: none"> • Government and Stakeholder Support: Since there is a strong presence of government and stakeholder interest in the preservation and promotion of this cultural event, efforts can be made to formalize and professionalize the management of Tok Tok Sape. This can include creating better infrastructure, marketing, and training for handlers to ensure the event's sustainability and safety. 	

The SWOT matrix in Table 3 synthesizes strategic recommendations based on the identified factors. Given the dominant strengths (5.12) and opportunities (4.48) scores, the most appropriate strategic direction is the SO (Strengths-Opportunities) Strategy. This table explicitly shows how strategies are generated by matching internal assets with supportive external conditions. For example, the strategy 'Cultural Integration and Tourism Development' (Strategy 1) is a direct result of combining the strength 'Tok-Tok Sape as part of local culture' with the opportunity

'Support from government and community'. A similar matching logic is applied to generate the other two strategies, which will be detailed in the next section. The analysis yielded three specific SO strategies:

1. Cultural Integration and Tourism Development Strategy

This strategy capitalizes on Tok-Tok Sape's deep cultural roots and strong community support to position it as a unique tourism attraction. The tradition's authenticity—being genuinely embedded in local life rather than created for tourists—provides a competitive advantage in the cultural tourism market. With documented government support and increasing tourist interest in authentic experiences, this strength-opportunity combination suggests high potential for success. Implementation would involve creating marketing materials that emphasize the cultural significance of the event, developing interpretive programs that educate visitors about the tradition's history and meaning, and coordinating with regional tourism boards to include Tok-Tok Sape in official tourism itineraries. This approach directly addresses the market trend identified by Butler (1999), who found that cultural tourism holds strategic value in preserving community identity while generating economic benefits.

2. Livestock Quality Improvement Strategy

The existing high-quality cattle used in bullfighting events represent both a cultural asset and an economic opportunity. This strategy proposes promoting Bawean cattle as a distinctive breed, leveraging the government's willingness to provide special land for development. By establishing formal breeding programs and quality standards, the community can enhance both the cultural spectacle (through superior animal performance) and create commercial value (through cattle sales and breeding services). The implementation of this strategy can adopt the model of community-based breeding programs successfully applied to local livestock in other regions, as documented by Mueller *et al.* (2015). Such models not only improve the genetic quality of livestock but also ensure that economic benefits are fairly distributed among local farmers. The 20–30% price increase observed for competition bulls demonstrates that market mechanisms already reward quality, suggesting that systematic quality improvement could amplify these benefits. This finding aligns with Garcia *et al.* (2024), who noted that economic motivation is increasingly driving livestock farms toward tourism integration that directly empowers local communities.—a pattern clearly evident in Bawean's context where cattle value is directly enhanced by cultural performance.

3. Government and Stakeholder Support Strategy

The documented presence of government interest and stakeholder engagement creates an opportunity to formalize and professionalize Tok-Tok Sape management. This strategy addresses the identified weakness of "unprofessional management" by leveraging external support to build capacity. Specific actions include: establishing formal organizational structures with clear roles and responsibilities, developing infrastructure improvements (spectator areas, veterinary facilities, parking), implementing safety protocols for both animals and spectators, and providing training for event organizers in areas such as tourism management, animal welfare, and cultural interpretation. Lopez *et al.* (2022) emphasize that for bullfighting traditions to successfully transition into sustainable tourism attractions, they must be professionally managed while preserving their cultural essence—a balance this strategy explicitly seeks to achieve.

These three strategies are not independent but mutually reinforcing. Professional management (Strategy 3) enhances the visitor experience (Strategy 1), while quality improvement (Strategy 2) strengthens both cultural authenticity and economic viability. Together, they form a comprehensive development approach that addresses the key finding of this research: that Tok-Tok Sape occupies a strategically favorable position (Quadrant I) where proactive growth strategies are both feasible and recommended.

The economic impact is already evident, as noted by Halid (2021), who documented that large numbers of Tok-Tok enthusiasts from across Bawean generate significant revenue for food vendors and local businesses during events. However, without formalized management and strategic development, these benefits remain sporadic and vulnerable to the threats identified in the analysis (disease outbreaks, potential misuse). The SO strategy framework provides a pathway to systematize and sustain these benefits while addressing potential risks.

CONCLUSION

"This study shows that the Tok-Tok Sape bullfighting tradition on Bawean Island has significant potential to be developed as a sustainable cultural ecotourism attraction. A SWOT analysis positions this tradition in Quadrant I, where strengths and opportunities far outweigh weaknesses and threats, indicating that a proactive strategy (Strengths-Opportunities) is highly appropriate for implementation. Based on this analysis, three key strategic recommendations are formulated. First, integrate Tok-Tok Sape into regional tourism packages by capitalizing on its cultural authenticity and strong community support. Second, formalize event management through professional training and infrastructure development to meet modern tourism standards. Third, develop Bawean cattle as a distinctive breed by leveraging government support to enhance its cultural and commercial value. While the economic

impact has been measured, realizing its full potential requires addressing the identified weaknesses, particularly the need for professional management."

ACKNOWLEDGMENT

In this research, we would like to express our gratitude to all those who contributed to its completion. We are deeply grateful to the funding bodies that supported this research. Special thanks are extended to the Faculty of Animal Science, Universitas Brawijaya, for providing the facilities and resources essential for conducting this study. We also appreciate the valuable input and feedback from our colleagues and mentors, as well as the assistance from local communities and officials on Bawean Island, who made data collection possible. Lastly, we acknowledge that this research is part of a broader academic exploration within the Faculty of Animal Science and is connected to ongoing studies in sustainable livestock management.

REFERENCES

- Aisah, & Icshan, H. M. (2020). Pengaruh manajemen pemeliharaan terhadap penerimaan peternakan sapi potong rakyat di Kutai Barat. *Jurnal Peternakan Lingkungan Tropis*, 3(2), 58–63. <http://dx.doi.org/10.30872/jpltrop.v3i2.7630>
- BPS. (2023). *Statistik peternakan Provinsi Jawa Timur 2023*. Badan Pusat Statistik Provinsi Jawa Timur.
- Butler, R. W. (1999). Sustainable tourism: A state-of-the-art review. *Tourism Geographies*, 1(1), 7–25. <https://doi.org/10.1080/14616689908721291>
- Chiteyi, V. (2023). Bullfighting culture: From sacred origins to global phenomenon. *Journal of Cultural Studies*, 15(1), 88–102.
- David, F. R. (2011). *Manajemen strategis: Konsep*. Salemba Empat.
- Dawson, N., Dzurino, D., Karleskint, M., & Tucker, J. (2018). Examining the reliability, correlation, and validity of commonly used assessment tools to measure balance. *Health science reports*, 1(12), e98. <https://doi.org/10.1002/hsr2.98>
- Fatimah, N., Rachmawati, A., & Anjani, D. (2020). Analisis SWOT dalam pengembangan ekowisata berbasis ternak di Kabupaten Sleman. *Jurnal Agribisnis Peternakan*, 13(1), 12–21.
- Fauziyah, S., & Hanani, N. (2020). Peran tradisi karapan sapi terhadap ekonomi masyarakat Madura. *Jurnal Sosial Humaniora*, 11(2), 134–142.
- Fotiadis, A., Vassiliadis, C. A., & Piper, L. (2019). Measuring the impact of innovation on cultural tourism: Evidence from an emerging tourism destination. *Journal of Cultural Heritage Management and Sustainable Development*, 9(2), 169–183. <https://doi.org/10.1108/JCHMSD-05-2018-0034>
- Garcia, P. F., Sanches, M. J. M., & Rengifo, G. J. I. (2024). The importance of the product "tourism in bullfighting ranches" in Spain from the perspective of the breeders. *Sustainability*, 16(11), Article 4837. <https://doi.org/10.3390/su16114837>
- Genovese, D., Culasso, F., Giacosa, E., & Battaglini, L. M. (2017). Can livestock farming and tourism coexist in mountain regions? A new business model for sustainability. *Sustainability*, 9(11), 1-21. <https://doi.org/10.3390/su9112021>
- George, E. W., Mair, H., & Reid, D. G. (2015). *Rural tourism development: Localism and cultural change*. Channel View Publications.
- Gurel, E., & Tat, M. (2017). SWOT analysis: A theoretical review. *The Journal of International Social Research*, 10(51), 994–1006. <https://doi.org/10.17719/jisr.2017.1832>
- Halid, A. (2021). Tujuh budaya masyarakat pegunungan: Reposisi pesantren sebagai pembimbing masyarakat. *Jurnal Agama Sosial dan Budaya*, 4(1), 138–156. <https://doi.org/10.31538/almada.v4i1.790>
- Jia, M., Gu, Y., Chen, Y., Tu, J., Liu, Y., Lu, H., ... & Zhou, H. (2022). A methodological study on the combination of qualitative and quantitative methods in cognitive interviewing for cross-cultural adaptation. *Nursing Open*, 9(1), 705–713. <https://doi.org/10.1002/nop2.1121>
- Lenaini, I. (2021). Teknik pengambilan sampel purposive dan snowball sampling. *Jurnal Kajian, Penelitian dan Pengembangan Pendidikan Sejarah*, 6(1), 33–39. <http://journal.ummat.ac.id/index.php/historis>
- Lopez, J. M. J., Castillo, C. A. M., & Mora, M. C. (2022). Perception of and motivation for attending bullfights: A comparative analysis of tourists and residents. *Cuadernos de Turismo*, 333–353.
- Misbah, M., Suwito, S., & Yulianingsih, H. (2019). Kajian sosial budaya tradisi adu sapi di Madura. *Jurnal Antropologi Indonesia*, 40(1), 25–36.
- Mueller, J. P., Rischkowsky, B., Haile, A., Philipsson, J., Mwai, O., Besbes, B., ... & Wurzinger, M. (2015). Community-based livestock breeding programmes: essentials and examples. *Journal of Animal Breeding and Genetics*, 132(2), 155–168. <https://hdl.handle.net/20.500.11766/12931>
- Mulyani, A., Dariah, A., & Agus, F. (2017). Kesesuaian lahan untuk pengembangan peternakan di wilayah kepulauan. *Jurnal Tanah dan Iklim*, 41(2), 83–90.

- Panagiotou, G. (2003). Bringing SWOT into focus. *Business Strategy Review*, 14(2), 8–10. <https://doi.org/10.1111/1467-8616.00253>
- Permatasari, B. R., Abraham, R., & Ali, S. (2014). Penerapan konsep permakultur dengan pendekatan sosio-ekologi dalam membangun desa wisata. *Jurnal Ruas*, 12(1), 91–100.
- Phadermod, B., Crowder, R. M., & Wills, G. B. (2019). Importance-performance analysis based SWOT analysis. *International Journal of Information Management*, 44, 194–203. <https://doi.org/10.1016/j.ijinfomgt.2016.03.003>
- Prayag, G. (2016). Consumer behavior in tourism: Concepts, influences and opportunities. *Current Issues in Tourism*, 19(12), 1191–1214. <https://doi.org/10.1080/13683500.2014.994594>
- Ramos, A., Jiménez, A., & Marqués, J. (2016). Innovative practices in rural tourism: Sustainability and competitiveness. *World Journal of Entrepreneurship, Management and Sustainable Development*, 12(4), 359–374. <https://doi.org/10.1108/WJEMSD-08-2016-0044>
- Rangkuti, F. (2015). *Analisis SWOT: Teknik membedah kasus bisnis*. Gramedia Pustaka Utama.
- Satriawan, A., Prasetyo, T. A., & Nugroho, B. A. (2021). SWOT analysis of cultural ecotourism in rural Java. *Journal of Tourism and Development*, 18(3), 211–225.
- Sucita, A. (2022). Nilai-nilai budaya dalam tradisi adu sapi Tok Tok Sape di Pulau Bawean. *Jurnal Seni dan Budaya*, 10(1), 49–58.
- Sugiarti, T., & Syafroyadi, H. (2024). Strategi pengembangan usaha penggemukan sapi Madura di Rahayu Farm Desa Samatan Kabupaten Pamekasan. *Agrimics Journal*, 1(2), 121–134. <https://doi.org/10.64118/aj.v1i2.28>
- Sugiyono. (2010). *Business research methodology*. Alfabeta.
- Sugiyono. (2013). *Metode penelitian pendidikan: Pendekatan kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Taherdoost, H. (2016). Validity and reliability of the research instrument; how to test the validation of a questionnaire/survey in a research. *International Journal of Academic Research in Management (IJARM)*, 5(3), 28–36.
- Wearing, S., & Neil, J. (2009). *Ecotourism: Impacts, potentials and possibilities* (2nd ed.). Butterworth-Heinemann.
- Zali, M. (2018). Cultural attitudes towards livestock and their role in sustainable development. *Asian Journal of Rural Studies*, 5(2), 55–65.