

The Practical Logic and Optimization Path of Rural Human Settlement Environment Governance in Jiangsu Region of China from the Perspective of Cultural and Tourism Integration

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Abstract: In recent years, managing rural living environments has become a vital component of the rural revitalization strategy. Jiangsu Province, rich in economic and cultural resources, has accumulated valuable experience in exploring rural environmental governance by integrating culture and tourism. This research analyzes the practical logic of rural environmental governance in Jiangsu from both theoretical and practical perspectives. It emphasizes the importance of integrating culture and tourism to enhance environmental governance while addressing the associated challenges. The results show that the integration of culture and tourism not only enhances rural ecological environments and living facilities but also boosts regional economic development and the preservation of cultural resources. Nevertheless, there are still challenges in aspects such as the collaboration of stakeholders, the establishment of long-term mechanisms, and the application of digital technologies. Based on real cases in Jiangsu, this study suggests optimization strategies and policy recommendations to improve rural environmental governance within the framework of cultural and tourism integration.

Keywords: Cultural and tourism integration; Rural living environment; Jiangsu; Governance logic; Optimization strategies

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1. Introduction

The enhancement of living conditions in rural districts is instrumental for the efficacy of rural rejuvenation efforts and is essential for improving the quality of life of rural residents while promoting sustainable growth ^[1]. A well-kept rural living environment enhances the mental and physical well-being of community members and attracts outside investment and talent, which revitalizes the rural economy. Jiangsu Province, known for its strong economic foundations and rich cultural heritage, has taken active measures in improving rural settings by incorporating cultural and touristic elements. This initiative has shown significant progress and provides insights that could be replicated across China ^[2]. However, the governance of these rural environments involves

tackling complex issues like ecological sustainability, economic development, and cultural conservation, as well as facilitating collaboration among diverse stakeholders. In integrating cultural and touristic dimensions, the main challenge is in aligning the interests of these varied stakeholders and encouraging collaborative growth in both the environment and cultural tourism sectors. Exploring the strategies and principles in managing rural environments through the cultural-tourism perspective is therefore both a theoretical and a practical endeavor of great importance.

2. Literature review and discussion

2.1. Collaborative mechanism of multiple stakeholders in rural living environment governance

The effective administration of rural habitats requires the collaborative effort of multiple stakeholders, including governmental agencies, private sector entities, and community members. As highlighted by Rau, it is crucial for local government authorities to lead efforts in minimizing disparities between urban and rural growth ^[1]. Through the deployment of well-crafted policy measures and efficient resource management, these governments have the potential to drive substantial enhancements in the condition of rural landscapes. They have the capacity to establish thorough plans and standards that form the foundation of policies aimed at the betterment of these areas. However, it is also important to acknowledge that a management style that relies solely on a single authority might not adequately address the complex issues prevalent in rural environmental scenarios.

Westerink *et al.* put forward a theoretical framework centered on collaborative governance. Their thesis argues that building strong collaborative relationships among diverse stakeholders improves the management of environmental challenges, especially regarding resource allocation and infrastructure development ^[3]. They contend that the distinct strengths and weaknesses of each stakeholder highlight the necessity for a cooperative strategy, making it essential for the effective deployment of resources in environmental management.

In Jiangsu, local governmental bodies are diligently working to improve environmental management by implementing specific policies and allocating financial resources. These policies mainly focus on improving conditions in rural areas, establishing clear governance objectives and outlining specific responsibilities. Funds have been designated specifically for the enhancement of rural infrastructure and the carrying out of environmental clean-up projects. According to Shen, despite the progress made in these areas, the level of participation from local villagers has not met expectations ^[4]. In certain rural regions, a significant challenge remains the limited awareness among the inhabitants regarding these environmental policies, which significantly affects the successful application of such initiatives. Moreover, there's a distinguished lack of environmental awareness among a portion of the rural population. This often leads to neglect in crucial areas such as waste segregation and sewage management, with some even showing resistance to these efforts.

This phenomenon highlights how crucial it is to increase the participation of villagers and the autonomy of the community in order to reach sustainable environmental governance. Initiatives such as strengthening public education and establishing incentive systems should be implemented to improve environmental awareness and encourage active participation from villagers. This approach will empower them to become key players in environmental governance.

2.2. Synergistic development of cultural tourism and environmental governance

Integrating cultural elements with tourism has proven to be a significant factor in enhancing the management of rural environments. Research from Wu and Cao revealed a significant relationship between the development of cultural tourism and effective local environmental management. They suggest that the rise of tourism in rural

regions not only upgrades the physical infrastructure but also enhances the quality of life and environmental awareness among the residents ^[2].

The development of tourism in rural areas has resulted in significant improvements in critical services such as waste management and sewage systems, essential for preserving environmental health. These upgrades are important not only to accommodate a growing number of visitors but also to improve the living conditions of the local community. The influx of tourists leads to increased consumer spending which subsequently drives further investments into vital infrastructure like transportation, water facilities, electricity, and communication services.

Additionally, interactions with diverse groups of tourists boost local residents' awareness and appreciation for a clean and healthy environment. This increased consciousness fosters a proactive approach to environmental conservation within these communities. Consequently, this cultivates a pattern of sustainable development in rural areas, propelled by both economic motives and a collective dedication to caring for the environment.

The approach of merging cultural heritage with tourism in Jiangsu Province has effectively promoted both the economic and ecological development of rural areas ^[5]. Highlighted by Gu, this tactic enables villages to explore and capitalize on their cultural resources while protecting their environmental landscapes ^[5]. Suzhou serves as a notable case where many ancient villages have leveraged their historical and cultural backgrounds to create rural tourism initiatives. These initiatives play a crucial role not only in conserving historical architecture and traditional customs but also in improving local ecosystems. As a result, these attractions have drawn a large number of tourists, playing a pivotal role in boosting the region's economy.

Within the sphere of cultural tourism, recurring challenges have emerged as a result of initiatives that lead to the overt commercialization of cultural resources. This trend tends to diminish the original cultural value and contributes to ecological degeneration ^[6]. Motivated by the potential for rapid financial gains, various regions have overly exploited their tourism resources, disrupting ecological balance and altering the inherent cultural atmosphere. Therefore, it is vital to focus on the protection and judicious exploitation of cultural assets when merging culture with tourism. This approach promotes a balanced synergy between economic development, conservation of the environment, and societal benefits.

2.3. The empowering role of digital technologies

With the advancement of technology, managing rural environments has increasingly relied on digital tools. Research by experts like Xi and Xing highlighted the impact of digital platforms in managing routine tasks such as waste and wastewater management. These platforms facilitate real-time monitoring, enhancing both the precision and efficiency of these functions ^[7]. In the Jiangsu region, the use of Internet of Things (IoT) technology is widespread, with sensors continuously monitoring environmental parameters and providing prompt feedback to local governance structures. This technology supports swift and well-informed decision-making processes. Particularly in rural areas around Nanjing, the introduction of smart waste bins and wastewater tracking devices allows for the consistent tracking of waste generation and sewage flows, generating vital data that supports targeted management practices. However, the adoption of digital technology in rural management is not without its hurdles ^[8]. Critical obstacles include insufficient infrastructure and financial constraints. Remote rural areas often suffer from weak internet connections and a dearth of necessary digital instruments, which hampers the seamless integration of modern technological solutions into their management systems.

In their 2023 study, Gao and Dong highlighted how the implementation of digital technologies in rural

areas could simultaneously advance cultural tourism and environmental conservation. By leveraging cutting-edge big data analytics, these regions can gain insights into tourist behaviors, aiding in the regulation of visitor numbers to prevent over-tourism. This precision in managing tourism flows not only protects the local environment, but also aids in crafting enhanced visitor experiences ^[8]. Detailed analyses of visitor origins, duration of stay, and spending habits enable tourist destinations to tailor their offerings more effectively, thereby improving infrastructure and services. This advancement underscores the significant role digital tools play in promoting sustainable development within the tourism sector, ensuring that cultural heritage and environmental health co-evolve beneficially.

In order to completely unlock this potential, it is extremely important to increase the investment in the digital infrastructure in rural areas. Moreover, developing digital talents is of great significance in establishing favorable circumstances for the application of digital technologies in the governance of the rural living environment.

2.4. Research assessment and limitations

Existing studies show that in both theory and practice, there is a certain degree of agreement on the governance of rural living environments. Nevertheless, there are still several limitations:

It's clear from the outset that there's a notable gap in empirical research regarding the collaboration between different stakeholders, particularly in the context of developing engagement strategies for rural communities ^[3,4]. While the importance of such collaborations is often emphasized in theoretical discourse, there's a pressing need for comprehensive research to identify the most effective methods to enhance the participation and interest of rural populations in real-world applications.

There remains a gap in our understanding of how the integration of culture and tourism impacts environmental management, especially when trying to balance the preservation of cultural assets with promoting tourism development ^[5,6]. It is critical to carry out more comprehensive investigations to ascertain ways in which tourism can be developed sustainably while also protecting cultural heritage. This approach will help establish a symbiotic relationship where cultural preservation and tourism both support each other's growth and sustainability ^[9].

It is important to thoroughly investigate the societal attitudes towards digital technologies and assess their role in enhancing governance at a local scale ^[7,8]. Such technologies hold immense potential for the administration of rural areas. However, one must evaluate the acceptance of these tools by local communities and determine their actual effectiveness in strengthening governance through real-world applications.

3. Theoretical framework

3.1. Collaborative governance theory

The concept of collaborative governance emphasizes the necessity for coordinated action among varying stakeholders when addressing public issues. It utilizes the collective capabilities of governmental bodies, the private sector, and community members to create a stronger governance structure ^[3]. Specifically, in the pursuit of better living conditions in rural Jiangsu, this concept provides a critical perspective on the synergy required among different actors.

In this framework, government bodies take on a central role by delivering policy support and financial backing. They establish relevant regulations that guide the actions of involved parties and provide the financial infrastructure needed for project execution. Meanwhile, the business sector contributes by applying its technological know-how, management skills, and strategic market insights. Their involvement, particularly in

rural environmental projects, not only augments the available technical and financial resources but also injects a level of professionalism into these endeavors.

Local community engagement is vitally important and is led by the villagers themselves. Having intimate knowledge of their environment, they offer valuable feedback that helps customize policies to meet the unique requirements and circumstances of their area. Their engagement is critical in ensuring that strategies are appropriately adjusted and thus more effective.

The improvement of living conditions in rural areas of Jiangsu relies on the effective cooperation of government entities, private businesses, and local communities. Each sector plays a vital and mutually reinforcing role in this collaboration, aiming to foster thorough and lasting environmental management in rural settings. This partnership highlights the mutual responsibilities and benefits, manifesting in enhanced life quality for rural populations.

3.2. Cultural and tourism integration development theory

The idea of combining culture with tourism involves leveraging cultural resources to enhance the tourism industry, which in turn can spur economic development and foster environmental conservation ^[5]. This **theory** is particularly relevant in regions like Jiangsu, known for its rich cultural history, unique folklore, and picturesque landscapes. By transforming cultural assets into attractions for visitors, this method does more than just expand the tourism market; it also helps in preserving cultural identities and transmitting heritage to future generations. Additionally, it plays a significant role in the economic betterment of rural communities and improving environmental sustainability. This integration offers a vital model for exploring environmental management within the context of cultural and tourism integration, proving to be advantageous for areas rich in cultural assets.

4. Research findings and conclusions

4.1. Research findings

Through an in-depth study of rural living environment governance in Jiangsu Province, several key findings have emerged.

In Jiangsu Province, there has been a notable push by governmental bodies at various levels to improve the rural landscape using detailed policy frameworks. Key initiatives such as the “Three-Year Action Plan for Rural Living Environment Improvement in Jiangsu Province” outline precise goals and delegate responsibilities concerning governance. Moreover, definite funds are allocated to support the improvement of rural infrastructure and environmental enhancement projects ^[4]. This organized allocation of financial resources and directives has facilitated the establishment of critical infrastructure like sewage pipeline networks and waste management systems, thus laying a strong foundation for subsequent environmental conservation efforts.

The successful integration of culture with tourism has been evidenced at Mingyue Bay, an old village nestled in Suzhou. Local authorities have tapped into the rich historical and cultural backdrop of the area to launch rural tourism projects. This approach has allowed for the appreciation and preservation of cultural treasures while simultaneously promoting environmental conservation ^[5]. Data indicates a steady increase in the number of tourists visiting Mingyue Bay each year after the merger of these two sectors. This increase in visitors has favorably affected the local economy, particularly by augmenting the incomes of residents through the growth of ventures such as homestays and eateries. Furthermore, the boost in tourism numbers has led to improved infrastructure developments, including better transportation, water, and power systems. This has greatly enhanced the village’s environmental conditions, and as a result, both economic and ecological

advantages have been achieved simultaneously.

In some countryside areas of Jiangsu Province, initial efforts are underway to fuse digital technologies into daily practices. For instance, in the rural communities of Jiangning District in Nanjing, technologies like the Internet of Things (IoT) have been implemented by setting up smart garbage bins and systems to observe sewage levels. Such developments enable the ongoing monitoring of garbage generation and sewage discharge, fostering more dynamic and data-driven management strategies ^[7]. By incorporating these advanced technologies, local authorities can not only manage their environments more effectively but also refine their administrative approaches based on real-time data, ensuring that management strategies are specific and accurate.

In the process of implementing policies for effective governance, numerous challenges have emerged. Active participation by government bodies notwithstanding, engagement at the community level, especially within rural villages, remains disappointingly low. As highlighted by Shen, in some rural areas, the villagers' limited understanding of environmental governance techniques compromises the success of these initiatives ^[4]. Furthermore, when attempting to integrate culture with tourism, the over-commercialization of cultural heritage is seen to not only erode its inherent worth but also negatively impact the environment. In addition, the spread of digital technology faces hurdles due to inadequate infrastructure and insufficient financial backing, a situation that is particularly acute in remote rural areas marked by poor network coverage and a lack of digital resources ^[8].

4.2. Research conclusions

This study demonstrates that rural living environment governance in Jiangsu, from the perspective of cultural and tourism integration, has achieved notable successes but also reveals areas for improvement. Cultural and tourism integration is indeed an effective approach to promoting rural economic development, enhancing ecological environments, and preserving cultural resources. By developing the cultural and tourism industry, local economic growth is stimulated, residents' quality of life is improved, and environmental conditions are enhanced.

Effective governance relies heavily on the collaborative efforts of various stakeholders. The government must retain its leadership role to steer these collaborations effectively. To bolster the participation of enterprises and community residents, the implementation of structured policies and motivating incentives is crucial. Such strategies facilitate the efficient allocation of governance resources ^[6]. Furthermore, the establishment of enduring governance structures that integrate technological advancements and regular evaluations is essential in preserving the efficacy and ongoing success of governance initiatives ^[3-8].

In the endeavor of merging cultural aspects with tourism, it's crucial to focus on the sustainable oversight and safeguarding of cultural heritage. This can be facilitated by conducting thorough assessments of cultural assets and crafting detailed strategies prior to launching developmental initiatives. Strengthening the monitoring of such initiatives and limiting excessive commercialization are essential measures to maintain the authenticity of cultural heritage ^[5,6]. Moreover, considering the diverse natural scenery, cultural treasures, and varying levels of economic development across different regions in Jiangsu, it's imperative to develop and enforce governance frameworks that are tailor-made for each area's distinct characteristics. Such tailored approaches play a significant role in efficiently tackling the unique needs and obstacles present in these areas.

Future research should focus on developing more effective mechanisms for villager participation. It should also clarify the specific connections between cultural and tourism integration and environmental governance. Additionally, in-depth studies are needed to assess the social acceptance of digital technologies and their impact

on local governance capacities.

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