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Formulating a Sustainable Tourism Development Strategy for Langsa City, Indonesia: A SWOT Analysis

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Abstract

This study formulates a sustainable tourism development strategy for Langsa City, Indonesia, using SWOT analysis applied to three dimensions of the local tourism sector: tourism attractiveness, supporting facilities, and environmental conservation. Data were collected using a Likert-scale questionnaire from 110 respondents (70 local residents and 40 domestic tourists) recruited through convenience sampling to assess tourism conditions across six sites (Merdeka Square, Bambu Runcing Park, Kuala Langsa Beach, Langsa City Museum, Mangrove Forest, and Urban Forest). Internal Factor Analysis Summary (IFAS) and External Factor Analysis Summary (EFAS) scores were computed and plotted on a SWOT Cartesian diagram. The results show that internal and external conditions are close to balance: weaknesses marginally outweigh strengths, and opportunities marginally outweigh threats, placing the sector marginally in Quadrant III (turnaround, WO orientation). Because both net scores are near zero and the plotted bootstrap intervals cross zero, this classification is provisional. Twelve strategic alternatives are proposed across the SO, WO, ST, and WT strategy groups, spanning cultural and eco-tourism festivals, one-destination-one-product local economic strengthening, digital promotion, community-based site management, transparent tariffs and complaint handling against illegal fees, and facility maintenance programmes. The findings suggest that Langsa City should prioritise correcting internal weaknesses (facility upkeep, promotion, and environmental management) while using available opportunities such as community participation and government support.

Keywords: sustainable tourism; SWOT analysis; IFAS-EFAS; tourism development strategy; Langsa City

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INTRODUCTION

Background

Tourism is widely recognised as a driver of economic growth, generating employment, raising incomes, and improving living standards wherever it is developed (Mardhani et al., 2021; Mardhani et al., 2024; Maulana et al., 2025). Indonesia's decentralised system of regional autonomy has given local governments a direct incentive to identify and develop their own tourism potential as a source of regional revenue (Ababil & Yulistiyono, 2022), and destination development in particular offers a low-capital route to economic growth, since natural and cultural attractions of the kind found across the archipelago frequently already exist and require organisation rather than heavy investment (Fradesa et al., 2022).

Aceh Province is one of Indonesia's more promising tourism destinations, combining a diverse natural landscape – beaches, mountains, and tropical forest – with a long history and a strong Islamic identity that supports cultural and heritage tourism, from the legacy of the Aceh Sultanate to traditional arts such as the Saman and Seudati dances (Mardhani et al., 2025; Swesti, 2019). Langsa City, on Aceh's eastern coast, is one of the province's emerging tourism centres: its strategic location makes it a natural gateway for visitors entering eastern Aceh, and its natural beauty, cultural heritage, and well-preserved local customs give it a strong identity as a cultural and religious tourism destination (Andriani & Anis, 2024; Safuridar et al., 2018).

Langsa City has various leading tourist destinations, including Kuala Langsa Beach, Mangrove Forest, Urban Forest, Merdeka Square, Bambu Runcing Park, and Langsa City Museum. The development of Langsa City's tourism sector is reflected in the number of tourist visits during the 2019–2023 period (Figure 1).

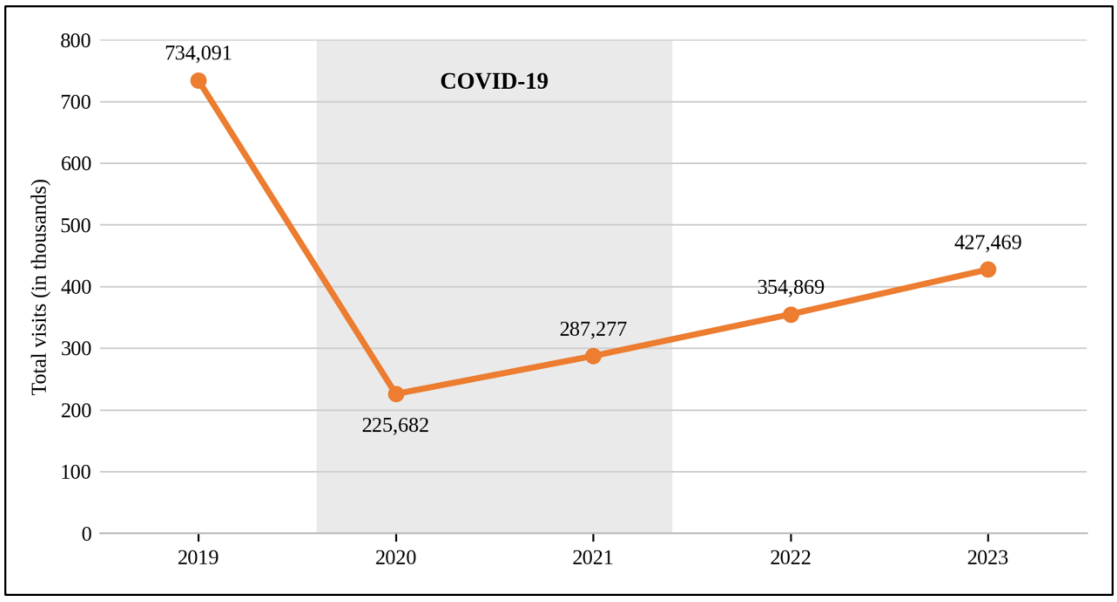


Figure 1. Number of Tourist Visits in Langsa City, 2019–2023
(Source: Authors' calculation based on Dinas Kebudayaan dan Pariwisata Aceh, 2025).

Visitor numbers for Langsa City are presented in Figure 1 and illustrate both the sector's underlying strength and its vulnerability to shocks. Langsa City recorded 734,091 tourist visits in 2019. In 2020, Langsa City experienced a decline to 225,682 tourist visits. This decline was due to the COVID-19 pandemic, which restricted public activities. These restrictions contributed to the decline in 2020. In the

following years, the number of tourist visits to Langsa City continued to increase significantly from 2021 to 2023. This was due to the decline in COVID-19 cases, allowing the community to resume their activities as before. Visits increased from 287,277 in 2021 to 354,869 in 2022 and 427,469 in 2023.

Tourism is widely treated as a driver of economic growth in Indonesia. National evidence supports this for both international and domestic tourism (Mardhani et al., 2021, 2024), and panel evidence exists for the ASEAN-5 countries (Maulana et al., 2025). Such evidence is national or regional in scale, however, and says little about how a mid-sized city should organise and prioritise its own destinations.

Despite this underlying resilience, Langsa's tourism sector faces management constraints. Stakeholders describe limited supporting infrastructure such as road access, public amenities, and accommodation; promotion that remains under-developed; limited professional site management; and limited community involvement in tourism management. These constraints have mostly been asserted and seldom documented. The survey addressed these concerns through statements on facility maintenance, cleanliness, promotion, and environmental conservation.

Strategy studies elsewhere show how SWOT-based approaches can be applied, but they leave this city-level question open. Fan et al. (2023) combined SWOT, QSPM, and AHP for Changbai Mountain in China, relying on a panel of 40 experts, and identified inadequate amenities and weak infrastructure as key weaknesses. Kartika et al. (2026) formulated strategies for North Jakarta using IFE, EFE, and TOWS, with weights and ratings set by the research team and validated the results through focus groups; they also noted the absence of survey data from residents and visitors. Musliha et al. (2023) examined a single mangrove site in Rembang. Among the studies reviewed here, none assesses a mid-sized city with several different sites through a stakeholder survey in which respondents themselves provide the weights and ratings. This is the gap that the present study addresses, and it also examines how stable the resulting strategic position is.

The matter is urgent for two reasons. First, tourism in Langsa City has not yet fully recovered from the COVID-19 pandemic (Figure 1). Because visitor numbers alone do not show whether recovery is sustainable, the conditions of attractions, supporting facilities, and environmental preservation also need to be assessed. Second, addressing the constraints above requires coordinated action among local government, tourism operators, and the community, and such action needs a transparent basis for deciding which conditions to address first.

Despite this underlying resilience, Langsa's tourism sector continues to face structural obstacles to fuller development: limited supporting infrastructure such as road access, public amenities, and accommodation; underdeveloped promotion, which keeps visitor numbers from both within and outside the region lower than the sites' potential would suggest; a lack of professional site management, which limits its service quality and the overall visitor experience; and limited community involvement in tourism management, which weakens both cultural preservation and the sector's long-term sustainability. Addressing these obstacles, this study argues, requires coordinated action among local government, tourism operators, and the community.

Against this background, the study asks three questions. First, how do stakeholders perceive the strengths, weaknesses, opportunities, and threats of tourism in Langsa City across the dimensions of tourism attractiveness, supporting facilities, and environmental conservation? Second, what strategic position of the tourism sector results from the weighted internal and external factor scores, and how robust is this position? Third, which strategic

alternatives can be formulated from the combinations of these factors, and which factors provide a basis for setting priorities among them? Answering these questions is intended to give local government and tourism stakeholders in Langsa City an evidence-based strategic roadmap, while also contributing a replicable methodological example for similar mid-sized Indonesian cities seeking to formalise their own tourism development strategies.

Research Objectives

The objectives of this study are to determine how SWOT analysis can be used to formulate sustainable tourism development strategies in Langsa City, to assess how the proposed strategies address the identified challenges of sustainable tourism development in Langsa City, and to determine the most appropriate strategies based on SWOT analysis to support sustainable tourism development in Langsa City.

LITERATURE REVIEW

According to Dann (1977), the desire to engage in tourist activities is divided into two types: internal desires, such as recreation, seeking new experiences, and the desire to escape boredom, which are push factors; and external pull factors, such as natural beauty, cultural attractions, and adequate tourist destination facilities. This forms the basis for the need for sustainable tourism development planning that considers its impacts.

According to the theory adopted by the World Tourism Organization in the 1990s, tourism must pay attention to several dimensions, including economic, socio-cultural, and environmental considerations.(Denman, 2013) Sustainable tourism requires planning that takes into account the impacts that will be caused, the obstacles that will arise, and ways to overcome and prevent problems that will arise in the future. The five concepts of sustainable tourism development (Musaddad et al., 2019) are: (1) Efforts to ensure the preservation of social, cultural, and environmental life and to maintain existing diversity; (2) The provision of training and education on tourism to local communities, as well as involving local communities in the planning, development, and preservation of tourism; (3) Following the concept of carrying capacity, which is limiting visits to tourist attractions according to capacity so as not to cause negative impacts. Educating tourists about the importance of preserving the environment and culture of tourist attractions; (4) Conducting periodic evaluations of the development of tourist attractions for the sake of the attractions themselves, the local community, and environmental sustainability; and (5) The realization of sustainable tourism.

Tourism activities have a significant impact on economic growth in a region by creating jobs that can reduce unemployment rates in the area. Tourism also serves as a means of introducing the languages, traditions, beliefs, and culture of a region (Adrianto et al., 2024). In this context, the existence of tourist attractions is an important factor that encourages travel. Tourism development has promising positive impacts in economic aspects such as government revenue, tourism business revenue, utilization of facilities by the community, and employment. Tourism development can have both positive and negative economic impacts (Oktaviani & Yuliani, 2023), namely (1) Tourism development causes high prices for goods; (2) Foreign exchange leakage occurs due to the use of imported materials for tourism development and operations, the management of tourism facilities by foreign parties, and the involvement of foreign workers in the management of the tourism sector; and (3) High investment costs for labor in each region also pose a challenge.

According to Leiper (1990), a tourist attraction is not simply a place or a feature but a system of three interrelated elements: a tourist, a nucleus, and a marker. The tourist is the person with the leisure time and

motivation to travel, who is the human element of the system. The nucleus is the feature or characteristic of a place that tourists visit or plan to visit, such as natural beauty, cultural heritage, or a particular activity. The marker (information marker) is a piece of information about the nucleus, such as a sign, brochure, guidebook, or online content, which informs tourists about it and shapes their image of it. An attraction exists when these three elements are connected, so a nucleus that tourists do not know about, or that gives them no reason to visit, does not function as an attraction (Leiper, 1990). In this study, the framework is used to separate the attractions themselves in Langsa (the nucleus) from the information and promotion about them (the markers), and from the visitors who respond to both.

According to Gunn (1988) in his book Tourism Planning, a tourist destination will not succeed by relying solely on its attractions. Success is also greatly influenced by the availability of supporting facilities that can provide comfort, safety, and ease of access for tourists. This shows that supporting facilities play an important role in encouraging the development of tourism. The better the facilities available, the higher the satisfaction of tourists, which ultimately makes them want to stay longer and even be interested in visiting again (Gunn, 1988).

Fennell (2008a), in his book Ecotourism, emphasizes that tourism needs to be seen as part of the ecological system, so that tourism activities should not exceed nature's capacity for regeneration. Therefore, environmental conservation is the main foundation so that tourism does not merely exploit natural resources, but also plays a role in preserving biodiversity, conserving nature, and protecting local culture (Fennell, 2008aa). However, Fennell (2008b) cautions that local or indigenous stewardship of nature should not be assumed to follow automatically from community involvement in ecotourism, so conservation outcomes need to be examined in each destination rather than taken for granted.

In the context of ecotourism, urban forests not only function as green open spaces, but also as tourist attractions that support nature conservation and environmental sustainability (Kamila et al., 2024). Environmental conservation in the Kuala Langsa mangrove forest tourist area is realized through the development of community-based ecotourism, in which local communities are actively involved as tour guides to prevent ecosystem degradation due to illegal logging and ensure the sustainability of the area for future generations (Syahputra & Mardhani, 2024).

The concept of Sustainable Development was then adapted by Burns & Holden (1995) to the context of tourism as an integrated model that connects three main components, namely the physical environment *(place)*, the cultural environment or local community *(host community)*, and tourists *(visitors)* (Burns & Holden, 1995). This model emphasizes the importance of balance between these three elements so that tourism development can proceed sustainably without damaging existing environmental and socio-cultural values.

SWOT analysis is a systematic identification of internal and external factors to formulate development strategies. This analysis aims to maximize opportunities and minimize weaknesses and threats. SWOT analysis is used to evaluate the conditions of a problem, project, or work plan by considering four main factors, namely strengths, weaknesses, opportunities, and threats (Wiswasta et al., 2018).

The research by Kurmidianata & Suwasono (2022) discusses the development of lake tourism in Hendrosari Village, Gresik Regency, through SWOT analysis. The results of the study show that SWOT analysis is able to accurately identify internal and external factors, thereby producing aggressive development strategies to increase the region's tourism potential.

The research by Fan et al. (2023) applied a combination of SWOT, QSPM, and AHP methods in formulating a tourism development strategy in Changbai Mountain. The results showed that an offensive strategy was the most effective approach by utilizing internal strengths to capture external opportunities in sustainable tourism development.

Afrianto & Setiawan (2024) investigated the development of koclok noodles as a culinary icon of Cirebon using the SWOT approach. The results showed that strengthening digital marketing, product innovation, and promotional collaboration were the main strategies for increasing competitiveness and preserving regional culinary heritage.

Al Mustaqim (2023) research examines the development of halal tourism as a sustainable economic development strategy. The results show that the development of halal infrastructure, the promotion of Muslim-friendly destinations, and the use of sharia-based financing contribute positively to local economic growth and environmental sustainability.

Research by Lisovska et al. (2025) analyzes the role of public-private partnerships in the tourism sector. The results show that these partnerships can improve resource management efficiency, encourage service innovation, and strengthen stakeholder collaboration in supporting tourism sustainability.

METHOD

This study examines how sustainable tourism can be developed in Langsa City, using six sites as the setting: the Mangrove Forest, Urban Forest, Langsa City Museum, Bambu Runcing Park, Merdeka Square, and Kuala Langsa Beach. Fieldwork took place between October and November 2025 and addressed three groups of factors, namely tourist attractions, supporting facilities, and environmental preservation.

A quantitative design was applied. Primary data came from a structured questionnaire with fixed answer options on a five-point Likert scale, which was completed on paper at the sites and through an online form (Sugiyono, 2008). Fixed answer options were used because the researchers had already defined the indicators to be assessed.

Participants were recruited through convenience sampling, which draws on people who are easy to reach and willing to respond at the time of the survey, without giving every member of the population an equal chance of being chosen (Etikan et al., 2016). In total, 110 people from the six sites returned a completed questionnaire, either on site or online during the data collection period. They comprised 70 local residents and 40 domestic tourists, working mainly as students, civil servants, tourism workers, and entrepreneurs.

The number simply reflects how many people were available and agreed to take part within the study period. Quotas were not set for each site and the number of respondents per site was not recorded, so respondents assessed tourism in Langsa City as a whole rather than each site separately. For this reason, the findings describe the views of these respondents and cannot be generalized to all residents and visitors of the city.

Measurement

Each statement was scored twice on a five-point scale, once for agreement and once for urgency, using the values in Table 1.

Table 1. Measurement scales applied in the study

Score	Agreement Scale	Urgency Scale
1	Strongly Disagree	Not Urgent at All
2	Disagree	Not Urgent
3	Neither Agree nor Disagree	Moderately Urgent
4	Agree	Urgent
5	Strongly Agree	Very Urgent

Source: Likert (1932); Vilnius & Dandoy (1990*)*

Data Analysis

Step 1. Data collection

During the data collection stage, internal and external factors that influence the sustainability of tourism in Langsa City were identified. In this study, these internal and external factors were obtained through questionnaires.

Step 2. Analysis of Internal and External Factors (IFAS & EFAS)

The identified factors were classified into strengths and weaknesses for the Internal Factor Analysis Summary (IFAS), and into opportunities and threats for the External Factor Analysis Summary (EFAS). Each statement was evaluated through two independent assessments on five-point scales: agreement and urgency (Table 1).

The mean agreement score of each factor was used to calculate its weight. The weight is the factor's mean agreement score divided by the sum of the mean agreement scores of all factors in the same summary, so that the weights sum to 1.00 separately for the IFAS (strengths and weaknesses together) and the EFAS (opportunities and threats together). The mean urgency score of each factor was used as its rating. Weights and ratings therefore come from two different questionnaire assessments.

Ratings run in the same direction for all factors, with higher values indicating greater urgency, and they were not reversed for weaknesses and threats. This differs from the convention in which ratings of weaknesses and threats are reversed (Rangkuti, 2006). The weighted score of a factor is its weight multiplied by its rating, and weighted scores were summed separately to obtain the total IFAS and EFAS scores.

Step 3. Cartesian SWOT Diagram

The Cartesian SWOT diagram is an analytical tool used to place internal factors (strengths and weaknesses) and external factors (opportunities and threats) into four quadrants based on the differences between weighted strengths and weaknesses and between weighted opportunities and threats. The signs of the two coordinates identify the relevant SWOT quadrant. A positive X value indicates that the total strength score exceeds the total weakness score, while a negative X value indicates the opposite. Likewise, a positive Y value means that opportunities outweigh threats, whereas a negative Y value indicates that threats exceed opportunities.

The resulting quadrant provides the strategic orientation for formulating tourism development recommendations for Langsa City. The interpretation is based on the calculated coordinates rather than on average weights.

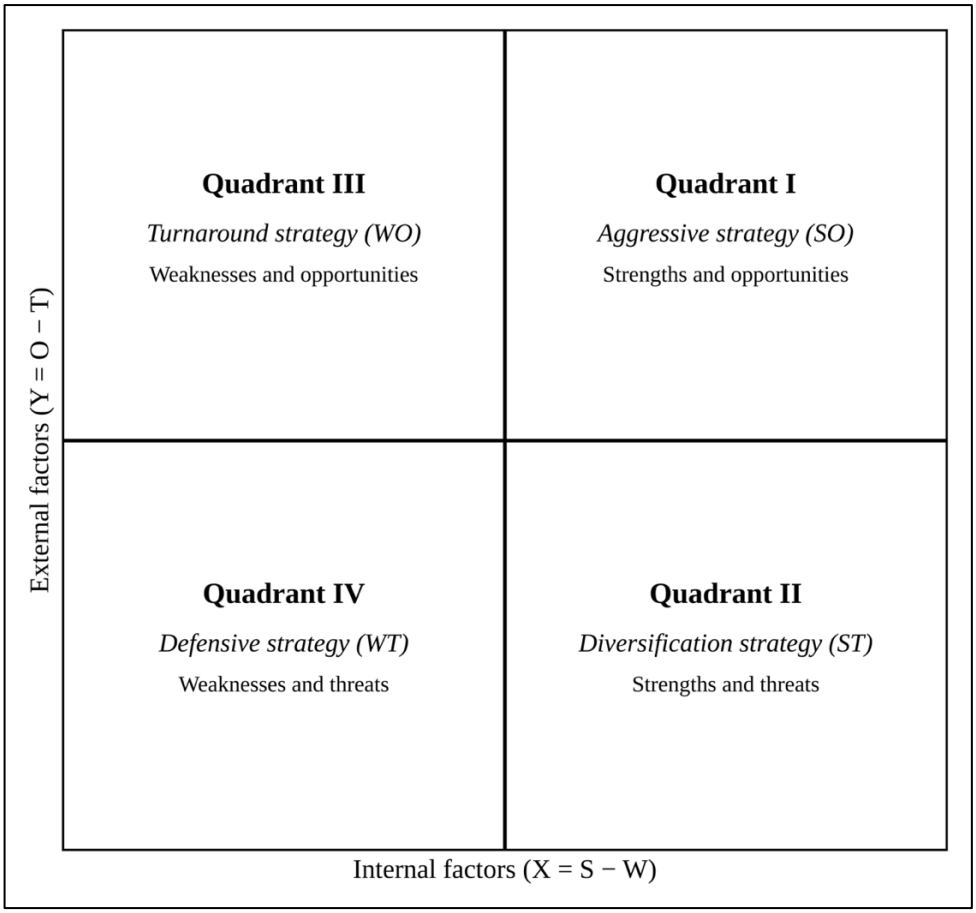


Figure 2. Cartesian SWOT Diagram.
(Source: Adapted from Rangkuti, 2006)

Based on Figure 2, the Cartesian SWOT diagram is divided into four quadrants, namely: Quadrant I (Growth Strategy) where there are high strengths and great opportunities (S and O are dominant). Quadrant II (Diversification Strategy), where there are high strengths but also threats (S and T dominate). Quadrant III (Turnaround strategy), where weaknesses outweigh strengths but opportunities outweigh threats (W and O dominate). Quadrant IV (Defense Strategy), where weaknesses and threats are dominant (W and T dominate).

Step 4. SWOT Matrix

Internal and external factors were assessed through SWOT analysis, with the resulting strategic combinations organized into four alternatives (SO, WO, ST, and WT) using the TOWS framework, as presented in Table 2 (Weihrich, 1982).

Table 2. SWOT Matrix

	Strengths (S)	**Weaknesses (W)**
Opportunities (O)	SO Strategy: a strategy that uses strengths to seize opportunities.	WO Strategy: a strategy that minimizes weaknesses to gain opportunities.
Threats (T)	ST Strategy: A strategy that uses strengths to address threats.	WT Strategy: A strategy that minimizes weaknesses to avoid threats.

Source: Adapted from Weihrich (1982)

Table 3. Mapping of SWOT items to the dimensions of sustainable tourism

Dimension	Strengths	Weaknesses	Opportunities	Threats
Economic	S2, S5	W4	O1, O2, O5	T1, T2, T5
Social and cultural	S1, S4	W2	O3, O4	T4
Environmental	S3	W1, W3, W5	none	T3

Source: Authors' classification based on UNWTO & UNEP (2005) and the survey instrument (2025)

Based on the results of the identification of internal and external factors described above, the SWOT matrix in the table above was compiled to combine strengths, weaknesses, opportunities, and threats in formulating alternative sustainable tourism strategies. In this regard, the operational definitions of the variables in this study were established as the basis for conducting a strategic analysis, namely sustainable tourism, internal factors, and external factors. Sustainable tourism is defined as the process of planning and managing tourism that balances economic, socio-cultural, and environmental aspects, with indicators of an increase in the number of tourists, infrastructure growth, and community involvement assessed using five-point response scales. Internal factors are factors originating from within the destination that are under management control, including the quality of tourist attractions, supporting facilities, and environmental preservation. Meanwhile, external factors are factors that originate from outside the destination and are beyond the control of management, such as economic conditions, policies, competition, and technological developments. Both factors are measured using a scale of 1-5.

Three terms were defined operationally as the basis for the strategic analysis: sustainable tourism, internal factors, and external factors. Sustainable tourism is understood as tourism that takes full account of its current and future economic, socio-cultural, and environmental impacts (UNWTO & UNEP, 2005). It was assessed through respondents' perceptions of the 20 statements, each mapped to one of these three dimensions (Table 3), so that tourist numbers or infrastructure growth alone are not treated as evidence of sustainability. Internal factors are conditions within the destination that tourism managers can influence, namely attractions, supporting facilities, maintenance and cleanliness, management, promotion, and environmental and cultural preservation. External factors are conditions outside the direct control of managers, namely access from outside the region, community and government support, competition, climate and weather, cultural influences, and economic dependence on tourism.

RESULTS AND DISCUSSION

Results

SWOT analysis can be used to formulate sustainable tourism development strategies in a systematic and targeted manner. To provide an overview of the respondents involved in this study, Table 4 presents respondents' characteristics to contextualise their assessments of tourism conditions in Langsa City. A total of 110 valid responses were retained for the analysis, as summarised in Table 4. Most respondents were female (63.6%) and young, with more than half aged 17–25 years (53.6%). Senior high school (52.7%) and bachelor's degrees (31.8%) were the most common education levels. Students (32.7%), civil servants (21.8%) and tourism workers (11.8%) were the largest occupational groups. Local residents accounted for 63.6% of respondents and domestic tourists for 36.4%; no international tourists were recorded. Nearly three-fifths of respondents (58.2%) had visited the sites more than three times, and recreation

was the most frequent purpose of visit (67.3%). The sample therefore consists mainly of respondents who know the sites well, which suits an assessment of internal and external conditions, but its composition is not balanced across stakeholder groups.

Table 4. Respondent Characteristics

Characteristic	n	%
Gender		
Male	40	36.4
Female	70	63.6
Age (years)		
17–25	59	53.6
26–35	26	23.6
36–45	17	15.5
≥ 46	8	7.3
Education		
Junior high school	1	0.9
Senior high school/vocational	58	52.7
Diploma	1	0.9
Bachelor's degree	35	31.8
Master's/Doctoral degree	15	13.6
Occupation		
Student	36	32.7
Civil servant	24	21.8
Private employee	12	10.9
Entrepreneur/SME	8	7.3
Farmer/fisher	2	1.8
Homemaker	6	5.5
Tourism worker (guide, manager, etc.)	13	11.8
Other	9	8.2
Residence status		
Local resident	70	63.6
Domestic tourist	40	36.4
Visit frequency		
Once	21	19.1
2–3 times	25	22.7
More than 3 times	64	58.2
Purpose of visit		
Recreation	74	67.3

Characteristic	n	%
Research	6	5.5
Business	20	18.2
Other	10	9.1
Total respondents	**110**	**100**

Source: Authors' processing of survey data (2025)

The questionnaire responses were used to analyse the internal and external conditions in the tourism sector in Langsa City through SWOT analysis. Identifying strengths, weaknesses, opportunities, and threats is the initial stage in SWOT analysis. These factors were obtained based on the results of a questionnaire distributed to 110 respondents and compiled in a SWOT matrix. The identified strengths, weaknesses, opportunities, and threats are presented in Table 5.

Table 5. SWOT Factors

Indicators	Code	Factors
Strengths	S1	The city of Langsa has high tourism appeal in terms of the uniqueness of its tourist destinations, natural and cultural beauty, and environmental comfort.
	S2	The availability of supporting facilities such as transportation, accommodation, and restaurants at every tourist attraction in Langsa City.
	S3	The cleanliness and environmental sustainability of tourist sites in Langsa City are well maintained.
	S4	Effective management by the government of tourism in Langsa City to support sustainable tourism.
	S5	Tourism activities make a tangible contribution to improving the local community's economy.
Weaknesses	W1	The lack of maintenance of destination facilities and public facilities in tourist areas, which can reduce the attractiveness of tourism.
	W2	The lack of development and preservation of local culture has the potential to reduce the tourist appeal of the Langsa City Museum.
	W3	The level of cleanliness in public facilities at tourist attractions is not optimally maintained.
	W4	Tourism promotion activities in Langsa City have not been carried out optimally to attract tourists.
	W5	Tourism development has not fully considered environmental conservation principles.
Opportunities	O1	The presence of the Mangrove Forest tourist attraction in Langsa City can attract foreign tourists.
	O2	The availability of infrastructure and transportation facilities from outside the region supports an increase in tourist visits.

Indicators	Code	Factors
	O3	Community participation in activities to preserve the environment around tourist attractions promotes a positive image of the destination.
	O4	The support of the government and community for sustainable tourism development in Langsa City.
	O5	The tourism sector in Langsa City offers significant opportunities to drive the growth of local SMEs.
Threats	T1	The presence of illegal fees at tourist attractions affects the appeal of tourism in Langsa City.
	T2	Competition with other tourist destinations outside Langsa City.
	T3	Climate change and extreme weather conditions that can damage the environment and reduce tourist comfort.
	T4	The dominance of foreign cultures and the lack of interest among the younger generation in historical heritage have the potential to reduce tourist visits to the Langsa City Museum.
	T5	Community dependence on the tourism sector poses economic risks when tourist visitation numbers decline.

Source: Authors' processing of survey data (2025)

The factors identified in Table 5 were used in the subsequent IFAS and EFAS analyses of sustainable tourism development in Langsa City. The resulting weighted scores are reported below.

According to Table 6, the total weighted strength score was 1.5896 and the total weighted weakness score was 1.6080. The IFAS result is obtained from the total strength score minus the total weakness score, resulting in a value of −0.0184. The slightly higher weakness subtotal indicates that weighted weaknesses marginally outweighed strengths in the surveyed group. Various weaknesses, such as suboptimal maintenance of tourist facilities, minimal promotional activities, and incomplete implementation of environmental and cultural preservation principles, remain major obstacles to sustainable tourism development in Langsa City.

Furthermore, in determining the sustainable tourism development strategy in Langsa City, an analysis of external factors or EFAS is also required. The external factors were assessed separately through EFAS. The corresponding EFAS results are presented in Table 7.

Table 6. Internal Factor Analysis Summary (IFAS)

Code	Factor	Mean agree-ment	Weight	Rating (mean urgency)	Weighted score
	Strengths				
S1	The city of Langsa has high tourism appeal in terms of the uniqueness of its tourist destinations, natural and cultural beauty, and environmental comfort.	3.582	0.1063	3.018	0.3210
S2	The availability of supporting facilities such as transportation, accommodation, and restaurants at every tourist attraction in Langsa City.	3.300	0.0980	3.191	0.3126
S3	The cleanliness and environmental sustainability of tourist sites in Langsa City are well maintained.	3.336	0.0991	3.100	0.3071
S4	Effective management by the government of tourism in Langsa City to support sustainable tourism.	3.382	0.1004	3.036	0.3049
S5	Tourism activities make a tangible contribution to improving the local community's economy.	3.591	0.1066	3.227	0.3441
	Total strengths		**0.5104**		**1.5896**
	Weaknesses				
W1	The lack of maintenance of destination facilities and public facilities in tourist areas, which can reduce the attractiveness of tourism.	3.227	0.0958	3.218	0.3084
W2	The lack of development and preservation of local culture has the potential to reduce the tourist appeal of the Langsa City Museum.	3.264	0.0969	3.309	0.3206

Code	Factor	Mean agree-ment	Weight	Rating (mean urgency)	Weighted score
W3	The level of cleanliness in public facilities at tourist attractions is not optimally maintained.	3.245	0.0964	3.291	0.3171
W4	Tourism promotion activities in Langsa City have not been carried out optimally to attract tourists.	3.427	0.1018	3.345	0.3404
W5	Tourism development has not fully considered environmental conservation principles.	3.327	0.0988	3.255	0.3215
	Total weaknesses		**0.4896**		**1.6080**
Net IFAS score (X = S − W)					**-0.0184**

Source: Authors' processing of survey data (2025)

Table 7. External Factor Analysis Summary (EFAS)

Code	Factor	Mean agree-ment	Weight	Rating (mean urgency)	Weighted score
	Opportunities				
O1	The presence of the Mangrove Forest tourist attraction in Langsa City can attract foreign tourists.	3.309	0.0962	3.291	0.3167
O2	The availability of infrastructure and transportation facilities from outside the region supports an increase in tourist visits.	3.400	0.0989	3.173	0.3137
O3	Community participation in activities to preserve the environment around tourist attractions promotes a positive image of the destination.	3.536	0.1028	3.336	0.3431
O4	The support of the government and community for sustainable tourism development in Langsa City.	3.491	0.1015	3.373	0.3424

Code	Factor	Mean agree-ment	Weight	Rating (mean urgency)	Weighted score
O5	The tourism sector in Langsa City offers signifi-cant opportunities to drive the growth of local SMEs.	3.482	0.1012	3.282	0.3323
	Total opportunities		**0.5007**		**1.6480**
	Threats				
T1	The presence of illegal fees at tourist attractions affects the appeal of tour-ism in Langsa City.	3.355	0.0975	3.291	0.3210
T2	Competition with other tourist destinations out-side Langsa City.	3.418	0.0994	3.191	0.3172
T3	Climate change and ex-treme weather conditions that can damage the envi-ronment and reduce tourist comfort.	3.509	0.1020	3.245	0.3312
T4	The dominance of foreign cultures and the lack of in-terest among the younger generation in historical heritage have the potential to reduce tourist visits to the Langsa City Museum.	3.455	0.1004	3.400	0.3415
T5	Community dependence on the tourism sector poses economic risks when tourist visitation numbers decline.	3.436	0.0999	3.255	0.3252
	Total threats		**0.4993**		**1.6360**
Net EFAS score (Y = O − T)					**0.0120**

Source: Authors' processing of survey data (2025)

Table 7 presents the EFAS results. Among the opportunities, the highest weighted scores were recorded for commu-nity participation in protecting the environ-ment around tourist sites (O3 = 0.3431) and for government and community support for sustainable tourism development (O4 = 0.3424), followed by the opportunity for local SME growth (O5 = 0.3323). The total weighted opportunity score was 1.6480. Among the threats, the highest weighted score was for the dominance of outside cul-tures and low youth interest in heritage, which may reduce visits to the Langsa City Museum (T4 = 0.3415). This was followed by climate change and extreme weather (T3 = 0.3312) and community dependence on tourism (T5 = 0.3252). Illegal levies

(T1) scored 0.3210. The total weighted threat score was 1.6360.

The net EFAS score (Y = O − T) was +0.0120. Opportunities and threats received almost identical mean agreement (3.444 and 3.435) and mean urgency ratings (3.291 and 3.276). External conditions were thus perceived as nearly balanced, with opportunities only marginally ahead.

Cartesian Diagram

The Cartesian SWOT diagram is an analytical tool that locates the tourism sector in one of four quadrants according to the net scores of internal factors (strengths minus weaknesses) and external factors (opportunities minus threats). Based on the weighted scores in the IFAS and EFAS tables (Tables 6 and 7), the net IFAS score on the X-axis (S − W) is −0.018 and the net EFAS score on the Y-axis (O − T) is +0.012. The mapping result is shown in Figure 3.

Based on Figure 3, the Cartesian SWOT diagram places Langsa City's tourism sector marginally in Quadrant III, which corresponds to a turnaround (WO) orientation. This position indicates that internal weaknesses slightly outweigh strengths, while external opportunities slightly outweigh threats. However, both coordinates are close to the origin and their bootstrap intervals include zero, so the classification is provisional and the sector is better described as being in a near-balanced position. Within this limit, the findings suggest that strategy formulation should emphasise using the available external opportunities, such as community participation and government support, to correct internal weaknesses, particularly tourism promotion, environmental conservation, and the maintenance of facilities.

Environmental management, community awareness, and gradual improvement of basic facilities are proposed as strategic directions, while attention to the threats from climate change and changing cultural interests remains necessary. These directions are recommendations derived from stakeholder perceptions; their effectiveness was not tested in this study.

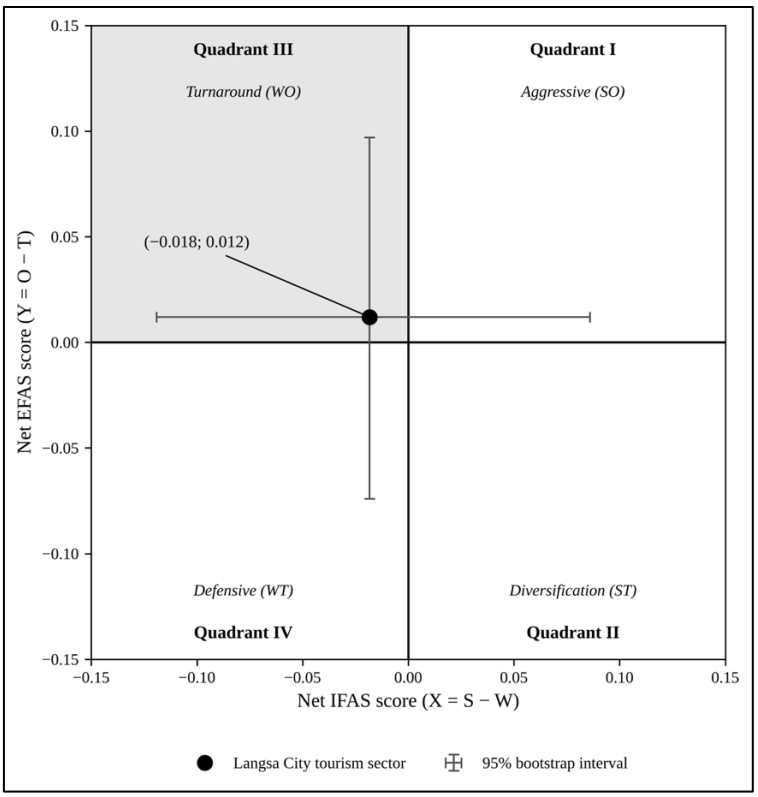


Figure 3. Cartesian Diagram (Source: Authors' processing of survey data, 2025)

SWOT Strategy Analysis

The SWOT matrix is a table used to connect the four elements of SWOT to develop a more focused and systematic strategy. In addition, using the SWOT matrix provides a comprehensive overview of the factors, to support the formulation of appropriate strategies. Through the SWOT matrix, researchers can develop strategies by combining internal and external factors, so that the resulting strategies not only focus on utilizing strengths and opportunities but also minimize weaknesses and address threats in sustainable tourism development.

Based on Table 8, the SWOT matrix, the sustainable tourism development strategy in Langsa City in quadrant I (S-O) is directed at *a growth strategy* that focuses on utilizing strengths to capture opportunities, such as holding cultural festivals as a means of promoting destinations, strengthening the local economy, and optimizing government support and infrastructure. Furthermore, quadrant II (S-T) applies a diversification strategy through the differentiation of tourism products based on local wisdom, the development of environmentally friendly tourism in response to climate change, and the strengthening of governance and institutional capacity to maintain the competitiveness of the destination.

In quadrant III (W-O), *the Turnaround strategy* is directed at increasing digital promotion, empowering the community in destination management, and preserving local culture through collaboration between the government and the community. Furthermore, quadrant IV (W-T) is *a defensive strategy*, such as implementing a programme to prevent illegal fees, maintaining facilities, cleaning the destination environment, and strengthening cultural and historical education for younger residents. Based on the results of the IFAS and EFAS analyses in this study, Langsa City's estimated strategic position lies marginally in Quadrant III (W-O), indicating a turnaround orientation that uses available opportunities to address internal weaknesses, while retaining targeted measures to manage threats.

Table 8. SWOT Matrix Strategy

	Weakness	**Strengths**
Opportunities	**WO** ***Turnaround Strategy*** 1. Increased digital promotion of tourism in Langsa City, with the Mangrove Forest also targeting foreign tourists. 2. Empowering the community as independent tourism managers. 3. Development and preservation of local culture through government support and community involvement.	**SO** ***Growth Strategy*** 1. Organizing cultural festivals. 2. Strengthening the local economy through one destination, one local product. 3. Optimizing government support and infrastructure for tourism development.

	Weakness	Strengths
Threats	**WT**	**ST**
	Defense Strategy	***Diversification Strategy***
	1. Implementing a programme to prevent illegal fees at tourist attractions 2. Maintaining facilities and cleanliness through a named manager and site-specific schedule at each site. Indicators: share of facilities in working condition, visitor complaints, cleanliness ratings 3. Strengthening cultural and historical education for younger residents.	1. Strengthening the competitiveness of tourist destinations through product diversification. 2. Adapting facilities and visitor management to climate and extreme weather: shade trees, shelters and drainage at open sites (Merdeka Square, Urban Forest); boardwalk maintenance and mangrove rehabilitation at coastal sites (Mangrove Forest, Kuala Langsa Beach); weather-based adjustment of opening hours. Indicators: weather-affected days, trees or mangroves surviving, visitor comfort ratings. 3. Strengthening the role of government and tourism managers in sustainable tourism.

Source: Authors' formulation based on the IFAS and EFAS results (2025)

Discussion

The results of this study have a strong relationship with the concept of sustainable tourism described in the UNWTO & UNEP (2005), which explains that tourism goals can only be achieved if the three main pillars are balanced, namely environmental protection, social well-being, and economic viability. The findings of this study show that the main problem with sustainable tourism in Langsa City lies in the lack of balance between these three pillars. Economically, tourism in Langsa City has contributed to increasing community income and encouraging the development of MSMEs, but from a social and environmental perspective, various weaknesses and threats are still found. This condition is the basis for the need to prioritise a turnaround-oriented (WO) approach to addressing weaknesses through available opportunities, alongside measures to manage threats through strategies to strengthen cultural and historical education based on the younger generation and maintaining the cleanliness of the environment and public facilities at tourist attractions. According to Burns & Holden (1995), the development of sustainable tourism must pay attention to the balance between the physical environment (place), the local community (host community), and tourists (visitors) in order to create a harmonious and sustainable tourism system.

The results of the SWOT analysis show that strengths such as cultural uniqueness, natural beauty, and community hospitality have positive values from the perspective of the place and community. However, weaknesses such as lack of facility maintenance, lack of promotion, and environmental cleanliness issues indicate that management and visitor handling are still weak. This aligns with the near-balanced SWOT position, which marginally favours a turnaround (WO) orientation focused on addressing internal weaknesses through available opportunities. These

strategies include a programme to prevent illegal fees to create a sense of security and comfort for tourists, maintenance of facilities and improvement of the cleanliness of tourist destinations to enhance the quality of the environment and the attractiveness of the destination, as well as a strategy to strengthen cultural and historical education for younger residents as an effort to preserve local culture in line with maintaining the social dimensions of tourism development. The implementation of this strategy is expected to strengthen the balance between environmental, social, and economic aspects, thereby supporting the realization of sustainable tourism in Langsa City. The point estimates place the sector marginally in Quadrant III (WO), although its near-zero coordinates and the uncertainty shown in Figure 3 warrant a cautious interpretation.

The results of this study are in line with Kurmidianata and Suwasono (2022), who emphasize that SWOT analysis is capable of accurately identifying internal and external factors as a basis for formulating destination development strategies. Fan et al. (2023) identified an offensive strategy in a different destination, illustrating that SWOT orientations depend on the local configuration of internal and external factors. Furthermore, the research by Al Mustaqim (2023) and Lisovska et al. (2025) reinforces the importance of strategic planning, strengthening collaboration, and policy adaptation in facing external challenges in support of a turnaround-oriented approach alongside targeted risk-management measures. Thus, the results of this study complement and enrich the understanding that the application of SWOT analysis can produce different strategies according to the characteristics and problems of the study.

The results of this study on the development of sustainable tourism in Langsa City using the SWOT analysis approach suggest prioritising a provisional turnaround (WO) strategy, using opportunities for community involvement and government support to improve management, facilities, destination cleanliness, and environmental preservation.

CONCLUSION

This study set out to assess Blue Lagoon Beach, Padangbai, as a special interest snorkeling destination by examining its 4A attributes and the characteristics of snorkeling activities conducted at the site. The findings indicate that Blue Lagoon has a strong foundation as a snorkeling destination. In terms of the 4A framework, the destination can be considered relatively complete and feasible for the development of special interest marine tourism. Its primary strength lies in the attraction dimension, particularly the beauty of its underwater scenery, clear water, accessible reef areas, and beginner-friendly marine setting, all of which make snorkeling the main reason why tourists visit the site. On average, around 200 domestic and international tourists engage in snorkeling and diving activities at Blue Lagoon each day, indicating that the destination is well accepted by the market.

This natural strength is reinforced by supporting amenities, workable accessibility, and ancillary services that collectively make the destination operationally viable. Blue Lagoon is equipped with snorkeling equipment rentals, traditional boats to reach snorkeling spots, food stalls serving local dishes, accommodation options, and supporting tourism services in the surrounding Padangbai area. Several tour operators also offer snorkeling packages that include equipment, boat transportation, and lunch, with prices ranging from IDR 100,000 to IDR 250,000 per person depending on the type of package selected. These conditions show that Blue Lagoon should not be understood merely as a scenic coastal attraction, but as a marine tourism site whose competitiveness is built on the interaction between environmental quality, local tourism services, and activity-specific experience.

A further contribution of this study is the finding that Blue Lagoon's snorkeling product is shaped strongly by local guide involvement. Guides play a central role not only in ensuring safety and providing technical assistance, but also in mediating the quality of visitor experience through interpretation, behavioural guidance, and reef-related awareness. This means that the value of the destination lies not simply in what tourists see underwater, but also in how the experience is organised, guided, and managed. In this regard, Blue Lagoon has clear potential to be developed as a community-based and conservation-sensitive special interest destination, especially if snorkeling is positioned more explicitly as a guided, educational, and reef-respectful activity rather than as purely consumptive marine recreation.

At the same time, the study highlights that destination feasibility should not be equated with unlimited growth. As with many coral reef tourism sites, the long-term sustainability of Blue Lagoon will depend on whether its environmental quality can be maintained while visitor demand continues to increase. For this reason, stronger pre-trip briefing systems, clearer interpretive materials, basic visitor management measures, and stronger coordination among local operators are recommended. These efforts are important not only to reduce ecological risk, but also to preserve the experience quality that currently distinguishes Blue Lagoon from other marine destinations.

Because this research is qualitative and context-specific, its findings are intended as analytical insight rather than statistical generalisation. Future studies could strengthen this work by incorporating visitor perception surveys, ecological assessments, and carrying-capacity analysis, so that tourism development at Blue Lagoon can be guided more comprehensively by socio-cultural understanding, market behaviour, and environmental evidence.

AI USE STATEMENT

Artificial Intelligence (AI) ChatGPT was used in some parts of this paper to recheck spellings and to improve the coherence of sentences in some paragraphs. To maintain academic integrity, the originality, accuracy, and credibility of data or contents are highly warranted.

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