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Sustainability of Wong Polo Mangrove Beach Tourism After COVID

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Abstract

This study aims to analyze business financial data to assess the sustainability of the Wong Polo Mangrove Beach Tourism business. The data collection technique was carried out using documentation techniques in the form of collecting the required data from the available financial data from 2019-2021 and comparing the efforts made by the Wong Polo Mangrove Beach Tourism manager with mangrove tourism which became an Ecotourism project launched by the Menparekraf Sandiaga Uno. Data was analyzed using quantitative and qualitative descriptive analysis. The main target of this research is to analyze financial data using the Altman Z-Score method and evaluate the efforts made for business sustainability. The result showed that Wong Polo Mangrove Beach Tourism is in a safe condition (predicted not in bankruptcy condition) but still has several shortcomings compared to other mangrove beach tourism in cities in Indonesia.

Keywords: Sustainability; Mangrove; Ecotourism; Altman Z-Score

1 Introduction

Kota Pari Village is one of the villages in Pantai Cermin Sub-district, Serdang Bedagai Regency. The village borders the Malacca Strait in the north; then, in the south, it borders Simalungun Subdistrict, the west borders Sungai Ular and the east borders Simalungun Subdistrict. The geographical location of Kota Pari Village, which is close to the beach, is a significant advantage for the community there to start a beach tourism business. The village has approximately six beach destinations: Dua Rasa Water Beach, Kuala Dewi Beach, Mutiara Dewi, Wong Rame, Wong Polo Mangrove, and Pondok Permai. These beach destinations are always full of visitors from the surrounding area or even Medan City who want to enjoy the beauty of the beach and the view of the sunset. This beach tourism business opportunity continues to be developed by offering water attractions for children to play in, such as wave pools, bubbly leisure pools, and water slides at the Pantai Cermin Theme Park tourist spot. In addition, as a place by the beach, the natural wealth there becomes a source of livelihood and efforts to preserve nature. This inspired Wong Polo Mangrove Beach Tourism to start its business.

Wong Polo, Mangrove Beach Tourism, has a beach condition that is still clean compared to other beach tours in the vicinity. The location is strategic and extraordinary because the mangrove forest is still beautiful, and the local community maintains the habitat, so it becomes one of the sources of income for them. The community formed a group and made activities to develop tourism there while retaining the existing habitat. The state of the beach, which is still clean and managed by the community with self-help, requires attention and financial support from the local government, especially the Environmental Service. This place can become a more exciting and educational tourist spot because mangrove conservation is essential. Mangroves have great functions, such as holding sea water from eroding the soil on the coastline, absorbing carbon dioxide (CO₂) gas, producing oxygen (O₂), and also as a place of life for various kinds of marine life, such as small fish that find food and shelter.

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The presence of mangrove forests is significant for the environment's survival and as a source of income for the surrounding community. Therefore, Wong Polo Mangrove Beach Tourism must be appropriately managed so that it becomes an attractive tourist spot to visit. However, the emergence of the Covid-19 outbreak has caused a decrease in the number of tourists visiting the location and impacted the community's income from the tourist spot. Therefore, it is necessary to analyze these conditions. However, there are two weaknesses in analyzing this condition. The first is no business bankruptcy prediction study to anticipate early things that can cause business bankruptcy. The last are aspects that must be considered to survive in unexpected situations.

2 Material and methods

2.1 Altman Z-Score Bankruptcy Prediction

The Altman Z-Score is a model for predicting financial distress or predicting bankruptcy developed by New York University Business Professor Edward I. Altman in 1968. Financial difficulties or bankruptcy of a company can be initiated by analyzing the signs that appear in the company's financial statement data. Altman predicts company bankruptcy by combining financial ratios that describe the company's financial condition.

Altman Z-score has 3 models, among others:

- Altman Z-Score Model (1968)
- Revised Altman Z-Score Model
- Modified Altman Z-Score Model

In this study, the Modified Altman Z-Score Model was used. Modified is a model refined by Altman in 1995[1]. This model can be applied to all companies, manufacturing, non-manufacturing (service companies, property, etc.), and bond-issuing companies in developing countries. The equation is as follows:

$$Z = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

Description:

Z = bankruptcy index

X₁ = working capital/total assets

X₂ = retained earnings / total assets

X₃ = earnings before interest and taxes/total assets

X₄ = book value of equity/book value of total debt

With the following classification:

- If the Z value < 1.1, it includes bankrupt companies.
- If the value of 1.1 < Z < 2.6, it contains a gray area (it cannot be determined whether the company is healthy or experiencing bankruptcy).
- If the value of Z > 2.6, it includes un bankrupt companies.

The explanation for each ratio is as follows:

- X₁ (Working Capital to Total Assets)
- The Working Capital to Total Assets ratio calculates the company's liquidity level by comparing net working capital to total assets. Net working capital is obtained from the reduction between total current assets and total current debt. The result of the decline in net working capital will measure the company's ability to pay off its debts.
- X₂ (Retained Earnings to Total Assets)
- The Retained Earnings to Total Assets ratio measures the company's ability to generate profits (profitability). This ratio calculates retained earnings which will be compared to all total assets. Retained earnings are profits that the company does not distribute to shareholders. A new company will have a reasonably low retained earnings balance, and vice versa. Companies that have been established for a long time will have a large retained earnings balance.
- X₃ (Earnings Before Interest and Taxes to Total Assets)
- The Earnings Before Interest and Taxes/Total Assets ratio measures the actual productivity of assets in generating earnings before interest and taxes by comparing earnings before interest and taxes with total assets.

- X_4 (Market Value of Equity to Book Value of Total Liabilities)
- The Market Value of Equity to Book Value of Total Liabilities ratio measures the company's ability to pay off its debt collateralized by share capital. Equity is obtained from the number of common and preferred shares outstanding multiplied by the market price of shares at the closing price at the end of the financial reporting period. The value of debt is calculated based on the combination of short-term and long-term debt.

2.2 Business Sustainability Strategies

The sustainable strategic growth model defines sustainability as the effective utilization of assets and information by organizations to create strategic solutions that benefit society, such as reducing environmental impact and creating socio-economic value that ensures the sustainability of organizational profitability and prosperity for future generations. To survive and thrive, MSMEs must formulate strategies to increase the chances of business survival and prosperity in terms of networking, brand building, having in-depth knowledge of products and business lines, market diversification, meeting customer needs, and having forward thinking and strategic management[2]

2.3 Green Economy and the Role of MSMEs

The shift towards more ecologically sustainable economic growth is becoming increasingly recognized. A green economy can fulfill economic and environmental goals by benefiting both. According to the European Environment Agency, the current model of economic development that relies on continuous resource consumption and increasing pollution cannot be sustained in a world of finite resources and ecological capacity[3].

The idea of a sustainable economy has gained global attention in recent years and is considered a key instrument in addressing sustainable growth[4]. However, a green economy should not be limited to economic aspects alone, as it would simply replace one "existing paradigm of economic growth" with another. In considering the transition to a sustainable economy, simultaneously achieving economic and environmental goals is essential [5]. Compelling evidence of human-induced climate change, resource degradation, adverse impacts of increasing greenhouse gases and pollution, and land and water degradation point to the need for changes in policy and implementation. Most importantly, the "baseline" scenario in the Environmental Outlook to 2050 produced by the Organization for Economic Cooperation and Development (OECD) estimates that fossil fuels will provide about 85% of global energy demand by 2050 unless the worldwide energy balance changes. Almost 50% increase in greenhouse gas emissions and severe air pollution adversely affecting the population's quality of life. The number of premature deaths from exposure to particle pollution could quadruple from current levels to 3.6 million per year. Global water consumption is expected to increase by 55% by 2050. Water scarcity is worsening, with an estimated 3.2 billion people living in severely water-stressed watersheds. Global terrestrial biodiversity is expected to be lost by 10% by 2050. These estimates highlight the need to make the global economy and international trade more sustainable and responsible, while raising awareness of human impact on the environment which has pushed the concept of green economy to the forefront in recent years.

Micro, Small, and Medium Enterprises (MSMEs) can support enterprises to improve resource efficiency and reduce environmental impacts. They can enhance their competitiveness by lowering operational costs and opening access to new markets while increasing their resilience. ASEAN members are committed to boosting economic growth and ensuring the sustainability of power systems and ecosystem services. Therefore, now is the right time to take steps to support the greening of MSMEs. These actions are significant in the face of global economic hard times due to the COVID-19 virus, which requires strong government support. ASEAN has developed the ASEAN Comprehensive Recovery Framework (ACRF) as an exit strategy from the COVID-19 crisis. The approach in this framework can support actions to promote the transition to a green and circular economy. It can be implemented through the ACRF plan under a broad strategy to achieve a more sustainable and resilient future. Governments can support MSMEs in adopting green practices through policies that ensure that the green transition is seen as a business opportunity, not just a compliance cost. Governments are essential in creating enabling conditions for adopting green practices by MSMEs.

Various studies are conducted to identify factors that encourage MSMEs to implement the green economy. One of them is research conducted by Moorthy, which found the following [6]:

- Economic benefits are the main factors that encourage businesses to implement green practices, including efficient use of resources and inputs, more efficient production techniques, and a better position in the eyes of stakeholders.
- Financial incentives, such as access to green finance, soft green loans, exemptions from import duties, and taxes on investments related to green practices, are also motivating factors.

- Demand from stakeholders, both internal such as owners and employees, and external such as individual customers and government procurement agencies, also influences MSME decisions to implement green practices.
- Regulations can encourage the adoption of green practices and facilitate capacity building.
- Resources and knowledge, time and money to implement green practices, and awareness of potential benefits are also factors that influence MSME decisions.

2.4 Methods

This research uses descriptive and verification methods. The population in this study is the financial statements of Wong Polo Mangrove Tourism. The sample used is the 2019-2021 financial report. The data analysis technique aims to describe the data to solve problems based on the data obtained. Bankruptcy research conducted by Altman (1968) uses multiple discriminant analysis (MDA). MDA was chosen as an appropriate statistical technique for his study even though it is not as popular as regression analysis. Discriminant function analysis is a statistical technique that allows researchers to determine which continuous variables distinguish between two or more naturally occurring groups [7]. When the analysis involves two groups, the method is called discriminant analysis. The technique is called multiple discriminant analysis (MDA) when there are more than two groups. Because this research aims to investigate whether Wong Polo Beach Tourism in Pari City is bankrupt, it is very appropriate to use this analysis technique. MDA can be used to optimize the predictive discriminant function calculated from the predictor variable to distinguish the level of the dependent variable maximally; it can also derive a classification function that will classify subjects into different groups with better accuracy than chance accuracy.

3 Results

3.1 Descriptive Statistical Analysis

Descriptive statistics provide an overview or description of the data seen from the minimum, maximum, average, and standard deviation values. The descriptive statistical results of this research data can be seen as follows:

Table 1 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
ASET_LCR	3	70.440.441	80.777.953	75.902.674	5.193.690
KWJB_LCR	3	31.100.441	44.982.447	38.068.628	6.941.162
TOT_ASET	3	70.954.656	81.367.632	76.456.763	5.231.604
LABA_DITHN	3	19.420.289	45.142.425	28.168.640	14.702.053
EB_IT	3	-11.099.080	-2.069.658	-7.424.471	4.743.409
TTL_EKUITAS	3	40.883.638	50.737.952	45.682.618	4.932.156
TTL_HUTANG	3	35.854.791	42.859.500	39.095.943	3.531.453
Valid N (listwise)	3				

Source: Data processed, SPSS 22 (2023)

When comparing the average value with the standard deviation for the distribution of the current asset value of Wong Polo Mangrove Beach Tourism is quite good (Rp 75,902,674 > Rp 5,193,690), the distribution of the current liability value is quite good (Rp 38,068,628 > Rp 6,941,162), the distribution of total asset value is quite good (Rp 76,456,763 > Rp 5,231,604), the distribution of retained earnings value is quite good (Rp 28. 168,640 > Rp 14,702,053), the distribution of EBIT value is not good (Rp -2,069,658 > Rp 4,743,409), the total equity value is quite good (Rp 45,682,618 > Rp 4,932,156), and finally, the distribution of the total debt value is also quite good (Rp 39,095,943 > Rp 3,531,453).

3.2 Calculating Financial Ratio Values

At the next stage, the calculation of financial ratios with the Altman Z-Score model is carried out, namely to find the values of X_1 , X_2 , X_3 , and X_4 :

3.2.1 Net Working Capital to Total Asset (WCTA) denoted by X_1 .

This ratio of net working capital to total assets shows the company's ability to generate net working capital from all total assets owned. The formula calculates this ratio:

$$X_1 = (\text{Net Working Capital}) / (\text{Total Assets})$$

The following are the results of the calculation of the X_1 value for each year:

$$X_1 \text{ for 2019} = (76,489,628 - 31,100,441) / 77,048,002 = 0.5891$$

$$X_1 \text{ for 2020} = (80,777,953 - 38,122,998) / 81,367,632 = 0.5242$$

$$X_1 \text{ for 2021} = (70,440,441 - 44,982,447) / 70,954,656 = 0.3587$$

3.2.2 Retained Earnings to Total Asset (RETA), which is denoted by X_2

This ratio of retained earnings to total assets shows the company's ability to generate retained earnings from the company's total assets. Retained earnings are profits that are not distributed to shareholders. The formula calculates this ratio:

$$X_2 = (\text{Retained Earnings}) / (\text{Total Assets})$$

The following are the results of the X_2 calculation for each year:

$$X_2 \text{ for 2019} = 45,142,425 / 77,048,002 = 0.5859$$

$$X_2 \text{ for 2020} = 19,943,207 / 81,367,632 = 0.2451$$

$$X_2 \text{ for 2021} = 19,420,289 / 70,954,656 = 0.2737$$

3.2.3 Earnings Before Interest and Taxes to Total Asset (EBITTA), which X_3 denotes

The ratio of earnings before interest and taxes to total assets shows the company's ability to generate profits as measured by the number of earnings before interest and taxes compared to total assets. The formula calculates this ratio:

$$X_3 = \text{EBIT} / (\text{Total Assets})$$

The following are the results of the calculation of X_3 for each year:

$$X_3 \text{ for 2019} = (-9,104,676) / 77,048,002 = -0.1182$$

$$X_3 \text{ for 2020} = (-11,099,080) / (81,367,632) = -0.1364$$

$$X_3 \text{ for 2021} = (-2,069,658) / (70,954,656) = -0.0292$$

3.2.4 Total Equity to Total Debt Ratio (TETD), which X_4 denotes

This total equity to total debt ratio measures the company's ability to meet its obligations from its capital. The formula calculates this ratio:

$$X_4 = (\text{Total Equity}) / (\text{Total Debt})$$

The following are the results of the X_4 calculation for each year:

$$X_4 \text{ for 2019} = 50,737,952 / (35,854,791) = 1.4151$$

$$X_4 \text{ for 2020} = 45,426,264 / (42,859,500) = 1.0599$$

$$X_4 \text{ for 2021} = 40,883,638 / (38,573,538) = 1.0881$$

3.3 Calculating bankruptcy analysis with the Modified Altman Z- Score Model

After calculating the financial ratios in the previous section, the next step is to predict whether Wong Polo Mangrove Beach Tourism is included in the bankrupt, a gray area, or not bankrupt category using the Z Score calculation for each year. The following are the results of the measure:

$$Z \text{ Score tahun 2019} = 6,56 (0,5891) + 3,26(0,5859) + 6,72(-0,1182) + 1,05(1,4151) = 6.46$$

$$Z \text{ Score tahun 2020} = 6,56 (0,5242) + 3,26(0,2451) + 6,72(-0,1364) + 1,05(1,0599) = 4.43$$

$$Z \text{ Score tahun 2021} = 6,56 (0,3587) + 3,26(0,2737) + 6,72(-0,0292) + 1,05(1,0881) = 4.19$$

If presented in a table format, it would look like this:

Table 2 Z Score Calculation Wong Polo Mangrove Beach Tourism 2019-2021

Year	X ₁	X ₂	X ₃	X ₄	Z Score	Conclusion
2019	0,5891	0,5859	-0,1182	1,4151	6.46	Safe
2020	0,5242	0,2451	-0,1364	1,0599	4.43	Safe
2021	0,3587	0,2737	-0,0292	1,0881	4.19	Safe

Source: Data processed (2023)

From the calculation of the Z value in Table 2, it can be concluded that in 2019, 2020, and 2021, Wong Polo Mangrove Beach Tourism is in a safe condition (not experiencing bankruptcy).

4 Discussion

Effective implementation of financial risk management can positively impact company performance [8]. However, companies with high liquidity tend to feel burdened with high costs when implementing Financial Risk Management (FRM), so they choose not to implement it. Meanwhile, companies with insufficient liquidity and experiencing financial difficulties can use the external derivatives market to maintain stable cash flows and minimize financial risks, so they can continue to develop their business sustainably and smoothly [9].

The COVID-19 outbreak in Indonesia has had a devastating impact on the economy. In addition, there are signs that half of MSMEs will go bankrupt during the pandemic [10]. MSMEs must implement a survival strategy using Business Cycle Management to avoid the worst risks during the pandemic. A typical business life cycle includes the stages of establishment, expansion, high growth, maturity, and decline. In the early establishment stage, MSMEs require high operational costs from the founders.

Meanwhile, at the expansion stage, the costs incurred will be shared with business partners. MSMEs achieve considerable revenue at the high-growth stage, so charges decrease. There is a maturity phase in MSMEs when the need for external funds decreases because internal capital is sufficient. The decline phase occurs when the business has reached its maturity. This decline can occur as competition intensifies and the market becomes saturated. In this phase, the sustainability of MSMEs is tested, mainly when systematic risks arise in the economic climate. All businesses must manage risk to anticipate possible risks [11]. Some of the efforts that can be made include creating changes to find opportunities for success, making the right and quick decisions, planning finances well, planning the business thoroughly, conducting effective team management, executing plans well, and starting at the right time [12].

One essential aspect is the application of risk management. However, not many MSME players understand and pay attention to risk management. Safi'i's research findings show that at least three risks are high [13]. The three risks are decreased revenue, decreased production, and increased raw material prices. At moderate risk, MSMEs will experience delays in the delivery of raw materials. Strategies that MSME players can implement are financial, resizing, and looking for new markets. Finding new markets with the help of social media and government policies is not easy to do. But during a pandemic, changes in marketing strategy are reasonable [14]. If the strategy is not changed from the start, it is feared that business continuity will be disrupted. One way to determine what strategy to implement is to analyze the company's current financial condition, and what the author chooses to discuss in this study is using the Altman Z Score model bankruptcy prediction.

An exciting and significant topic in the business field is research on bankruptcy prediction. Accurate and timely predictions are invaluable for organizations, small and medium-sized enterprises (SMEs), or large enterprises in evaluating risks or detecting bankruptcy early on, thereby preventing default. Several pioneers have conducted research on bankruptcy prediction, such as Beaver (1966), Springate (1978) from Canada, Fulmer Model (USA, 1984), Ca-score (Canada, 1987), the logistic regression model by Ohlson (1980), artificial neural network model by Thomaidis et al. (1998), Hsieh et al. (2006), and others. Regarding model form, formula, analysis system, and sample, bankruptcy prediction models continue to evolve.

Insolvency is a complex financial condition causing a company to be unable to operate smoothly and correctly. Meanwhile, financial distress is a financial or liquidity difficulty that may be the beginning of insolvency. Analyzing financial distress will greatly assist decision-makers in determining their stance toward companies experiencing financial problems. Therefore, a model needs to be sought regarding indicators of companies experiencing financial difficulties and possibly becoming insolvent. The parties were interested in knowing the financial distress model and predicted insolvency are as follows: creditors, to make decisions on whether to provide loans with certain conditions or design policies to monitor existing loans; investors, to help determine their stance towards debt securities issued by a company; Regulatory Authorities, such as accounting associations, capital market watchdogs, or other institutions, to help issue regulations that can protect public interests; government, to cover labor, industry, and society, safeguarding them from losses and possible disruptions to the country's economic and political stability; auditors, to be able to audit and provide opinions on a company's financial statements more effectively; management, to be able to make the best essential decisions for the company.

Based on the Z Score calculation results shown in Table 2, it can be concluded that the financial condition of Wong Polo Mangrove Beach Tourism is fine (showing no signs of bankruptcy). However, the author observed and received information from the manager that the number of visitors has decreased significantly since the outbreak of Covid-19. Although the economy has improved and the Covid-19 outbreak has begun to subside, the government still urges the public to remain vigilant. Until the last confirmation at the end of February 2023, the number of visitors has not yet increased. The state of Wong Polo Mangrove Beach, which still survives despite the impact of the Covid-19 pandemic, is inseparable from the efforts made by its managers and hopes for an increase in the number of visitors. Although it takes time to reach this tourist location, Mangrove Beach is still attractive with its unique beach beauty and the combination of the sound of ocean waves and mangrove leaves that soothe the hearts of visitors [15].

Wong Polo Mangrove Beach is still a favorite of tourists because it has several unique advantages. First, the lush and cool mangrove forest creates a romantic atmosphere. This area was previously a tiger shrimp pond in the 1980s, but due to abrasion, residents began planting mangrove trees independently in 2005 to restore healthy beach conditions. In 2012, a cooperative was built to manage the beach as a tourist attraction. Secondly, the bamboo bridge that crosses over the sea adds to the beauty of the mangrove forest. Visitors can see wet sand at low tide with various marine animals trapped. But when the sea is high, small seawater waves will decorate visitors' feet. Third, the white sand beach has huts lined up to unwind while enjoying the sea breeze or having a picnic with the family. Fourth, lodging is available in the middle of the mangrove forest for those who want to enjoy the nuances of a beautiful beach for a longer time. In addition, Wong Polo Mangrove Beach Tourism also conducts mangrove forest conservation activities, such as feed management with mangrove-based ingredients and intensive pond maintenance where all mangrove plants are cleaned except those left in the pond. It supports the government program through the Indonesian Ministry of Tourism and Creative Economy, as stated in the Sustainable Trend section in the Tourism Industry Trend Book 2022-2023 [16]. Environmental issues concern many people, especially during the last pandemic. When people reduce their mobility, they feel the difference in the surrounding environment. Generally, when going to work, many people are forced to be exposed to pollution due to the large number of vehicles heading to the workplace. However, this condition was drastically reduced after the government imposed the Restriction of Community Activities (PPKM). Based on a study conducted by the Hakuodo Institute of Life and Living ASEAN, around 86 percent of Indonesians have realized the importance of considering the impact of a product on themselves and the environment [17].

According to the Sustainable Development Goals report in the journal Nature Climate Change, global tourism currently contributes 8 percent to global emissions, with 40 percent coming from transportation services [18]. Tourism industry players can leverage this issue, and the Ministry of Tourism and Creative Economy has launched the Carbon Footprint Program to raise awareness and concern among stakeholders in the tourism industry [19]. The program will be implemented in five pilot destinations selected by local governments, namely Plataran Menjangan in West Bali National Park, Tembudan Berseri Mangrove in Berau, 3 Warna Beach in Malang, Bukit Peramun in Belitung and Klawalu Mangrove Tourism Park in Sorong.

Reviewing several previous research results is a valuable suggestion for the Wong Polo Mangrove Beach Tourism manager. One of them is to manage an Instagram account and post photos of tourist visits and capture new things that appear. In addition, intensive collaboration with epistemic communities to discuss and develop new things can also create more effective marketing media. In addition, a sustainable marketing strategy needs to be implemented to improve the marketing of mangrove tourism by working with other MSMEs, expanding the mangrove area as land for the surrounding community to cultivate mangrove plants, and training the community on how to grow mangrove plants. Other actions that need to be taken are:

1. Raise the awareness of the surrounding community to develop mangrove cultivation and produce various products from the plants.
2. Micro, Small, and Medium Enterprises that produce mangrove-processed products must develop products with raw materials and environmentally friendly packaging to compete in mangrove tourism areas.
3. Build facilities to cultivate mangrove plants.
4. Creating tours and MSME products with eco-green based on mangrove processing to reduce non-organic waste in mangrove areas.
5. Provide training to the community around the mangrove area on designing processed products from mangrove plants.
6. Setting up a mangrove-processed product sales point centered around the mangrove tourism area.
7. Provide product marketing training to MSME players who produce mangrove-processed products.

5 Conclusion

From the above discussion, it can be stated that Wong Polo Mangrove Beach Tourism has a healthy financial condition (does not show signs of bankruptcy) based on the calculation of the Altman Z-Score model. Therefore, it is necessary to carry out various development strategies to make this tourist spot more attractive and support environmental conservation programs.

Compliance with ethical standards

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Disclosure of conflict of interest

Our research team declares there is no conflict of interest in publishing the results of this study.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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