

Research on the Sustainable Development of Ancient Villages

Yuqian Liu^{1,a,*}

¹Lingnan Normal University, Zhanjiang, Guangdong, 524000, China

a. 15917800569@163.com

*corresponding author

Abstract: In the wake of rural urbanization and the advancement of new rural construction, numerous ancient villages are confronted with issues, such as the loss of cultural characteristics, ecological environment deterioration, and lagging economic development. The sustainable development of ancient villages has thus emerged as a subject of considerable research value in the face of the challenges and opportunities presented by the modernization process. This paper initially analyzes the significance of the sustainable development of ancient villages, with the aim of exploring the paths and strategies for their sustainable development, in order to address the challenges and opportunities that traditional villages encounter during modernization. Subsequently, through a literature review and case analysis, this paper summarizes the main approaches to the sustainable development of ancient villages, and contends that it is not only necessary for protecting historical and cultural heritage and inheriting national culture but also constitutes an important means to facilitate the transformation and upgrading of the rural economy and achieve rural revitalization. Additionally, this paper presents the difficulties that ancient villages need to overcome in their pursuit of sustainable development. Firstly, the majority of research has a relatively short time scale and is unable to accurately predict the development trends of ancient villages. Secondly, the research directions are vague and simplistic, and the research content requires further refinement. Finally, attention must be paid to balancing cultural protection and modernization.

Keywords: Ancient villages, sustainable development, cultural preservation, rural tourism, economic development

1. Introduction

With the acceleration of China's modernization process, urbanization, industrialization, and changes in lifestyle have led to increasingly severe problems such as population outflow, building aging, and cultural discontinuity in ancient villages. Traditional villages are at risk of disappearing. Ancient villages carry rich historical and cultural legacies and natural heritage, holding immeasurable value. However, the contradiction between the transformation of rural economic development models and the protection of villages has become increasingly prominent. How to strike a balance between economic development and cultural inheritance has become an issue that demands a solution. In recent years, the state has attached great significance to the protection and development of traditional villages. The 19th National Congress of the Communist Party of China made a major strategic decision and deployment to implement the rural revitalization strategy and issued a series

of policy documents, such as *Opinions on Implementing the Rural Revitalization Strategy and Rural Revitalization Strategy Plan (2018-2022)*, clearly stating that the protection and utilization of traditional villages are integral to the comprehensive revitalization of rural areas [1].

Researching the sustainable development of ancient villages helps to deeply explore and inherit the cultural connotations of ancient villages, promoting the creative transformation and innovative development of excellent traditional Chinese culture. By safeguarding the historical buildings, folk customs, traditional handicrafts, and other elements of ancient villages, the diversity and continuity of culture can be maintained, leaving precious cultural legacies for future generations. It can also increase the income sources of local residents by rationally planning and developing the tourism resources and cultural and creative industries of ancient villages. Simultaneously, ancient villages are often closely intertwined with the natural environment and boast unique ecological landscapes and ecological environments [2]. Studying the sustainable development of ancient villages is conducive to protecting these precious natural resources and maintaining ecological balance. Through the implementation of green ecological tourism, eco-environmental protection techniques, and other measures, damage and pollution to the environment can be mitigated. This study aims to provide theoretical support and practical guidance by conducting in-depth analyses of the current situation and problems of ancient villages, promoting the harmonious coexistence and sustainable development of traditional ancient villages in the new era.

2. Scientific evaluation system and development model

The theoretical framework for the sustainable development of ancient villages mainly encompasses two core components: the human system and the ecological system. The human system focuses on five dimensions: social and cultural development, economic development, the status of ancient building protection, social policies, and tourism services and quality. The aim is to promote the internal vitality and harmonious coexistence of ancient villages through means, such as cultural inheritance, economic incentives, and policy guidance. The ecological system includes three dimensions: overall environmental perception, ecosystem quality, and environmental policy and management levels, emphasizing the achievement of harmonious coexistence between ancient villages and the environment based on the protection of the natural ecology. By constructing this theoretical framework, a comprehensive assessment of the sustainable development status of ancient villages can be conducted, providing theoretical support for formulating scientific and reasonable protection and development strategies.

Among them, many studies have emphasized the analysis of the sustainability of ancient villages through comprehensive evaluation models and dynamic analyses. For instance, the Minimum Cumulative Resistance (MCR) model combined with land use, landscape pattern, and ecosystem services (ES) provision is adopted to evaluate the sustainability of ancient villages. Factors such as GDP, population, and terrain are also incorporated into the sustainability assessment [3]. This method not only conducts comprehensive and multi-dimensional sustainability assessments of ancient villages but also provides specific development suggestions. When calculating and evaluating ES, it is first necessary to define the evaluation objectives and scope, clarify the specific types of ecosystem services to be evaluated, such as biodiversity conservation, water conservation, and climate regulation. Secondly, define the geographical area, time scale, and involved ecosystem types for the evaluation. Simultaneously, it is necessary to refer to ecological theories and research findings, based on ecological principles, to understand the structure, function, and processes of ecological systems, as well as how they provide benefits for humanity [4]. Review academic papers, reports, and case studies in related fields to understand established evaluation indicators and methods for ecosystem services. Among the considerations for indicator selection are: selecting indicators from different levels of ecosystem elements, structure, processes, functions, and services,

prioritizing those most closely related to human well-being. Consider the uniqueness of ecosystem types, regions, and service recipients when selecting representative indicators. Also, consider feasibility by choosing indicators that are easy to obtain, measure, and quantify, and avoid subjective factors. Finally, avoid information redundancy and correlation among indicators to ensure that each indicator can independently reflect a certain aspect of ecosystem services, consider the economic costs of assessment, and select indicators with a high cost-effectiveness ratio. After the initial selection of indicators, they should be subjected to practical validation and adjustment. Apply the selected indicators to actual evaluations and observe their performance in practical operations. Based on the results of practical verification, adjust and optimize the indicators to ensure the accuracy and reliability of the assessment results.

Additionally, the kernel density estimation model can be used to calculate the kernel density values for the distribution of traditional villages in different periods, and distribution maps can be created using Arcgis software to analyze the changes in the distribution of traditional villages in different periods and further explore the driving factors of spatial distribution[5].

The evaluation results of the sustainable development of ancient villages comprehensively reflect their current status of protection and development. When interpreting the evaluation results, special attention should be paid to dimensions such as resource protection, cultural inheritance, economic development, and the quality of life of residents. In terms of resource protection, the preservation status of ancient village buildings and natural landscapes should be analyzed, and the effectiveness of protection measures evaluated. In terms of cultural inheritance, the inheritance intensity and influence of folk activities and traditional skills should be examined. In the economic development dimension, the driving role and sustainability of tourism development and characteristic industries in ancient villages should be reviewed.

3. Outline methods for sustainable development of ancient villages

3.1. Development of tourism in ancient villages

The report of the 20th CPC National Congress pointed out that solid efforts should be made to promote rural industries, and tourism is the main means of promoting the economic development of ancient villages. Before developing the tourism industry, it is necessary to deeply understand the local distinctive culture, such as building styles, traditional customs, and ethnic features that are different from other places. Then, the local distinctive tourism industry can be developed by focusing on promoting these traditional features [6]. In addition, the local infrastructure must keep pace, such as transportation, catering, and accommodation. Transportation-wise, tourist lines can be established at railway stations and airports to facilitate passenger transportation. The local cultural and tourism bureau can also cooperate with travel agencies to set up tourism information points on highway service areas to provide more convenient and comprehensive travel services for self-driving tourists, thereby attracting more tourists. Improving the convenience of travel will greatly enhance tourists' travel intentions. In addition, delicacies are also an important carrier of local culture. At present, the main ways of conveying delicacies in various regions are divided into three categories: offline restaurants, specialty stores, and online specialty stores. The limitations of offline restaurants are insufficient publicity, average taste, high price, or "scamming" incidents that lead to poor reputation. The limitations of specialties are serious homogeneity and careless use of ingredients and craftsmanship. In general, a good reputation is the key to the sustainable development of the tourism economy. In the process of economic development in an ancient village, it is inevitable to repair houses and promote commercialization, but excessive commercialization may lead to the destruction of cultural heritage. Therefore, in the development process, the relationship between tourism development and cultural protection needs to be balanced.

3.2. Cultural protection and inheritance

In the process of modernization and urbanization of ancient villages, the protection and inheritance of traditional culture will inevitably be ignored, which leads to the continuous disappearance of many traditional cultures. As for the traditional culture of ancient villages, we can first study and explore its origin, so as to more accurately understand its development history, then analyze its current situation, analyze the limitations of cultural development and inheritance, and finally inject vitality into its development through reform and innovation, so as to achieve cultural protection and inheritance [7]. The study of the traditional culture of ancient villages is not only to preserve cultural diversity, but also to study the local human-land relationship more deeply. The researchers point out the need to strengthen the link between nature and culture, especially in the context of China's rapid modernization process. Previously in rural China, modern practices led to the prevalence of the same image in different regions, regardless of local characteristics or traditional values. And, given the differences in the natural context, the application of urban methods to rural problems seems relatively limited. Therefore, only by studying its traditional culture and combining it with the local natural environment can we think more comprehensively about the sustainable development of the local area [8].

3.2.1. Community participation and education

The transmission of culture requires a solid mass base, so it is necessary to enhance the cultural awareness and protection awareness of community residents and encourage them to actively participate in the protection and inheritance activities of traditional culture in ancient villages. Cultural festivals can be held, museums can be built, and platforms for cultural display can be provided. Traditional culture in ancient villages can be included in the content of school education and community training, and cultural activities can be held through lectures, training classes, and other forms to improve the awareness and interest of the younger generation in traditional culture. For example, traditional craft classes can be opened at local universities, and targeted employment units can be arranged to attract the next generation to learn and inherit culture. Traditional culture can also be compiled into stage plays and musical dramas in a more entertaining way to spread outward [9].

3.2.2. Living transmission and utilization

There are many areas that turn culture into tangible form, building statues and displaying relics, which is indeed a good way to protect culture and can also attract tourists to drive the tourism economy, but they neglect the living transmission of culture. Paying attention to the living transmission of traditional culture in ancient villages can be achieved through the cultivation of inheritors and the transmission of skills to maintain the vitality of traditional culture. The use of local farming techniques, housing architecture, and canal trade routes can also be continued and utilized in a way that suits the local conditions, strengthens the relationship between man and land, and cannot be directly applied to the universal sense of modern sustainable development. At the same time, the resources of ancient villages can be rationally developed and utilized for cultural tourism and craft manufacturing industries under the premise of protection, achieving the dual enhancement of the economic value and social value of traditional culture [7].

3.2.3. Cultural record and research

Cultural survey and documentation: A comprehensive cultural survey of ancient villages can be carried out on the spot, including face-to-face interviews, records, descriptions, and records of their

historical evolution, architectural style, folk customs, traditional skills, etc. It can also use modern scientific and technological means to explore, measure and record, such as remote sensing technology, three-dimensional scanning technology, etc., to improve the efficiency and accuracy of the census. At the same time, the establishment of digital cultural relics archives and intelligent management systems can backup the originals to the archives and ancient books, so as to better protect and manage traditional cultural resources [10]. Encourage and support experts and scholars to conduct in-depth research on the traditional culture of ancient villages, excavate its cultural connotation and value, make culture and cultural relics alive, and provide theoretical support for protection and inheritance.

3.3. Policy and regulation support

The government has formulated and improved relevant policies for the protection of ancient villages, clearly defining the protection objects, scope, and measures, providing legal guarantees for the protection and inheritance of traditional culture in ancient villages. Strengthen law enforcement against illegal construction and other behaviors that damage the cultural heritage of ancient villages, ensuring effective implementation of policies. In many ancient villages and rural areas, there are still many labor forces, including low-educated unemployed youth and women left behind by their husbands who are working outside. The government can focus on these groups and provide policy support, offering suitable employment opportunities and efficiently utilizing these labor forces. Providing job opportunities locally not only brings vitality to the local economy but also reduces the impact on individual families caused by long-distance employment. Providing employment opportunities for women left behind can further eliminate gender inequality in rural areas. Women can also obtain jobs that require less physical effort and more care and patience, such as textile dyeing and light handicraft manufacturing, rather than being forced to do low-value, physically demanding work [11]. The expansion of local employment opportunities cannot be achieved without cooperation from various parties and financial support. The government should increase its financial input into the protection of ancient villages while encouraging social capital to participate in the protection and inheritance work. The government, enterprises, and social organizations should establish cooperative mechanisms and form a diversified funding mechanism to jointly promote the protection and inheritance of traditional culture in ancient villages.

3.4. Digital preservation and dissemination of cultural heritage

Utilizing modern technological means to digitally record traditional cultural heritage of ancient villages, such as establishing digital museums and virtual reality experiences, to enable more people to learn and appreciate traditional culture. Through internet platforms, disseminate traditional cultural heritage of ancient villages to expand its influence and popularity, and attract more people to pay attention to and participate in the protection and inheritance work. At the same time, modern technology and the concept of smart villages are also incorporated into the framework of sustainable development of ancient villages, through digital technology and intelligent management systems to improve the management and development efficiency of ancient villages. In addition, education is considered to be a key factor in enhancing and developing smart village governance and SDG values [12].

3.5. Ecological and low-carbon design

In the context of China's rural revitalization, development should be pursued while protecting the environment, such as minimizing deforestation and the transformation of farmland, as well as the rational expansion of building land. At the same time, combining green development concepts and

traditional architectural wisdom for low-carbon design is considered an effective approach to achieving sustainable development of ancient villages. Among them, ecological environmental protection and restoration are of paramount importance. Taking scientific and reasonable protection and restoration measures for the unique natural and cultural environment of ancient villages is crucial. First, strengthen ecological environment monitoring, such as the heavy metals, microplastics, and carbon content of local soil and water, to grasp the dynamic process of the ancient village's environmental changes and timely solve ecological degradation problems. Second, integrate the land use functions in the local area and implement ecological restoration projects such as vegetation restoration and soil and water conservation to maintain the ecological balance of the ancient village [13]. At the same time, advocate for green lifestyles to reduce pollution emissions, and protect water resources and air quality. In addition, strengthen environmental protection education and raise the awareness of villagers and tourists about environmental protection, so they can participate in ecological protection together.

Deepen the exploration of traditional culture's environmental protection content and learn from it, for example, using natural and organic products to replace chemical products [2]. Finally, establish a sound ecological compensation mechanism to give appropriate compensation to villagers and units that contribute to ecological protection, and motivate the whole society to jointly guard the green mountains and clear waters of ancient villages. Through these measures, ensure that ancient villages can maintain their historical features while achieving sustainable development of their ecological environment.

4. The focus of sustainable development work for ancient villages

4.1. Increase the time scale of the study

The current lack of research mainly lies in the limitations of data collection and temporal validity, although existing research has provided many valuable insights. However, most studies are short-term and lack long-term dynamic monitoring and analysis, which makes it difficult to obtain comprehensive detailed development data for some ancient villages, affecting the depth and breadth of analysis. In addition, research on the dynamic evolution process of the cultural ecosystem of ancient villages is still insufficient; therefore, more cross-sectional research is needed in the future. Long-term tracking monitoring should be strengthened through interdisciplinary cooperation, using more advanced technological means, in order to better understand the development laws and trends of ancient villages [14].

4.2. Detailed research on social and economic impacts

At present, most studies focus on the protection of ecology and culture, while less attention is paid to the detailed research and evaluation of social and economic impacts. In the future, more data and indicators can be used to deepen research and evaluation of the social and economic impacts of ancient villages. For example, the fairness of resource allocation [15].

4.3. Multi-disciplinary integrated research

The sustainable development of ancient villages involves multiple disciplines, such as ecology, economics, sociology, and cultural heritage protection. Therefore, more research in the future can adopt multi-disciplinary integrated methods, combining the perspectives and methodologies of different disciplines, ultimately achieving a coordinated, fair, efficient, and multi-dimensional development, and reaching more systematic and comprehensive conclusions [16].

4.4. Balance tradition and modernity

Continuously seek a balance between modernization development and the protection of traditional culture, keeping up with changes in the times and maximizing the protection of traditional culture while ensuring economic development. Deeply explore methods of combining modern technology with traditional culture to spread culture while improving production efficiency and driving local economic development. This will not only protect the unique cultural heritage of the local area, but also promote community economic and social development.

5. Conclusion

This study concluded the following conclusions and main findings through in-depth analysis of the sustainable development model of ancient villages: Firstly, the sustainable development of ancient villages should be led by the government, with scientific and reasonable planning to ensure the coordination and unity of ancient village protection and development. Secondly, increase investment and introduce social capital to provide strong support for the restoration, protection and development of ancient villages. At the same time, pay attention to enhancing the cultural consciousness and protection awareness of residents and encourage them to actively participate in the protection and development of ancient villages. In addition, this paper proposed specific measures such as developing rural tourism, unearthing cultural features, and creating cultural brands to promote the diversified economic development of ancient villages.

The limitation of this paper is that it only analyzed the case through examples without practice, so it did not propose more specific strategies and solutions. Moreover, this paper analyzes based on existing literature and research, so it has a time limitation. However, sustainable development is a dynamic process, so the methods and obstacles to help ancient villages achieve sustainable development will be updated in real time with the changing times and advancement of technology. For the future development of ancient villages, the author believes that after completing the database of all aspects of ancient villages, they can be managed more effectively and efficiently, thus developing into smart rural areas.

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