



The Role of Environmental Management on Visitor Satisfaction of Bogor Botanical Gardens

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Abstract

The purpose of this research is to find out how the implications of environmental management on the satisfaction of visitors in the Bogor Botanical Gardens. The research was conducted at the Bogor Botanical Garden, Bogor City, West Java. The research was conducted using a quantitative method with a correlative approach. The purpose of correlative research is to know whether or not there is a relationship between two or more variables. Data retrieval using several methods such as field surveys, library research, and documentation. The conclusion of the research is, that the satisfaction felt by visitors after traveling to the Bogor Botanical Gardens is strongly influenced by the environmental management that is done well. The better management activities carried out in the Bogor Botanical Gardens will have a positive impact on visitor satisfaction. When the destination of visitors traveling to Bogor Botanical Gardens is fulfilled then the satisfaction of visitors will be fulfilled as well. High visitor satisfaction will give a positive image to the Bogor Botanical Gardens, this will be one of the benchmarks of the extent of success of the management to carry out the task charged. To achieve good visitor satisfaction, through this research it is known that the role of environmental management is very decisive.

Keywords: *Environmental Management; Tourist; Satisfaction; Bogor Botanical Garden*

Introduction

Environmental conservation efforts to achieve sustainability or environmental sustainability which is the goal of sustainable development is carried out in various ways, one of which is through tourism activities. Tourist activities have many positive impacts both to the perpetrators consisting of managers or visitors, but on the other hand tourist activities can also cause negative impacts on the environment grouped into two aspects, namely aspects of the natural environment and aspects of the artificial environment (Puriana, 2017). The negative impacts of tourist activities on the natural environment are the occurrence of water pollution, soil pollution, the emergence of landfills, excessive use of natural resources, disruption of animal habitats and life, illegal trade in souvenirs derived from animals, the inclusion of foreign lifestyles, to climate change, while the impact on the artificial

environment is excessive development, disruption of environmental aesthetics, and sedimentation after the construction of tourist areas (Inkson and Minnaert, 2018).

Referring to the various negative impacts resulting from tourist activities, the tendency that arises is to develop responsible tourism activities. Based on Law No. 10 of 2009 stated that: 'tourism is an integral part of national development carried out systematically, planned, integrated, sustainable, and responsible while protecting religious values, the culture that lives in society, sustainability and quality of the environment, as well as the national interest.' Sustainable tourism has a very important contribution to the environment, in this case, tourism whose management is based on a conservation approach, or better known as ecotourism. Ecotourism actors and experts agreed to emphasize that ecotourism patterns should minimize the negative impact on the environment and local culture, and be able to increase the economic income of the surrounding community by not forgetting the values of conservation (Dhalu & Anrada, 2019).

Indonesia is a country in the tropical region with fairly high rainfall and a warm climate and traversed by the equator causes high biodiversity. Various fauna in Indonesia consists of an Asiatic type, Australis type, and transition type which is divided by Wallace Line and Weber Line. Similar to fauna, the diversity of flora in Indonesia is a plant that is part of the Malesiana flora with the seventh-highest level of diversity in the world (Kusmana and Hikmat, 2015). The high level of diversity of flora species in Indonesia is also in line with Indonesia's status as one of the countries with the highest level of threat and extinction of flora species in the world. Efforts made by the government and various parties concerned with the sustainability of biological life make the emergence of special areas used as conservation areas in various regions scattered in Indonesia. Indonesia has many conservation-based tourism potentials that attract local and foreign tourists, for example, national parks, wildlife reserves, protected forests, forest parks, tourist parks, production forests, and botanical gardens. One of the most famous nature reserves that Indonesia has, is the Bogor Botanical Gardens. Bogor Botanical Garden is a pioneer of the establishment of botanical gardens in Indonesia and Southeast Asia located in the city of Bogor. The existence of a botanical garden in the heart of the city that is one of the buffer cities of the nation's capital is the reason tourists are interested in visiting this tourist attraction. The function of Bogor Botanical Garden as one of the plant conservation centers under the management of the Indonesian Institute of Sciences (LIPI) attracts tourists both as natural attractions, educational objects, and research (Sulistiono et al., 2020).

Bogor Botanical Garden as one of the tourist magnets in the West Java area is inseparable from the management activities carried out by LIPI. The best efforts made by the manager of the botanical garden will bring the future of the botanical garden in a better direction as well. Management is not only related to existing plants as the main resources of botanical gardens but also how the efforts of botanical gardens maximize existing services so that the destinations owned and expected by tourists by visiting the Bogor Botanical Gardens are fulfilled (Hotimah et al., 2015).

There are several reasons why a person visits tourist attractions, including to unwind, recreate, or record new knowledge of the visitor activities. Once the destination of the traveler is fulfilled, there will be a feeling of satisfaction in each individual who visits the attraction. The satisfaction that arises in each visitor is one form of evaluation that determines how well the management of a tourist area conducts management of the area, because if the management is not good then there will be various criticisms coming from visitors. The perception of visitors related to the satisfaction obtained after visiting, either positively or negatively can be a very useful input for the continuity of the management of tourist areas because in this case positive perception and visitor satisfaction are one of the main objectives of the construction of tourist areas, in this case, the Bogor Botanical Gardens in addition to having a function as a plant conservation area is also one example of ecotourism objects. The sustainability and sustainability of ecotourism objects are inseparable from the role of tourists who visit these places but still found visitors to Bogor botanical gardens who do not care about the plants there. Often found visitors who do

not heed the prohibition to step on the grass in certain areas, picking parts of plants, to climb low-ed trees to take photos are some of the problems that exist in the Bogor Botanical Gardens. Ecotourism can be a means for tourists to realize the importance of environmental functions.

Referring to the background of the problems that have been described, with the conduct of this research is expected to the relationship between environmental management to the satisfaction of visitors in the Bogor Botanical Gardens.

Methodology

The research was conducted at the Bogor Botanical Garden, which is located at Jl. Ir. Haji Djuanda number 13, Paledang, Bogor Tengah, Bogor City, West Java. The research was conducted using a quantitative method with a correlative approach. The purpose of correlative research is to know whether or not there is a relationship between two or more variables. Data retrieval using several methods as follows:

1. Survey method (field survey), which is data collection conducted through observation methods, questionnaires (questionnaires), and interviews.
2. Library research method, which is data collection conducted by library study method. This stage is conducted by studying and studying libraries related to research topics both through print media and various pages on the internet (academic articles, books, documents, and other studies conducted in the research area).
3. Documentation method, which is a data collection technique by documenting sources in the field related to the problem being researched or from the publication of government agencies or agencies and other organizations.

Result

Statistical testing to determine the relationship between environmental management and visitor satisfaction is conducted through a simple regression analysis test, the results of those tests produce constants = 151,345, and the direction of the coefficient of regression $b = 0.104$, then the regression equation (\hat{Y}) can be notified as $\hat{Y} = 151,345 + 0,104x_1$. The following is displayed in the regression linearity test result Table 1.

Table 1 Anava linear regression of visitor satisfaction to environmental management

Variants	Degree of Free (dk)	Sum of Square (JK)	Average Sum of Squares (RJK)	F _{count}	F _{table} ($\alpha = 0,05$)
Sum	399	34069.898		5.440	3.865
Coefficient (a)	1				
Regression (b/a)	1	459.433	459.433		
Remain	398	33610.465	84.448		
F_{count}	48	3158.619	73.456	0.856	1.394
Error	355	30451.846	85.780		

Referring to Table 1, the test results of the regression significance of $F_{count} = 5.440$ and $F_{table} = 3.865$, if it is clear that on the regression model $\hat{Y} = 151.345 + 0.104x_1$ and the level of $\alpha = 0.05$ $F_{count} > F_{table}$. Based on this, it can be explained that there is a positive relationship between environmental management and visitor satisfaction.

The results of the linearity test in the table above show that at the level of $\alpha = 0.05$ $F_{count} = 0.856$ and $F_{table} = 1.394$ so that $F_{count} < F_{table}$ which can also be interpreted that the relationship between environmental management and visitor satisfaction occurs linearly. The regression equation $\hat{Y} = 151,345 + 0,104X_1$ means that the relationship between environmental management and visitor satisfaction can be interpreted as follows; that every 1 point change in the environmental management score is expected to affect the visitor satisfaction score of 0.104 in the same direction with a constant magnitude of 151.345.

The large correlation coefficient between environmental management and visitor satisfaction resulted in a correlation coefficient of 0.476.

Table 2 Test of Coefficient of Correlation Between Visitor Satisfaction and Environmental Management

Correlation Coefficient (r_{YX_1})	Coefficient of Determination ($r^2 \times 100\%$)	t_{count}	t_{table} ($\alpha = 0,05$)
0.476	0.227	6.642	1.963

Table 2 shows that at the level of $\alpha = 0.05$ t_{count} results = 6.642 and $t_{table} = 1,963$, from it obtained information that $t_{count} > t_{table}$ which can be interpreted that H_0 is rejected so that the correlation coefficient of environmental management with visitor satisfaction occurs significantly. More clearly it implies a positive relationship between environmental management and the library of visitors, then when the variable of environmental management directly increases the variable of visitor satisfaction will also increase, from this is interpreted also when the environmental management is done better than the satisfaction of visitors will also increase.

Referring to the Table 2, it is known that the coefficient of determination on the relationship of environmental management with visitor satisfaction is 0.227. It can be defined that 22.7% variance in visitor satisfaction can be explained through environmental management and the rest is influenced by factors other than environmental management.

Discussion

The free variables used in this study are environmental management as variable X and the bound variable used is visitor satisfaction as variable Y. After testing the analysis related to the first hypothesis as previously listed in the previous chapter, evidence obtained that H_0 was rejected, which explains that there is a relationship between environmental management and visitor satisfaction. The positive relationship formed between the two variables is evidenced by the test results where $t_{count} > t_{table}$. The strength of the relationship between environmental management and visitor satisfaction was 0.476 and the coefficient of determination was 0.227. Based on this, it can be indicated that visitor satisfaction depends on the environmental management done.

The condition of the tourist area is very influential on how much interest tourists to come to a tourist attraction, which will further affect the level of satisfaction of visitors after visiting. Environmental management is one of the essential things that should be considered to ensure the quality of a tourist area. The activities covered in the Environmental Management in Bogor Botanical Gardens include maintenance and utilization of botanical garden areas along with the collection of plants and supporting infrastructure included in it, nor rule out the fundamental values contained in the core 'management' itself. Maintenance of the Bogor Botanical Gardens area is carried out with maintenance activities and the arrangement of the Bogor Botanical Gardens area, in addition to activities focused on the maintenance of plant collections in it such as propagation activities, maintenance, and documentation of each type of plant in the Bogor Botanical Gardens including management activities.

The fulfillment of tourist destinations coming to the tourist area will cause a feeling of satisfaction in each individual, the satisfaction of each individual can be assessed from various aspects and support the existence of tourist areas. Various efforts made by the management of Bogor Botanical Gardens solely aim to provide a tourist experience that will always be well remembered by the visitors who come. The existence of important aspects to support the information needs of visitors such as information centers, travel guides, signage, and maps of locations is very helpful for visitors Bogor botanical gardens, as well as transportation access that is easy to reach because the location of the Bogor Botanical Gardens is in the city center. Other important things that support the needs of visitors in the Bogor Botanical Gardens such as the existence of food/beverage sales, souvenirs, toilets, and mosques that are quite easily accessible to visitors become an important point in a tourist area. The feeling of satisfaction gained from the good management performance will have a positive impact, as stated by Vu et al. (2020), that when visitors are comfortable with tourism services, they will express that the trip will create a strong bond between each individual and nature of certain cultural values. The importance of optimal environmental management has implications for the satisfaction of visitors who come to Bogor Botanical Gardens, under Truong et al. (2018) statement that human resources involved in the management aspect are one of the points that determine the satisfaction of visitors after traveling to a tourist area. Optimization of Bogor Botanical Garden services that present various attractions for visitors, including 'Griya Anggrek', carrion plants (*Amorphophallus titanum*) that bloom in a certain month, as well as educational trips 'Wisata Flora' to know various types of plants in the Bogor Botanical Gardens affect the level of satisfaction of visitors, as stated by Biswas, Omar, and Rashid-Radha (2020) that certain attractions of a tourist area have to posit relationships significant if to visitor satisfaction. Latip et al. (2020) also stated that the management of city parks has a very strong influence on visitor satisfaction, based on the overall hypothesis that has been done, it can be concluded that environmental management has a significant effect on visitor satisfaction.

Conclusion

The conclusion of the research that has been done is, that the satisfaction felt by visitors after traveling to the Bogor Botanical Gardens is strongly influenced by the environmental management that is done well. The better management activities carried out in the Bogor Botanical Gardens will have a positive impact on visitor satisfaction. When the destination of visitors traveling to Bogor botanical gardens is fulfilled then the satisfaction of visitors will be fulfilled as well. High visitor satisfaction will give a positive image to the Bogor Botanical Gardens, this will be one of the benchmarks of the extent of success of the management to carry out the task charged. To achieve good visitor satisfaction, through this research it is known that the role of environmental management is very decisive.

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