Policy models for improving ecotourism performance to build quality tourism experience and sustainable tourism

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ABSTRACT

Several administrative areas in Bali are not ready for an effective spatial regulation for the tourism industry resulting in large-scale land conversion, including changes in productive agricultural land for tourism and other industrial needs. These changes allow environmental damage that threatens the performance and sustainability of tourism in Bali. The purpose of this study was to investigate the seven factors of ecotourism success, and their impacts on quality tourism experiences and sustainable tourism. The research was conducted in Bali by taking 200 samples from four village samples. The analysis used was Structure Equation Modeling (SEM) assisted by the Partial List Square (PLS) application. The results show that the research model yielded feasible Goodness of Fit. The results also show that ecotourism as a source of income was unable to support economic and infrastructure development. Community involvement had no significant impact on conservation efforts. Conservation had no impact on ecotourism performance. Services did not have any impact on tourism performance. Thus, ecotourism as a source of income, community involvement, conservation and services as successful factors in improving ecotourism performance are strategic management priorities to build quality tourism experiences and sustainable tourism.

1. Introduction

Bali is an island with an agrarian-based culture influencing its tourism. Investors have come to develop the tourism business, but Bali is not ready with effective spatial regulations for the tourism industry. As a result, the use of spatial planning tends to be determined by the wishes of investors (Investment-Driven). As a result, there was a substantial land conversion, including the conversion of productive agricultural land to land for tourism and other industries. This phenomenon has and will cause damage to the natural environment and the threat of a water crisis, widespread coastal abrasion, and landslides, which further threaten the sustainability of tourism in Bali. According to Ross and Wall (1999), ecotourism is a necessary choice for sustainable tourism development. Several studies argue that ecotourism forms the following aspects: First, the purpose of ecotourism refers to natural areas to reduce damage and pollution. Second, the advancement of ecotourism emphasizes the principle of ecological protection. Third, ecotourism is a green industry that contains scientific and technological content, which requires multidisciplinary guidance and argumentation from ecologists, economists and sociologists. Fourth, ecotourism pays close attention to the development of the tourism economy of the destination and the improvement of living standards for local residents. Fifth, the advantages of ecotourism are in the educational function of the ecological environment; a view of the lifestyle and environment of tourists.

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Ecotourism is seen as a means of protecting the natural environment through income generation, ethics education or environmental preservation and involvement of local communities (Ross & Wall, 1999). At the same time, conservation and development will be carried out in the context of sustainability. Thus, the dimensions of ecotourism development are protection of the natural environment, conservation, economic development, income, education and involvement of local communities. The ecotourism paradigm (Wall, 1996) is described as follows:

![Ecotourism Paradigm](image)

From the description above it can be concluded that the research problem is whether the dimensions of ecotourism development as a success factor have a correlation with tourism performance, quality tourism experiences and sustainable tourism.

This study aims to investigate the role of seven success factors for ecotourism in improving performance and supporting tourism with quality and sustainable experiences. The seven success factors are: (a) sources of income, (b) environmental conservation education, (c) involvement of local communities in tourism, (d) conservation of biodiversity and natural resources, (e) economic and infrastructure development, (f) services, (g) supervision. The results of this investigation will become a policy model for the development and improvement of ecotourism management and performance to create tourism with quality and sustainable experiences. To achieve the objectives of this study, the conceptual model of developing and improving ecotourism performance will be confirmed based on two theories, first, Ross S., Wall G. as a means of protecting and maintaining the natural environment through income generation, ethics education or environmental preservation and involvement of local communities. At the same time, conservation and economic and infrastructure development will be implemented in the context of sustainability. Second, Pedersen's (1991) theory states that in addition to offering a pleasant experience for tourists, ecotourism also functions to provide protection or protection for nature conservation, sources of income, environmental ethics education facilities, and empower local community participation. Each of these functions will determine the success of ecotourism. From these two theories it can be described the conceptual framework of a management development policy model and improving ecotourism performance (Fig. 2).

2. Literature review

2.1 Preliminary Research

Based on the results of reference tracing and preliminary observations, Bali has actually developed a type of tourism based on natural environment or ecotourism, but is still dominated by cultural tourism. Research on the Empowerment of Cultural Tourism and Ecotourism in Bali found that ecotourism has a low correlation with destination competitiveness, but has a strong correlation with efforts to develop sustainable tourism (Wardana et al., 2018). The low correlation between ecotourism and destination competitiveness is due to the fact that ecotourism development management has not been properly managed in relation to planning, stakeholder involvement, involvement of local communities and elements of supervision. The economies of scale in ecotourism are still relatively small, so business efficiency still needs to be improved. In addition, Wardana et al. (2018) also found out that local community support significantly moderates the relationship between ecotourism and sustainable tourism development. This shows that the spirit and awareness of the community is still strong in developing sustainable tourism. Su et al. (2014) stated that ecotourism development is closely related to the sustainability of protected natural areas. If facilitated by the right management, ecotourism can contribute to conservation and development efforts, as well as the welfare of local communities. As such, ecotourism has been encouraged and practiced in various forms in many places, including China.

2.2 Natural Environment Protection

According to Hamilton et al. (2018) environmental protection can be defined as the prevention of undesirable changes to an ecosystem and its parts, including: protection of an ecosystem and its parts from changes related to human activities; and prevention of undesirable natural changes to ecosystems and their parts. One of the problems associated with this definition is whether ecosystems and their parts include people and communities, or whether environmental protection is concerned only with protecting natural capital. From an ecological perspective, humans are considered an integral part of the ecosystem.
2.3 Ecotourism

Ecotourism is generally considered to be more than just natural tourism. However, there is no definition of ecotourism that addresses a more broadly accepted account of the peculiarities of ecotourism and the extent to which it differs from other forms of tourism. Since Ceballos-Lascurain's formal introduction of the term ecotourism nearly two decades ago, controversy over the proper use of the term and inconsistencies in its application have hindered concept development and practical realization (Reid, 1991; Scace, 1992; Nelson, 1994; Bottrill & Pearce, 1995; Lindberg et al., 1997). Ziffer (1989) discusses nature base tourism (NBT) associated with ecotourism by considering various terms, such as nature tourism, adventure tourism and cultural tourism, which are mostly activity-based, and also related to value-laden terms, such as responsible answer, alternative tourism and ethical tourism. All of that aims to make all parties consider the impact and consequences of tourism. The International Ecotourism Society (TIES) (2015) has changed the definition of ecotourism according to the development of thought and practice in the field. Since the existing TIES definition covers only two (Conservation and Local Communities) of the three pillars of ecotourism, the inclusion of interpretations now holds a place. Therefore, the TIES revised definition of ecotourism is responsible travel to natural areas that conserves the environment, maintains the welfare of the local community and involves interpretation and education with the specification that education is for the community and guests.

According to EBSCO Sustainability Watch (2009), one of the main objectives of ecotourism is to increase benefits for the environment. In many destinations, revenue from ecotourism is directed towards conservation and park preservation efforts. The economic benefits of ecotourism provide anti-hunting incentives for local communities, which can increase wildlife diversity. Ecotourism also provides environmental education, awareness and funding for conservation efforts. According to a study conducted in the Galapagos Islands, educational information provided through ecotourism increases knowledge of protected areas, changes tourist behavior patterns and increases philanthropic conservation support. Ecotourism practices non-consumptive behavior towards wildlife and natural resources and contributes to the areas visited, the spirit of conservation, economic development and the welfare of the local population (Ziffer 1989: 6). According to Fennel (2015) the core criteria of ecotourism include: (1) ecotourism is nature-based; (2) is a dimension of sustainability in which ecotourism is seen from a conservation perspective; (3) is a dimension of human sustainability in the form of local participation and benefits; (4) learning and education as part of the ecotourism experience; and (5) obligation to behave ethically. Furthermore, Ross and Wall (1999), emphasized that the indicators of ecotourism consist of: (1) protection of the natural environment (2) sources of income (3) education (4) quality tourism (5) participation of local communities.

2.4 Revenue Generation

According to Mukrimah et al. (2015) ecotourism is a strategy to support conservation, generate income, and create jobs for people living around protected areas. In Malaysia, national park management (protected areas) focuses on planning and implementing various activities that contribute to the long-term conservation of the area while reducing conflicts between people and the environment. According to Altunel and Buğday (2019), as long as ecotourism activities are carried out in locations where rural residents live, it will become a new work area and a source of income for the countryside. Therefore ecotourism is an important instrument for rural development, if managed properly, and also makes a major contribution to the country's economy. Tourism revenues can make a large contribution to the costs of managing protected areas. Lindberg (1991) cites many examples of the positive impacts of tourism revenue. At Saba Marine Park Netherlands, royalties and low entrance fees are allocated and allow the park to become financially independent. Galapagos National Park, Ecuador, allows some funds to be redistributed to other protected areas in Ecuador. However, the amount of income really depends on the management used. Dixon and Sherman (1991) describe five main ways to generate income from nature tourism, including: (a) User fees: these are usually a reflection of people's willingness to pay, where fees vary according to whether the visitor is a resident or a foreigner. (b) Concession fees: in the case of the government, fees are charged to private companies that provide tourists with goods and services. (c) Royalties: The sale of souvenirs and t-shirts provides a good basis for this type of income. (d) Taxation: Sales tax, hotel tax and airport tax are examples. (e) Donations: Tourists are encouraged to donate money in an effort to address local problems (lack of resources or money for endangered species).

2.5 Environmental Education

There are two different terms, namely between learning and education, which are appropriate to use in the context of ecotourism. Some scholars are keen to use the term learning rather than education as one of the criteria for ecotourism. The reason for choosing the term learning, because learning is a more general term than education. Education is a process that is delivered by the teacher or teacher, to students or tourists, while learning is a continuous activity every day to seek knowledge or something new. According to Garavan (1997), training can be associated with learning by doing, while education is more synonymous with learning by thinking. They can also enhance the visitor experience, directing people in a direction appropriate to their behavior (Orams, 1995; Bottrill & Pearce, 1995). Furthermore, people who enjoy high-quality experiences in nature will be willing to pay a fee, which can be used to maintain protected areas. According to Pipinos and Fokiali (2009), education can be considered as an effective strategy for managing tourists in a sustainable manner whether it is in a passive or active form. Passive forms include providing an information center, publications, an exhibition center displaying printed materials, photographs, pictures, and so on. This media must be demonstrated so that tourists are environmentally friendly.
Active participation in the educational process is an environmental interpretation method and technique that is necessary and suitable for environmental conservation purposes. Environmental education should also be directed to local residents who are the final recipients of ecotourism business development. It is important for local people to acquire historical knowledge of the regions and foreign languages in which communication is facilitated (Walpole & Goodwin, 2000).

2.6 Local Community Involvement

The role of local residents in ecotourism as an interrelation in the ecotourism framework is shown in Fig. 1 (Ross & Wall, 1999). Local residents have an interrelation with elements in the development of ecotourism, namely elements of biodiversity, and tourism itself. Local residents should receive guidance to protect the environment, in an effort to ensure that the resources are nature can be used sustainably. Thus local residents will appreciate the preservation of cultural values. About how communities work together in controlling ecotourism development, an initiative offered by Drake (1991), which defines local participation as the ability of local communities to influence development outcomes like ecotourism having an impact on them. In general, participation can be defined as the right of community members to be involved in the decision-making process at every stage of development, starting from planning, implementation, monitoring, and preservation. Society is not just a beneficiary or mere object, but as a subject of development. Most local residents feel they have a personal advantage, and they feel that tourism has both positive and negative impacts. They argue that development support and planning support from local communities is urgently needed (Wardana et al., 2018). The meaning of participation is the strength possessed by the community to overcome its problems in the present in order to achieve a better life in the future.

2.7 Conservation of Biodiversity and Natural Resources

Over the past two decades, ecotourism has emerged as an important conservation strategy especially in tropical areas where species diversity and habitats are under threat by traditional forms of development (Blersch & Kangas, 2013). However, the sustainability of ecotourism depends on how income is distributed to local communities and the degradation of the ecotourism destination ecosystem. Currently, the basic conceptual of ecotourism has evolved along with the concept of sustainable conservation, and has even become ethical thinking. This concept has developed rapidly, and conservation scientists have recognized the potential of ecotourism to help protect sensitive environments and to support local economies in areas that are still lagging behind. Mello et al. (2015) provided incentives for the restoration of historic buildings and conservation of natural resources. However, ecotourism development does not automatically lead to the conservation of community resources, and in fact can cause additional environmental burdens, if not managed properly (Shikida et al., 2010).

2.8 Economic Development and Tourism Infrastructure

Infrastructure development is an interrelation between local population participation, conservation and the tourism industry. The local population is part of the effort to conserve the environment. Conservation will maintain the uniqueness of the environment that will become the attraction of a destination. Funding will be obtained from tourism activities where if someone gets a high quality experience they will be able to pay higher fees, which can be used to protect the environment (Orams, 1995; Bottrill & Pearce 1995). Tourism infrastructure is one component of regional tourism products. Infrastructure consists of basic facilities, buildings and service institutions, whose existence is very important in driving the economy and society. Infrastructure is divided into: (1) techniques which include basic facilities, which are used in transportation, communications, gas, energy, road facilities for industry and others. (2) social, which includes facilities and institutions related to education, culture, science, health, physical culture and tourism and public administration (Gaworecky 2003). According to Panasiuk (2007), tourism infrastructure includes facilities and institutions that are material and organizational, which consists of four basic elements, specifically accommodation facilities, restaurant facilities, complementary facilities and communication.

2.9 Quality Travel Experience

According to Pine et al. (1999), experience is an event that occurs and is felt by everyone personally which can give a distinct impression to the individual who feels it. In other words, experience is also the result of individual observation or participation in an event, where the event is real and what actually happened. Currently we are in a new era, a more developed economy, which is based on services or services and must provide a higher emotional experience to consumers (Stasiak, 2013). In the economic concept in this new era, customer value is emphasized on the customer experience. Goods and services are no longer sufficient to sustain economic growth, create jobs and maintain economic prosperity. Economic prosperity can continue through the acquisition of added value at the experience stage. The occurrence of a shift in economic value began in the era of commodity goods creation, goods manufacturing, service delivery and now it is in the era of the experience stage which is the focus of commodities in the industry. Zátori (2013) argues that experience is not only an added value for products and services, but in itself has become a valuable item. In the experiential stage, goods and services are usually differentiated in terms of competition and the price applied is higher.
2.10 Sustainable Tourism

The concept of sustainable tourism development is very strategic to be developed in balancing economic goals and maintenance of important tourism sources (Wardana et al., 2018, 2019). The concept of sustainable tourism was introduced by the World Commission on Environment and development (WCAD in Brussels Report in 1987), which states that: Sustainable development is development that meets the needs of present without compromising the ability of future generation to meet their own needs. From this statement it is understood that sustainable development is part of sustainable development by considering the needs of the present without neglecting the ability of future generations to meet their needs. WTO (1993) states that tourism puts forward development principles which include, first, ecological sustainability; second, social and cultural sustainability; and third, economic sustainability, both for current and future generations.

2.11 Controlling

Local community participation provides residents with various opportunities to participate effectively in tourism development activities, to mobilize their capacity as social actors, not as passive subjects, to make decisions, and to control activities that affect their lives (Rasoolimanesh et al., 2016). There is reciprocity between the government and the community, even if the community is given power in part or all of the program and is fully controlled by the community, this is the level of participation that reflects the strength in society. Tourism development in destinations goes through stages where community-based tourism is gradually being threatened and marginalized by outsiders and local elites. Control over tourist destinations, as a consequence, increases the potential for growth through the support of important external stakeholders (Giampiccoli, et al., 2018). Local communities have a very substantial control role in tourism development, especially in rural areas, because control over the decision-making process must be given to those who later bear the consequences of development implementation including failure or negative impacts that occur as a result of the development of tourism villages. Therefore, decision-making authority should be given to local communities.

2.12 Service

The quality of tourism services in an organization is defined in terms of quality of excellence, quality of value, quality of conformity with several levels, and quality is seen as very important to meet the expectations of tourism customers. Quality dimensions such as the quality of accessibility, accommodation, place and its components, contribute directly to tourist satisfaction, their intention to return and ultimately the development of the tourism industry in an area (Ebrahimpour, 2010). Through a series of studies on various kinds of service industries, Parasuraman, Zeithaml, and Berry (1985) have identified five main dimensions of service quality that also apply to the tourism sector: reliability, responsiveness, assurance, empathy, tangibility.

3. Research Concept Framework

The framework of the ecotourism research concept has been discussed in Ecotourism: towards congruence between theory and practice (Ross & Wall, 1999). However, this concept has never been studied in a scientific study to find evidence that seven successful factors in developing ecotourism performance can describe the factors that drive the existence of ecotourism and experience quality tourism and sustainable tourism. Based on this conceptual framework and further development is carried out by entering the quality tourism experience variable and then testing the suitability of the model (goodness of fit) to be determined as a model of ecotourism performance development policy, which is also the main point of this research. The ecotourism performance development policy model based on the latest scientific studies has not been owned by Bali Indonesia tourism as part of world tourism, so this model is very important and very necessary.
3.1 Research Hypothesis

Based on a literature review and two main theories (Grand Theory), (Ross & Wall, 1999) and Pedersen's (1991) theory, a hypothesis can be formulated as follows:

1. Income creation, education on environmental preservation ethics and involvement of local communities have a positive and significant impact on the conservation of biodiversity and natural resources and economic and infrastructure development (H1, H2, H3, H4, H5, H6).
2. Conservation of biodiversity and natural resources and economic and infrastructure development have a positive and significant effect on ecotourism performance (H7, H8).
3. Service and supervision have a positive and significant effect on ecotourism performance (H9, H10).
4. Ecotourism performance has a positive and significant effect on the experience of quality tourism and sustainable tourism (H11, H12).
5. Quality tourism experience has a positive and significant effect on sustainable tourism (H13).

3.2 Research methods

This study uses a quantitative approach based on the positivism principle, conducted to confirm data and theory through hypothesis testing. This study will examine research variables to be placed in a model of improving ecotourism performance as a manifestation of nature protection to build quality tourism experiences and sustainable tourism. This research was conducted before the Covid-19 pandemic in Bali Province, Indonesia, as one of the provinces with the highest level of foreign tourist visits and one of the provinces as a tourism economy in Indonesia. Two sample villages that were the target of the observations were: (1) Jatiluwih Village (Tabanan Regency). Jatiluwih Village has been designated by UNESCO as a World Cultural Heritage (WBD) since 29 June 2012 because it has uniqueness and characteristics in its agricultural system. (2) Pengelipuran Village (Bangli Regency), received an award from the Government of Indonesia for its efforts to protect Bamboo Forest in their local ecosystem.

3.3 Population and Sample

Respondents in this study are parties who live in the ecotourism management area and are considered competent in providing data and information related to the research variables. The sources of information that are considered competent are local communities and farmers, community leaders, ecotourism business actors, related governments, tourism business associations and academics. The sample size was set at 200 respondents (Sampling Quota) consisting of 50 respondents from local communities / farmers, 50 respondents from local community leaders, 50 respondents from tourism actors, 20 respondents from the government, 20 respondents from tourism associations, 10 respondents from academia. The sampling technique used a random approach for each cluster. This research is a perceptual study, so the data obtained is primary data using a questionnaire as a research instrument. In order for the data to be processed in the parametric statistical method, at least the data is on an ordinal scale, then it is taken through the Likert Scale approach with a degradation of 5 levels as a score from strongly agreeing on the highest assessment to strongly disagreeing on the lowest assessment. To test the validity and the reliability of the indicators of each building uses Structural Equation Modeling (SEM), through the Partial Least Square (PLS) approach with the help of the Smart PLS version 3 software application program.

3.4 Identification of Research Variables

Revenue Creation (X1)
- Entrance ticket (x1.1.)
- Increased income of rural communities (x1.2.)
- increase in rural industry income (x1.3.)
- Grant from certain parties (x1.4.)

Environmental Education (X2)
- The community understands the importance of natural resources. (x2.1.)
- The community understands the Social Culture must be preserved (x2.2.)
- The community understands how to minimize environmental damage (x2.3.)
- The community understanding the history of the village area (x2.4.)
- The community able to provide information about the existence of tourist in foreign languages (x2.5.)

Community Involvement (X3)
- Local people are involved in tourism planning (x3.1.)
- Local people are involved in tourism supervision (x3.2.)
- Local people are involved in the implementation of tourism x3.3.)
• Local people are involved in nature conservation efforts (x3.4.)

Conservation (X4)
• Ecotourism (village tourism) seeks to create a life of harmony between people (x4.1.)
• Ecotourism (village tourism) seeks to create a life of harmony with nature (x4.2.)
• Ecotourism (village tourism) seeks to save natural resources (x4.3.)
• Ecotourism (village tourism) seeks to increase spiritual understanding (x4.4.)

Economic Development and Infrastructure (X5)
• Ecotourism (village tourism) opens employment opportunities for people in the village (x5.1.)
• Ecotourism (village tourism) enhances Entrepreneurship (x5.2.)
• With Ecotourism (village tourism) the distribution of income is evenly distributed (x5.3.)
• Smooth communication access (x5.4.)
• Affordable transportation access to objects (x5.5.)
• Ecotourism (village tourism) maintains existence and pride in culture (X5.6.)

Service (X6)
• Reliability. The community supports services to tourists with existing facilities (x6.1.)
• Responsiveness. The community is responsive in providing information to tourists (x6.2.)
• Assurance. The community gives confidence in services that can be trusted by tourists (x6.3.)
• Empathy. The community understands the needs of tourists (x6.4.)
• Physical evidence. The quality of physical facilities for tourist services is adequate (x6.5.)

Controlling (X7)
• There are regulations regarding spatial use (x7.1.)
• There are regulations at the village level regarding tourism (x7.2.)
• Local people are involved in tourism supervision (x7.3.)
• There is environmental monitoring to be sustainable by village officials, and the local government (x7.4.)

Ecotourism Performance (X8)
• Ecotourism (village tourism) provides benefits to the community (x8.1.)
• Ecotourism (village tourism) provides an understanding of environmental (x8.2)
• Through ecotourism (village tourism) the natural environment is maintained (x8.3.)
• Ecotourism (village tourism) provides a quality experience for tourists (x8.4.)
• Through ecotourism (village tourism) there is an increase in income and welfare of the community (x8.5.)
• Through ecotourism (village tourism) there is an effort to defend the environment (x8.6)

Quality Tourism Experience (X9)
• There are conservation efforts with the mission of protecting nature (x9.1.)
• There are tourist attractions that allow local people to interact with tourists (x9.2.)
• Tourism activities and environmental preservation support the quality of life of tourists and the community (x9.3.)
• Tourism activities in the village are beneficial to tourists and the community both in material and non-material terms (x9.4.)
• The community offers a variety of uniqueness both the natural beauty of culture and craft art, so that it becomes a wonderful experience for tourists (x9.5.)

Sustainable Tourism (X10)
• Environmental sustainability (x10.1.)
• Social Culture Sustainability (x10.2.)
• Economic Sustainability (x10.3.)

3.5 Measurement Model Test

1. Convergent validity
Convergent validity can be seen from the Composite Reliability and the Average Variance Extracted (AVE) value. Based on the Composite Reliability value presented in Table 4 shows that the 10 constructs have Composite Reliability above 0.90, meaning that the established indicators can measure each construct well or the measurement model is reliable. The better Convergent Validity value is indicated by the higher correlation between the indicators that make up a construct. In this study, the AVE value of each construct was above 0.60. Therefore, there is no convergent validity problem in the model being tested (Chin, 1998).
Table 4
Construct Reliability and Validity

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Cronbach's Alpha</th>
<th>rho_A</th>
<th>Composite Reliability</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>0.852</td>
<td>0.874</td>
<td>0.901</td>
<td>0.696</td>
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<td>X10</td>
<td>0.937</td>
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<tr>
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</tr>
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<td>0.786</td>
</tr>
<tr>
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<td>0.954</td>
<td>0.839</td>
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<td>0.926</td>
<td>0.929</td>
<td>0.944</td>
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</tr>
</tbody>
</table>

Source: Results of Data Processing

| X1 : Revenue Creation | X6 : Service |
| X2 : Environmental Education | X7 : Controlling |
| X3 : Community Involvement | X8 : Ecotourism Performance |
| X4 : Conservation | X9 : Quality Tourism Experience |
| X5 : Economic Development and Infrastructure | X10 : Sustainable Tourism |

2. Discriminant Validity Test.

The next criterion is discriminant validity, by comparing the correlation between constructs and the AVE root as shown in Table 5. The AVE value of each construct is greater than the highest r² value of the other construct values. In other words, discriminant validity can be considered achieved.

Table 5
Discriminant Validity (Fornell-Larcker Criterion)

<table>
<thead>
<tr>
<th>Variable</th>
<th>X1</th>
<th>X10</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
<th>X8</th>
<th>X9</th>
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<tr>
<td>X10</td>
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<td>X5</td>
<td>0.831</td>
<td>0.865</td>
<td>0.857</td>
<td>0.876</td>
<td>0.824</td>
<td>0.798</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>X6</td>
<td>0.873</td>
<td>0.826</td>
<td>0.869</td>
<td>0.830</td>
<td>0.903</td>
<td>0.824</td>
<td>0.896</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X7</td>
<td>0.857</td>
<td>0.858</td>
<td>0.874</td>
<td>0.870</td>
<td>0.887</td>
<td>0.842</td>
<td>0.878</td>
<td>0.895</td>
<td></td>
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</tr>
<tr>
<td>X8</td>
<td>0.847</td>
<td>0.875</td>
<td>0.848</td>
<td>0.868</td>
<td>0.852</td>
<td>0.863</td>
<td>0.845</td>
<td>0.856</td>
<td>0.878</td>
<td></td>
</tr>
<tr>
<td>X9</td>
<td>0.862</td>
<td>0.929</td>
<td>0.888</td>
<td>0.906</td>
<td>0.886</td>
<td>0.893</td>
<td>0.893</td>
<td>0.891</td>
<td>0.870</td>
<td>0.879</td>
</tr>
</tbody>
</table>

Source: Results of Data Processing

| X1 : Revenue Creation | X6 : Service |
| X2 : Environmental Education | X7 : Controlling |
| X3 : Community Involvement | X8 : Ecotourism Performance |
| X4 : Conservation | X9 : Quality Tourism Experience |
| X5 : Economic Development and Infrastructure | X10 : Sustainable Tourism |

3.6 Structural Model Test (Inner Model Evaluation)

Inner Model evaluation aims to determine the goodness of fit model with the following approach method:

1. R-Square ($R^2$).

Shows the strength and weakness of the influence caused by variations in exogenous variables on endogenous variables. $R^2$ is greater than 0.50 is categorized as strong model. $R^2$ is the coefficient of determination in the endogenous construct. According to Chin (1998), $R^2$ 0.67 (strong), 0.33 (moderate) and 0.19 (weak). $R^2$ of each endogenous variable is presented in Table 6.

Table 6
R Square

<table>
<thead>
<tr>
<th>Variabel</th>
<th>R Square</th>
<th>Adjusted R Square</th>
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</thead>
<tbody>
<tr>
<td>X10</td>
<td>0.881</td>
<td>0.879</td>
</tr>
<tr>
<td>X4</td>
<td>0.833</td>
<td>0.828</td>
</tr>
<tr>
<td>X5</td>
<td>0.811</td>
<td>0.805</td>
</tr>
<tr>
<td>X8</td>
<td>0.821</td>
<td>0.814</td>
</tr>
<tr>
<td>X9</td>
<td>0.758</td>
<td>0.755</td>
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</tbody>
</table>

X4 = Conservation X5 = Economic Development and Infrastructure X8 = Ecotourism Performance X9 = Quality Tourism Experience X10 = Sustainable Tourism
Table 6 shows that the endogenous variables are economic sustainable variables tourism and the conservation variable has $R^2$ at a strong level, which is above 0.70. Thus it can be said that the model formed by the 10 variables is strong.

2. F – Square ($f^2$)

The value of $f^2$ in Table 7 shows the effect of the construct as a predictor at the structural level. In other words, how much influence is the endogenous construct on exogenous constructs, which is known based on the effect size $f^2$. The value of $f^2$ 0.02 is categorized as a weak influence, the value of $f^2$ 0.15 is categorized as sufficient influence and the value of $f^2$ 0.35 is categorized as a strong influence.

<table>
<thead>
<tr>
<th>Variable</th>
<th>X1</th>
<th>X10</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
<th>X8</th>
<th>X9</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
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<td></td>
</tr>
<tr>
<td>X10</td>
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<td>0.029</td>
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<td></td>
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<tr>
<td>X2</td>
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<td></td>
<td>0.273</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X3</td>
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<td></td>
<td></td>
<td>0.104</td>
<td></td>
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<td></td>
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<td>X4</td>
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<td></td>
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<td>0.023</td>
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<td></td>
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<td></td>
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<td>X5</td>
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<td></td>
<td></td>
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<td></td>
<td>0.232</td>
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</tr>
<tr>
<td>X7</td>
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<tr>
<td>X8</td>
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<td>0.020</td>
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</tr>
<tr>
<td>X9</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.041</td>
</tr>
</tbody>
</table>

The F-square calculation yields a value of 0.999 or 99.9%, which means that the model has a very good observation value. This means that 99.9%, the relationship between variables can be explained by the model. Based on the 2 results of the Inner Model assessment above where $R^2$ is at a moderate and strong level and $Q^2$ is at a very good level.

3. Q-Square (Q$^2$) : Predictive Relevance.

Q$^2$ measure how good the observed value is generated by the estimation model and its parameters. Q$^2$ Value > 0 shows that the model has a good predictive relevance. Otherwise if Q$^2$ Value < 0 shows that the model has poor predictive relevance.

Value of Q$^2$ can be calculated as follows:

$$Q^2 = 1 - (1-R^2) (1-R^{22})$$

$$Q^2 = 1 - (1-0.881)(1-0.833)(1-0.811)(1-0.821)(1-0.758)$$

$$Q^2 = 1 - (0.189)(0.167)(0.189)(0.179)(0.242)$$

Q$^2$ = 0.999

The Q-square calculation yields a value of 0.999 or 99.9%, which means that the model has a very good observation value. This means that 99.9%, the relationship between variables can be explained by the model. Based on the 2 results of the Inner Model assessment above where $R^2$ is at a moderate and strong level and Q$^2$ is at a very good level.

4. Goodness of Fit (GoF) Test

GoF index, used in evaluating structural models and overall measurements which can be calculated by the root of the average AVE multiplied by the average R$^2$.

Average AVE = (0.786)+(0.839)+(0.800)+(0.637)+(0.770)+(0.766)+(0.773)+(0.696)+(0.803)+(0.888) = 7,722: 10 = 0.72

Root of average AVE = 0.77 = 0.85

Root of average AVE x average R$^2$ = 0.85 x 0.821

GoF = 0.69. (large)

The GoF test criteria are 0.1 (GoF small), 0.25 (moderate GoF), and 0.36 (GoF large), Tenenhaus et al. (2004). So thus the overall evaluation of the research model can be declared good, then it can be continued with hypothesis testing analysis.

5. Estimate for Path Coefficients

The results of the statistical test of the relationship between variables (Estimate for Path Coefficients) are the significance of the path coefficient value which shows the strong influence of exogenous constructs on endogenous constructs carried out by the Bootstrapping procedure in the Partial Least Square (PLS) application program. The bootstrapping process can produce an image of the research model (See Fig. 4). The results of testing the significance of the path coefficient of the research model using Smart-PLS 3 are recapitulated in Table 8.
Table 8 shows that of the 13 causal relationships between exogenous variables and endogenous variables, there are four insignificant relationships (hypothesis rejected) at \( \alpha = 0.05 \) with a statistical value \(<1.96\). On the other hand, there are nine causal relationships between exogenous variables and significant endogenous variables (hypothesis is accepted) at \( \alpha = 0.05 \) with a statistical value \(>1.96\).

4. Discussion

The results of the research hypothesis can be examined as follows,

1. The results show that revenue creation (Revenue Creation) in the implementation of ecotourism has a significant impact on the conservation of biodiversity and natural resources (H1). The increasing income from ecotourism activities, the more conservation efforts that can be carried out. The results of this study are consistent with the perspective of Ross and Wall (1999) that ecotourism is seen as a means of protecting natural areas through income generation. According to Steven et al. (2013) many conserved area managers wish to expand and diversify their funding portfolios because they consider tourism revenue to be an increasingly significant fiscal source for protected area management and conservation. Revenues are generated from entry and activity fees, accommodation, concession and rental fees, and sales of tourist commodities. Thus the management of the management of the source of funds is very important to obtain conservation financing in a sustainable manner.

2. The results show that income generation from ecotourism activities does not have a significant impact on economic and infrastructure development efforts in the ecotourism destination areas in (H2). The findings of this study indicate that the
theory of Ross and Wall (1999) regarding the relationship between income creation and economic and infrastructure development is not proven. The findings of this study are supported by the research of Steven R, et al. (2013), which states that in general the government budget allocation is still the main source of protected areas. Research conducted by Bhuiyan et al. (2011) in Malaysia show that the main role of the Malaysian government for ecotourism development is to strategize, increase ecotourism products, increase accessibility, employment and training, marketing promotion, sustainable tourism development, investment, research and planning, safety and security. However, the reality in the field of ecotourism development is impossible, if it remains the responsibility of the government alone. It is an acknowledged fact that many environmental problems cannot be solved without the active participation of local communities and community-centered grassroots organizations. According to Backman and Munanura (2015), taking a stake is a key actor in achieving sustainable development through ecotourism. Marulo (2012) agrees by pointing out that management influences the growth of ecotourism, and all stakeholders form the basis on which ecotourism stands and its success depends on cooperation, communication and involvement of various stakeholders. Stake an interest in tourism development in Indonesia, called Pentahelix, namely five key interests, to be precise, government, society, academia, businessmen and the media.

3. The results show that environmental education has a positive effect on the conservation of biodiversity and natural resources variables (H3). The more intensive environmental education efforts for both local communities and tourists will have a positive impact on efforts to conserve biodiversity and natural resources. This finding also supports the theory of Ross and Wall (1999) about the relationship of environmental education with conservation efforts of biodiversity and natural resources in the ecotourism development model. Effective environmental education is more than just the transfer of information but also a set of tools to develop and enhance attitudes, values and environmental knowledge, as well as build skills. Prepare individuals and communities to collaboratively carry out positive environmental actions that support sustainable environmental preservation efforts.

4. The results of the research hypothesis test indicate that environmental education has a positive effect on the variables of economic and infrastructure development (H4). This finding also supports the theory of Ross and Wall (1999). The higher the intensity of education towards the environment will encourage the intensity of economic and infrastructure development. Environmental education is one of the keys to a successful ecotourism development. Environmental education includes approaches, tools and programs that develop and support attitudes, values, awareness, knowledge and skills related to the environment. Environmental education will support efforts to conserve nature as a source of tourist attraction and a source of livelihood for local communities in general. Conservation efforts will build sustainable ecotourism. Many governments adopt ecotourism as a development strategy to increase their economic status in order to obtain conservation support in their natural areas (Wearing & McNeil, 2000).

5. The results of the research hypothesis test show that the variable of community involvement has no significant effect on the variable of biodiversity and natural resource conservation (H5). This finding is inconsistent with the theory of Ross and Wall (1999) regarding the relationship between community involvement in efforts to conserve biodiversity and natural resources. Balancing the needs of humans and wildlife (conservation) is difficult but possible if everyone works together (Reynolds & Bettinger, 2008). Community participation with their traditional knowledge, systems and practices should be the starting point for protection of areas, regardless of management. However, all traditional systems are not necessarily compatible. Therefore, one must adopt and improve the good system and avoid the bad (Bajracharya, et al., 2007). Knowledge of the benefits that can be enjoyed and social systems that do not support it results in low community participation in conservation programs.

6. The results of the research hypothesis test show that community involvement has a positive and significant effect on the variables of economic development and infrastructure (H6). This finding strengthens the theory of Ross and Wall (1999), about the relationship between community involvement with economic development and infrastructure in an ecotourism development model. There has been a relatively slow implementation of the importance of community participation in tourism development (Aref & Ma’rof, 2008). This may be the reason why in many developing countries, where tourism has been developed is controlled by companies that do not really care about local social and economic conditions. Every development activity must be pareto superior (building benefits all parties, especially the community), not pareto optimal (building at the expense of others). The important values of community participation in development are as a strategy. That is, community participation is a strategy to get community support. Community participation is a partnership between stakeholders, especially government, private sector and society in the development process called the Public Private Partnership (Razak, Andi, 2013).

7. The results show that the conservation of biodiversity and natural resources has no effect on ecotourism performance (H7). This finding rejects the theory of Ross and Wall (1999), regarding the relationship between conservation of biodiversity and natural resources on the performance of ecotourism. The reciprocal contribution of ecotourism to conservation of community-owned land is often difficult to evaluate, both in developing countries and in areas owned or managed by indigenous peoples in developed countries (Steven, 2013). Local people usually depend on these areas for their livelihoods, and in many cases live in them. They may view ecotourism, generally including a cultural component, as a significant source of cash income, but they may also wish to continue traditional subsistence activities, or modern hunting, which may conflict with ecotourism opportunities.

8. The results of the study conclude that economic and infrastructure development has a positive impact on ecotourism performance (H8). These findings reinforce the theory of Ross and Wall (1999), about the relationship between economic development and infrastructure with ecotourism performance. For successful tourism development, the need for more
intensive investment in modernization is indispensable. Tourism infrastructure contributes to increasing the efficiency of production and distribution of tourism services. In this case, investment in tourism infrastructure development is important as a component of tourism competitiveness. Tourism infrastructure is an important factor for the purpose of visiting and tourists get satisfaction on the spot (Blazeska D., et al., 2018). Excellent satisfaction and experience is one of the dimensions of the performance of the ecotourism business.

9. The results show that the servant element does not provide a significant boost to ecotourism performance (H9). Each service change unit cannot provide a significant change in the ecotourism performance variable. This finding does not support the theory of Ross and Wall (1999), regarding the relationship between service delivery and ecotourism performance. Ecotourism in Bali is actually relatively recently developed based on the potential of its natural and cultural resources. The development of ecotourism in Bali is increasing along with the environmental damage which is also increasing. Currently, stakeholders in the tourism sector are looking for forms of ecotourism management, including aspects of excellent service to tourists. The obstacles in developing excellent service to tourism today are the lack of connectivity, basic services, and infrastructure to serve tourists. Lack of good amenities in tourist destinations, for example the absence of toilets. Lack of direct flights from target markets to tourist destinations. Lack of foreign-language tour guides, especially other than English (Kompas.com, 2016).

10. The results show that the element of supervision has a positive and significant effect on ecotourism performance (H10). These findings reinforce the theory of Ross and Wall (1999), about the relationship between monitoring and eco-tourism performance. The tourism development policy in Indonesia involves five parties (pentahelix) as well as those who can oversee tourism, including ecotourism. These parties are academia, community, government, business and media. Academics are a source of knowledge who have concepts, theories in developing business to gain a sustainable competitive advantage. Communities are people who share the same interests and are relevant to a growing business. The government is the party that makes the rules and is responsible for developing business. Business is an entity that has activities in processing goods or services to become valuable. Meanwhile, the media are stakeholders who have more information to grow the business. Muhyi et al. (2017) explained that penta-helix is an addition to the triple-helix strategy by involving communities and elements of non-profit organizations to realize innovation.

11. The results show that the performance of ecotourism has a positive impact on the quality tourism experience (H11). These findings reinforce the theory of Ross and Wall (1999), about the relationship between ecotourism performance and quality tourism experiences. Ecotourists tend to expect eco-friendly businesses and prefer services that are polite, informative, and trustworthy, providing a pleasant experience. In addition, environmentally appropriate physical facilities and equipment that minimize environmental degradation were found to be more important for tourists (Khan, 2003).

12. The results show that the performance of ecotourism has a positive impact on sustainable tourism (12). This finding strengthens the theory of Ross and Wall (1999), about the relationship between ecotourism performance and sustainable tourism. Ecotourism is a sub-component of the sustainable tourism sector. The perception of ecotourism as potential as an effective tool for sustainable development is the main reason why developing countries are now embracing it and incorporating it into their economic development. Ecotourism assists community development by providing more sustainable alternative livelihoods for local communities (Kiper, 2013). The goal is to conserve resources, especially biodiversity, and maintain a sustainable use of resources, which brings ecological experiences for travelers, conserves ecological environment, and derives economic benefits.

13. The results of the study indicate that quality tourism experiences have an impact on sustainable tourism (H13). This finding is in accordance with the opinion (Boyd, 2002), that the indicator of a quality tourism experience is sustainability. The results of this study also support the findings of Monica A., B., et al., 2020, suggesting four dimensions of sustainable tourism experiences: interactions with the natural environment; interaction with the cultural environment; insights and views; and activities based on the uniqueness of the destination. Subsequent studies support future research and management to further incorporate the dimensions of sustainable experiences to enhance the value of the experience perceived by tourists and the holistic sustainability of the destination.

5. Conclusion

Seven variables as the key to successful ecotourism performance have been proven through the GoF (Goodness of Fit) = 0.69 test. (large). They have become elements in the policy model for improving ecotourism performance to build quality tourism experiences and sustainable tourism in Bali Province, Indonesia. The seven variables are revenue creation, environmental education, community involvement, conservation, economic development and infrastructure, service, and controlling. The results also have shown that ecotourism as a source of income was unable to support economic and infrastructure development. Community involvement has maintained no significant impact on conservation efforts. Conservation has no impact on ecotourism performance. Services have not had an impact on tourism performance. Thus, ecotourism as a source of income, community involvement, conservation and services as successful factors in improving ecotourism performance are strategic management priorities to build quality tourism experiences and sustainable tourism. Managing ecotourism performance by designing quality tourism experiences is a new breakthrough to increase the loyalty of returning tourists.

6. Limitations

This research was conducted before the Covid-19 pandemic in Indonesia, so the research instrument was not designed to include various variables related to the Covid-19 pandemic.


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