A Tourism Village Development Model Based on Cultural Ecology on the Slopes of Mount Lawu, Indonesia

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Abstract. Sustainable development has emerged in response to the environmental damage caused by exploitative development, and this has led to the need for efforts to align development with environmental preservation. There are concerns that the rapid rise in tourism village development will destroy the ecological balance. Several models for tourism village development have emerged, in line with the capacity of human resources and local potential. This research aims to investigate a development model for mountainside tourism villages based on an ecological perspective. A qualitative research method is used with a phenomenological approach. The research location is the tourism villages on the slopes of Mount Lawu, Magetan Regency in East Java, Indonesia. The research results show that a tourism village development model based on cultural ecology, marked by the development of social networks and local cultural potential, has been proven to empower the local communities.

1 Introduction

In the national economy, tourism is one of the sectors that is hoped will provide increased revenue through foreign exchange earnings. The tourism sector has a huge impact on society, especially for communities living in regions or locations that have become tourist destinations. Tourism is a sector that is being continuously promoted by the government as a pillar of national development because it has the potential to support the national economy during times of global crisis. Law Number 10 of 2009 states that tourism development is needed in order to encourage equal opportunities for business and to gain benefit and face the challenges of life changes on a local, national, and global scale. Development of the tourism sector is also included in human resource and natural resource development efforts [1-2].

Indonesia is a country with a wealth of potential in ecotourism. Its cultural diversity and local wisdom enhance the potential of tourism and the creative economy. This means that human ability to interact with the environment, guided by cultural elements, plays an important role in development [3-7]. The development of tourism villages based on cultural ecology has become a tourism village development model that is carried out through a joint effort, based on the slogan “building with the community”, to provide benefit for local communities.

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communities. The theory of cultural ecology, according to [8], states that the environment and culture cannot be viewed separately but rather are the combined result that has been formed through a process of two-way communication.

Cultural ecology is a way of understanding problems related to the living environment from a cultural perspective or, vice versa, understanding culture from the perspective of the living environment. Cultural ecology studies the ways in which human beings adapt to their natural environment. Cultural ecology began with a school of thought that was developed in the field of anthropology and pioneered by [8]. In the Theory of Cultural Ecology, adaptation is associated with environmental change in the human dimension which always leads to a process, action, or outcome of a system (household, community, group, sector, region, country) to develop a better ability to overcome, manage, or adjust to changing conditions, pressures, hazards, risks, or even opportunities [9-13]. More specifically, the term environmental adaptation is used to explain the adaptation of local communities (society on a smaller scale) in response to environmental change [14-15]. The adaptation strategies carried out by local communities may not always align with policies implemented by the government in response to issues of environmental change on a global scale. Adaptation strategies in the theory of cultural ecology [16-19] use a multilinear and historical sociological approach to explore environmental change that is locally specific, and its connection to change in a livelihood setting, in line with the concept of adaptation in the cultural ecology theory.

As explained by [20], adaptation strategies can be differentiated into adaptive behavior, adaptive strategies, and adaptive processes. Adaptive behavior refers to the actual methods used by communities to discover or plan ways for acquiring resources to achieve goals and solve problems. Adaptive behavior is a choice of action that takes into consideration the costs that must be borne and the outcome that will be achieved. Adaptive strategies constitute a general pattern that is formed through separate numerous priori adaptations of individual people’s thoughts. People respond to the problems they face by making an evaluation of the possible alternatives and their consequences. Efforts are made to try and position the problems within a general strategy design to balance any conflict of interests of the numerous parties responsible for their actions. Adaptive process refers to the changes that are shown through a lengthy process by adapting the strategies chosen. The process of adaptation strategies can be divided into two levels, individual and group. In principle, individuals live together in a social environment, and for this reason, it is important for individuals to ease and lighten each other’s burdens in the social environment.

The culture of a society grows and develops through a process of adaptation, by adjusting to the conditions of the bio-physical environment and its changes [21-22]. At the center of this cultural development is the technological and economic regulations that are referred to as the culture core. This culture core serves as a behavior guide for members of the community in carrying out their subsistence activities and in developing their culture outside the culture core. Non-core culture is the immaterial culture that supports the growth and development of the culture core, and includes religion, values, art, language, and ritual. Tourism village development, as the manifestation of the core concept of community tourism, adheres to the presupposition that it is the local people of an area who gain maximum benefit from tourism development. The community is directly involved in tourism activities, such as providing services which can result in increased income for people outside their daily activities. Attention to the supporting capacity and carrying capacity of a region, along with environmentally friendly development, means that a tourism region must keep in mind both the physical capacity of the region and the readiness of the local community [24-26].

Based on the research of [27], cultural ecology views patterns of adaptive human behavior through their culture towards their surrounding natural environment. According to the views of [28] on cultural ecology, the environmental factor does not define humanity. In fact,
human interaction with the environment through subsistence works to determine and directly influence the environment within the social and cultural order. In the work of [29], Geetz on Mojokuto states that ecological, economic, social, and cultural factors play a part in changes to the social structure, where such changes turn a social balance or homeostasis into another kind of social balance. On this basis, it can be seen that culture plays a vital role in determining the way natural resources are managed in a particular environment, specifically in the adaptation process and the sustainability of nature itself through local wisdom. This also corresponds to the views of [30-31], who explain that human beings and their environment form a complex network shaped within a religious system. This research aims to describe adaptation strategies in tourism village development, local wisdom in tourism village development, and cultural ecology in tourism village development.

2 Research method

This research uses a qualitative method, and the results are presented in the form of a descriptive analysis. With reference to [32-34], this research studies the condition of a natural object, with the researcher functioning as the key instrument. In its implementation, the research focuses on the aspect of deep understanding of a phenomenon. It examines and endeavors to understand the subject and object of the research, which includes people and institutions, based on the facts as they appear in the development of a tourism village.

The location chosen for the research is Genilangit Village in the Pancol District of Magetan Regency, East Java. The consideration for selecting this location was the unique characteristics of the mountainside area in preserving the sustainability of its natural resources. Informants in the research include community figures, administrators of the tourism village, village officials, heads of farmers groups, farmers, traders, and MSME operators connected to the tourism village. The data used in the research consists of primary and secondary data. The primary data includes data about the characteristics of the dasa wisma group, characteristics of the social environment, characteristics of tourism, and the opinions of informants who have the best understanding of the research topic, such as dasa wisma groups, tourism administrators, and village government officials. The secondary data in the research includes data about the village profile (conditions of the region, conditions of the community, village facilities, village potential), data about dasa wisma group activities, and data about tourist visits.

The data collected were divided into two categories according to the source, namely primary data and secondary data. The primary data were obtained directly from a number of respondents. The primary data collection techniques included in-depth interviews, participative observation, documentation, and a Focus Group Discussion (FGD). The data collection was carried out in various settings, from numerous sources, involving several methods. The observations in the research used passive participative observation in which the researcher went in person to the place where the activities were happening to observe but was not involved in the activities. In-depth interviews were held to discover the thoughts of the informants. The documentation study included articles, illustrations, and monumental written works such as diaries, life histories, stories, biographies, regulations, and policies, and picture documents such as photographs, live images, and sketches. The validity of data in this research was tested using data triangulation, consisting of triangulation of sources, triangulation of theories, triangulation of methods, and triangulation of the researcher. The data analysis was carried out by organizing the data, describing it in units, synthesizing and arranging it in patterns, and selecting which data was important to be studied, then formulating a conclusion to be shared with other people [35-39]. The technique for data analysis in this research refers to [40], and is divided into three stages: data reduction, data display, and conclusion.
3 Research results and discussion

The history of Genilangit Village began at a time when the area was still an untamed wilderness, inhabited by a group of people led by Ki Malang Yudho. The eleven members of the group lived as nomads, relying on farming and cultivating activities to support their lives as they moved from one place to another. On arriving in this uncultivated spot, the leader of the group, Ki Malang Yudho, decided to clear the land to make way for a place to live. From that time on, life in the place now known as Genilangit Village continued to develop, under the guidance of the honest and trusted leader, Ki Malang Yudho.

The story of the name Genilangit originates from the events in which Ki Malang Yudho happened to see a fire blazing up high into the sky in the east. When he went to take a closer look at the fire, Ki Malang Yudho uttered the following sentence, in Javanese: “tlatah iki bakal rejo lan jaya yen dijenengi Genilangit”, which means this will become a large, busy place if it is given the name Genilangit. From that time on, the local people called the village Genilangit, and it is still known by the same name today.

The research findings of [41-45] show that a tourism village is a form of village tourism development that is based on the surrounding tourism potential of an area. A tourism village is also described as a rural area that has unique potential and a special tourist attraction, whether in terms of the physical characteristics of the natural village environment or the social and cultural life of the community, which is managed and packaged in an attractive and natural manner by developing other supporting facilities to transform it into a tourist object. It can be said, therefore, that a village can be referred to as a tourism village if it has the potential of a tourist attraction that can be developed to become the object of a tourism destination.

3.1 Adaptation strategies in tourism village development

Adaptation is of great importance because a system must always adapt to its environment, and even though such adaptation exists between a system and its environment, it is not only carried out by the system or the environment alone but rather is of a reciprocal nature, without making adaptation the primary function.

This research studies the theory of adaptation [20], in which John W. Bennett applies three forms of adaptation strategy: (a) behavioral adaptation strategy, which is implemented by following the flow of the environment to avoid bankruptcy; (b) strategic adaptation, in which the community compiles smart tactics to solve problems faced related to the utilization of resources; and (c) process adaptation strategy, which takes a long time and aims to lighten the burden of individuals and facilitate businesses, by establishing a farmers organization in the community and receiving intervention from the government to aid the process.

Adaptation is regarded as responsive human behavior to environmental changes that are taking place. This responsive behavior enables a person to arrange certain systems for their actions or behavior so that they can adjust to existing situations and conditions. A person will make adaptations after experiencing certain circumstances and subsequently build a pattern and make a decision to face future situations. In short, adaptation is a process of adjusting to an ecological or social environment [20]. Similarly, [46-49] explain that the concept of adaptation contains the basic assumption that human beings always endeavor to adapt and adjust to their surrounding environment in an effort to preserve their living conditions in order to survive. In other words, in order to sustain their lives, people must make adaptations, and this includes the people living in communities around tourism locations.
<table>
<thead>
<tr>
<th>Form of Adaptation Strategy</th>
<th>Implementation of adaptation strategy</th>
<th>Impact</th>
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<tbody>
<tr>
<td>Behavioral adaptation strategy</td>
<td>Socialization and increasing frequency of activities at the tourism location as an education medium to raise tourism awareness in the local community</td>
<td>Local communities develop better awareness of tourism, marked by changes in behavior such as riding motorcycles along the road to the tourism location, being more friendly towards people from outside their own community</td>
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<td>Holding performances of local art and culture to attract visitors as a medium for modernization and acculturation</td>
<td>Revival of local arts and more participation of young children in preservation of the arts with regular rehearsals at the tourism location</td>
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<tr>
<td>Strategic adaptation strategy</td>
<td>Creating a miniature model of the Eiffel Tower</td>
<td>Many people are interested or curious, and eventually come to visit to have a closer look and take photos with friends</td>
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<td></td>
<td>Holding events where religious leaders and public figures are invited to attend</td>
<td>Many people come to visit from different areas, boosting the sales of local souvenirs</td>
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<tr>
<td>Process adaptation strategy</td>
<td>Providing supporting facilities for a children’s play area</td>
<td>More visits by schoolchildren (class outings, family gatherings, outbound activities, and camping)</td>
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<td></td>
<td>Providing facilities for young people (photo booth for selfies, games for teenagers, live music etc)</td>
<td>More teenagers and young people from various places come to visit in organized groups, for camping activities, meetings, reunions, and other activities such as organization capacity building</td>
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<tr>
<td></td>
<td>Providing facilities and infrastructure for the comfort and safety of visitors at the location</td>
<td>More modes of transport available to reach the location</td>
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<td></td>
<td>Developing alternatives ways to attract visitors to stop and enjoy the natural beauty of the mountainside scenery (picking various vegetables and fruits along the road to the tourism location)</td>
<td>People who own land near the road to the tourism location can offer their gardens for vegetable and fruit picking, while those living further away from the road can sell local food products at the side of the road leading to the tourism location</td>
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</table>

One of the characteristics of cultural ecology is attention to adaptation on two levels: first, in connection with the ways cultural systems adapt to their total environment, and second, as a concept of systemic adaptation, the attention to the ways institutions in a culture adapt and adjust to each other. Cultural ecology states that the need for processes of adaptation will enable people to see the ways of emergence, preservation, and transformation as cultural configuration. Cultural ecology discusses the interaction of life forms in a particular ecosystem and the ways human beings shape the ecosystem itself.
The unit of adaptation of human beings includes the organisms and the environment that make up an ecosystem: a system or unit that functions and consists of a physical environment and the various organisms that live inside it. The process of adaptation creates a dynamic balance because human beings are a part of one of the organisms that exists in a particular physical environment. Through the culture to which they belong, human beings are able to develop a set of idea systems. In other words, human beings as a form of organism, through the system of ideas they have developed and possess, have the ability to adapt to a part of the ecosystem.

The adaptive behavior of the mountainside community towards biophysical environmental change includes: (1) Maintaining a land use system for vegetable plants; (2) Planting medicinal plants (a live pharmacy) and fruits and vegetables (a live food stall) outside the house; (3) Cultivating an organic vegetable garden; (4) Fitting water pipes on agricultural land, using existing water sources; (5) Improving village infrastructure; and (6) Using technology for cultivation activities, post-harvest processing, and agricultural marketing. The adaptive behavior of village communities to changes in the social environment include: (1) Building associative relationships between the local community and people outside the community; (2) Developing social capital; and (3) Livelihood diversification by means of a multiple income pattern.

### 3.2 Local wisdom in tourism village development

<table>
<thead>
<tr>
<th>Dimension of local wisdom</th>
<th>Form of local wisdom</th>
<th>Role in tourism village development</th>
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<tbody>
<tr>
<td>Local knowledge dimension</td>
<td>Local communities know about plant types according to their use (suitable for conservation, decoration, medicine etc.)</td>
<td>Easier for tourism village administrators to map plants according to their purpose</td>
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<td></td>
<td>Local communities know which plant types are rare and difficult to grow</td>
<td>Tourism location becomes a medium for preserving rare plant types</td>
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<td></td>
<td>Local communities have local knowledge about reading natural signs and phenomena</td>
<td>Tourism object managers can anticipate as necessary in the event of a possible disaster</td>
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<tr>
<td>Local skills dimension</td>
<td>Local communities know the right time to plant and the right time to harvest, according to demand</td>
<td>Easier for tourism administrators to map agricultural land to become alternative land for vegetable picking to attract visitors</td>
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<td>Local communities have conservation skills to anticipate landslides</td>
<td>Landslides can be minimized at the location of the tourism object by way of anticipation</td>
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<td>Communities are familiar with using local potential to eradicate pests and plant diseases</td>
<td>Eradication of pests and plant diseases will support sustainable development</td>
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<tr>
<td>Local resources dimension</td>
<td>Communities know when various types of flowers are in season</td>
<td>Decorative plants are always in bloom at the tourism village location</td>
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<td></td>
<td>Communities have knowledge about the plants that grow and thrive well near the tourism object</td>
<td>Diversity of food crops and horticulture means there is always ready stock at the tourism object</td>
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<td></td>
<td>Communities have their own methods to preserve the sustainability of water sources</td>
<td>Continuous supply of fresh water is always available</td>
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The dimension of local wisdom in the communities living around tourism villages can be divided into three categories: the local knowledge dimension, the local skills dimension, and the local resources dimension. The table below shows the roles of these three dimensions in tourism village development.

In the local knowledge dimension, local communities always possess knowledge related to their environment. It has been shown here that local knowledge can distinguish between the natural resources that can be consumed or cultivated and the resources that are not intended for consumption but function as decoration, thereby preventing exploitation on a massive scale. The local skills dimension is used as a means of survival. In this dimension, local wisdom provides knowledge which is passed down from generation to generation for the continuity of subsequent generations, whether in the form of tangible or intangible heritage. The local resources dimension is generally concerned with the natural resources, both renewable and non-renewable, that are found in a particular area. In this dimension, local wisdom, through customs or tradition, plays a role in safeguarding the continuity of nature and the environment through regulations. These regulations are usually in the form of prohibitions, to ensure that the utilization of natural resources is carried out wisely and prudently.

### 3.3 Cultural ecology in tourism village development

Community empowerment through the utilization of local cultural potential is one of the ways developments can achieve better prosperity for the community. According to [1], tourism villages at the present time are a form of implementation of community-based and sustainable tourism development that is widely used as an opportunity to improve the living standards of a community. It is hoped that breaking the chain of poverty will enable communities to be free from powerlessness and poverty, and to grow strength and independence.

<table>
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<tr>
<th>Entity of Cultural Ecology</th>
<th>Empowerment activity</th>
<th>Role in tourism village development</th>
</tr>
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<tbody>
<tr>
<td>Social network</td>
<td>Development of community participation in an institution (group, organization, commodity association etc.)</td>
<td>Broadens networks and provides better access to collaborations with stakeholders for developing unique local souvenir products and branding the existence of the tourism village</td>
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<td></td>
<td>Strengthening of civil society</td>
<td>Communities become involved in decision making, from planning to implementation, monitoring, evaluation, and utilization of development outcomes</td>
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<td></td>
<td>Facilitation of political public space</td>
<td>Becomes a medium for accommodating the aspirations of the community in connection with tourism village development</td>
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<tr>
<td>Local cultural potential</td>
<td>Promotion of local traditions (village cleansing and other traditional rituals)</td>
<td>Can be used as an attraction to encourage more tourists to visit</td>
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<td></td>
<td>Development of traditional arts (<em>reyog</em>, <em>hadrah</em>)</td>
<td>Can be used to support regular weekend events</td>
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<td></td>
<td>Revitalization of social capital in the community</td>
<td>Preserves the safety of the tourism village and builds solidarity and togetherness</td>
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</table>
According to Kuninggar et al (2021), a tourism village is a rural district with a number of special characteristics that have enabled it to become a tourist destination. As stated by Noor and Zulfiani (2021), the concept of a tourism village contains a uniqueness that can be optimized by the local community, a uniqueness that may be either of a tangible or an intangible nature. Research has shown that the presence of such uniqueness in a local community can be promoted to play an important role in tourism village development. According to Rahman et al (2022), community empowerment together with the development of tourism potential has the ability to improve the economic contribution for the community, as well as to encourage environmental preservation.

In an empowerment program, the community is positioned as the subject in the program. In this context, the program helps the community to develop its own skills to become more independent so that it can resolve its own problems and make its own decisions. The research results show that the social network established through empowerment activities has the potential to increase the community’s role in decision making at every level of community participation in the tourism village development. Empowerment means preparing and providing a community with resources, opportunities to develop knowledge, and skills to increase the social capacity of the community for determining its own future, as well as encouraging participation and influencing the lives of the people in the community. In its implementation, empowerment can be defined as encouragement or motivation, guidance or counseling to improve the skills of individuals in the community so that they are able to live independently.

### 4 Conclusion

Human beings need the natural resources in their environment in order to prosper and fulfil their lives so that human life can continue in a sustainable way. Therefore, the environment does not only exist for human beings to exploit and explore but is also a prerequisite for the formation of a stable relationship between human beings and their surrounding environment. In order for this relationship to continue, human beings must make adaptations, as a behavior strategy for dealing with the natural environment and the people around them. Human adaptation is carried out in response to environmental change, leading to a development in behavior patterns that can help people to take advantage of a particular environment. The adaptation strategies implemented in tourism village development are: (a) behavioral adaptation strategies, (b) strategic adaptation strategies, and (c) process adaptation strategies. The local wisdom that exists around the tourism village can be divided into three dimensions: the local knowledge dimension, local skills dimension, and local resources dimension. Community empowerment is a process which gives a community power to overcome any problems that arise. social network established through empowerment activities has the potential to increase the community’s role in decision making at every level of community participation in the tourism village development.

### References


