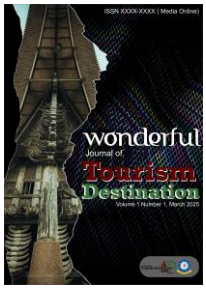
Wonderful - Journal of Tourism Destination, Page 1-8 Volume 1 No.2 (2026)
ISSN (Online): 3123-9633
DOI: 10.33649/wjotd.v1i1.xxx
Received: 18 August 2025/ Revised: 08 August 2026/ Accepted: 08 August 2026

WONDERFUL: JOURNAL OF TOURISM DESTINATION
https://journal.poltekparmakassar.ac.id/index.php/WJoTD



Business Model Planning for the Situmurun Waterfall Tourism Attraction Based on the Business Model Canvas

Arie Afandi Manalu[1]
Politeknik Pariwisata Medan, Indonesia, 90244[1,2,3,4,5]
*Corresponding author's email : afandi.arie44@gmail.com

Abstract
Situmurun Waterfall, located in Jonggi Nihuta Village, Toba Regency, is one of the geosites within the UNESCO Global Geopark of Lake Toba, holding great potential as a natural tourist attraction. However, the management of this destination still faces several challenges, including damaged infrastructure, weak local institutions, and the absence of a structured business strategy. This study aims to analyze the internal and external conditions of Situmurun Waterfall management through SWOT analysis and to formulate a business model plan using the Business Model Canvas (BMC). The research employed a qualitative approach with data collection techniques including observation, in-depth interviews, and document review. The findings indicate that development strategies should focus on leveraging the natural uniqueness of the waterfall through digital promotion, enhancing local human resource capacity, improving supporting facilities, and strengthening multi-stakeholder collaboration. The integration of SWOT analysis into the nine elements of BMC resulted in an adaptive, applicable, and sustainable business model. Theoretically, this study contributes to the literature on applying BMC to natural tourist attractions, an area that remains underexplored. Practically, the results provide guidance for local governments, communities, and private partners in developing Situmurun Waterfall into an inclusive, competitive, and globally recognized destination.

Keywords: Situmurun Waterfall, SWOT, Business Model Canvas, Destination Development.

Abstrak
Air Terjun Situmurun di Desa Jonggi Nihuta, Kabupaten Toba, merupakan salah satu geosite dalam kawasan Danau Toba UNESCO Global Geopark yang memiliki potensi besar sebagai daya tarik wisata alam. Namun, pengelolaan destinasi ini masih menghadapi berbagai kendala, antara lain kerusakan infrastruktur, lemahnya kelembagaan lokal, serta minimnya strategi bisnis yang terarah. Penelitian ini bertujuan menganalisis kondisi internal dan eksternal pengelolaan Air Terjun Situmurun melalui analisis SWOT, serta merumuskan perencanaan model bisnis berbasis Business Model Canvas (BMC). Metode penelitian menggunakan pendekatan kualitatif dengan teknik pengumpulan data berupa observasi, wawancara mendalam, dan studi dokumentasi. Hasil penelitian menunjukkan bahwa strategi pengembangan dapat diarahkan pada pemanfaatan keunikan alam melalui promosi digital, peningkatan kapasitas SDM lokal, perbaikan fasilitas pendukung, serta penguatan kolaborasi multipihak. Integrasi analisis SWOT ke dalam sembilan elemen BMC menghasilkan model bisnis yang adaptif, aplikatif, dan berkelanjutan. Secara teoretis, penelitian ini berkontribusi pada pengembangan literatur tentang penerapan BMC pada daya tarik wisata alam, yang masih jarang dikaji. Secara praktis, hasil penelitian dapat menjadi panduan bagi pemerintah daerah, masyarakat, dan mitra swasta dalam mengembangkan Air Terjun Situmurun sebagai destinasi unggulan yang inklusif, kompetitif, dan berdaya saing global..

Kata kunci: Air Terjun Situmurun, SWOT, Business Model Canvas, Pengembangan Destinasi.

1. INTRODUCTION

Indonesia possesses diverse natural and cultural resources that serve as the primary foundation for tourism development. One of the areas designated by the government as a Super Priority Tourism Destination is Lake Toba, which has also been recognized as a UNESCO Global Geopark. Within

Copyright: ©2024 Open Access/Author/s – Online (a Creative Commons Attribution-ShareAlike 4.0 International License)

this area, Situmurun Waterfall is a unique attraction featuring a waterfall approximately 70 meters high that flows directly into Lake Toba, making it a geosite with scientific and educational value, as well as strong potential for community-based geotourism.

Nevertheless, this considerable potential has not been matched by adequate management. Previously constructed tourism facilities have deteriorated, local institutions such as Tourism Awareness Groups and Village-Owned Enterprises have not functioned optimally, and there is no business strategy capable of integrating local potential with market needs. This has created a gap between the potential of the tourism attraction and the reality of its management in the field, resulting in suboptimal economic, social, and environmental benefits for the surrounding community (Ferianto & Setyawati, 2024; Suryanto et al., 2021).

The urgency of this research lies in the need to formulate a business model that is oriented not only toward increasing visitor numbers but also toward environmental sustainability and community empowerment. In line with the paradigm of sustainable tourism and community-based tourism, community-based business planning is considered important to prevent excessive exploitation and encourage community involvement in maintaining the sustainability of the destination (Hidayat et al., 2023; United Nations, 2015).

This study aims to analyze the internal and external conditions of the Situmurun Waterfall tourism attraction through SWOT analysis and to formulate a business model plan using the Business Model Canvas approach. The BMC was selected because it provides a systematic framework for mapping nine key business elements, thereby enabling the development of strategies that are adaptive, measurable, and contextualized to the characteristics of the destination (Osterwalder & Pigneur, 2010).

This research contributes to the development of knowledge by addressing a research gap concerning the application of the BMC to natural tourism attractions in geopark areas. Furthermore, the integration of SWOT analysis with the BMC provides a new framework for designing practical and sustainable community-based tourism management strategies. Practically, the findings are expected to serve as a reference for local governments, tourism managers, and communities in developing Situmurun Waterfall as a competitive and inclusive leading destination.



Figure 1. Situmurun Waterfall.
Source: Author, 2024

Copyright: ©2024 Open Access/Author/s – Online (a Creative Commons Attribution-ShareAlike 4.0 International License)

.

2. RESEARCH METHODOLOGY

This study employed a qualitative approach. The selection of this method was based on the need to explore in depth the actual conditions of Situmurun Waterfall management, incorporate the perspectives of various stakeholders, and formulate a Business Model Canvas-based business model that is relevant to the local context. A qualitative approach was considered appropriate because it is capable of revealing social, economic, and institutional dynamics that cannot be measured solely through quantitative data (Sugiyono, 2019).

The research was conducted in Jonggi Nihuta Village, Lumban Julu District, Toba Regency, North Sumatra, where Situmurun Waterfall is located. This location was selected because it possesses unique natural tourism potential that has not yet been optimally managed. Data collection was conducted from 2024 to early 2025 and included field observations, interviews, and documentation to obtain a comprehensive understanding of the research object.

The research population comprised all parties directly or indirectly involved in the development of Situmurun Waterfall. Key informants were selected using purposive sampling, taking into consideration their involvement in the management or utilization of the destination. The research sample consisted of tourism managers, domestic and international tourists, local communities, including tourism business owners, guides, and boat owners, village officials, representatives of the Toba Regency Tourism Office, and private-sector parties involved through corporate social responsibility programs. The number of informants was determined until data saturation was reached, namely when interviews no longer generated significant new information (Moleong, 2018).

The primary instrument in this study was the researcher as the human instrument, supported by semi-structured interview guidelines, observation sheets, and field documentation. Observations were conducted by examining tourism facilities, environmental conditions, and interactions between tourists and local communities. In-depth interviews were conducted to explore the experiences, perceptions, and views of informants regarding tourism management. A literature review was conducted to strengthen the empirical data with a theoretical foundation (Creswell, 2016). Data validity was maintained through source and method triangulation, while reliability was strengthened through member checking to ensure the accuracy of information provided by the informants (Lincoln & Guba, 1985; Patton, 1990). Data were analyzed using SWOT analysis to identify internal and external factors affecting the development of Situmurun Waterfall (Rangkuti, 2018). The results of the SWOT analysis were subsequently incorporated into a SWOT Matrix to formulate relevant development strategies before being integrated into the nine elements of the Business Model Canvas (Osterwalder & Pigneur, 2010). This approach enables the development of a business model that is structured, applicable, and contextualized to the characteristics of the destination.

3. FINDINGS AND DISCUSSION

3.1 Strengths, Weaknesses, Opportunities, and Threats (SWOT) of the Situmurun Waterfall Tourism Attraction

Situmurun Waterfall, located in Jonggi Nihuta Village, Toba Regency, is one of the geosites within the Toba Caldera, which is recognized as a UNESCO Global Geopark. Its main attraction is a waterfall approximately 70 meters high that flows directly into Lake Toba, a natural phenomenon rarely found in Indonesia. However, this potential has not yet been accompanied by optimal management. Previously constructed infrastructure is now damaged, transportation access is limited, and local institutions such as Tourism Awareness Groups and Village-Owned Enterprises are not yet actively involved in tourism management.

Copyright: ©2025 Open Access/Author/s – Online (a Creative Commons Attribution-ShareAlike 4.0 International License)

Based on the results of observations and interviews, findings were obtained regarding the internal and external factors affecting Situmurun Waterfall. Its main strengths lie in its natural uniqueness, quick access from the Jonggi Nihuta Village pier, and its established presence on social media. In contrast, its weaknesses include damaged facilities, the absence of a management system, and limited local human resource capacity. From the external perspective, opportunities include government support through the Lake Toba Super Priority Tourism Destination program, potential CSR collaboration, and the growing trend of nature-based tourism. The main threats include low community awareness, the migration of younger generations, and the risk of uncontrolled exploitation.



Figure 2. Environmental Conditions Surrounding Situmurun Waterfall.
Source: Author's Documentation, 2025.

Based on this mapping, development strategies were formulated using the SWOT Matrix. The SO strategy focuses on utilizing the site's natural uniqueness with the support of digital promotion; the ST strategy focuses on improving service and facility quality; the WO strategy focuses on enhancing human resource capacity through training; while the WT strategy focuses on strengthening collaboration with government and private-sector stakeholders.

Copyright: ©2024 Open Access/Author/s – Online (a Creative Commons Attribution-ShareAlike 4.0 International License)

Faktor Internal Eksternal	Strengths	Weaknesses
	1. Air terjun jatuh ke Danau Toba (unik) 2. Alam asri & eksotis 3. Akses tercepat via Desa Jonggi Nihuta 4. Sudah dikenal di media sosial	1. Infrastruktur rusak 2. Belum ada sistem pengelolaan 3. Kapal wisata terbatas dari jarak terdekat/desa 4. Pokdarwis & BUMDes tidak aktif 5. Minim SDM muda
Opportunities (O)	**Strategi SO (Strength–**	**Strategi WO (Weakness–**
1. DPSP Danau Toba 2. Potensi bantuan CSR 3. Tren wisata alam 4. Promosi digital 5. Kemitraan akademisi & travel digital 6. Meningkatkan pertumbuhan	1. Mengembangkan paket wisata eksklusif berbasis keunikan air terjun untuk pasar digital & wisata minat khusus. 2. Mempromosikan destinasi melalui media sosial dan *influencer*. 3. Mengajukan proposal CSR (Inalum, Pertamina) untuk perbaikan fasilitas. 4. Membangun kolaborasi	1. Reaktivasi Pokdarwis & BUMDes melalui pelatihan dan pendampingan. 2. Melibatkan diaspora/perantau dalam promosi digital dan penguatan SDM lokal. 3. Menyusun sistem manajemen retribusi, kebersihan, dan operasional sederhana.
Threats (T)	**Strategi ST (Strength–Threat)**	**Strategi WT (Weakness–Threat)**
1. Kerusakan lingkungan 2. Risiko kecelakaan 3. Ketergantungan pihak luar 4. Persaingan destinasi lain di sekitar danau toba	1. Meningkatkan edukasi wisatawan tentang keselamatan dan konservasi. 2. Membentuk tim relawan lokal untuk pemantauan keamanan dan kebersihan. 3. Membuat aturan pengelolaan berbasis desa (Perdes wisata). 4. Membangun branding “unik &	1.Menyusun roadmap revitalisasi infrastruktur secara bertahap. 2. Melakukan sosialisasi sadar wisata kepada masyarakat. 3. Membentuk tim jangka pendek untuk penataan lokasi & operasional terbatas. 4. Mengembangkan kemitraan antar desa agar pengelolaan lebih kolaboratif.

The results of the SWOT Matrix were subsequently integrated into the nine elements of the Business Model Canvas (BMC). Customer segments are focused on tourists seeking authentic nature-based experiences, while value propositions emphasize the uniqueness of Situmurun Waterfall, which cascades directly into Lake Toba. Channels are strengthened through digital promotion, while customer relationships are developed through personalized services provided by local guides. The primary revenue streams are derived from entrance fees, boat rentals, and local products. To support these activities, key resources include natural resources, local human resources, and infrastructure; key activities comprise promotion, community training, and tourism package development; key partnerships are established with local governments, local communities, and corporate social responsibility programs; while the cost structure focuses on operational costs, promotion, and facility maintenance.

Copyright: ©2025 Open Access/Author/s – Online (a Creative Commons Attribution-ShareAlike 4.0 International License)

3.2 Business Model Planning for the Situmurun Waterfall Tourism Attraction Based on the Business Model Canvas

Table 2. Business Model Canvas of the Situmurun Waterfall Tourism Attraction

Key Partnerships	Key Activities	Value Proposition	Customer Relationships	Customer Segments
a. Village, regency, provincial, and ministry governments.b. PT Inalum and other companies through CSR programs.c. Higher education institutions (Poltekpar Medan, USU, etc.) for education and mentoring.d. Influencers, photographers, and local digital creative practitioners.e. Travel agents, tourism operators, and nature enthusiast communities.*Derived from the SO and WO strategies*	a. Infrastructure development and tourism area arrangement, including a floating pier, information center, pedestrian facilities, MSME areas, toilets, etc.b. Training for local guides, Tourism Awareness Groups, and Village-Owned Enterprises.c. Regular and professional digital promotion.d. Management of cleanliness, safety, and visitor flows.e. Development of additional tourism attractions: boat packages, viewpoints, water sports, and environmental education.*Derived from the WO and WT strategies*	a. A unique experience: the only waterfall in Lake Toba that cascades directly into the lake.b. Fast and exclusive access through the local village, approximately 10–15 minutes by boat.c. Natural surroundings and spectacular views of Lake Toba.d. Potential for special-interest tourism, including sports tourism and healing tourism.*Derived from the SO and ST strategies*	a. Friendly and educational services provided by local residents as guides.b. Visitor testimonials as a form of organic promotion.c. A simple reservation system based on WhatsApp or social media.d. Involvement of tourists in local activities, such as environmental education and tourism clean-up activities.*Derived from the ST and WT strategies*	a. Domestic special-interest tourists, including backpackers, nature enthusiasts, and tourists interested in lakes and photography.b. Local tourists from Toba and North Sumatra.c. Outdoor communities, including nature photography, camping, and touring communities.d. Academics, university students, and environmental education communities.e. Social media users interested in ecotourism destinations that are not yet crowded.*Derived from the SO and WO strategies*

Copyright: ©2024 Open Access/Author/s – Online (a Creative Commons Attribution-ShareAlike 4.0 International License)

The results show that the integration of SWOT and BMC can produce a business plan that is adaptive to local characteristics. From an academic perspective, this approach strengthens the literature on the application of BMC to natural tourism attractions, which remains relatively underexplored. From a practical perspective, this business model provides guidance for local governments, communities, and private-sector partners in managing Situmurun Waterfall in an inclusive and sustainable manner. These findings also support the achievement of the Sustainable Development Goals (SDGs), particularly in terms of local economic empowerment, job creation, and environmental conservation (United Nations, 2015).

4. CONCLUSION

This study aims to analyze the internal and external conditions of the Situmurun Waterfall tourism attraction and to formulate a business model plan based on the Business Model Canvas (BMC). The analysis shows that Situmurun has advantages in the form of rare natural uniqueness and strategic accessibility, but faces weaknesses including damaged infrastructure, limited human resource capacity, and the absence of an integrated management system. From an external perspective, significant opportunities arise from Lake Toba's status as a Super Priority Tourism Destination and UNESCO Global Geopark, while the main threats include low community awareness and the risk of exploitation without adequate regulation.

Integrating the results of the SWOT analysis into the nine elements of the BMC resulted in an applicable business model plan, with key strategies including digital promotion, strengthening local human resource capacity, improving facilities, diversifying revenue sources, and fostering collaboration with government and the private sector. These findings are consistent with the research objective of formulating an inclusive and sustainable business-based development strategy.

Theoretically, this study contributes to the development of the literature by presenting a SWOT–BMC integration model in the context of natural tourism attractions, an approach that remains relatively underexplored. Practically, this study provides strategic guidance for local governments, village communities, and private-sector partners in managing community-based destinations. From a policy perspective, the study emphasizes the importance of regulatory support, infrastructure development, and multi-stakeholder partnerships to promote more sustainable tourism governance.

The significance of these findings lies in their ability to bridge tourism potential with concrete business strategies. Accordingly, Situmurun Waterfall can be developed as a leading destination that not only offers strong tourism appeal but also supports the well-being of local communities and environmental conservation.

As a next step, future research is recommended to examine the implementation of this business model through longitudinal studies and quantitative approaches to assess its economic, social, and environmental impacts more measurably. In addition, community involvement in management practices should be continuously monitored so that the formulated strategies can be adapted to local dynamics and market needs.

ACKNOWLEDGMENTS

The authors would like to express their deepest appreciation to Politeknik Pariwisata Medan for providing academic support throughout the research process. The authors also extend their gratitude to the Government of Jonggi Nihuta Village, the local community, and all informants who generously contributed their time and valuable information during the data collection process. Finally, the authors acknowledge the contributions of all parties involved, including fellow students, the research support team, and academic reviewers, who provided valuable input, constructive criticism, and moral support throughout the research process and the preparation of this article.

Copyright: ©2024 Open Access/Author/s – Online (a Creative Commons Attribution-ShareAlike 4.0 International License)

REFERENCES

Darmayasa, D., Nugraha, P. A., Nasution, S., Suarjana, I. W., Putra, A. M., Rante, M. W., Dinan, R., Prihartini, I., Sumarno, E., & Sibero, B. M. T. (2025). *Eduwisata di Indonesia: Potensi, peran, dan strategi*. Star Digital Publishing.

Dinan, R. (2022). Analisis competitive advantage dalam kajian sektor perekonomian unggulan Kabupaten Bima, Provinsi NTB. *Jurnal Wilayah dan Kota, 8*(2), 155–168. https://doi.org/10.34010/jwk.v9i02.7769

Dinan, R. (2023). Assessment of agricultural land carrying capacity for food availability in Situbondo Regency, Indonesia. *Jurnal Ilmiah Pertanian, 20*(1), 25–40. https://doi.org/10.31849/jip.v20i1.11809

Dinan, R. (2024). Tinjauan kebutuhan infrastruktur persampahan perkotaan dengan metode peramalan pada tahun 2022–2042 Kota Malang, Jawa Timur. *Pranatacara Bhumandala: Jurnal Riset Planologi, 5*(1), 52–63. https://doi.org/10.32795/pranatacara_bhumandala.v5i1.4316

Dinan, R., & Arief, S. (2022). Analisis agroklimat dalam penentuan potensi tanaman pangan alternatif sebagai solusi ketahanan pangan di Kabupaten Situbondo. *Jurnal Planologi, 19*(2), 219. https://doi.org/10.30659/jpsa.v19i2.23185

Dinan, R., Purnama, S. G., Pricilla, S. P., Hasibuan, R., Triastuti, U. Y., Juansa, A., & Pinaria, N. W. C. (2025). *Wisata tanpa jejak: Menuju zero waste tourism di Nusantara*. Star Digital Publishing. ISBN 978-634-7400-15-4.

Ferianto, & Setyawati, E. (2024). Model eduwisata agroindustri beras Tambelang menggunakan Business Model Canvas. *Jurnal Industri Pariwisata, 6*(2).

Hidayat, C. W., Weganofa, R., Liskinasih, A., Pgri, U., & Malang, K. (2023). Peningkatan perekonomian masyarakat dengan mengembangkan ekowisata berbasis kearifan lokal. *JPM (Jurnal Pemberdayaan Masyarakat)*. https://doi.org/10.21067/jpm.v8i1.7692

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.

Nasution, S., Kusumaningrum, H., Rahmawati, A., Rustiyana, R., Rahjasa, P. S. L., Hanggraito, A. A., Dinan, R., Sudiarta, I. N., Manuhutu, F., Putra, A. M., Asrin, M. K., Sulistia, E., Mautuka, D. P. H., Rahafuna, M. Z., & Rosardi, R. G. (2025). *Pengantar pariwisata: Buku ajar*. Star Digital Publishing. ISBN 978-634-7400-19-2.

Osterwalder, & Pigneur. (2010). *Pembuatan model bisnis: Buku pegangan bagi para visioner, pengubah permainan, dan penantang*.

Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Sage Publications.

Santosa, E., Dinan, R., & Lion, J. (2022). Socio-cultural transformation aspects of the local sustainability from a traditional community in the protected area. *IOP Conference Series: Earth and Environmental Science, 1218*, 012006. https://doi.org/10.1088/1755-1315/1218/1/012006

Suryanto, E., Suroso, A. I., & Hasbullah, R. (2021). Rancang bangun model bisnis ekowisata Grasberg pasca tambang. *Jurnal Aplikasi Bisnis dan Manajemen, 7*(3), 743. https://doi.org/10.17358/jabm.7.3.743

United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. United Nations. https://www.undp.org/sustainable-development-goals

Copyright: ©2024 Open Access/Author/s – Online (a Creative Commons Attribution-ShareAlike 4.0 International License)