

ANALYSIS OF ECOTOURISM SUSTAINABILITY FACTOR AMONG A THOUSAND ISLAND MANGROVE POPULATIONS

Hamzah Muhammad Mardi Putra

Faculty of Management, Pelita Bangsa University, Cikarang

*Corresponding author: hamzah@pelitabangsa.ac.id

Abstract. *The objective of this study is to analyze difference of variable before and after of the impact ecotourism factor with dependent samples t-test. This research uses quantitative methods through field surveys of a sample size of 40 respondents taken from a population of 23.000 population I Thousand Island District of DKI Jakarta. This sample size uses the purposive sampling of resident live in Sepa Island before ecotourism and after ecotourism with variable Economic Sustainability, Social Culture Sustainability, Environment Sustainability and Quality of Life. Conclusion of the research are There are significant differences between Economic Sustainability, Socio-cultural and Environment factor with t-test and p-value significant on clusters without (before) ecotourism and with (after) ecotourism in terms of education, employment, and monthly income of respondents. However, there were no differences in terms of Quality of Life..*

Keywords: *Perception of Ecotourism; Sustainability, Thousand Island*

1. INTRODUCTION

So far, technology has succeeded in increasing the welfare of humanity, but it is also recognized that the impact caused by technological advances also causes a lot of damage to the environment. Now the awareness of environmental damage is getting stronger in Indonesia and has received great attention. The danger of the ozone hole and the occurrence of global warming and other forms of environmental pollution are gaining more attention with the emergence of a movement known as Back-To-Nature.

Many people now want to find places that have not been touched by technology, they want to unite with nature in Indonesia, which has natural potential, flora and fauna, and a sustainable environment that is now receiving great attention so that it can be saved free from environmental influences and pollution that can cause harm to the population of Indonesia, whose numbers now reach 220 million people.

The movement back to nature which is now widely proclaimed by Non- Governmental Organizations (NGOs) and several environmental experts, is basically an opportunity for the development of ecotourism in Indonesia. we believe that the development of ecotourism is seen from the great efforts of development to increase the prosperity of the Indonesian people as well as the quality of life of the people who have suffered too long.

Meanwhile, total foreign tourist arrivals in 2015 reached 9.73 million visits, resulting in 11.1 billion dollars [1]. The number of tourists from Asean countries reached 40 percent of total foreign tourists, with Malaysia and Singapore contributing 1.49 and 1.74 million, respectively. Tourism is an extension of political relations where citizens visit each other for business, leisure and social reasons (Zengeni, N. and Zengeni, D. M. F. 2012). Regarding this economic potential, rural areas need to seize this opportunity. Especially with the approval of the implementation of the Asean Economic Community (MEA), the tourism sector is a priority to be integrated and developed (Asean. 2012).

2. LITERATURE REVIEW

What is Ecotourism? In Indonesian the term ecotourism is translated as "Ecotourism", which is a kind of environmentally friendly tourism. That is, through activities related to nature, tourists are invited to see nature up close, enjoy the authenticity of nature and the environment so as to make it tempting to love nature. All of this is often referred to as Back-To-Nature. Unlike tourism that we are familiar with, ecotourism in its implementation does not require the availability of modern or glamorous accommodation facilities that are equipped with luxurious equipment or artificially excessive buildings.

Basically, ecotourism in its implementation is carried out with simplicity, maintaining the authenticity of nature and the environment, maintaining the authenticity of art and culture, customs, living habits (the way of life), creating calm, silence, maintaining flora and fauna, and maintaining the environment so that creating a balance between human life and its natural surroundings. For example, Kotok Island, one of the islands in the Seribu Island group in North Jakarta. The island was arranged in such a way that it seemed never to get a touch of the modern world. Tourists who are hired there sleep in homes just like ordinary people's homes, use dipper showers, toilets (slightly modified), chairs and halls for resting places. The trail is also not paved, but is arranged neatly and cleanly and migrants should not litter.

So, ecotourism is not a type of tourism that is merely wasting money or glamorous tourism, but rather a type of tourism that can increase knowledge, broaden horizons, or learn something from the natural, flora and fauna, or local ethnic socio-culture. In ecotourism there are four elements that are considered very important, namely the element of pro-active, concern for environmental preservation, involvement of local residents, elements of education. Tourists who come not only to enjoy the natural surroundings but also learn it as an increase in knowledge or experience.

Emil Salim, the former Minister of Population and Environment in the Daily Friday edition of April 12, 1991 gave the following restrictions on ecotourism: Ecotourism is tourism that is environmentally sound and its development always pays attention to the balance of values. Therefore, said Emil Salim, the natural environment and cultural wealth are the main assets of Indonesian tourism that must be maintained so as not to be damaged or polluted.

Entin Supriatin in his article entitled "There Are Five Elements in Ecotourism Management", which was published in Tourism News on October 21, 1997, provided limits on ecotourism as follows: Purposeful travel to natural areas to understand the nature of natural environment, taking care of economic opportunities that make the conservation of natural resources beneficial to local people (Ecotourism Society).

Freely the limitation can be interpreted as follows: Ecotourism is a type of tourism whose activities merely enjoy activities related to the natural environment with all forms of life in conditions as they are and tend to be an arena or environment for tourists by involving communities around the ecotourism project area.

This research raises ecotourism activities in Sepa Island of Thousand Island in DKI Jakarta, about perceptions of social and cultural life, environment and economic activities. Village social and cultural life in terms of housing (houses), clothing, food (drinks), arts, traditions, values / norms and the dynamics of their lives, can be promoted to add value to tourism. The potential of natural mountains, beaches, lakes, seas, valleys, rivers in the area can also be used for roaming, sports, or adventure.

Economic potentials such as agribusiness (agriculture, plantation, fisheries, livestock, forestry), home industries, or other supporting sectors in the research villages, provide significant economic added value to the local population. This potential can increase economic activity driven by complex factors, supply-demand, internal-external influences, innovation-creation, leadership and organization, and the dynamics of village life.

Elsewhere, ecotourism services always show cluster characters (Fodor, A. and Sitanyi, L. 2008). The ecotourism cluster is an ecotourism organization (Prieto, L.C., Gilmore, J. and Osiri, J. K. 2009), which involves all stakeholders including local communities, non-governmental organizations, private actors, national parks and the government. They form synergies to supply ecotourism entrepreneurship. Social entrepreneurship is an important component as a basis for ecotourism entrepreneurship. This requires all parties to act as social entrepreneurs in the organization.

Ecotourism business services operate very efficiently. This is demonstrated through management principles as a group of visitors with low volume, high quality services, and high value added as expected in the early stages of ecotourism development in the two research villages.

Some common trends have been noted in Indigenous-led entrepreneurship. In Canada, for example, many Aboriginal communities continue to rely on the natural resource based industries and the use of common property resources as the backbone of new economic opportunities, but are working to enhance local control and benefit from these activities (Anderson et al., 2006; Anderson and Giberson, 2004). To do this, many Aboriginal enterprises are employing a social, or community-based, approach that places economic outputs as one goal amongst many, rather than as the primary decision-making criterion (Anderson et al., 2006; Berkes and Davidson-Hunt, 2010).

Other objectives often have socio-cultural, political and ecological dimensions, including enhancing cultural integrity, local autonomy and self-determination, control and stewardship over traditional territories and resources, as well as quality of life of community members. Consequently, many communities are adding a nation-building component to development (University of Arizona, 2011) that includes creating governance practices to better meet the objectives of social entrepreneurship.

RESEARCH PURPOSES

1. Knowing the demographics distribution between respondents' profiles on Thousand Islands, DKI Jakarta without (before) ecotourism and with (after) ecotourism in terms of gender, marital status, age, education, employment, length of stay.
2. Knowing the real differences between respondents' ecotourism sustainability factors on Thousand Islands Villagers without (before) ecotourism and with (after) ecotourism in terms of perceptions of economic sustainability, socio-cultural, environmental, and life satisfaction.

RESEARCH HYPOTHESES

1. There are significant differences between respondents' perceptions of Thousand Islands Residents without (before) ecotourism and with (after) ecotourism in terms of economic factor sustainability
2. There are significant differences between respondents' perceptions of Thousand Islands Residents without (before) ecotourism and with (after) ecotourism in terms of sustainability of socio-cultural factors
3. There are significant differences between the perceptions of respondents on Thousand Islands Residents without (before) ecotourism and with (after) ecotourism in terms of environmental sustainability.
4. There are significant differences between respondents' perceptions of Thousand Islands Resident without (before) ecotourism and with (after) ecotourism in terms of sustainability of life satisfaction factors.

3. METHODS

This research uses quantitative methods through field surveys of a sample size of 40 respondents in Sepa Island taken from a population of 23,897 residents in the Thousand Island of DKI Jakarta (BPS Indonesia, 2017). This sample size uses the stratified sampling by choosing the respondent begin with one of island on Thousand Island district. Researcher choose the Sepa Island, one of thousand island in Thousand Island district because Sepa Island is one of the Island with Ecotourism Ecology.

Next, the researcher used the statistical method of paired dependent sample T-Test to determine the difference before ecotourism and after ecotourism. This is done by setting pre and post ecotourism as dependent variables and indicators of respondents' profiles, economic perceptions, socio-cultural, environmental, and quality of life as independent variables.

4. RESULT AND DISCUSSION

Demography Result

Gender	Frequency	%
Male	33	82,5
Female	7	17,5
Total	40	100

The demography status of gender variable in Sepa Island that the Male is 82,5% and the lowest is Female 17,5%.

Marital Status	Frequency	%
married	25	62,5
Single	15	37,5
Total	40	100

The demography status of Marital Status variable in Sepa Island that the Married Status is 62,5% and the lowest is Single 37,5%.

Age	Frequency	%
16 – 20	3	7,5
21 - 30	20	50
31 - 40	10	25
41 - 50	5	12,5
51 - 60	2	5
Total	40	100

The demography status of Age Status variable in Sepa Island that the age Status highest is age between 21 until 30 year 50% and the lowest the age 51 year until 60 year 5%.

Educational Status	Frequency	%
SMP below	15	37,5
SMA	20	50
S1	5	12,5
Total	40	100

The demography status of Education Status variable in Sepa Island that the Education Status highest is Education Senior High School (SMA) with 50% and the lowest is undergraduate with 12,5%.

Job Status	Frequency	%
Labor	20	50
fisherman	10	25
housewife	8	20
Student	2	5
Total	40	100

The demography status of Job Status variable in Sepa Island that the Job Status highest is Labor with 50% and the lowest is Student with 5%.

Length of Stay	Frequency	%
Under 10 years	25	67,5
11 – 20 years	10	25
Over 20 years	5	12,5
Total	40	100

The demography status of Length of Stay in Sepa Island that the Length of stay highest is under 10 year with 67,5% and the lowest is length of stay over 20 years with 12,5%.

Income	Frequency	%
Below Rp. 3.500.000	23	57,5
Between Rp. 3.500.001 – Rp. 5.000.000	15	37,5
Over Rp. 5.000.001	2	5
Total	40	100

The demography status of Income variable in Sepa Island that the Income Status highest is Income below Rp. 3.500.000 with 57,5% and the lowest is Income over Rp.5.000.001 with 5%.

Hypothesis 1 Test Results:

1. There are significant differences between respondents' perceptions of village clusters without (before) ecotourism and with (after) ecotourism in terms of perceptions of the sustainability of economic factors which consist of different perceptions of the attributes below:
2. There is a positive and significant perception that ecotourism in the research area will be able to improve the work of the local population.
3. There is a positive and significant perception that ecotourism in the research area will be able to increase the number of shops or stalls that are carried out by local residents.
4. There is a positive and significant perception that ecotourism in the research area will be able to increase tax revenues from local residents.
5. There is a positive and significant perception that ecotourism in the research area will be able to increase business ventures carried out by local residents.
6. There is a positive and significant perception that ecotourism in the research area will be able to increase the investment of stakeholders from the local population.

The results of the study of the impact of ecotourism on the economic sustainability of local residents can be seen in the table below.

Table of Economic Sustainability Factor

	mean	N	Standar deviation	Standar error
Before ecotourism	15,23	40	2,731	0,432
After Ecotourism	20,88	40	2,893	0,457

This study shows that there are significant differences between the Economic Sustainability Factor in resident of Sepa Island before ecotourism and after ecotourism before ecotourism factor with score 15,23 and after score is 20,88 based on data from 40 respondent. The standard deviation score before is 2,731 and the standard deviation score after is 2,893. The standard error mean before is 0,432 and the standard error mean after is 0,457

Paired Samples Test

	Mean	Std. Deviation	Std. Error Mean	lower	upper	t-test	Sign .
Economic Sustainability	-5,65	4,549	0,719	-7,105	-4,195	-7,855	0,000

Meanwhile the result of paired samples t-test shows that there is a significant difference at the score of t-test is -7,855. This significant difference shows that the Sepa Island respondents as post-ecotourism villages have a higher level of economic sustainability than respondents of Sepa Island before who were declared as pre- ecotourism resident in this study.

Furthermore, this study showed there are significant difference at the 5 percent significance level between before economic sustainability and after economic sustainability with p-value score is 0,000. This is due to the fact that this population economic attribute is higher in income and other economic factor related to all residents in all places.

Hypothesis 2 Test Results:

There is a significant difference at the 1 percent significance level between respondents' perceptions of village clusters without (before) ecotourism and villages with (after) ecotourism in terms of perceptions of the sustainability of the following socio-cultural factors:

1. Respondents of this study have a real perception that ecotourism will be able to increase labor force participation in the ecotourism industry.
2. That ecotourism at this initial level will be able to develop this area in a sustainable manner into a world-class ecotourism village.
3. This rural ecotourism is perceived to be able to better social and cultural life.
4. Ecotourism is also perceived to be able to develop a local socio-cultural identity in the international arena, but there are no concrete results in terms of cultural exchange.

The results of the research on respondents' perceptions can be seen in the table below.

Table of Social Cultural Sustainability Factor

	mean	N	Standar deviation	Standar error
Before ecotourism	17,45	40	3,381	0,535
After Ecotourism	21,60	40	3,448	0,545

This study shows that there are significant differences between the Socio-cultural Sustainability Factor in resident of Sepa Island before ecotourism and after ecotourism before ecotourism factor with score 17,45 and after score is 21,60 based on data from 40 respondent. The standard deviation score before is 3,381 and the standard deviation score after is 3,448. The standard error mean before is 0,535 and the standard error mean after is 0,454.

Paired Samples Test

	Mean	Std. Deviation	Std. Error Mean	lower	upper	t-test	Sign.
Socio-Cultural Sustainability	-4,150	4,902	0,775	-5,718	-2,582	-5,354	0,000

Meanwhile the result of paired samples t-test shows that there is a significant difference at the score of t-test is -5,354. This significant difference shows that the Sepa Island respondents as post-ecotourism resident have a higher level of Socio-cultural sustainability than respondents of Sepa Island before who were declared as pre-ecotourism resident in this study.

Furthermore, this study showed there are significant difference at the 5 percent significance level between before socio-cultural sustainability and after socio-cultural sustainability with p-value score is 0,000. This is due to the fact that this population socio-cultural attribute is higher in labor force participation, the development of manner, there are better cultural and social life and other social cultural factor related to all residents in all places.

Hypothesis 3 Test Results:

This study found that there were significant differences between respondents of village clusters without (before) ecotourism and with (after) ecotourism in terms of the sustainability of life satisfaction factors. This includes the following perceptions of several research elements:

1. Health will increase in line with the growth of sustainable ecotourism
2. Life security is perceived as increasing in line with the development of ecotourism.
3. The household life will be better with the existence of eco-development.
4. Free time will be more enjoyed by the existence of sustainable ecotourism development.
5. Spiritual and social life will develop better with the development of sustainable ecotourism.

6. Overall housing will increase growth and comfort through sustainable eco- development.

The results of the research on respondents' perceptions can be seen in the table below.

Table of Environmental Sustainability Factor

	mean	N	Standar deviation	Standar error
Before ecotourism	8,10	40	1,353	0,217
After Ecotourism	10,67	40	1,545	0,247

This study shows that there are significant differences between the Environmental Sustainability Factor in resident of Sepa Island before ecotourism and after ecotourism, before ecotourism factor with score 8,10 and after score is 10,67 based on data from 40 respondent. The standard deviation score before is 1,353 and the standard deviation score after is 1,545. The standard error mean before is 0,217 and the standard error mean after is 0,247.

Paired Samples Test

	Mean	Std. Deviation	Std. Error Mean	lower	upper	t-test	Sign.
Environmental Sustainability	-2,564	1,997	0,320	-3,212	-1,917	-8,017	0,000

Meanwhile the result of paired samples t-test shows that there is a significant difference at the score of t-test is -8,017. This significant difference shows that the Sepa Island respondents as post-ecotourism resident have a higher level of Environmental sustainability than respondents of Sepa Island before who were declared as pre-ecotourism resident in this study.

Furthermore, this study showed there are significant difference at the 5 percent significance level between before Environmental sustainability and after Environmental sustainability with p-value score is 0,000. This is due to the fact that this population Environmental attribute is higher in health condition, security, household life, more free enjoyed time, more spiritual condition and other Environmental factor related to all residents in all places.

Hypothesis Test Results 4:

There are significant differences between respondents' profiles on village clusters without (before) ecotourism and with (after) ecotourism in terms of perceptions of sustainability of Quality of Life factors, where the perception includes the following elements:

1. Ecotourism is perceived to be able to provide health well-being.
2. Ecotourism is also believed to be able to provide safety well-being.
3. Ecotourism is perceived to be able to provide family satisfaction.
4. Ecotourism is perceived to be able to provide satisfaction with leisure, spiritual life, cultural life, social life, housing, standard of living and the excellent of life.

The results of the research on respondents' perceptions of Quality of Life ecotourism area in Sepa Island Resident can be seen in the following table.

Table of Quality of Life Factor

	mean	N	Standar deviation	Standar error
Before ecotourism	54,05	40	6,816	1,018
After Ecotourism	51,03	40	8,532	1,349

This study shows that there are significant differences between the Quality of Life Factor in resident of Sepa Island before ecotourism and after ecotourism, before ecotourism factor with score 54,05 and after score is 51,03 based on data from 40 respondent. The standard deviation score before is 6,816 and the standard deviation score after is 8,532. The standard error mean before is 1,108 and the standard error mean after is 1,349.

Paired Samples Test

	Mean	Std. Deviation	Std. Error Mean	Lower	upper	t-test	Sign.
Environmental Sustainability	3,025	10,136	1,603	-0,217	6,267	1,887	0,067

The result of paired samples t-test shows that there is not a significant difference at the score of t-test is 1,887 (lower than the distribution of T table). This score shows that the Sepa Island respondents as post-ecotourism resident have a lower level of Quality of Life than respondents of Sepa Island before who were declared as pre-ecotourism resident in this study.

Furthermore, this study showed there are not significant difference at the 5 percent significance level between before Ecotourism and after Ecotourism in Quality of Life factors with p-value score is 0,067 (higher than 0,05). This is due to the fact that this population Quality of Life attribute is lower in health well-being condition, lower safety, lower satisfaction, and lower spiritual life, cultural life and other factor related to all residents in all places.

CONCLUSION

1. There are significant differences between respondents' perceptions of Sepa Island resident without (before) ecotourism and with (after) ecotourism in terms of sustainability of economic factors, namely increased employment, number of shops, tax acceptance, business development, investment.
2. There are significant differences between respondents' perceptions of Sepa Island Resident without (before) ecotourism and with (after) ecotourism in terms of socio-cultural factor sustainability, namely in the perception of increasing participation, development, nature conservation, and increasing regional identity.
3. There are significant differences between respondents' perceptions of Sepa Island Resident without (before) ecotourism and with (after) ecotourism in terms of sustainability of environmental factors, namely increasing animal and animal life, improving quality of life, work productivity, and social awareness.
4. There are not significant differences between respondents' perceptions of Sepa Island without (before) ecotourism and with (after) ecotourism in terms of sustainability of life

satisfaction factors, which include health growth, better security, family life, leisure, spiritual, housing, and overall comfort.

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