

The influence of agricultural planting in rural landscape design and tourism development — A case of Shandong Yinshi Village

Jie Bai¹, Suhana Binti Johar², Noraziah Binti Mohammad³

^{1,2,3} Faculty of Engineering and Built Environment, National University of Malaysia, Malaysia

ABSTRACT

Within the framework of China's rural revitalization strategy, there is a notable positive trend in rural construction and development across various regions, accompanied by a burgeoning interest in rural tourism development. This paper focuses on Yinshi Village in Linqu County, Shandong Province, examining how the village capitalizes on its persimmon industry to shape, design, and advance tourism development within its rural landscapes. The results of this study illustrate that the persimmon industry plays a pivotal role in diversifying rural landscapes, improving the overall planning and design of rural areas, enhancing the attractiveness of rural tourism, and boosting the economic prosperity of the local population. This research contributes valuable development strategies for integrating agricultural planting into rural landscape design and tourism development. Moreover, it investigates the substantial influence of agricultural planting on both rural landscape design and tourism development, ultimately providing insights and experiences that are applicable not only in China but also in similar regions globally.

Keywords: Agricultural planting; Landscape design; Rural tourism; Organizational efficiency.

Corresponding Author:

Jie Bai
Faculty of Engineering and Built Environment
National University of Malaysia
Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor
P120096@siswa.ukm.edu.my

1. Introduction

The issue of agriculture, rural areas, and farmers has consistently been a crucial focus of China's economic development, representing a cornerstone for both national economic growth and the populace's well-being. The central government's No. 1 Central Document has emphasized the importance of agriculture, rural areas, and farmers annually for 20 consecutive years, from 2004 to 2023. This sustained focus underscores the critical role that the development of the rural economy, the enhancement of farmers' incomes, and the modernization of agriculture play in China's economic strategy [1]. The objective of the rural revitalization strategies is to enrich more farmers. By capitalizing on rural resources, ecological benefits, and cultural heritage, these strategies aim to boost production and incomes, bridge the urban-rural divide, and foster the growth of rural industries [2].

Currently, China's economic advancement has entered a new phase characterized by rapid growth accompanied by significant challenges, including rising agricultural costs, resource scarcity, and environmental issues. Traditional agricultural methods no longer suffice to meet the evolving demands of agricultural development [3]. Consequently, many rural regions have embraced rural revitalization and industrial development initiatives, actively promoting leisure industry projects that integrate tourism with local cultural heritage to stimulate economic and social progress. Furthermore, some areas have adopted green development strategies, constructing public spaces that merge ecological and cultural elements through tourism models such as efficient agriculture and leisure tourism. These strategies transform ecological and environmental benefits into economic and cultural gains [4]. Additionally, certain regions are expanding their spatial scope by preserving local culture and the natural ecological environment, employing modern

ecological principles and rural planning techniques. For example, the ecology, culture, and economy model aims to create livable, functional, and enjoyable rural ecological and cultural tourism parks, enhancing landscape design's role in rural revitalization. Alternatively, by focusing on the interaction between humans and the natural environment and integrating agriculture and tourism as a strategic direction, some areas are exploring sustainable development pathways in rural revitalization and industrial growth. These include approaches that foster coexistence and mutual enrichment between humans and nature through green ecology and sightseeing agriculture, ultimately steering towards organic and sustainable rural development [5].

There are numerous strategies to achieve rural revitalization. However, effectively utilizing existing favorable resources, ameliorating adverse environments, and fostering local tourism development remain pressing social issues that researchers and policymakers continue to investigate. Therefore, this study focuses on Yinshi Village, known as Hermit Village, in Shandong Province, China, as a case study to examine how it has accomplished rural revitalization and promoted rural development through the synergistic combination of agriculture, landscape design, and tourism. The lessons drawn from the village's experiences emphasize the importance of identifying, nurturing, and leveraging a region's strengths, whether in agriculture, cultural heritage, or natural scenery.

This study explores the impact of agricultural planting on rural landscape and tourism development, using Hermit Village in Shandong as a case study for in-depth analysis. The research scrutinizes how agricultural planting shapes rural landscapes, stimulates tourism development, and pinpoints the mechanisms that mediate these effects. The goal is to underscore the importance of agricultural planting in enhancing the quality of rural landscapes and developing tourism while offering actionable development recommendations. By thoroughly investigating the case of Herit Village, this study provides insights and guidance for other rural areas, aiming to foster the transformation and upgrading of the rural economy, promote sustainable development of rural tourism, and achieve the strategic objectives of rural revitalization.

2. Method

2.1. Literature Review

The concept of rural revitalization is integral to China's development agenda, aiming to alleviate rural poverty, stimulate economic growth, and bridge the urban-rural divide. This policy framework seeks to leverage rural resources and empower communities through sustainable agricultural practices and tourism development. Researchers, including [6], [7], have explored the comprehensive nature of rural revitalization, emphasizing the importance of balanced growth, environmental sustainability, and improved living standards in rural areas. Agricultural innovations lie at the heart of China's strategy for rural development. The integration of agriculture and innovative landscape design has been critical in transforming rural landscapes. Typically, villages are the primary settings for rural landscape design, reflecting both cultural and natural landscapes and encompassing elements like folk culture, rural architecture, plantations, waters, and farmland. Research by [8] examines the relationship between rural landscapes and agriculture, showing how intelligent landscape planning can boost both the visual appeal and economic viability of rural areas. Moreover, the revival of traditional practices has rejuvenated interest in rural regions, strengthening the bond between people, culture, and the land.

The development of rural tourism has been a key component of China's comprehensive rural revitalization strategy. Study [9] have investigated the extensive impact of rural tourism, highlighting its significant contributions to economic empowerment, especially in impoverished areas. The expansion of leisure-based tourism has led to noticeable improvements in income levels, which have subsequently raised living standards and strengthened local economies [10]. This facet of rural development not only addresses immediate economic challenges, but also contributes to the broader mission of rural revitalization.

A defining attribute of rural tourism in China is its unique capacity to preserve cultural heritage while promoting sustainable land use. As detailed in the research by [11], rural tourism initiatives often incorporate and showcase traditional practices, rituals, and cultural events. These elements not only attract tourists but also play a pivotal role in the preservation and revitalization of local cultures. Thus, rural tourism acts as a vehicle for the inter-generational transmission of cultural knowledge, ensuring the continuity of traditions into the future.

The involvement of the Chinese government in advancing rural tourism is significant. Initiatives such as the Beautiful Countryside Project [12] have been instrumental in directing the development trajectory of rural

tourism. These government programs provide financial aid, infrastructure enhancements, and marketing support, considerably enhancing the ability of rural communities to engage in and benefit from the tourism industry.

Nevertheless, the expansion of rural tourism in China faces notable challenges. Achieving a balance between tourism development and environmental sustainability remains a critical issue. As rural areas gain popularity as tourist destinations, the need to maintain a harmonious balance between nature and human activities becomes paramount [13]. Implementing sustainable practices is crucial to ensuring that the influx of tourists does not lead to ecological degradation [14]. Additionally, fully realizing the potential of rural tourism requires the effective utilization of local advantages. Identifying and leveraging unique strengths, whether in agriculture, cultural heritage, or natural beauty, can provide a competitive advantage to rural destinations [15]. By aligning tourism activities with these local strengths, communities can offer authentic and enriching experiences to visitors while preserving their distinctive cultural and environmental assets. This strategic alignment is key to the success of rural tourism development in China and provides valuable lessons for other regions globally aiming to optimize tourism benefits while safeguarding their natural and cultural resources [16].

2.2. Qualitative Approach

The study was contextualized in Yinshi Village, nestled in the mountains at the junction of Linqu, Qingzhou, and Boshan counties. This ancient village, part of Wujing Town in Linqu County, Weifang, Shandong Province, is strategically located between two mountain valleys, spanning 6.5 kilometers along a river and backed by mountains. With a rich history spanning 2,000 years, the village has 670 households and a population of 2,180, including 153 individuals from 61 impoverished households. Historically dedicated to poverty alleviation, the village is renowned for its persimmons, which have become a specialty product, attracting numerous visitors. The local government has leveraged the persimmon industry as a catalyst for rural tourism development, gradually transforming the village into a distinctive leisure tourism destination.

Over the past few years, the village has undergone a significant transformation from poverty to prosperity, driven by the development of persimmon-themed tourism, supported by cultural and tourism initiatives from the local government, and aligned with the national rural revitalization strategy. Currently, the village has enhanced its tourism offerings across various dimensions—food, housing, transportation, tourism, shopping, entertainment, training, and maintenance—and has developed five major tourist zones: a leisure area, residential area, ancient village folk culture experience area, leisure center, and mountain sightseeing and sports area. As a result, the village's annual per capita income reached 26,000 RMB, lifting all 61 impoverished households out of poverty. China recognized the village as a key rural tourism village in August 2020.

This field research employed a qualitative approach to deeply understand how persimmon-themed tourism has facilitated the village's escape from poverty. This methodology provided a thorough exploration of the complex elements of persimmon-themed tourism, the dynamics within Yinshi Village, and the nuanced perspectives of the local community. Qualitative methods, such as semi-structured interviews, participant observation, and document analysis, were utilized to garner rich, context-specific insights into the village's journey towards economic transformation through tourism and to ensure data triangulation. The specific details of the data collection methods are as follows:

- **Semi-structured interviews:** Conducting semi-structured interviews with villagers, local authorities, tourism operators, and other key stakeholders allowed the research to capture a diverse range of perspectives on persimmon-themed tourism. This method facilitated open-ended conversations that explored the motivations, challenges, and outcomes of tourism development. Participants shared their experiences and perceptions, exploring the strategies used to harness tourism as a poverty alleviation tool, as well as the impact of these strategies on their lives.
- **Observation:** The researcher's presence in Yinshi Village was crucial for understanding the day-to-day dynamics of the community and how tourism integrates into the local lifestyle. Participant observation provided insights into how the village's natural and cultural assets were leveraged for tourism, the interactions between residents and tourists, and the overall impact on the local economy. This method

allowed for a deeper appreciation of the lived experiences of community members as they navigated this transformative journey.

- Document analysis: Analyzing relevant documents, including government reports, community development plans, tourism promotional materials, and researchers' reflection journals, contributed to a contextual understanding of the official policies and narratives guiding the development of Yinshi Village. Document analysis enhanced the insights from interviews and observations by providing a broader view of the village's tourism initiatives and their alignment with broader regional and national poverty alleviation strategies.

The collected data underwent rigorous analysis to identify meaningful patterns and themes. Interview transcriptions were meticulously reviewed and coded, focusing on recurrent ideas, challenges, and opportunities. Notes from participant observations were organized to provide a detailed account of daily life, community interactions, and tourist presence in Yinshi Village. Document analysis involved scrutinizing official documents to understand how local tourism efforts align with broader policy objectives. The qualitative data analysis process adopted an iterative approach, where emerging themes were cross-verified among various data sources to confirm their validity and reliability. This methodological approach aimed to offer a nuanced and comprehensive understanding of how persimmon-themed tourism contributes to poverty alleviation in Yinshi Village, highlighting the complex interplay between community engagement, policy frameworks, and the lived experiences of the villagers.

3. Results and discussion

3.1. Results

3.1.1 Characteristic industry of Yinshi Village

The development of Yinshi Village has been prominently themed around persimmons. Over the years, the area dedicated to persimmon cultivation has shown impressive growth, expanding from 199.61 hectares in 2013 to a significant 266.67 hectares currently, as detailed in Table 1. This increase not only underscores the village's commitment to persimmon cultivation but also its focus on fostering a dynamic industry. The annual production of persimmons has escalated to 3,000 tons, demonstrating the success of these efforts. The data presented in Table 1 highlights the substantial growth in persimmon cultivation over the past decade, illustrating the village's increasing expertise and renown in this specialized agricultural niche. This success not only bolsters the village's agricultural base but also enhances its appeal as a tourism destination. Yinshi Village is positioned as a prime location for persimmon enthusiasts and tourists looking for distinctive rural experiences, thereby contributing to the development of agriculture-based tourism

Table 1. Expansion of permission yield and planting areas in Yinshi Village

Index (year)	Persimmon Yield (t.)	Plant Area (ha.)
2013	1,200	199.61
2014	1,466	212.08
2015	1,720	226.01
2016	1,800	227.14
2017	1,845	228.32
2018	2,000	234.13
2019	2,234	245.31
2020	2,243	248.22
2021	2,460	254.67
2022	2,690	261.32
2023	3,000	266.67

3.1.2 A new mode of development: Persimmon plantation industry, cooperatives, and farmers

Under the guidance of the village committee, Yinshi Village has established a specialized rural tourism professional cooperative. This cooperative functions within a structured framework that emphasizes government guidance, company management, cooperative leadership, and active farmer participation (refer to Figure 1). This model has significantly contributed to the village's comprehensive poverty alleviation and prosperity initiatives. Capitalizing on the unique appeal of persimmons, the cooperative has developed a notable brand that streamlines the processes of purchasing, packaging, and selling persimmons, thereby enhancing their overall quality. This initiative has enabled the export of persimmon products to international markets, including South Korea and Japan. In a strategic effort to secure dividends for the community, the village collective has unified the operation and management of vacant houses and land equity cooperatives. The strategy involves the development of home-stays and specialized plantations, distributing profits at year-end to ensure the preservation and appreciation of asset value. The investments in rural household improvements have also increased efficiency and benefits, with the cooperative providing essential support to these households. Profits generated are funneled back to the village collective, ensuring the smooth operation of rural households and bolstering the overall income of the village collective.

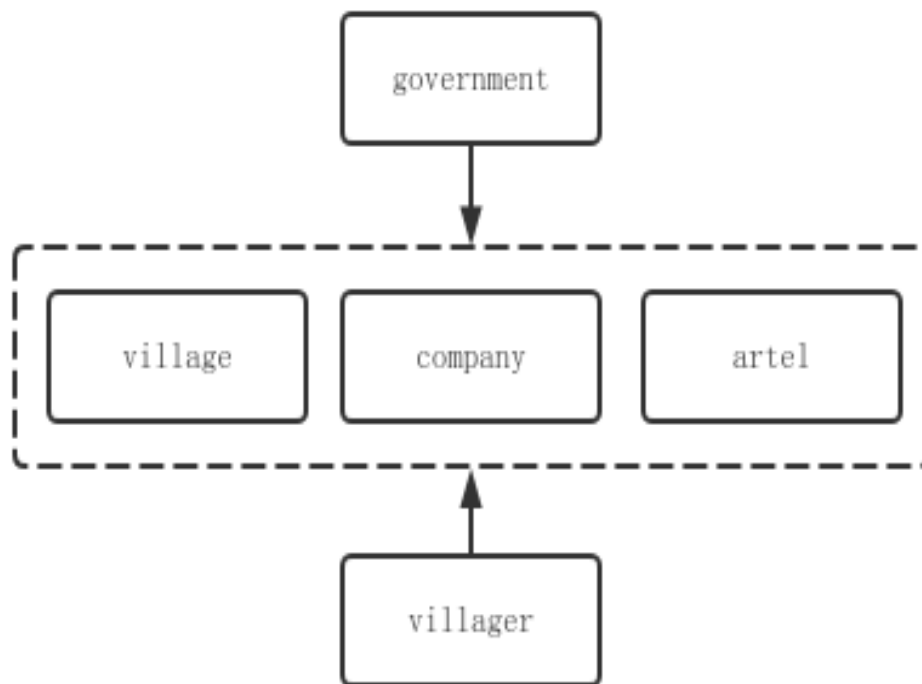


Figure 1. Persimmon industry cooperation in Yinshi Village

3.1.3 Persimmon industry and tourism: Opportunities for leisure

To rejuvenate rural tourism, the local government has demonstrated a proactive commitment to utilizing resources such as persimmon culture, folk activities, and local products. This effort includes the strategic use of these assets to promote tourism for poverty alleviation and emphasize the development of the village. To ensure effective planning and enhance the attractiveness of the tourism offerings, a professional design team has been engaged to undertake comprehensive planning. Figure 2 depicts the intricate integration of persimmon culture into the village's character, prominently featuring persimmons. Efforts to standardize the village's visual identity include painting the roofs of residential buildings a distinctive orange, mirroring the color of ripe persimmons. Furthermore, the names 'persimmon' and 'yinshi' are creatively displayed on select rooftops using tiles of various colors to accentuate the village's key industries. Additionally, residential exteriors are decorated with wall paintings that celebrate persimmon themes, adding aesthetic appeal while honoring the village's distinctiveness. These artistic enhancements have transformed the village into a visually appealing destination, offering tourists unique photographic opportunities. Moreover, landscape architecture and sketches inspired by persimmons have been implemented to increase the village's experiential allure, establishing a distinctive and ancient village getaway.



Figure 2. Permission-themed landscape design in Yinshi Village

Focusing on distinctive industrial traits, the village has embraced the themes of 'hidden' and 'persimmon', refining its design style with a modern twist on local architecture. The village has complemented this transformation by developing various facilities such as local academies, village history centers, dining halls, theme parks, parking lots, node landscapes, home-stay clusters, new tourist ring roads, new barrages, and the creation of landscape lakes. Additionally, the Qilu Model Livable Village Project (see <http://www.shandong.gov.cn/col/col175484/index.html>), issued by the local government, has given the village a comprehensive facelift, enhancing both its physical appearance and cultural vibrancy. Cultural enrichment has been fostered through a variety of persimmon-related activities, such as the Persimmon Picking Festival, Persimmon Luck DIY, and Persimmon Poetry Conferences. These events aim to elevate and diversify the tourism experience in the village, encouraging active participation from both tourists and residents. Notably, the 9th National Persimmon Culture Tourism Festival (see https://dzrb.dzng.com/articleContent/705_931253.html) was held in Yinshi Village in 2018.

Innovative development models have been implemented to enhance construction quality. Addressing the outdated and sub-optimal state of the original persimmon sheds, a "two demolition and one construction" rural improvement project was initiated. This project involved demolishing old persimmon drying sheds and breeding sheds and replacing them with a leisure tourism resort. The village's original facilities underwent a meticulous transformation into an industrial park, which is now the largest persimmon drying base in China. This upgrade not only addressed illegal constructions but also modernized the farmers' persimmon drying facilities, creating a standardized, large-scale, and uniform tourism landscape for persimmon drying. The updated persimmon drying rooms, operational year-round, support not only the drying of persimmons in

autumn but also activities like persimmon cake making in other seasons. Re-purposing these rooms for rural entertainment can boost the income of persimmon processing households. This innovative approach marks a significant improvement in the quality of construction and the village's economic prospects.

3.1.4 Persimmon industry and E-commerce: Chances for specialty marketing

Yinshi Village has embarked on an innovative path by establishing an ecological tourism and holiday website alongside a Taobao platform, leveraging its persimmon industry, and diversifying with other agricultural products such as wheat, millet, and sweet potatoes. Through these e-commerce platforms, Yinshi Village achieved significant sales in 2021, selling over 200,000 kilograms of persimmon cakes, 120,000 kilograms of millet, and 300,000 kilograms of sweet potatoes, resulting in an increase in per capita income of 12,000 RMB yuan. Additionally, the village has developed three persimmon wine processing workshops, over 30 persimmon pancake processing households, and two centralized processing points, effectively creating a comprehensive persimmon industry chain. The involvement of young villagers, who have returned to promote the export of persimmons through Taobao, TikTok, live broadcasts, and other social media channels, has significantly boosted the popularity of local products and the village itself.

3.1.5 Overall change and development

Yinshi Village is undergoing a transformative phase, with a focus on improving the village's overall planning and aesthetics. This effort includes significant enhancements to tourism resources, the expansion of the Persimmon industrial park, and the integration of leading processing enterprises and cultural tourism initiatives within the Persimmon industry. High-quality festival activities are being organized to increase public satisfaction and community engagement. The village is capitalizing on its unique industrial resources, particularly focusing on establishing a distinct persimmon industrial belt. The overarching goal is to increase agricultural efficiency, raise farmers' incomes, and achieve comprehensive rural development.

As of early 2023, the village has witnessed notable progress, with 123 members joining the community, or about one-fifth of the total rural households, collectively managing 380 acres of land. The cooperatives play an essential role in providing unified services, including the supply of seeds and agricultural materials, and facilitating processing, drying, and sales, ensuring higher returns than traditional primary industries typically offer. Furthermore, cooperative members benefit from an additional share of rural tourism income and dividends. The village has attracted over 100,000 tourists, generating a cumulative income of 66.68 million RMB, with the average annual income for cooperative members reaching 26,000 RMB.

The village's progress is remarkable, driven by the growing tourist interest and their diverse demands. The cooperatives have responded by expanding their brand packaging and exploring e-commerce sales for persimmons, thus extending the persimmon industry chain. Noteworthy developments include the successful registration of trademarks such as "Yinshi Red" (Yinshi Hong) and "Hidden Persimmon Valley" (Yin Shi Gu), along with the introduction of various persimmon gift packs in different sizes and grades. The cooperative has also established over 60 e-commerce business accounts on the Taobao platform and entered into sales partnerships with e-commerce platforms. In 2021, nearly 2 million kilograms of persimmons were sold through e-commerce, accounting for one-third of the village's total annual output. This effective integration of tourism with primary and secondary industries has created a dynamic synergy that drives continuous growth and prosperity.

Cultural tourism has indeed become a transformative force in Yinshi Village, with persimmons emerging as a symbol of the area's identity. This successful integration of culture and tourism has propelled the village from a disadvantaged state to prosperity within just five years. The village has diversified its tourism offerings across various domains, including food, lodging, transportation, leisure activities, shopping, cultural exploration, and maintenance services. This comprehensive development strategy has led to the formation of five unique areas: the pastoral leisure area, the retreat residential area, the ancient village folk culture experience area, the meditation area, and the mountain sightseeing sports area. This multifaceted approach has positioned the village as a distinctive leisure tourism destination in the mountainous regions of central Shandong Province. Additionally, the recent investment in the Sino-Japanese joint venture, the Qianchen Research and Learning Project (see <https://w.dzwww.com/p/p4CA3YhVC3.html>), marks a significant advancement in the village's evolution. The project aims to establish the village as a hub for rural research and educational travel, thereby enhancing its significance not only within the province but also throughout China.

3.2. Discussion

3.2.1 The Influence of the persimmon industry in Yinshi Village on rural landscape design

The persimmon industry has had a significant influence on Yinshi Village's landscape design. It has not only highlighted the village in terms of landscape aesthetics but has also introduced innovative design concepts to the development of rural landscapes. The village leverages its unique planting industry, cultural landscape, and architectural style as the driving forces behind its landscape planning. This approach helps to capitalize on the local characteristics of the countryside, enhancing its appeal and showcasing its unique charm while also providing diverse visiting experiences for tourists [17].

Secondly, the evolution of the persimmon industry has infused rural landscape design with a surge of creative inspiration and artistic expression. The industry has introduced various artistic forms, such as persimmon sculptures, architectural designs inspired by persimmons, and persimmon-themed murals. These elements have become integral components of the rural landscape, enhancing its aesthetic and ornamental value. Moreover, they imbue rural landscape design with renewed vibrancy and dynamism, making it more vibrant and dynamic [18].

Finally, the persimmon industry lays a sustainable foundation for rural landscape design. The cultivation of persimmons requires careful land resource management and protection, which is vital for the sustainable development of rural landscapes. In Yinshi Village, the planning and management of persimmon plantations are approached with a dual focus on maximizing yield and economic benefits while prioritizing ecological and environmental protection. This approach to ecological agriculture provides a stable ecological base for rural landscape design, supporting the long-term preservation and development of rural landscape [19].

3.2.2 The influence of the persimmon industry on tourism development

It is evident from the analysis that the impact of the persimmon industry on tourism development is profound and multifaceted. Initially, the concept that 'an industry is a scenic area, and each scenic area drives one industry' aptly describes this influence [20]. By transforming agricultural bases into rural tourism hot-spots, turning new countryside areas into picturesque destinations, and evolving characteristic agricultural products into sought-after tourism commodities, the village continuously broadens urban tourism possibilities. This strategy creates a seamless integration between modern agriculture and the tourism sector, drawing visitors with unique agricultural experiences, retaining their interest in immersive rural tourism, and maintaining their engagement through innovative e-commerce ventures [21]. Yinshi Village has strategically focused on leveraging its core resource—persimmons—to drive development. The village's approach began by addressing specific agricultural challenges, which then served as a catalyst for subsequent tourism development.

Additionally, the persimmon industry in Yinshi Village has generated significant economic benefits and created employment opportunities in rural tourism. The development of persimmon plantations has spurred the expansion and diversification of the agricultural industry chain, providing critical economic support for rural landscape design and tourism development. In Yinshi Village, the persimmon industry has played a crucial role in driving rural tourism. For example, the village has diligently expanded its tourism resources, increased the scope of its persimmon industrial parks, introduced prominent processing enterprises within the persimmon chain, and fostered cultural and tourism initiatives. Village cooperatives have actively participated in developing the persimmon industry, organizing high-quality festival activities. The advent of online stores has also contributed to ancillary growth in the logistics sector and expanded employment opportunities. The cultivation of persimmon-themed folk traditions, along with developments in research and education, has attracted both tourists and investors, further highlighting the village's unique industrial resources. These collective efforts have led to the creation of a distinctive persimmon industry belt, resulting in tangible improvements in agricultural efficiency, increased farmers' incomes, and a more prosperous rural economy [22].

3.2.3 Ways forward

Agricultural plantations are a pivotal component of the rural economy, exerting a positive influence on rural tourism development. However, it also faces numerous challenges in its convergence with rural tourism, necessitating the implementation of appropriate countermeasures.

In the context of rural tourism development, one major hurdle for agricultural plantations is persistent adherence to conventional agricultural practices. In rural areas, some farmers continue to employ traditional farming methods and crop cultivation habits, often characterized by a lack of innovation awareness and technological modernization. This rigidity limits the potential of rural tourism, as modern tourists are keen to explore unique agricultural landscapes and engage in distinctive farming activities [23]. Consequently, it is essential to enhance training and educational initiatives targeting farmers, improving their proficiency in agricultural technologies, fostering their innovative capabilities, and creating an environment conducive to the development of captivating and competitive landscape designs and tourism experiences.

Furthermore, agricultural plantations face challenges in rural tourism development, including concerns about environmental pollution and ecological degradation. Certain agricultural production practices, especially the use of fertilizers and pesticides, can inadvertently lead to pollution of land and water resources, resulting in ecological damage. This is a significant issue for rural tourism development, as contemporary tourists increasingly prioritize eco-friendliness and favor environmentally sustainable destinations [24]. Therefore, in aligning agricultural plantations with rural tourism development, it is crucial to focus on protecting ecological environments and promoting sustainable development. This requires the implementation of measures designed to minimize the environmental impact of agricultural production and enhance the sustainability of agriculture.

In addition, the challenge posed by agricultural plantations to rural tourism development relates to the inadequacy of processing and marketing capabilities for agricultural products. Rural tourism extends beyond the mere display of agricultural landscapes and activities; it involves providing opportunities for tourists to purchase and enjoy locally sourced agricultural products [25]. However, in some rural areas, the seamless integration of agricultural production and tourism is lacking, negatively impacting the processing and sales potential of these products. Consequently, these shortcomings hinder rural tourism's capacity to meet the diverse needs of its patrons [26]. Addressing this challenge requires promoting the holistic development and integration of the agricultural industry chain and the tourism sector. This involves strengthening the infrastructure supporting the processing and distribution of agricultural products while enhancing their market value and competitiveness.

To summarize, agricultural plantations face various challenges in the context of rural tourism development, all of which can be addressed through targeted countermeasures. Enhancing farmer training and education, improving proficiency in agricultural technologies and innovation awareness, and creating captivating landscape designs and tourism experiences are critical initiatives. Moreover, a steadfast commitment to environmental conservation and sustainable development should guide efforts to minimize the environmental impact of agricultural practices. Lastly, the concerted integration and development of the agricultural industry chain and the tourism sector, along with efforts to enhance the value and competitiveness of agricultural products, will foster a symbiotic relationship between agricultural plantations and rural tourism development, facilitating mutual growth.

4. Conclusion

This study focused on Yinshi Village in Shandong Province to explore the influence of persimmon plantations on rural landscape design and tourism development. The findings indicate that persimmon plantations positively impact both rural landscape design and tourism development. Firstly, they enhance the diversity of rural landscapes, enrich rural landscape resources, and improve the overall tourist experience. Secondly, the development of persimmon plantations has introduced new tourism features and enhanced the appeal of rural tourism. Furthermore, using persimmon plantations as a case study has promoted the integration of agricultural plantations into the rural economy, paving the way for innovative paths in rural tourism development that can ultimately yield substantial economic benefits.

Nevertheless, this study had certain limitations. First, due to time and funding constraints, it focused solely on Yinshi Village in Shandong as a case study, which may limit the findings' universality and generalizability. Secondly, the study did not explore in depth the specific mechanisms through which agricultural plantations impact rural landscape design and tourism development, leaving room for further investigation in these areas. Given these limitations, future research could expand in several directions. Firstly, researchers might consider selecting cases from various regions to compare the effects of agricultural plantations on rural landscape design and tourism development, thereby enhancing the universality and applicability of the research findings. Secondly, from an ecological perspective, exploring the relationship between agricultural plantations and both rural landscape design and sustainable tourism development could foster harmonious development. This

research direction aims to integrate agricultural plantations within the broader framework of rural landscape design and tourism development, while also considering environmental sustainability.

Declaration of competing interest

The authors declare that there are no known competing financial or non-financial interests that could have appeared to influence the work reported in this paper.

Funding information

This research was conducted without receiving external funding from any financial organization.

References

- [1] Q. B. Baloch *et al.*, “Impact of tourism development upon environmental sustainability: a suggested framework for sustainable ecotourism,” *Environmental Science and Pollution Research*, vol. 30, no. 3, pp. 5917–5930, 2023.
- [2] W. Li, Y. Zhou, and Z. Zhang, “Strategies of landscape planning in peri-urban rural tourism: A comparison between two villages in China,” *Land (Basel)*, vol. 10, no. 3, p. 277, 2021.
- [3] R. Huang and H.-M. Bu, “Destination attributes of memorable chinese rural tourism experiences: impact on positive arousal, memory and behavioral intention,” *Psychol Res Behav Manag*, pp. 3639–3661, 2022.
- [4] C. Jin *et al.*, “Co-existence between humans and nature: Heritage trees in China’s yangtze River region,” *Urban For Urban Green*, vol. 54, p. 126748, 2020.
- [5] W. Tang and J. Zhu, “Informality and rural industry: Rethinking the impacts of E-Commerce on rural development in China,” *J Rural Stud*, vol. 75, pp. 20–29, 2020.
- [6] Cui Yan, Mi Kaiqiang, and Liu Jiajia, “Research Hotspots and Prospects in Rural Landscape Evaluation and Design — A Visualization Analysis Based on Bibliometrics,” *Design*, vol. 8, p. 2038, 2023.
- [7] H. Guoqin, “Functions, Problems and Countermeasures of China’s Rural Ecosystems.,” *Journal of Landscape Research*, vol. 11, no. 5, 2019.
- [8] L. Qinglei, Z. Sixun, and W. Baoyan, “Creative Shiftin Rural Tourism,” in *West Forum on Economy and Management*, 2019, pp. 51–55.
- [9] Y. Liu, Y. Zang, and Y. Yang, “China’s rural revitalization and development: Theory, technology and management,” *Journal of Geographical Sciences*, vol. 30, pp. 1923–1942, 2020.
- [10] J. Gao and B. Wu, “Revitalizing traditional villages through rural tourism: A case study of Yuanjia Village, Shaanxi Province, China,” *Tour Manag*, vol. 63, pp. 223–233, 2017.
- [11] Y. Liu, M. Zhang, Q. Cao, E. Wang, and B. Zou, “Can Integration of Agriculture and Tourism Promote Rural Green Development?—Empirical Evidence from 152 Cities in China,” *Agriculture*, vol. 13, no. 2, p. 405, 2023.
- [12] Y.-L. Liu, J.-T. Chiang, and P.-F. Ko, “The benefits of tourism for rural community development,” *Humanit Soc Sci Commun*, vol. 10, no. 1, pp. 1–12, 2023.
- [13] Q. Tian and W. Qin, “Research on Rural Landscape Space Design Based on Immersive Experience: Taking Mantangli Village of Anji as an Example,” 2022.
- [14] F. Higgins-Desbiolles, “Sustainable tourism: Sustaining tourism or something more?,” *Tour Manag Perspect*, vol. 25, pp. 157–160, 2018.
- [15] X. Qin, H. Wu, and T. Shan, “Rural infrastructure and poverty in China,” *PLoS One*, vol. 17, no. 6, p. e0266528, 2022.
- [16] S. Fajrina and A. Srifauzi, “Analysis of the Strengths and Weaknesses of Paradiplomacy to Increase Regional Tourism Attractiveness,” *Jurnal Studi Ilmu Pemerintahan*, vol. 5, no. 1, pp. 53–66, 2024.
- [17] B. Song, G. M. Robinson, and D. K. Bardsley, “Measuring multifunctional agricultural landscapes,” *Land (Basel)*, vol. 9, no. 8, p. 260, 2020.

-
- [18] Q. Song and W. Feng, "Interests-Based Local Experience Tourism: A New Tourism Product Design in China," *Open J Soc Sci*, vol. 9, no. 4, pp. 413–426, 2021.
 - [19] G. Zhang, Q. Zeng, M. Li, and X. Fang, "Thoughts on Rural Talent Revitalization in East Fujian against the Background of Rural Rivitalization Strategies: A Case Study of Cultural and Tourism Integrative Revitalization in Xiadang Town, Shouning County, Ningde City," *Journal of Landscape Research*, vol. 13, no. 5, pp. 57–64, 2021.
 - [20] H. Tajuddin, F. A. Abd Latif, and S. Mohamed Ali, "Preserving and enhancing the cultural landscape of Kampung Santubong, through eco-village approach," *Built Environment Journal (BEJ)*, vol. 15, no. 1, pp. 33–40, 2018.
 - [21] J. Shen and R.-J. Chou, "Rural revitalization of Xiamei: The development experiences of integrating tea tourism with ancient village preservation," *J Rural Stud*, vol. 90, pp. 42–52, 2022.
 - [22] Y. Yi, C. Zhao, and J. Fu, "Research on the integration and development of modern agriculture and rural tourism based on AHP—take Yangjia town in Mianyang city as an example," *Open J Soc Sci*, vol. 7, no. 07, p. 76, 2019.
 - [23] F. You and S. Li, "Environmental regulations, green development of agriculture, and residents' health—empirical analysis of Yangtze River Economic Belt in China," *PeerJ*, vol. 11, p. e15717, 2023.
 - [24] Y. Zang, Y. Yang, and Y. Liu, "Understanding rural system with a social-ecological framework: Evaluating sustainability of rural evolution in Jiangsu province, South China," *J Rural Stud*, vol. 86, pp. 171–180, 2021.
 - [25] Z. Juan and Z. Xinyi, "Research on Local Culture based on Landscape Design of Characteristic Town," in *E3S Web of Conferences*, EDP Sciences, 2020, p. 03016.
 - [26] Q. Zhuang, M. K. Hussein, N. F. Mohd Ariffin, M. Y. Mohd. Yunus, and S. Chen, "Rural landscape characterization from the perspective of the tourist using online reviews: A case study of Yayou Gou Village in Shandong, China," *Front Environ Sci*, vol. 10, p. 915110, 2022.