

Evaluation Research on Ecological Environment Quality of Rural Tourism Area Based on AHP Method

Dongling Sun
Luohe Vocational Technology College, China

Yang Zhou
Guangdong University of Technology, China

ABSTRACT

The construction of rural tourism destroys the natural ecological environment, and tourists in tourism areas also produce a lot of domestic waste for the ecological environment. Therefore, this study established the hierarchical analysis method-AHP to explore the coupling relationship between the construction of rural tourism area and ecological environment, and also evaluated the influence of the factors of rural tourism area on the quality of rural ecological environment. The results showed that tourism areas could lead to an increase in nitrogen organic matter in ecological water and greenhouse gas. The increase in tourists also led to a significant decrease in water and air quality. The number of air quality monitoring stations helps to improve the ecological environment and construction materials in rural tourism areas have an impact on ecological quality. Therefore, a certain number of environmental monitoring stations can control the number of tourists and the area of tourist areas, and choose environmentally friendly construction materials to improve the quality of ecological environment.

KEYWORDS

Ecological Environment Quality, Rural Tourism Area, AHP Hierarchical Analysis, Nitrogen Organic Matter Content, Coupled Model

INTRODUCTION

With the deepening of industrialization and urbanization, urban populations are increasing. On one hand, the urban population's long-term fixed work status limits opportunities for experiencing rural life, while work-related pressures promote the need for spiritual purification. On the other hand, the repressed mindset fosters a desire within urban residents to experience the silent life of the countryside through leisure vacations, scenic tours, and hands-on rural experiences (Liu & Bae, 2018; Luo et al., 2020).

The 19th National Congress of the Communist Party of China proposed implementing the rural revitalization strategy, with rural tourism playing a key part in the initiative (Yang et al., 2021). Maintaining ecological balance is the basis for the development of rural tourism (López-Sanz et al., 2021). Therefore, in the process of rural revitalization, ensuring the balance and integrity of rural cultural ecology around socialist core values is an important issue (Zhao, 2022).

DOI: 10.4018/IJAEIS.372084

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

The countryside is a geographical area with natural, social, and economic characteristics. It has multiple functions, including production, living, ecology, and culture. Together, they constitute the main space for human activities.

Therefore, rural tourism optimizes the industrial structure of rural areas (Hao et al., 2020). It also plays a role in improving the cultural and humanistic environment (Niu, 2022), driving both the cultural ecology of the countryside and local tourism. Additionally, rural tourism fosters the coordinated development of tourism-related industries. However, while it relieves the work pressure of the urban population (Jha, 2021), it also poses challenges, causing pollution and damage to the rural ecological environment (Ma & Xia, 2021).

The sustainable development of rural tourism is also facing many problems. First, the construction of rural tourism areas will destroy the natural ecological environment, as mountains, rivers, and other naturally formed landscapes will be transformed or destroyed (Dunets et al., 2019; Tang et al., 2021). Large amounts of construction waste and harmful materials are discharged into the environment (Joshi et al., 2022). These construction materials can dissolve into environmental waters, while the process of renovating tourist areas leads to the emission of construction particles into the air (Chen et al., 2024). In addition, the domestic waste generated by a large amount of tourist activity causes ecological pressure on rural environments, polluting local water sources (Li et al., 2022).

In summary, implementing conservation measures to improve the ecological environment of rural tourism areas is important for reducing ecological pollution (Popescu et al., 2022).

To address environmental pollution defects associated with the construction of rural tourism areas, this study established the analytic hierarchy process (AHP) to study the coupling relationship between rural tourism development and the ecological environment (see Figure 1). In addition, this study hopes to put forward rural eco-environmental protection policies and work plans by evaluating the impact of various factors in rural tourism areas on eco-environmental quality. This study seeks to provide relevant recommendations for the construction of rural tourism areas while protecting the ecological environment. Furthermore, the findings aim to serve as a reference for the formulation of policies of relevant departments.

15 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/article/evaluation-research-on-ecological-environment-quality-of-rural-tourism-area-based-on-ahp-method/372084

Related Content

Green Technology Implementation in the Moroccan Industrial Processes

Zakaria Nejariand Hanane Aamoum (2022). *International Journal of Environmental Sustainability and Green Technologies* (pp. 1-15).

www.irma-international.org/article/green-technology-implementation-in-the-moroccan-industrial-processes/289032

Development of an Integrated Methodology for the Management and Assessment of the Impact of Agricultural Policies at a Territorial Level

Guido Saliand Claudia Bulgheroni (2011). *Agricultural and Environmental Informatics, Governance and Management: Emerging Research Applications* (pp. 446-469).

www.irma-international.org/chapter/development-integrated-methodology-management-assessment/54421

Preserving Yemeni Architecture in the Era of Civilization and Development

Abobakr Al-Sakkaf (2021). *International Journal of Environmental Sustainability and Green Technologies* (pp. 1-12).

www.irma-international.org/article/preserving-yemeni-architecture-in-the-era-of-civilization-and-development/279120

Flash Flood Hazard Assessment in Small Agricultural Basins Coupling GIS-Data and Cellular Automata Modelling: First Experimentations in Upper-Normandy (France)

Johnny Douvinet (2014). *International Journal of Agricultural and Environmental Information Systems* (pp. 59-80).

www.irma-international.org/article/flash-flood-hazard-assessment-in-small-agricultural-basins-coupling-gis-data-and-cellular-automata-modelling/111217

Pharmaceuticals in Environment: Global Concerns and Regulations

Alka Bali (2022). *Research Anthology on Emerging Techniques in Environmental Remediation* (pp. 308-334).

www.irma-international.org/chapter/pharmaceuticals-in-environment/291240