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MARKETING | RESEARCH ARTICLE

Sustainability Analysis of Carocok Painan Beach Area Management in Pesisir Selatan Regency

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Abstract: The Carocok Beach tourist area has tourism potential that can be developed because it is located on the coast and is easily accessible and close to the center of Painan city. This tourist area needs to consider its sustainability so that the next generation can enjoy it. The aim of this research is to analyze the sustainability status of the Carocok Painan Beach Area. The research method is qualitative and quantitative with the Multidimensional Scaling (MDS) analysis technique with the Rapid Appraisal Index Rap-fish modified into Rap-ecotourism. The sustainability status of the Carocok Painan Beach tourist area is included in the quite sustainable category with an average index value of 57.37. The index values for the 5 dimensions are the ecological dimension quite sustainable (56.16), the economic dimension quite sustainable (51.29), the social dimension quite sustainable (54.63), the infrastructure dimension quite sustainable (63.01), and the laws and institutions are quite sustainable (61.76).

Keywords: Carocok Beach, Continuity, Multidimensional Scaling, Raffish.**JEL Classification Code:** Q01, Q56, R11, Z32, Q57, L83

1. INTRODUCTION

West Sumatra is one of the provinces in Indonesia which is a tourist destination. One of the popular tourist areas in West Sumatra is the Carocok Painan Beach Area. This area has the attraction of the Samudera Ilahi Floating Mosque built on an area of 1,795 square meters, an island connected to the end of Bukit Langkisau, namely the Batu Kareta Island tourist attraction and to the west of Carocok Beach, about 200 meters from Corocok Beach can visit a historic island, namely Cingkuak Island. The level of tourists visiting this area every year continues to increase every year. Along with that, facilities in the form of infrastructure and other infrastructure facilities continue to be improved. This will certainly have an impact on the environment around the area, especially on spatial planning and a decrease in the quality of the surrounding environment. As a result, potential natural resources for coastal areas are threatened with damage and can lead to unsustainability. This study aims to assess the ecotourism sustainability status index of the Carocok Beach Tourism Area. The analysis method used is Multidimensional Scaling with the Rap-ecotourism technique modified from Rap-fish, with six dimensions: ecological, economic, social, infrastructure, legal and institutional.

2. RESEARCH METHOD AND MATERIALS

2.1. Regional Scope

The research location was carried out in the Carocok Beach Area of South Pesisir Regency, West Sumatra Province. Carocok Beach is located west of Painan City, about one kilometer from Painan Market (city center) or 75 kilometers from Padang City towards the South. This area is located at 0°59' - 2°28.6'LS 100°18' East and is in the administrative area of Painan Selatan Painan Village. More details can be seen in Figure 1.





Figure 1 Scope Map of the Research Area

2.2. Type of Research Data

Primary data sources are research locations, experts and local government officials in Pesisir Selatan Regency and West Sumatra Province. Secondary data consists of documents related to the research, such as books, theses, journals, reports, and policies related to the research. This study's secondary data sources came from the Central Bureau of Statistics (BPS), the Agriculture Office, the Regional Development Planning Agency (BAPPEDA), the Geospatial Information Agency (BIG), sub-district governments, and village governments.

2.3. Data Collection Technique

Primary data collection techniques include observation (observation), interview (interview), and questionnaire (questionnaire). Secondary data is obtained through literature reviews, related reports, research studies conducted and related documents.

2.4. Data Analysis Method

MDS analysis using Rapid Appraisal or Rap-fish (Rapid Assessment Techniques for Fisheries) on fisheries systems (Pitcher & Preikshot, 2001) modified into Rap-ecotourism. The procedure of this method is as follows (Fauzi, 2013):

1. Review of attributes (including categories and scoring).
2. Identification and definition of attributes.
3. Scoring (constructing reference points for good and bad and anchor).
4. Multidimensional scaling ordination (for each attribute).
5. Montecarlo analysis.
6. Leverage analysis.
7. Analyze sustainability/assess sustain ability.

This method accommodates the dimensions of sustainability and its description is multi-disciplinary based on the assessment of five dimensions, namely ecological, economic, social, infrastructure, legal and institutional dimensions. The score range used ranges from 0-4, 0-3, or 0-2 to reflect the accountability conditions of the dimensions assessed by constructing reference points for good, bad, and anchor. The position of the sustainability point is visualized in two dimensions with horizontal and vertical axes using the rotation method with a score point of 0% (bad) and a score of 100% (good), divided into 4 categories of sustainability status.

Furthermore, the sustainability index value of each dimension can be visualized in the form of a kite diagram. The applications used to conduct this analysis are RAPFISH 3.1 and Microsoft Excel 2010 32 bit. The sustainability index values for each dimension can be seen in Table 1.

Table 1. Sustainability Index Value

Index Value	Category
0,00-25,00	Bad: not sustainable
25,01-50,00	Less: less sustainable
50,01-75,00	Enough: sustainable enough
75,01-100,00	Good: very sustainable

Source: Nurmalina, 2008

2.5. MDS Application Process in Sustainability Status Research

The Monte Carlo analysis technique is used to evaluate the effect of attribute errors at a confidence level of 95% (Muhsoni, et al. 2021). Leverage analysis techniques were used to determine which attributes of the economic, socio-cultural, environmental, legal institutional, and infrastructure network dimensions had the most influence on sustainability. In the leverage analysis, the leverage value ranges from 2% to 6% (Fauzi, 2019: 89). Leverage factors are attributes that have sensitive values that affect the increase or decrease in sustainability status, the greater the RMS value, the greater the influence of the attribute on the sensitivity of the sustainability status (Kavanagh & Pitcher, 2004).

$$RMS = \sqrt{\frac{1}{N} \sum_{i=1}^N (X_{red} - X_{flip})^2}$$

Information:

- Xred = attribute reduction ordination result (Vflip-remove)
- Xflip = ordination result without attribute reduction (V)flip
- N = number of objects analyzed

3. RESULTS AND DISCUSSION

The results of the MDS calculation of the five dimensions of sustainability of the Carocok Painan Beach tourism area can be seen in Appendix - respectively. The MDS value (ordination) shows that the sustainability status varies in each dimension in the table below.

Table 2. Ordination Value (MDS) of Sustainability Dimensions of Carocok Painan Beach Tourism Area

Dimensions of Sustainability	Sustainability Index		Difference	Category
	MDS	Monte Carlo		
Ecology	56,15	56,01	0,14	sustainable enough
Economy	51,29	50,98	0,31	sustainable enough
Social	54,63	54,25	0,38	sustainable enough
Infrastructure	63,01	62,76	0,25	sustainable enough
Legal and Institutional	61,76	61,38	0,38	sustainable enough

Source: Data processing results using Rapsfish 2024

The results of the Monte Carlo analysis that evaluates the impact of random errors on the six dimensions show that the difference between the Monte Carlo value and the sustainability index value is less than 1. Thus, the ecotourism management model is in accordance with real conditions.

3.1. Ecological Dimension Sustainability Index

The ecological dimension consists of six attributes, including: (1) beach type, (2) beach width, (3) tourist attraction, (4) beach land cover, (5) conformity with RTRW, (6) carrying capacity of the area. The ecological dimension shows a Rap Analysis value of 56.15. This value is included in the moderately sustainable category, which is in the range of index values > 50-75. It can be interpreted that the ecological aspects of the Carocok Painan Beach Area, South Pesisir Regency, West Sumara Province



can be categorized as a fairly sustainable development. Attribute scores and the results of the leverage analysis calculation show that conformity with the RTRW is the most influential component in the sustainability of the Carocok Painan Beach area from the ecological dimension. This is because the RTRW is required to conduct a review every 5 years.

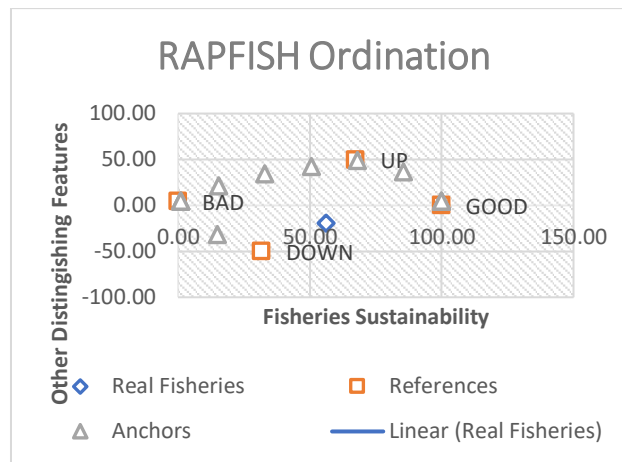


Figure 2. Sustainability of Carocok Beach Area from the ecological dimension

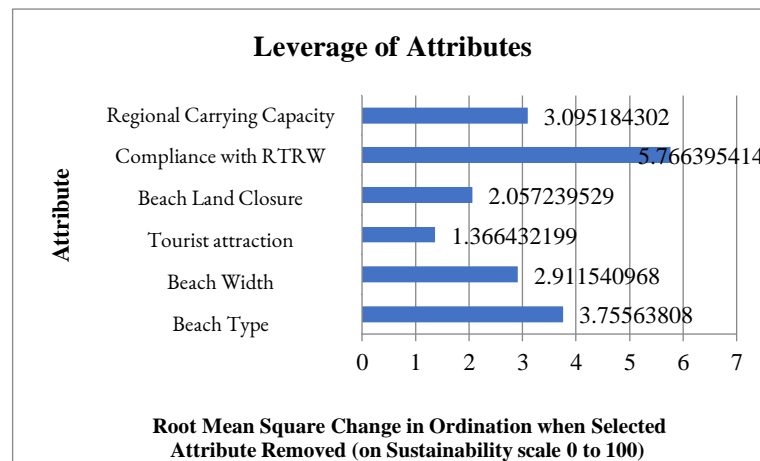


Figure 3. Ecological Dimension Leverage Diagram

3.2. Economic Dimension Sustainability Index

The economic dimension consists of six attributes, including: (1) level of community welfare, (2) tourist spending, (3) willingness to revisit, (4) tourist visits, (5) contribution to PAD, (6) tourism marketing potential. The result of ordination in the form of a symbol that forms a circle is the result of iteration to assess the ecotourism sustainability index in the economic dimension showing the category of ecotourism sustainability status is quite sustainable with an index value of 51.29% because it is in the range of index values > 50-75.

The results of the economic dimension sustainability leverage analysis provide three leverage attributes that affect ecotourism management, namely tourist spending by 1.03%; the level of community welfare by 0.98% and contribution to PAD by 0.84%. Based on the leverage analysis, the most sensitive attribute affecting ecotourism sustainability in the economic dimension is tourist spending. Based on the results of discussions with tourists, the entrance ticket to the Carocok Painan Beach area is quite affordable and even cheap, namely IDR 5000 (five thousand rupiah) per tourist. Only other expenses such as buying food, souvenirs, rides and so on make tourists' expenses high.

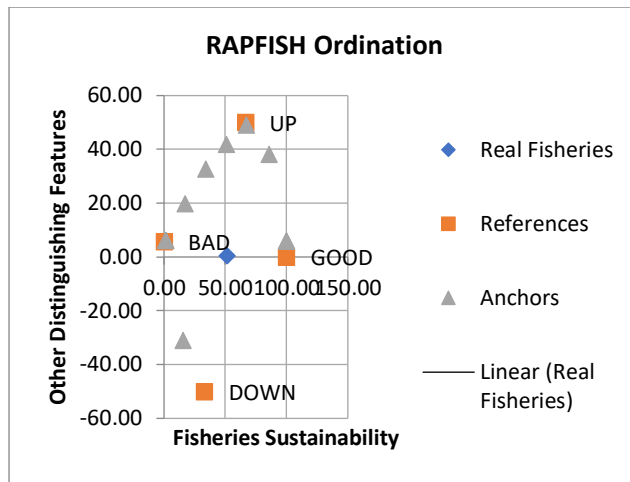


Figure 4. Sustainability of Carocok Beach Area from the economic dimension

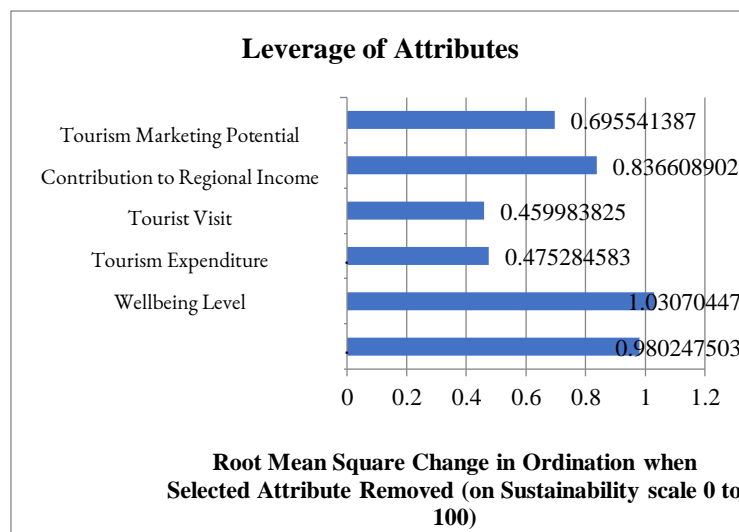


Figure 5. Economic Dimension Leverage Diagram

3.3. Social Dimension Sustainability Index

The social dimension consists of five attributes, including: (1) The level of formal education of the community, (2) Knowledge of the environment and local wisdom, (3) Potential land use conflicts, (4) The role of Sawasta, (5) The role of the government. The result of ordination in the form of a symbol that forms a circle is the result of iteration to assess the social dimension ecotourism sustainability index showing the category of ecotourism sustainability status is quite sustainable with an index value of 51.29% because it is in the range of index values > 50-75.

The results of the social dimension sustainability leverage analysis provide two leverage attributes that affect ecotourism management, namely the potential for land use conflicts at 3.54% and knowledge of the environment and local wisdom at 3.82%. Based on leverage analysis, the most sensitive attribute affecting ecotourism sustainability in the social dimension is land use conflict. This is because there are land uses in this area that function as protected areas, cultivation areas and others. Based on ownership status is government ownership, customary ownership and local ownership,

3.5. Sustainability Index Legal and Institutional Dimension

The legal and institutional dimension consists of three attributes, including: (1) availability of management regulations, (2) implementing, supervising and promoting tourism, (3) coordination between stakeholders. The results of ordination in the form of symbols that form a circle are the results of iteration to assess the ecotourism sustainability index of the legal and institutional dimensions showing the category of ecotourism sustainability status is quite sustainable with an index value of 61.76% because it is in the range of index values > 50-75. The results of the infrastructure dimension sustainability leverage analysis provide two leverage attributes that affect ecotourism management, namely the availability of management regulations at 1.61% and coordination between stakeholders at 1.47%. Regulations regarding ecotourism management and its various activities are still poorly socialized. There is a Minister of Forestry Regulation, but it does not regulate in detail. The community considers discussions on ecotourism planning, management and control to be rare. The community around the Carocok Painan Beach area considers that so far the existing regulations are only about tourism activities that can only be carried out in the utilization zone. In reality, people do not understand what and where the utilization zone is.

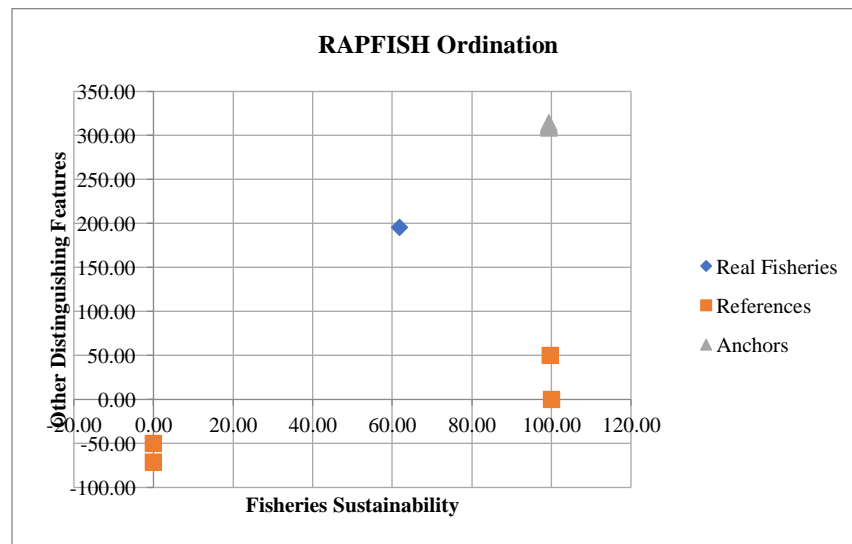


Figure 8. Sustainability of Carocok Beach Area from Legal and Institutional Dimensions

Research on the effect of price and ease of use on customer loyalty through interest in re-transacting the OVO application was carried out by distributing questionnaires via google form to respondents. As many as 80 research respondents. Where the total number of Master of Management Students Batch 48 is 80 people. In accordance with the problems and model formulation that have been stated, as well as the interests of hypothesis testing, the analysis techniques used in this study include qualitative analysis and quantitative analysis. Qualitative analysis is an analysis in the form of a description supported by the theory of data that has been tabulated and then categorized. Meanwhile, quantitative analysis is an analysis that uses formulas and calculation techniques to solve the problem being studied. The calculation technique used in this research is Path analysis. Before further analysis is carried out, the validity and reliability are first tested, so that the conclusions obtained in this study can be declared valid.

4. CONCLUSION

The conclusion of this research is that the sustainability status of the Carocok Painan Beach tourism area is included in the moderately sustainable category with an average index value of 57.37. The index value of the five dimensions, namely the ecological dimension is quite sustainable (56.16), the economic dimension is quite sustainable (51.29), the social dimension is quite sustainable (54.63), the infrastructure dimension is quite sustainable (63.01), and the legal and institutional dimensions are

quite sustainable (61.76). Suggestions from the follow-up of this research are that it needs to be improved again considering that there are still obstacles in the management of the Painan carocok beach area, especially from the attributes of implementation, supervision and promotion of tourism and the level of formal education of local communities.

REFERENCES

- Cendrakasih, Y, U., Yudha, I., G., Yuliana, D dan Maharani, H.W. (2021). Analisis Status Keberlanjutan Pengelolaan Wisata Pantai Guci Batu Kapal di Desa Maja, Kalianda, Lampung Selatan. 6(2):60-71
- Dinas Prasarana Jalan, Tata Ruang dan Permukiman. (2022). Penyusunan Rencana Tata Bangunan Dan Lingkungan (RTBL) Kawasan Carocok. Pemerintah Kabupaten Pesisir selatan. Painan.
- Fauzi, A. (2013). Analisis keberlanjutan melalui Rapid Appraisal dan Multi Dimensional Scalling (RAP+/MDS). (Bahan pelatihan). Bogor: Program Studi PSL IPB.
- Fauzi, A. (2019). Teknik Analisis Keberlanjutan. Jakarta: Gramedia Pustaka Utama.
- Indra, N., Sari,S., Rahayu, G., Oktaviandra, R., Handoko, A., Putri, V.,S.,Hanapi, M.,I. (2019). Kualitas Lingkungan dan Kesesuaian Wisata Pesisir Kawasan Carocok Painan, Kabupaten Pesisir Selatan. Jurnal Kapita Selekt Geografi. 2(5):43-51
- Kavanagh, P., & Pitcher, T. J. (2004). Implementing Microsoft Excel Software For Rapfish: A Technique For The Rapid Appraisal of Fisheries Status. 12(2).
- Muhsoni, F. F., Zainuri, M., & Abida, I. W. (2021). Evaluasi Pemanfaatan Pelabuhan Kamal Untuk Wisata Bahari Pasca Pembangunan Jembatan Suramadu Menggunakan Pemodelan Rapfish. Jurnal Kebijakan Sosek KP. 11(1): 63-73.
- Pemerintah Indonesia. (2010). Peraturan Pemerintah Nomor 52 Tahun 2010 tentang Sertifikasi Kompetensi dan Sertifikasi Usaha di Bidang Pariwisata. Jakarta.
- Pitcher, T., & Preikshot, D. (2001). RAPFISH: a rapid appraisal technique to evaluate the sustainability status of fisheries. Fisheries Research. 49:255–277
- Purwaningsih, R., & Santosa, H. (2015). Pengembangan Metode Penilaian Keberlanjutan (Sustainability Assessment) Klaster Industri Perikanan. Prosiding SNST ke-6, 1-6