Evaluation of the implementation of ecotourism principles in the operation of diving tourism in Bali, Indonesia

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ABSTRACT

Using a set of attributes of ecotourism principles, this study aims to evaluate the compatibility between community expectations and the performance of implementing ecotourism principles in diving tourism practices in Bali from the perspective of the local community. Data were collected through a questionnaire survey of 234 respondents from indigenous community leaders regarding their expectations of 18 attributes of ecotourism principles and their perceptions of the performance of these attributes. A total of 17 of the 18 attributes of the ecotourism principles have negative performance, meaning that the performance level of these attributes was lower than expected, and one attribute is neutral. Importance-Performance analysis shows that the attributes of ecotourism principles that have performed well and need to be maintained include Minimizing environmental impact, Responsibility for the natural environment, culture, and local wisdom, Use of local products, Use of local workers, and Hospitality in services. On the other hand, the attributes of ecotourism principles that have become weaknesses and need to be focused on for improvement include Partnership with the local community, Increase local capacity, Eco-friendly tourism facilities, and Minimizing social impact.

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INTRODUCTION

Nature-based tourism in the New Bali Era is directed at the dimension of quality tourism by applying ecotourism principles to maintain the balance of nature, people, and Balinese culture based on the values of local wisdom. One of Bali’s tourism resources which is a mainstay for the development of quality tourism with the concept of ecotourism is diving tourism. As an important part of the world's Coral Triangle, and receiving direct influence from the Indonesian through-flow (ITF), Bali's marine waters are one of the areas in the world that have high coral reef biodiversity, become a corridor for migration of marine mammals, as well as gathering of manta rays and sunfish. If properly protected and managed, these advantages can be used as a priority for the development of the world's leading diving tourism destination.

Ecotourism is generally associated with the term small-scale, alternative, nature-oriented or nature-based, sustainable, and special interest forms of tourism (Weaver and Oppermann 2000; Diamantis, 1999). This kind of tourism is guided strictly by the principles of ecotourism, namely the ideology that underlies the implementation of ecotourism to achieve sustainable tourism goals, both in the economic, socio-cultural and environmental fields. According to Weaver (2001), the ecotourism paradigm represents whatever is overlooked in conventional forms of tourism. Ecotourism consists of all components that are an integral part of the overall strategy of integrated sustainable resource use, in the literal sense of optimal management/use. The ecotourism paradigm has an anthropocentric approach and profits are strictly centered on ecology and economy. According to The International Ecotourism Society (TIES, 2015), ecotourism is about bringing together conservation, community and sustainable tourism. This means that those who implement, participate in ecotourism and ecotourism activities must adopt ecotourism principles.

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Diving tourism in Bali has become a large-scale tourism industry seen from the number of corporations involved in this business, the tourist market, and the variety of diving tourism sites developed. There are also many problems that accompany the booming development of the diving tourism industry, including the damage to coral reefs, the lack of involvement of local communities, and their minimal contribution to the local economy, nature conservation and cultural preservation. If the principles of ecotourism are applied consistently, diving tourism is expected to be a vehicle for preserving Bali’s nature and culture, increasing collective learning and awareness of Balinese natural and cultural values, prospering local communities, minimizing the impact on environmental damage, and providing a meaningful experience to tourists.

Based on the potentials and problems above, this study aims to: (1) evaluate the compatibility between community expectations and the performance of the implementation of ecotourism principles in the diving tourism practices in Bali; and (2) find out the actual performance of implementing ecotourism principles in diving tourism practices in Bali from the perspective of the local community. This information is important for dive operators in formulating strategies that are directed at strengthening the implementation of ecotourism principles for the sustainability of diving tourism in Bali.

Research and Methodology

This study uses primary data sources. A structured questionnaire was used to collect data from indigenous peoples as respondents. The questionnaire was designed to obtain data about respondents’ expectations of a set of attributes of ecotourism principles based on Balinese local wisdom and respondents’ satisfaction with these attributes which reflect the performance of implementing ecotourism principles by dive operators in Bali.

The target population in this study is indigenous peoples in three diving tourism destinations, namely the Amed Area, Tulamben Area, and Pemuteran Area. Indigenous communities consist of traditional village administrators, community leaders, and youth. Sample or respondents used as data sources using purposive sampling technique. Questionnaires were distributed directly to respondents’ homes. A total of 234 completed questionnaires were collected.

Eighteen attributes of the ecotourism principles based on Balinese local wisdom were chosen to evaluate the ecotourism principle items that are important or expected by the respondents and at the same time their performance in diving tourism practices. The attributes of the ecotourism principles are grouped into five variables, including the conservation variable which consists of three indicators/attributes, the educational variable which consists of three attributes, the environmentally friendly variable which consists of four attributes, the economic empowerment variable which consists of four attributes, and tourist satisfaction variable which consists of four attributes (Table 1). The ecotourism principle attributes used in this study were modified from TIES (2015), Blamey (2001), Honey (1999), and Wallace and Pierce (1996).
Table 1: Variables and attributes used to evaluate the implementation of ecotourism principles by dive operators in Bali

| Code | Variables dan Attributes | Short Label | Description |
|------|--------------------------|-------------|-------------|
| A    | Conservation variable    |             |             |
| 1    | Conservation of nature   | Contribute to nature conservation | |
| 2    | Preservation of culture  | Contribute to local culture preservation | |
| 3    | Respect to local culture | Respect/appreciation for local culture and wisdom | |
| B    | Education variable       |             |             |
| 4    | Educate tourists about nature conservation | Educate tourists to build awareness about nature conservation | |
| 5    | Educate tourists about cultural preservation | Educate tourists to build awareness about cultural preservation and local wisdom | |
| 6    | Educate local people about nature conservation | Educate local people to build awareness about nature conservation | |
| C    | Environmentally friendly variable |             |             |
| 7    | Eco-friendly tourism facilities | Using and operating eco-friendly tourism facilities | |
| 8    | Minimizing environmental impacts | Efforts to minimize negative impacts on the environment | |
| 9    | Minimizing social impacts | Efforts to minimize negative impacts on local communities (social, cultural, behavioral, and psychological impacts) | |
| 10   | Responsibility for the natural environment, culture, and local wisdom | Promoting moral, ethical, and behavioral responsibility towards the natural environment, culture, and local wisdom | |
| D    | Local community empowerment variable |             |             |
| 11   | Partnership with the local community | Building partnerships/involving local communities in tourism businesses | |
| 12   | Use of local products    | Prioritizing the use of local products as a tourism business supply chain | |
| 13   | Use of local workers     | Prioritizing the involvement of local workers | |
| 14   | Increase local capacity  | Improve the capacity and skills of local communities | |
| E    | Tourist satisfaction Variable |             |             |
| 15   | Responsible marketing    | Responsible tourism business marketing in accordance with existing realities and facts | |
| 16   | Interpretive experiences | Providing tourists with interpretive experiences about nature and local culture | |
| 17   | Hospitality in services  | Prioritizing service with respect, courtesy, and friendliness to tourists | |
| 18   | Satisfactory services    | Prioritizing satisfying service for tourists | |

The importance ratings were measured through a 5-point Likert scale (1=very unimportant to 5=very important). The performance ratings were measured as respondent satisfaction through a 5-point Likert scale (1=very dissatisfied to 5=very satisfied). The hypotheses proposed in this study are: H1: There is a significant difference in the expectation and performance of the attributes of ecotourism principles perceived by respondents.

Evaluation of the compatibility of the expected ecotourism principal attributes with the performance of these attributes (H1 hypothesis testing) using paired sample t-test. While the analysis of the actual performance of the attributes of ecotourism principles in the implementation of diving tourism uses Importance Performance Analysis (IPA) (according to Martilla and James, 1977).

Analysis and Findings

Most of the respondents involved in this study were in the age group 41 – 50 years (42.78%), followed by the age group 31 – 40 years (25.00), 51 – 60 years (20.00%), >60 years (6.67%), and 21 – 30 years (5.56%). The majority of respondents were male (90.70%). Most of the education levels are Senior High School (74.42%), followed by Junior High School (13.95%), Primary School (6.98%), and Diploma/Bachelor (4.65%). The occupations of the respondents consist of employees (47.76%), farmers (22.39%), fishermen (17.91%), and entrepreneurs (11.94%).

The mean score of respondents' expectations for the implementation of attributes of ecotourism principle by dive operators and the mean score of performance of these attributes are shown in Table 2. Overall, the mean score of respondent's expectation is $MI = 4.24$ and the mean score of performance is $MP = 3.70$ with the reliability value is $= 0.913$ and $= 0.940$, respectively for the expectations and performance scales. In terms of expectations in the implementation of ecotourism principles based on local wisdom, respondents are most concerned with the variable "Empowerment of local communities" ($MI = 4.32; \alpha = 0.839$), followed by the variable "Environmentally friendly " ($MI = 4.29; \alpha = 0.809$), "Tourist satisfaction" ($MI = 4.19; \alpha = 0.790$), "Conservation" ($MI = 4.19; \alpha = 0.809$).
The five attributes most expected or prioritized by respondents were “Use of local products” (MI = 4.36), “Increase local capacity” (MI = 4.32), “Minimizing environmental impacts” (MI = 4.31), “Use of local workers” (MI = 4.31), and “Minimizing social impacts” (MI = 4.29). Meanwhile, the five attributes perceived as having the highest performance were “Conservation of nature” (MP = 3.91), “Responsibility of the natural environment, culture, and local wisdom” (MP = 3.83), “Educate tourists about nature conservation” (MP = 3.79), “Hospitality in services” (MP = 3.78), and “Respect to local culture” (MP = 3.77).

Table 2: The mean score of expectation and performance of the attributes of ecotourism principles on the diving tourism practices in Bali

| No | Attribute | Expectation | Performance | MP-MI | t value | Sig. (2tailed) |
|----|-----------|-------------|-------------|-------|---------|---------------|
| A  | Conservation variable | 4.19 | 0.852 | 3.78 | 0.948 | 0.162 |
| 1  | Conservation of nature | 4.13 | 0.855 | 3.91 | 0.979 | -0.22 | 1.411 |
| 2  | Preservation of culture | 4.21 | 0.869 | 3.67 | 0.931 | -0.54 | 3.852 |
| 3  | Respect to local culture | 4.23 | 0.833 | 3.77 | 0.921 | -0.46 | 3.274 |
| B  | Education variable | 4.17 | 0.743 | 3.68 | 0.859 | 0.004 |
| 4  | Educate tourists about nature conservation | 4.17 | 0.793 | 3.77 | 0.833 | -0.40 | 2.928 |
| 5  | Educate tourists about cultural preservation | 4.14 | 0.782 | 3.79 | 0.884 | -0.35 | 2.772 |
| 6  | Educate local people about nature conservation | 4.21 | 0.649 | 3.49 | 0.830 | -0.72 | 5.626 |
| C  | Environmentally friendly variable | 4.29 | 0.747 | 3.71 | 0.830 | 0.000 |
| 7  | Eco-friendly tourism facilities | 4.26 | 0.760 | 3.59 | 0.793 | -0.67 | 5.132 |
| 8  | Minimizing environmental impacts | 4.31 | 0.758 | 3.76 | 0.805 | -0.55 | 4.050 |
| 9  | Minimizing social impacts | 4.29 | 0.788 | 3.64 | 0.818 | -0.65 | 4.632 |
| 10 | Responsibility for the natural environment, culture, and local wisdom | 4.29 | 0.683 | 3.83 | 0.885 | -0.46 | 3.552 |
| D  | Local community empowerment variable | 4.32 | 0.751 | 3.63 | 0.875 | 0.000 |
| 11 | Partnership with local community | 4.28 | 0.817 | 3.58 | 0.929 | -0.71 | 4.789 |
| 12 | Use of local products | 4.36 | 0.717 | 3.72 | 0.832 | -0.64 | 5.181 |
| 13 | Use of local works | 4.31 | 0.758 | 3.72 | 0.848 | -0.59 | 4.302 |
| 14 | Increase local capacity | 4.32 | 0.709 | 3.51 | 0.875 | -0.81 | 5.912 |
| E  | Tourist satisfaction Variable | 4.19 | 0.752 | 3.73 | 0.787 | 0.001 |
| 15 | Responsible marketing | 4.19 | 0.754 | 3.73 | 0.859 | -0.46 | 3.625 |
| 16 | Interpretive experiences | 4.19 | 0.623 | 3.69 | 0.791 | -0.50 | 4.096 |
| 17 | Hospitality in services | 4.24 | 0.789 | 3.78 | 0.674 | -0.46 | 3.701 |
| 18 | Satisfactory services | 4.14 | 0.830 | 3.73 | 0.813 | -0.41 | 3.020 |

Note: *Significant; MI = mean score of expectation; MP = mean score of performance; SD = standard deviation

Paired sample t-test to evaluate the significance of the difference between the mean score of expectation and the mean score of performance for each attribute of ecotourism principles (testing the H1 hypothesis) is shown in Table 2. This information is important in helping dive operators determine not only how to perform them in the implementation of ecotourism principles as a whole, but also what is important in relation to the implementation of ecotourism principles from the point of view of local community. In turn, the results of this analysis will help dive operators determine attributes that are significantly underperforming than expected so that improvement efforts can be directed at the right attributes.

The results of the paired sample t-test concluded that the hypothesis was accepted for 17 attributes, meaning that there were 17 attributes with a mean score of expectation that was significantly different from the mean score of performance. The seventeen attributes are negative performers, where the mean score of performance is significantly smaller than the expected at the level of p<0.05. One attribute, namely “Conservation of nature” is neutral, where the mean score of expectation and the mean score of performance are not significantly different. There is no attribute that has a positive performance (Table 2). From the results of this analysis, it is revealed that the operators of diving tourism in Bali have not optimally implemented the ecotourism principles as expected by the community. The importance of implementing the ecotourism principles is to ensure that the diving tourism practices are in accordance with local wisdom values in maintaining the balance of nature, society, and Balinese culture for the sustainability of the diving tourism business itself.

Hetzer (1965), as one of the first to use the concept of ecotourism, identified four “pillars” or principles of ecotourism as responsible tourism, namely minimizing environmental impacts, respecting the culture of the host community, maximizing benefits for local communities, and maximizing tourist satisfaction. The ecotourism principles were then developed and refined in many perspectives
as an "ideology" in the implementation of ecotourism such as Wallace and Pierce (1996), Honey (1999), Blamey (2001), and TIES (2015). These ecotourism principles guide all stakeholders in developing tourism activities, attractions, and businesses that are beneficial to all parties involved by optimally contributing to the conservation of nature and local culture, being environmentally friendly to minimize negative impacts, building awareness of the environmental and local culture, provide fair economic benefits, and provide visitors with memorable interpretive experiences.

The analysis of the relative position of the attributes of ecotourism principles in relation to the overall mean score of expectations and performance using IPA is shown in Figure 1. A four-quadrant matrix of IPA outcomes constructed by two axes based on the overall mean score of expectations (MI = 4.24) and the overall mean score of performance (MP = 3.70) as perceived by the respondents. There are five attributes located in quadrant B (Keep up the good work). These attributes indicate the optimal level of performance, exceeding the overall mean score of the attributes in relation to attributes that are also considered important by respondents. Attributes that have performed well in implementing ecotourism principles by dive operators include “Minimizing environmental impacts”, “Responsibility for the natural environment, culture, and local wisdom”, “Use of local products”, “Use of local workers”, and “Hospitality in services”. According to Martilla and James (1977), the attributes that are in the Keep up the good work quadrant are attributes that perform well so they need to be maintained. According to Bindu and Kanagaraj (2013) and Boley et al. (2017), attributes in the Keep up the good work quadrant can be used as a strength in competition and become a focus in destination marketing, and in the future the quality must be maintained.

Attributes that are in the quadrant A (Concentrate here) can be considered as a weakness in the implementation of ecotourism principles by dive operators in Bali where respondents have high expectations for these attributes but their performance is low. There are four attributes that fall in quadrant A, including “Partnership with local community”, “Increase local capacity”, “Eco-friendly tourism facilities”, and “Minimizing social impacts”. According to Martilla and James (1977), the attributes in the Concentrate here quadrant are low-performing that need to be the focus of improvement. Furthermore, Boley et al. (2017) stated that the attributes in this quadrant pose the biggest problems for destinations, and therefore require urgent managerial attention to improve their quality and performance. It is also suggested by Bindu and Kanagaraj (2013) that the attributes in the Concentrate here indicate that destination management and marketing efforts need more attention to turn them into areas of perceived strengths for the destination. In this regard, of particular importance are the perceived lack of partnership with local communities and increasing local capacity needs further improvement and should become an important part of the diving tourism practices to empower local communities.

Three attributes are in quadrant C (Low priority), including “Preservation of culture”, “Educate community about nature conservation”, and “Interpretive experiences”. The attributes in this quadrant indicate that respondents are less concerned with these attributes and their performance is also perceived as low. According to O'Neill et al. (2000), quadrant C reflects the tendency that certain aspects of the organization do not work optimally. However, because the importance of these aspects is also low, it is not necessary to prioritize efforts for improvement.

Furthermore, there are six attributes in quadrant D (Possible overkill) which means that expectation of respondents to these attributes is low but the performance is high. The attributes include “Conservation of nature”, “Respect to local culture”, “Educate tourists about nature conservation”, “Educate tourists about cultural preservation”, “Responsible marketing”, and “Satisfactory services”. According to Bindu and Kanagaraj (2013), attributes that are rated low in importance and high in performance are areas that service providers should continue to maintain at the same level effort. Likewise, Martilla and James (1977) stated that although the attributes were judged to be of slight importance, but because their performance was considered well, this good work practices could be used as a reason to continue.
Seventeen of the 18 attributes of ecotourism principles judged by respondents as having significantly lower performance than expected. This fact shows that the dive operators in Bali have not optimally implemented the ecotourism principles based on local wisdom as expected. This is a problem to realize quality-oriented and sustainable diving tourism, and at the same time it is a challenge in making Bali diving tourism competitive in accordance with the trend of the tourist market which prefers to dive in destinations that apply the ecotourism principles as a form of responsible tourism.

Attributes of ecotourism principles, including “Minimizing environmental impacts”, “Responsibility of the natural environment, culture, and local wisdom”, “Use of local products”, “Use of local workers”, and “Hospitality in services”, are relatively positioned as having actual performance optimally, above the average of all attributes in relation to respondents’ expectations of these attributes. These attributes can be used as strengths in developing sustainable diving tourism through the implementation of ecotourism principles. On the other hand, the attributes including “Partnership with the local community”, “Increase local capacity”, “Eco-friendly tourism facilities”, and “Minimizing social impacts”, are weaknesses and require priority efforts for improvement. Dive operators must focus more and continuously improve the performance of these attributes in order to reverse the condition so that they become a strength in the sustainable diving tourism practices, considering that these attributes are highly emphasized by respondents. Meanwhile, the attributes that have actually performed well need to be maintained.

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