



Integrating BMC and SBSC Approaches for Tangkahan Ecotourism Management Strategies in Gunung Leuser National Park, North Sumatra, Indonesia

Integrasi Pendekatan MBC dan SBSC dalam Menyusun Strategi Pengelolaan Ekowisata Tangkahan, Taman Nasional Gunung Leuser, Sumatera Utara

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ABSTRACT

Indonesia's captivating biodiversity and wealth of local wisdom activities attract tourists worldwide. Their inclination to embrace nature enhances the growth of ecotourism. Tangkahan stands out as one of the ecotourism destinations with many attractions, but it encounters various challenges that impact organizational efficiency and effectiveness. Therefore, it is crucial to formulate an integrated ecotourism management strategy, utilizing the Business Model Canvas (BMC) and the Sustainable Balanced Scorecard (SBSC). This research aimed to examine ecotourism performance using the BMC framework, analyze it through a SWOT model, and devise comprehensive management strategies by combining BMC and SBSC approaches. This research used primary data from the field and secondary data. The research confirmed that BMC, with its nine fundamental elements, could visualize Tangkahan Ecotourism. The SWOT analysis recommended enhancing the BMC description by incorporating and improving specific aspects of these elements. The SBSC resulted in 16 management strategies for effective ecotourism management in Tangkahan.

INTISARI

Indonesia memiliki pesona utama berupa keragaman hayati dan aktivitas kearifan lokal yang dapat dinikmati oleh para wisatawan dunia. Perkembangan ekowisata didorong oleh adanya kecenderungan para wisatawan untuk kembali ke alam. Tangkahan menjadi salah satu kawasan ekowisata dengan daya tarik dan atraksi wisata yang beragam. Namun seiring berjalannya waktu, ekowisata Tangkahan juga mengalami berbagai tantangan yang mempengaruhi efisiensi dan efektivitas dari organisasi. Oleh karena itu, perlu dilakukan penyusunan strategi pengelolaan ekowisata, dengan mengintegrasikan business model canvas (BMC) dan sustainable balanced scorecard (SBSC). Penelitian ini bertujuan untuk menggambarkan kinerja ekowisata menggunakan BMC, menganalisis kinerja ekowisata dengan analisis SWOT, serta merancang strategi pengelolaan ekowisata dengan mengintegrasikan BMC dan SBSC. Penelitian ini menggunakan data primer dari lapangan dan data sekunder. Hasil penelitian mengkonfirmasi bahwa Ekowisata Tangkahan dapat divisualisasikan menggunakan sembilan elemen utama dari BMC. Hasil evaluasi dari analisis SWOT merekomendasikan gambaran BMC baru untuk ekowisata Tangkahan, dengan menambahkan dan meningkatkan beberapa aspek dari sembilan elemen tersebut. Hasil perancangan strategi pengelolaan menggunakan SBSC diperoleh sebanyak 16 strategi untuk pengelolaan ekowisata yang efektif di Tangkahan.

Introduction

Indonesia's remarkable allure lies in its abundance of rich biodiversity and diverse local wisdom activities, making it an irresistible destination for global tourists (Dokhi et al. 2016). The growing trend among travellers to seek natural environments reflects their interest in exploring such places (Fandeli 2002; Rhama 2019). This pattern presents a compelling market opportunity (Kuswanda 2018), catalyzing the development of ecotourism as a sustainable alternative amidst the declining availability of natural resources and escalating environmental degradation (Arida 2017; Kuswanda 2018; Butarbutar 2021).

The Central Bureau of Statistics (CBS) revealed that North Sumatra stood out as one of the most frequent provinces by foreign tourists from 2018 to 2020, with Tangkahan Ecotourism being a prominent attraction within the region (Febrianti et al. 2022). Tangkahan, once infamous as a hub for illegal logging activities where loggers cut hundreds of trees daily, has transformed dramatically. With guidance and efforts to combat illegal logging, the local community became increasingly aware and transitioned from uncontrolled resource exploiters to proactive advocates for tourism development. These activities culminated in the Tangkahan Ecotourism establishment in 2004, which continues to thrive as a hidden paradise in North Sumatra (Ginting et al. 2010; Wiranatha 2015; Siratha 2015). 2010; Wiranatha, 2015; Siregar et al. 2021; Febrianti et al. 2022; Wiratno et al. 2022).

Tangkahan Ecotourism encounters various challenges that impact its management effectiveness and efficiency. These problems include internal performance among ecotourism managers, increasing tourist expectations, service quality provided to explorers, infrastructure conditions, concerns related to animal welfare and rights, and the temporary closures of the areas due to COVID-19 restrictions. These factors have caused a decline in tourist numbers and have affected the financial aspects of ecotourism operations (Nasution et al. 2021; Febrianti et al. 2022; Wiratno et al. 2022). Designing and implementing a strategic management plan becomes crucial to

support effective management (Lüdeke-Freund 2009; Giannoukou & Beneki 2018) in Tangkahan ecotourism.

In formulating ecotourism management strategies, an integrated approach that combines the Business Model Canvas (BMC) and the Sustainable Balanced Scorecard (SBSC) is employed (Lüdeke-Freund 2009; Giannoukou & Beneki 2018). The BMC serves as a concise and detailed framework representing the organization's actual conditions, enabling it to achieve organizational objectives and offering an overview of the measurable processes within Tangkahan Ecotourism (Agusty 2020). The SBSC functions as a general visualization model to represent four main pillars (finance, customer, internal business, and growth and learning perspectives). These four pillars become essential business model aspects. Adding non-market dimensions, such as environmental and social perspectives, could enhance the organization's potential added values (Ballon 2007; Osterwalder & Pigneur 2009; Abdelrazek 2019). Consequently, combining these two methods offers an alternative approach to designing sustainable business models and strategies, allowing Tangkahan Ecotourism to compete effectively, maximize revenue, and maintain a balance between social, environmental, and economic considerations that align with the actual conditions (Abdelrazek 2019; Giannoukou & Beneki 2018).

Previous research explored business overview and tourism strategy development, commonly employing the Strengths, Weaknesses, Opportunities, and Threats (SWOT) matrix. This research evaluated the performance of Tangkahan Ecotourism using the SBSC based on a newly developed BMC derived from SWOT analysis to establish a professional business performance aligned with the organization's strategy. The outcomes provided valuable guidance for top-middle management, business entities, and educational institutions in designing, controlling, and assessing organizational performance. Additionally, the findings could impact policy formulation within business organizations and educational institutions and provide the framework for evaluating changes in

the internal and external environment and organizational culture. Ultimately, the research contributed to the improved and sustainable operation of Tangkahan Ecotourism. This research aimed to examine the performance of Tangkahan Ecotourism using the BMC framework, analyze it through the SWOT model, and design a management strategy for Tangkahan Ecotourism by integrating the BMC and SBSC.

Materials and Methods

Location and Time

This research occurred in Tangkahan, an area encompassed within the utilization zone of Gunung Leuser National Park (GLNP) in North Sumatra, covering an area of 3,837.77 ha. The management of the National Park fell under the Tangkahan and Cinta Raja Resorts, National Park Management Section (SPTN) Region VI Besitang, and National Park Management Division (BPTN) Region III Stabat (TNGL 2021). Tangkahan became one of the prioritized tourist destinations in the utilization zone in GLNP (Figure 1).

Various tourist activity points, including river cruising areas, waterfalls, elephant bathing locations, LPT (Lembaga Pariwisata Tangkahan) offices, and Tangkahan Conservation Response Unit (CRU) became the locations for data collection (Figure 2).

The research consisted of four stages that occurred between February and December 2022. The preparation occurred between February and May 2022 to learn about research topics, data collection methods and data analysis. The data collection stage was completed from 1 June to 19 July 2022 to collect all the required field data. The data analysis stage was carried out from July to September 2022 to process primary and secondary data and produce an output. The reporting, seminar, and trial stage was conducted from October to December 2022 to prepare the written outputs.

Data

This research utilized both quantitative and qualitative data (Table 1). The data collection involved gathering primary data through observations, interviews, and questionnaires. The observations

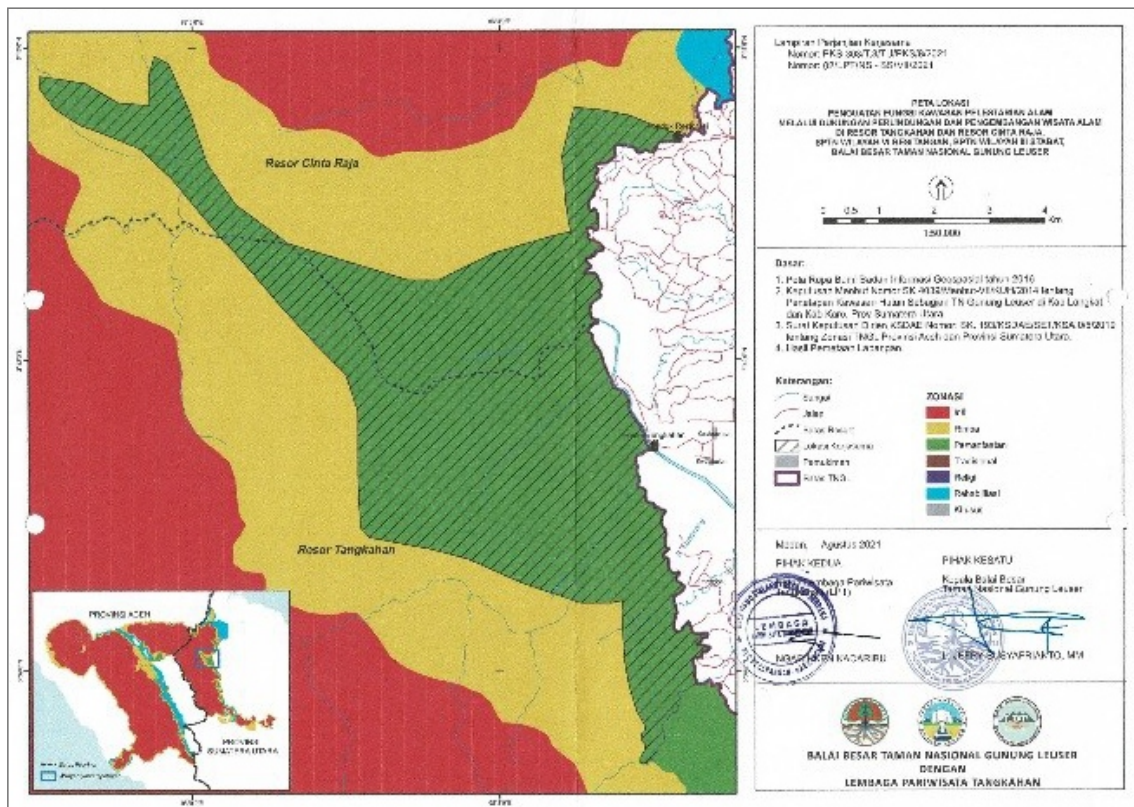


Figure 1. Location map of Tangkahan utilization zone between LPT and GLNP (Source: TNGL 2021)

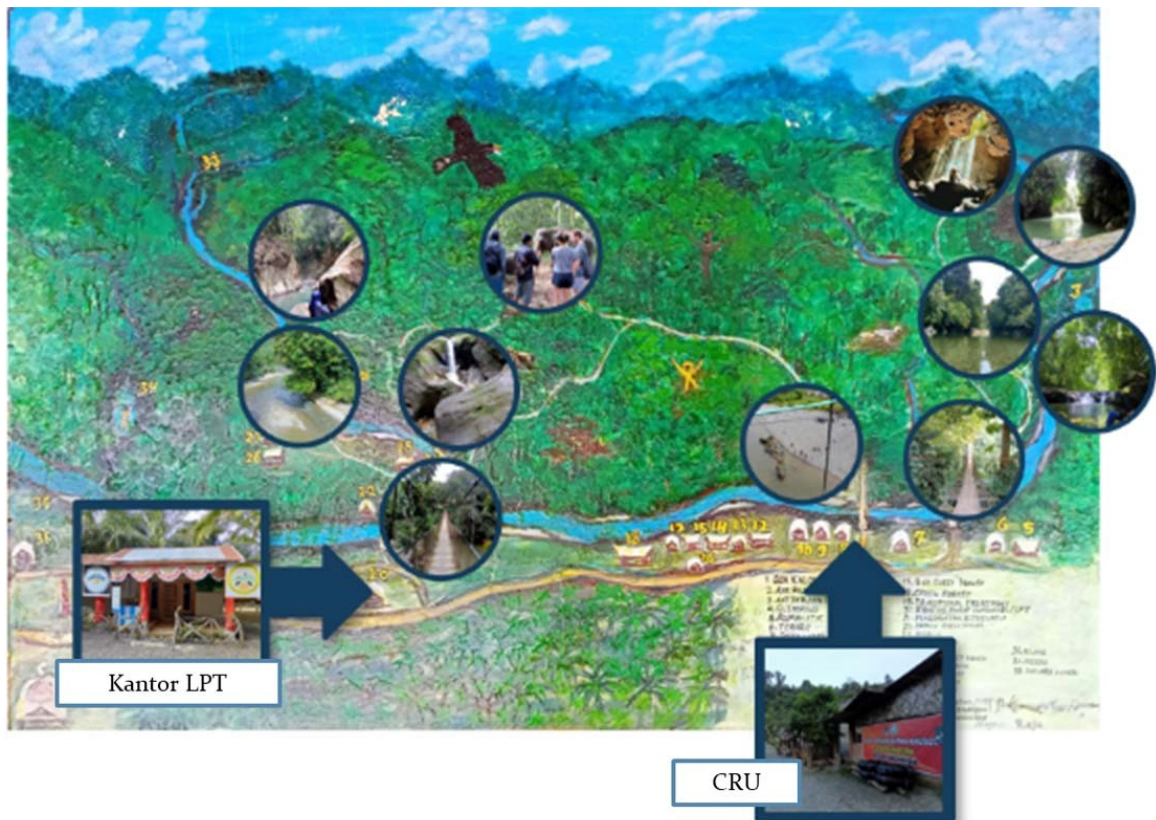


Figure 2. Data collection points for tourism activities (Source: LPT Management 2022)

Table 1. Types and methods of data retrieval

| No | Research Objectives | Data Type | Data Collection | Data Source | Data Analysis | References |
|----|-------------------------------------|-----------------------|---------------------------|-------------------------|------------------|--|
| 1 | Business model overview | Primary and Secondary | Observation and Interview | Field, manager, tourist | BSC | (Osterwalder & Pigneur 2010; Richardson, S. 2014) |
| 2 | Business model performance analysis | Primary and Secondary | Observation and Interview | Field, manager, tourist | SWOT | (Osterwalder & Pigneur 2010; Lüdeke-Freund 2009) |
| 3 | Strategy design | Primary and Secondary | Observation and Interview | Field and manager | SBSC and PLS-SEM | (Lüdeke-Freund 2009; Schaltegger & Lüdeke-Freund 2011; Giannoukou & Beneki 2018) |

intended to directly assess the physical condition, activities, and events related to the research objectives and management practices. The interviews were semi-structured by preparing the main questions for all respondents and additional questions when necessary to obtain direct information. Meanwhile, questionnaires became the instrument to gather data that validated the strategies. The secondary data consisted of evidence, records, or historical reports organized in archives, such as annual reports, previous research findings, and other supporting documents (Saunders et al. 2009).

Sampling

This research employed purposive sampling for the primary data collection through interviews to gain insight into the organization's long-term goals, current conditions, efforts, and achievements. Respondents were top/middle managers of LPT, CRU, GLNP, or GLNP partners in the Tangkahan area. The questionnaire respondents were determined using the simple random sampling method. The sample size calculation (Table 2) used the Cochran formula (1997). Seventy-eight managers responded to the distributed questionnaires, while domestic and foreign tourists

Table 2. Calculation of the questionnaire respondent sample using the Cochran formula

| Respondent | Z (the level of confidence the sample requires) | p (chance of being right) | q (chance of being wrong) | e (inaccuracy tolerance) | n (required sample) |
|------------------|---|--|----------------------------------|--------------------------------|----------------------------|
| Manager | 1.64 | 70% (assumption: top/middle management) | 30% | 10% | 56,4816 |
| Local tourists | 1.64 | 50% (assumption: tourists visit all tourist sites) | 50% | 10% | 67,24 |
| Foreign tourists | 1.64 | 80% (assumption: tourists visit all tourist sites) | 20% | 10% | 43,0336 |

were 128 and 56, respectively.

$$n = \frac{Z^2pq}{e^2}$$

Remarks: n = required sample; Z =the level of confidence the sample requires; p = chance of being right; q = chance of being wrong; e = inaccuracy tolerance.

Data Analysis

SWOT Analysis - BMC

The design of a Business Model Canvas (BMC) for Tangkahan Ecotourism commenced with a descriptive analysis, mapping existing business models and identifying internal and external factors, including a SWOT analysis (Baginda et al. 2016). The existing BMC elements identification was to assess the current state of the ecotourism business. Subsequently, each element underwent a detailed SWOT analysis based on observations, interviews, and questionnaires. The SWOT analysis results became the complement of the existing BMC and facilitated further ecotourism development. Suitable BMC would maximize organizational strengths and opportunities while minimizing weaknesses and threats. The nine BMC elements and SWOT analysis became the basis for evaluating and designing future business models (Azhar et al. 2017).

BMC and SBSC Integration for Designing Strategies

The designing stage of measuring SBSC performance started by grouping the nine components in BMC into SBSC perspectives (Lüdeke-

Freund 2009), followed by formulating objective strategies based on the vision, mission, and existing condition of the organization visualized by BMC (Richardson 2014). Additionally, the challenges LPT and partners involved in Tangkahan ecotourism faced, such as nature conservation and preservation, economic benefits provision, and local community empowerment, were considered. The conceptualized strategy design needed to be measured. This research measured the design by validating the causal-effect relationships of the objective strategies visualized by the SBSC strategic map (Saghei & Ghasemi 2009).

This research used the Partial Least Square-Structural Equation Model (PLS-SEM) analysis to validate the SBSC objective strategy. The PLS-SEM enables structural equation modeling with multivariate statistical analysis, accommodating non-normally distributed data and allowing for small research samples with a minimum amount of data (30-100 samples) (Syahrir et al. 2020). PLS-SEM consisted of Latent and Manifest variables. The Latent Variables (Objective Strategies) needed a set of observed variables and measurable indicators to represent the construct. Indicators were Manifest Variables that could be measured empirically (Russo & Stol 2021). The PLS-SEM also consisted of the Structural Model (Inner Model) and the Measurement Model (Outer Model). The structural model indicates the relationship between Objective Strategies (Latent Variables), while the latter is between all Manifest Variables and their Latent Variables (Syahrir 2020; Hair et al. 2014; Russo & Stol 2021). This research used SMART PLS-4 software for the statistical analysis.

Results and Discussion

Existing Business Model Canvas of Tangkahan Ecotourism

Figure 3 presents the existing BMC of the Tangkahan ecotourism. The BMC focuses on the LPT organization as the principal manager of ecotourism. The primary value proposition of Tangkahan ecotourism was a nature-based tourist attraction managed by locals. Tangkahan ecotourism offered insightful experiences, historical knowledge, and ecosystems to support diverse tourist activities, such as elephant tourism and accommodation options. Additionally, scientists and academics could research the flora and fauna biodiversity.

In supporting these tourism activities, the LPT requires assets (essential resources) as the primary component/capital to support the value propositions offered to tourists, including elephants, natural resources (flora and fauna), human resources, as well as accessibility and amenities that facilitate ecotourism activities. To ensure the smooth operation of ecotourism activities, the manager undertakes several primary activities in ecotourism and marketing efforts to increase tourist visits and establish a positive organizational image. These activities include maintaining environmental

cleanliness, providing tourists safety through a Search and Rescue (SAR) team, offering services to both local and foreign explorers, managing ecotourism facilities, implementing an English school program, providing ranger education, managing and training on tamed elephants, conducting patrols to secure the GLNP area, and maintaining elephants healthcare. In supporting the activities, LPT, as a tourism organization, collaborated with partners who have different focuses and roles. The Gunung Leuser National Park Center, Conservation Response Unit (CRU), and Vesswic were among the partners involved in the contribution to ensure the sustainable operation of tourism activities within the park.

LPT's customer segments or target markets consisted of domestic and foreign tourists. Domestic tourists tended to engage in tubing activities or enjoy the river, while foreign tourists participated more in elephant tours and forest exploration packages. The channels through which the organization communicated and distributed its value propositions to the target market include word-of-mouth promotion, collaboration with external guides or travel agents coordinated with LPT, utilization of social media platforms such as Instagram and TikTok, and print media such as brochures or travel books. Regarding customer relationships, LPT interacted

| | | | | |
|--|--|--|---|--|
| <p>Key Partnership</p> <ul style="list-style-type: none"> Gunung Leuser National Park (GLNP) Conservation Response Unit (CRU) Vesswic | <p>Key Activities</p> <ul style="list-style-type: none"> Services Training (mahout & guide) Facilities management Environmental hygiene Elephant management Elephant care English school activities <p>Key Resources</p> <ul style="list-style-type: none"> Sumatran Elephant The natural beauty of flora and fauna Human Resources Accessibility & amenities | <p>Value Proposition</p> <ul style="list-style-type: none"> Natural tourist attractions (forests, caves, rivers, waterfalls & hot springs) Tourist activities (forest exploration, cave exploring, river crossing by tube/boat/kayak, camping, observing wild animals, swimming and fishing) Elephant tourism (bathing elephants, free-ranging elephants, feeding elephants) Research and education Local human resources Various accommodation options | <p>Customer Relationship</p> <ul style="list-style-type: none"> Tangkahan Namu Ecotourism Services Cooperative (KJNET) Personal Assistance from guide Tangkahan Sustainable Entrepreneurs Association (PPTL) <p>Channels</p> <ul style="list-style-type: none"> Verbal information Travel agent Guide outside LPT Electronic media (social media) Print media | <p>Customer Segment</p> <ul style="list-style-type: none"> Domestic tourists Foreign tourists |
| <p>Cost Structure</p> <ul style="list-style-type: none"> Construction of facilities and infrastructure Welfare of members Cleanliness for the Environment Operating costs Human resources training 50% for Sharing benefits with CRU 70% for Retribution | | <p>Revenue Stream</p> <ul style="list-style-type: none"> Jungle trekking and elephant tour packages (50% Sharing benefits with CRU) Donate accommodation 30% for Retribution | | |

Figure 3. Existing BMC of Tangkahan ecotourism

Table 3. SWOT analysis results of Tangkahan ecotourism existing BMC elements

| No | Aspect | Strength | Weakness | Opportunities | Threat |
|----|-----------------------|--|--|--|--|
| 1 | Value propositions | <ul style="list-style-type: none"> Interaction with elephants, Diverse tourism potential, Human resources were dominated by local communities | <ul style="list-style-type: none"> Poor accessibility to tourist sites, Information boards and environmental cleanliness (garbage bins and awareness) were incomplete | <ul style="list-style-type: none"> Some hidden natural attractions (caves & waterfalls) and cultural tourism (Karo Tribe) can be optimized. | <ul style="list-style-type: none"> There are more and more competitors, Animal welfare and rights issues |
| 2 | Key resources | <ul style="list-style-type: none"> Diversity of ecosystems and tourist attractions, The hospitality of human resources, | <ul style="list-style-type: none"> Inadequate public facilities and facilities for elephants, non-competence of human resources, Absence of membership card, Inadequate technology | <ul style="list-style-type: none"> Advances in technology and information, | <ul style="list-style-type: none"> No institutional assistance related to IT and management; the threat of natural disasters (flash floods) |
| 3 | Key activities | <ul style="list-style-type: none"> Services, maintenance, and care related to ecotourism activities were well-implemented | <ul style="list-style-type: none"> The internal conflict between old and new management, Uneven information about ecotourism services, Training that had not been re-implemented, Waste management that had not been running, English school activities had not been running, There was no standardized interpretation of guide guidelines yet | <ul style="list-style-type: none"> Community support and participation in ecotourism | <ul style="list-style-type: none"> PB-PJWA permit by GLNP had not been issued, There has been no enforcement of the SOP guide by GLNP, specifically for permits into the area. |
| 4 | Key partnership | <ul style="list-style-type: none"> There was an agreement between partners, Profit sharing appropriate to the agreement between related partners | <ul style="list-style-type: none"> Ineffective Financial and ecotourism management | <ul style="list-style-type: none"> Open opportunities for collaboration with many parties | <ul style="list-style-type: none"> Lack of support from the local government (Langkat) and provincial government (North Sumatra province) |
| 5 | Customer segments | <ul style="list-style-type: none"> Tourists' Interest in elephants and the history of Tangkahan Ecotourism | <ul style="list-style-type: none"> Instructions and information regarding ecotourism activities for tourists were incomplete | <ul style="list-style-type: none"> Diverse tourist segments, The high growth of tourist visits in the high season | <ul style="list-style-type: none"> Decrease in the number of tourists due to the COVID-19 pandemic, Local tourists' awareness of environmental hygiene (garbage) was low The threat of mass-tourism |
| 6 | Channels | <ul style="list-style-type: none"> Collaborate with many domestic and overseas travelers | <ul style="list-style-type: none"> The management was still conventional in attracting tourists, There was no official social media | <ul style="list-style-type: none"> Optimal utilization of social media, Good ratings from tourist and travel agents | <ul style="list-style-type: none"> Competitors were increasingly active in the promotion |
| 7 | Customer relationship | <ul style="list-style-type: none"> Good relations with local communities, tourists, and NGOs | <ul style="list-style-type: none"> Lack of member trust in the institution | <ul style="list-style-type: none"> Utilization of technology with social media | <ul style="list-style-type: none"> Local communities' lack of concern for the environment (specifically waste) |
| 8 | Revenue stream | <ul style="list-style-type: none"> Various sources of income | <ul style="list-style-type: none"> Ineffective financial management Unstable source of income | <ul style="list-style-type: none"> Establishment of new sources of income (donors and rental fees) | <ul style="list-style-type: none"> Differences in the price of area entrance tickets in Langkat Regency for foreign tourists on Sundays / national holidays |
| 9 | Cost structure | <ul style="list-style-type: none"> Increased profit share with CRU partners | <ul style="list-style-type: none"> Incoming funds had not met the needs, There were no investment costs for technology and information (IT/collaboration to develop ecotourism marketing) | <ul style="list-style-type: none"> Cost savings by organizing daily staff schedules | <ul style="list-style-type: none"> High operational costs |

directly with tourists by providing administrative services and assistance before conducting tourism activities through the Tangkahan Namo Ecotourism Services Cooperative (KJNET). During the tour activities, guides accompanied tourists, ensuring hospitality and effective communication. Additionally, the PPTL provided accommodations and catered to the needs of tourists who stayed overnight in Tangkahan.

Tangkahan ecotourism generated revenue through various sources, including tour packages, sharing benefits with the CRU by 50%, income from fees by 30%, and donations from accommodation (PPTL). These income sources served as the primary funding for operational activities and other necessities related to ecotourism. LPT allocated the received income to fund the ecotourism facilities. The cost structure included sharing benefits with CRU by 50% and sharing retribution by 70% for the local village (PADes), member welfare, maintaining area cleanliness, conducting security patrols in the GLNP area, providing training for members (rangers), and covering the organization's operational costs.

SWOT Analysis - BMC

Table 3 depicts the results of the SWOT Analysis of the Tangkahan ecotourism existing BMC elements.

Overview of the New BMC for Tangkahan Ecotourism

The SWOT analysis results for the existing BMC became the inputs for formulating the new BMC for Tangkahan Ecotourism. The new BMC highlighted the areas that require improvement and innovation (Figure 4). In the value propositions element, Tangkahan ecotourism capitalized on the rich and unique Karo culture for cultural tourism. Regarding the primary resource element, LPT should enhance the integration of information technology among all relevant partners. LPT should organize weekly meetings and active marketing through official social media channels to improve primary activities. Regarding key partnerships, collaboration with local companies surrounding Tangkahan ecotourism and local or provincial governments to address any deficiencies in ecotourism management. The revenue stream element indicated the need for LPT to diversify the sources of income, such as offering tourism equipment and seeking CSR initiatives from PPTL and companies around Tangkahan.

Integration of BMC into SBSC for Designing Strategies

The SBSC visualization represented the analysis results of the existing condition of Tangkahan ecotourism and provided a comprehensive view of the business's balance process within Tangkahan

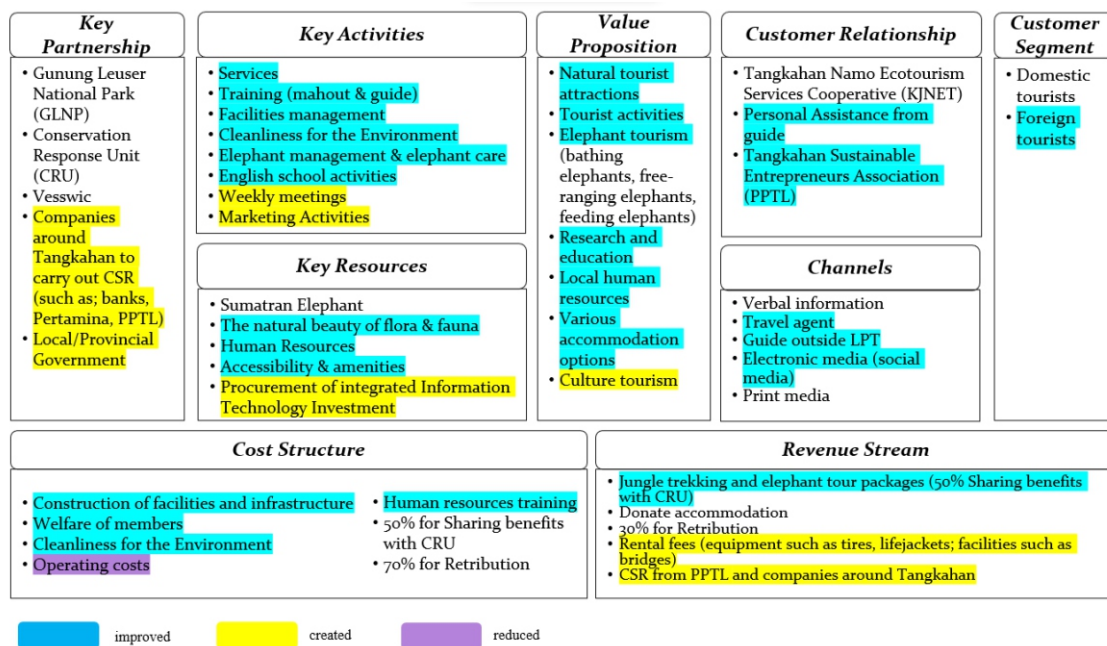


Figure 4. Overview of the new BMC Tangkahan ecotourism

Table 4. Objective Strategies (OS) of Tangkahan Ecotourism

| SBSC Perspective | BMC Elements | OS Code | Objective Strategies |
|---------------------|---|---------|--|
| Growth and learning | Value Proposition | LG1 | Improved information systems and technology investment |
| | | LG2 | Increased member knowledge and capability |
| | | LG3 | Improved attributes of tourism products |
| Internal business | Key Resources Key Partnership Key Activities | IB1 | Increased productivity of members |
| | | IB2 | Increased collaboration with partners |
| | | IB3 | Improved service quality |
| Customers | Channels Customer Relationship Customer segments | C1 | Increased marketing effectiveness |
| | | C2 | Increased traveler loyalty |
| | | C3 | Increased tourist satisfaction |
| | | C4 | Increased number of tourists |
| Economic | Revenue stream Cost Structure | EC1 | Increased income growth |
| | | EC2 | Reduced business expenses |
| | | EC3 | Provide financial benefits |
| Social | Customer Relationship | S1 | Provide social benefits to local communities |
| Environment | Key activities Value Propositions & Key Resources | EN1 | Minimize environmental damage and pollution |
| | | EN2 | Preserve natural beauty and protect biodiversity |
| | | | |

ecotourism. The SBSC performance measurement design stage involved categorizing the nine components of the BMC into SBSC perspectives and formulating objective strategies from each perspective. This research, in collaboration with top-middle management, successfully designed 16 Objective Strategies (OS) (Table 4).

Strategy Map

The conceptualized Objective Strategies (OS) became the input for developing a strategy map (Figure 5). It illustrated the interrelationships among elements that influence the organization's performance in achieving its objectives by measuring its assets, activities, outputs, and outcomes obtained from ecotourism operations. The OS map's outcome strategy consisted of the environmental, social, and economic perspectives, representing the desired effect resulting from the output. The output strategy included the customer perspective, representing the products and services produced by the organization and their value to tourists, such as their satisfaction with the services provided. The internal business perspective outlined the actions/drivers and activities required to achieve the output and outcome strategies. The growth and learning perspective focused on the necessary assets and resources to execute the action strategy and achieve the output and outcome strategies. The LPT and CRU managers approved all the designed OS presented in the strategy map through discussions. Subsequently, the outcomes of

the SO mapping were validated using the PLS-SEM analysis.

Measurement and Validation Concepts of the Objective Strategy

The measurement and validation of the OS employed the *Partial Least Square-Structural Equation Model* (PLS-SEM) using SMART PLS-4 software. Figure 6 visualizes the interrelationships among the researched variables. The validation process involved generating a model consisting of Latent Variables/Strategy Objectives (Blue Variables) and Manifest Variables/Indicators (Yellow Variables). The model assessment consisted of the Measurement Model (Outer Model) and Structural Model (Inner Model).

After running the structural diagram path model (Figure 6) using the SmartPLS 4.0 software and the PLS Algorithm, the assessment outcomes were obtained and presented in Table 5. The path coefficient analysis indicated a positive effect because all constructs had values ranging from 0-1. However, the t-statistic suggested that the construct of increasing the attributes of tourist products (LG4) did not significantly affect the construct of improving service quality (IB3) as the t-statistic value ($t_{LG3-IB3} = 0.96$) was smaller than the recommended value of 1.96. Ardane et al. (2017) suggested that tourism product attributes and factors such as timeliness and accuracy, politeness and hospitality, responsibility,

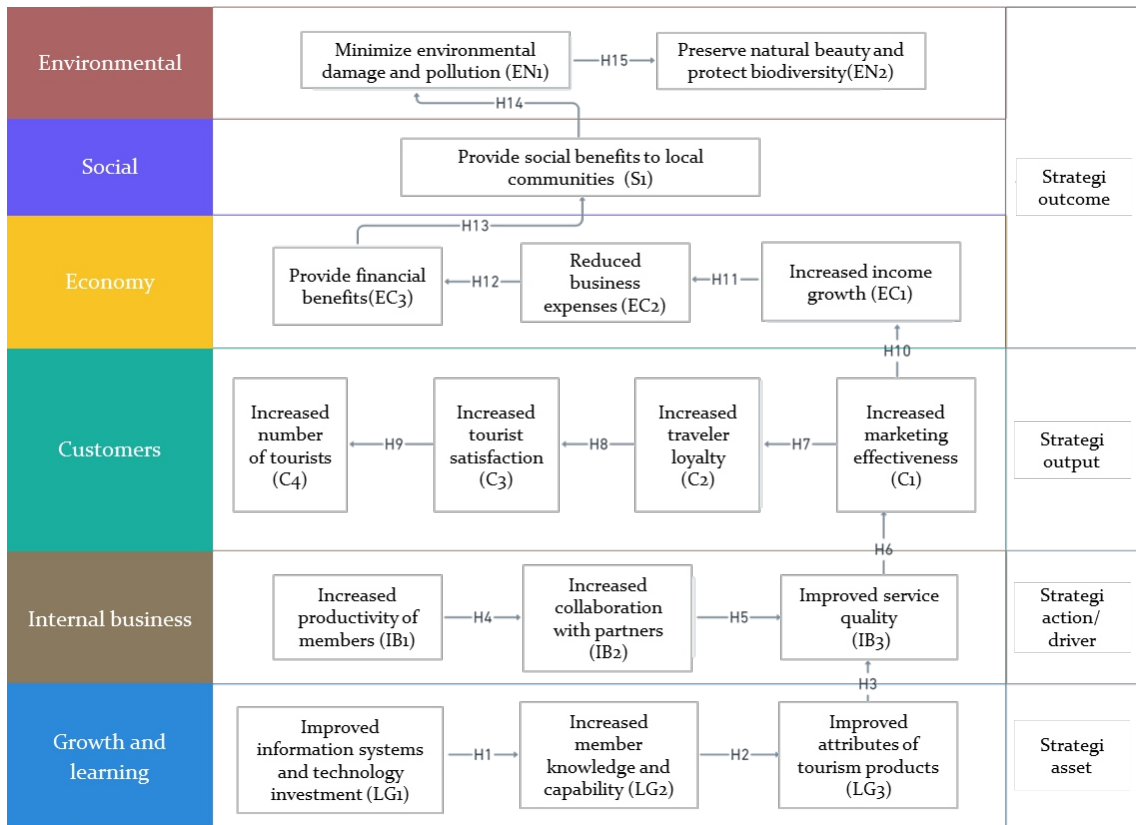


Figure 5. Objective strategy map

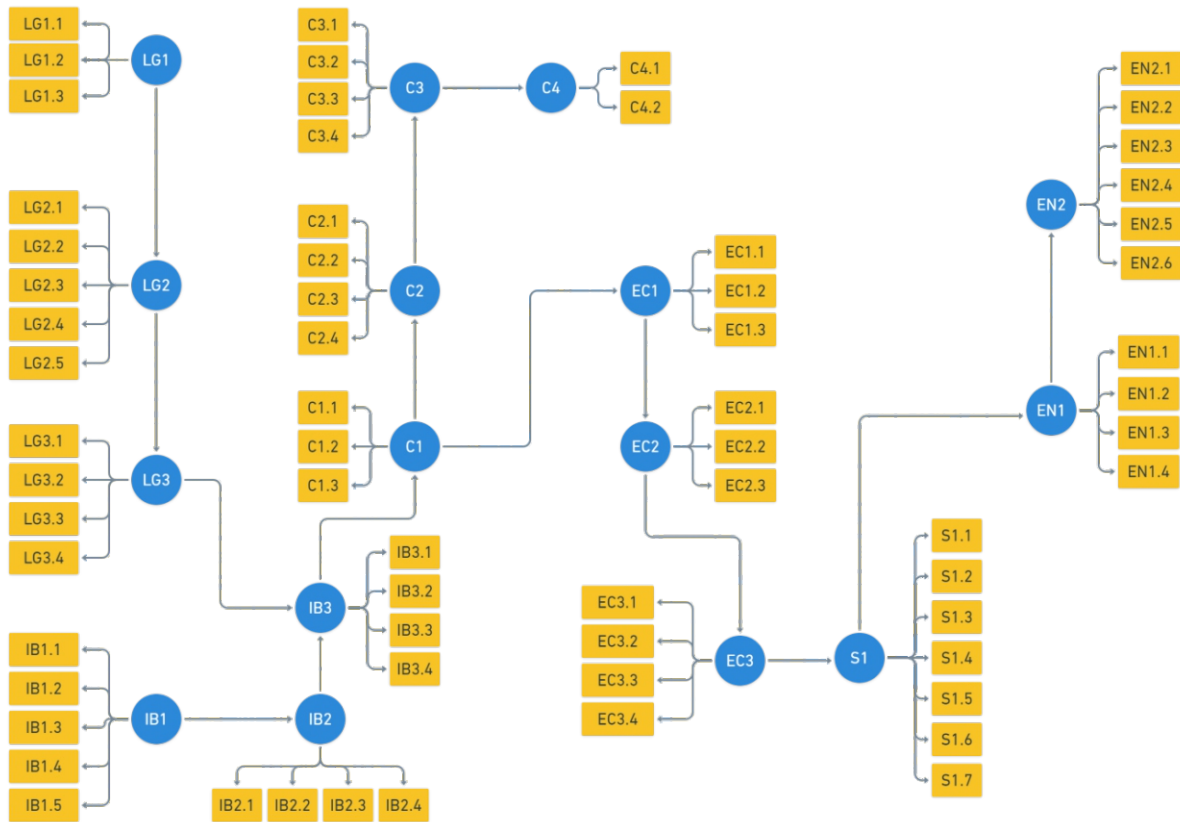


Figure 6. PLS model

Table 5. Validation of SBSC performance management strategy

| Assessment | Test | Criteria | Results | |
|---------------------------------|------------------|----------------------------------|---|---|
| Measurement model (outer model) | Validity Test | Loading Factor | Value of each indicator >0.7 | Value of each indicator >0.7 |
| | | Average Variance Extracted (AVE) | Value of each variable >0.5 | Value of each variable >0.5 |
| | | Fornell Larcker Criterion | correlation of variables with the variable itself > correlation of variables with other variables | correlation of variables with the variable itself > correlation of variables with other variables |
| | | Cross Loading | correlation of indicators with their variables > correlation of indicators with other variables | correlation of indicators with their variables > correlation of indicators with other variables |
| | Reliability Test | Cronbach's alpha | Value>0.7 | Value>0.7 |
| | | Composite Reliability | Value>0.7 | Value>0.7 |
| Model Structural (Inner Model) | R-Square | Q ² Value | Approaching 1 | Approaching 1 |
| | Path coefficient | | Range 0-1 | Range 0-1 |
| | T-statistic | | >1.96 | All latent variable effects >1.96, except LG ₃ →IB ₃ <1.96 |
| | Model Fit | SRMR | | <0.05 |
| Chi-square | | | < 101.88 | < 101.88 |
| NFI | | | >0.9 | >0.9 |

ease of access, service variety, personalization, and comfort influenced service quality.

SBSC Performance Management Strategy Design Results

The validated OS became the input for designing performance management strategies. The organization could implement these strategies to measure, manage, and improve its performance, efficiency, and effectiveness. The SBSC (Table 6) contained the designed business management strategies, including perspectives, BMC elements, objective strategies, indicators, KPIs, and targets.

The growth and learning perspective consisted of three objective strategies related to assets or capital to measure ecotourism performance. These included investment in information technologies and their utilization, member knowledge and capabilities enhancement, and tourism product attributes improvement. The internal business perspective included three objective strategies to increase member productivity, collaborate with partners, and provide quality services. The visitor perspective consisted of enhancing marketing effectiveness,

promoting tourist loyalty, improving tourist satisfaction, and increasing the number of tourists. The economic perspective included promoting income growth, reducing business expenses, and providing financial benefits. The social perspective involved the objective strategy of providing social benefits to local communities. The environmental perspective featured two objective strategies: minimizing environmental damage and pollution and preserving natural beauty and biodiversity.

Each objective strategy was measured using one or more indicators calculated based on the designed KPI formulas, resulting in the achieved target by comparing current and previous performances. The assessment used two scoring systems. The first system was HB, where the higher the values, the better; while the second was LB, where the lower the values, the better. The performance target should elaborate the organization's vision and mission. The SBSC performance management system allowed the measurement of organization performance and stimulated professional work culture and integrity in Tangkahan ecotourism.

Table 6. Results of the Tangkahan ecotourism SBSC strategy design

| Perspective | BMC Elements | OS | Indicator | KPI | Target | | |
|---|---|--|--|--|--|---|----|
| Learning and growth | Value Proposition | Improved information systems and technology investment (LG1) | The organization provides training on the use of information technology (LG1.1) | Number of trainings | HB | | |
| | | | The organization's ability to facilitate and utilize technology (LG1.2) | Number of technologies | HB | | |
| | | | Workers can master technology and information related to work (LG1.3) | The ratio of participants who attended training | HB | | |
| | | Increased knowledge and capability of members (LG2) | The organization can improve its human resources (LG2.1) | Percentage of human resources who have a license | HB | | |
| | | | The organization has a plan to ensure the welfare of its members (LG2.2) | The ratio of total human resources | HB | | |
| | | | The organization trains its members on the environment, conservation, and socio-culture (LG2.3) | The ratio of participants who participated in the training | HB | | |
| | | | The ability of members to master foreign languages (LG2.4) | Number of human resources who master foreign languages | HB | | |
| | | | The organization conducts English club activities (LG2.5) | Number of English club activities carried out | HB | | |
| | | Improved attributes of tourism products (LG3) | The organization can optimize and develop tourist attraction destinations (LG3.1) | The ratio of tourist attraction | HB | | |
| | | | The organization can sort out the attraction that becomes the icon of Tangkahan (LG3.2) | Percentage of unique tourist attractions | HB | | |
| | | | The organization's ability to provide information boards to tourist destinations (LG3.3) | Percentage of information boards to destinations | HB | | |
| | | | The organization supports the existence and quality of basic tourist facilities (access, toilets, parking) (LG3.4) | Number of facilities that exist and are suitable for use | HB | | |
| | | Internal bisnis | Key Resources | Increased member productivity (IB1) | The organization involves members in the decision-making process (IB1.1) | Percentage of participants who attended the meeting | HB |
| | | | | | The organization can create a good environmental climate (IB1.2) | Percentage of survey results | HB |
| | | | | | The organization can respond to every problem that exists in the organization fairly (IB1.3) | The ratio of problems number | HB |
| The organization provides punishment to members who commit violations (IB1.4) | Percentage of members who commit violations | | | | HB | | |
| The organization can retain the best members by providing rewards (IB1.5) | Percentage of members who received awards | | | | HB | | |
| Key Partnership | Increased collaboration with partners (IB2) | | The organization conducts evaluations for members and stakeholders involved (IB2.1) | Percentage of survey results | HB | | |
| | | | The organization can collaborate and share resource innovations with other organizations (IB2.2) | Number of collaborations in organizing an activity | HB | | |
| | | | The organization communicates the pros and cons of the organization's existence with partners (IB2.3) | Number of meetings held with partners | HB | | |
| | | | The organization can increase collaboration with other organizations (by using CSR) (IB2.4) | Number of collaborations with new organizations | HB | | |
| Key Activities | Increased quality service (IB3) | | The organization can identify what the needs of tourists are at the moment (IB3.1) | The organization can meet tourist demand | HB | | |
| | | | The organization checks manages, and develops facilities that support tourism activities (IB3.2) | Number of daily HR assignments | HB | | |
| | | | The organization complies with all existing laws and regulations (IB3.3) | Basic written guidebook/ SOP regarding tourism activities carried out | HB | | |
| | | | A line of communication is maintained by holding weekly/monthly meetings for briefing and evaluation (IB3.4) | Percentage of weekly meetings held | HB | | |
| Channels | Enhance more effective marketing (C1) | | The organization has an overview of the market segment to be addressed (C1.1) | Number of comparisons of local tourists and foreign tourists | HB | | |
| | | | The organization has procedures to assess the quality of services provided to tourists (C1.2) | Survey of tourists regarding the quality of services from Tangkahan Ecotourism | HB | | |
| | | The organization's ability to control the market area (C1.2) | Percentage of promotion effectiveness | HB | | | |

| | | | | | | |
|---|---|---|--|--|---|----|
| Customers | Customer Relationship | Increase traveler loyalty (C2) | Organization's ability to retain tourists (C2.1) | Number of tourists who come back | HB | |
| | | | The organization accommodates complaints from tourists regarding the shortcomings of ecotourism (C2.2) | Percentage of survey results | HB | |
| | | | Number of incidents of biodiversity/ environmental violations by tourists (C2.3) | Number of incidents from tourists | LB | |
| | Customer segments | Improving traveler satisfaction (C3) | Workers can serve tourists well (C3.1) | Percentage survey of tourist satisfaction with services | HB | |
| | | | The ability of the organization to meet the needs of tourists (C3.2) | Percentage of survey results | HB | |
| | | | The organization knows tourist satisfaction with access to tours (C3.3) | Percentage of survey results | HB | |
| | | | The organization can package tour packages attractively (C3.4) | The existence of a guidebook/e-guide for tourists | HB | |
| | Revenue stream | Increasing income-earning growth (EC1) | The organization has data on the growth of tourists every year (C4.1) | Percentage of the number of tourist visits | HB | |
| | | | The organization has an effort to evaluate changes in the number of tourists annually (C4.2) | Percentage of local and foreign tourists | HB | |
| | | | The ability of the organization to obtain income for organizational needs (EC1.1) | Amount of income earned from each type of income-earning source | HB | |
| Economy | Cost Structure | Minimizing business expenses (EC2) | The organization's ability to obtain new sources of income (EC1.2) | Number of collaborations with new organizations | HB | |
| | | | Profits earned by the organization (EC1.3) | Percentage of income | HB | |
| | | | Availability of financial reports (EC2.1) | Percentage of survey results | HB | |
| | Benefit financially (EC3) | The organization's ability to prioritize expenses and minimize costs incurred (EC2.2) | Data collection for costs incurred | LB | | |
| | | The organization's ability to increase sales of services provided (EC2.3) | Percentage of survey results | HB | | |
| | | The suitability of the wages of the members with the workload (EC3.1) | Income earned | HB | | |
| | | The organization employs women in ecotourism activities (EC3.2) | Percentage of women employed | HB | | |
| | Social | Customer Relationship | Provide social benefits to local communities (Si) | The organization employs local communities in ecotourism activities (EC3.3) | Percentage of the local community employed | HB |
| | | | | The organization provides business opportunities to maximize financial benefits for the community (EC3.4) | Number of business opportunities that can be utilized | HB |
| | | | | The organization performs cultural conservation actions (behaviors that are compatible with community activities) (Si.1) | Number of conservation measures | HB |
| The organization invests its income in local community activities (Si.2) | | | | Amount of money invested | HB | |
| Organization's ability to build relationships with local education and training institutions (Si.3) | | | | Number of partnerships | HB | |
| Local communities are satisfied with the organization's presence (Si.4) | | | | Percentage of community survey results | HB | |
| The organization conducts local meetings to discuss policies implemented (Si.5) | | | | Number of community participants in policy discussions | HB | |
| The organization has an ecotourism plan in collaboration with government or private agencies (Si.6) | Number of collaboration plans with government or local agencies | HB | | | | |
| Number of people who participate in empowerment (Si.7) | Number of people involved | HB | | | | |
| Environment | Key activities | Minimize environmental damage and pollution (EN1) | The organization's ability to effectively manage waste and waste, such as holding a waste bank (EN1.1) | Amount of waste | LB | |
| | | | The ability of the organization to educate tourists to do self-service (EN1.2) | Number of tourists who do self-service | HB | |
| | | | The organization's ability to plan the arrangement of vendors (EN1.3) | Number of traders recorded with the number of traders in the field | LB | |
| | | | Organization's ability to provide waste in appropriate quantities and locations (EN1.4) | Number of trash bins available | HB | |

| | | | | |
|------------------------------------|--|---|--|----|
| Value Propositions & Key Resources | Preserve natural beauty and protect biodiversity (EN2) | The organization has protection efforts for endangered/captured species (EN2.1) | Number of violations that exist and are successfully handled | HB |
| | | The organization has a complaint platform about KH conservation areas (EN2.2) | Number of grievance receptacles in place | HB |
| | | Organization incurs protection costs for biodiversity out of the total budget in a year (EN2.3) | Total cost invested | HB |
| | | Organization's ability to meet elephant feeding needs (EN2.4) | Number and type of elephant feed | HB |
| | | Organization's ability to provide facilities that meet elephant needs (EN2.5) | Number of facilities available and fit for use | HB |
| | | The organization routinely conducts elephant health checks and responds appropriately to elephant conditions and behavior changes (EN2.4) | Number of health checks conducted | HB |
| | | The ability of members to interact with elephants (EN2.5) | Percentage of survey results | HB |
| | | Ability to manage captive elephants according to their natural habitat (EN2.6) | Percentage of survey results | HB |

Conclusion

The local community within Lembaga Pariwisata Tangkahan (LPT) managed Tangkahan ecotourism, reflected in nine main BMC elements. The nine BMC elements consisted of Value Proposition, Key Resources, Key Activities, Key Partnerships, Customer Segments, Channels, Customer Relationships, Revenue Streams, and Cost Structure. The SWOT analysis suggested a new BMC visualization for Tangkahan ecotourism to improve organizational performance by enhancing various aspects of the nine elements. The design of SBSC management yielded 16 strategies, including enhancing information systems and technology investment, member knowledge, capabilities and productivity, tourism product attributes, collaboration with partners, effective marketing, quality services, tourist satisfaction and loyalty, number of tourists, income growth, minimizing business expenses, providing financial and social benefits for local communities, minimizing damage and environmental pollution as well as maintaining the natural beauty, and protecting biodiversity.

In the key partnership element, Tangkahan Ecotourism had the opportunity to strengthen collaborations with partners. Organizations had various motivations for engaging other parties to ensure the sustainability of their operations. One potential activity was the implementation of Corporate Social Responsibility programs, driven by the desire to improve their reputation within the local

community and find effective methods to mitigate environmental protests associated with business activities. Partnerships can contribute to resources in various forms (capital, effort, and time), enable better decision-making during conflicts or complicated issues, increase flexibility in activity implementation, reduce risks and losses, and protect mutual interests according to the agreed terms. In the value propositions element, the daily involvement of elephants in ecotourism activities remained a topic of debate due to the lack of a standardized assessment system ensuring internationally accepted elephant welfare. Therefore, further analysis was required to develop scientific-based protocols addressing welfare concerns and improving the management system to ensure the well-being of all stakeholders involved, including elephants, mahouts, tour managers, and ecotourism tourists. In the key activities element, waste management in Tangkahan ecotourism required further analysis to raise awareness among local communities and tourists. Improving regulations, encouraging conservation practices, and implementing a more comprehensive waste management system from downstream to upstream could promote a greater sense of environmental responsibility.

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