

Research on Promoting Rural Tourism Development through the Activation and Utilization of Ancient Bridge Heritage: A Case Study of the Bian Bridge in Sishui

Chu Shuying

*School of History and Culture, Qufu Normal University, Qufu, Shandong, 273100, China
chu3539chu@gmail.com*

Abstract: *As integral carriers of historical transportation and culture, ancient bridge heritage possesses historical, scientific, artistic, and social values. Under the current context of the rural revitalization strategy and the integration of culture and tourism, ancient bridge heritage demonstrates unique potential for driving the development of rural tourism. This paper takes the Bian Bridge in Sishui, Jining, as a case study to explore the role of activating and utilizing ancient bridge heritage in promoting rural tourism. By examining the historical evolution and value connotations of the Bian Bridge and comparing it with relevant domestic cases, this paper analyzes the shortcomings in its tourism development. Furthermore, it proposes new pathways for leveraging ancient bridge heritage, using the Bian Bridge as an example, to foster rural tourism development.*

Keywords: *Bridge Heritage; Revitalization and Utilization; Rural Tourism; Sishui Bianqiao*

1. Introduction

As an important transportation facility in ancient times and a highly valuable cultural heritage in the modern era, ancient bridge heritage not only played a crucial role in facilitating urban-rural communication and promoting cultural exchange among residents in history, but also, under the background of China's vigorous promotion of the rural revitalization strategy, has gradually demonstrated its unique value and charm in advancing rural tourism development. Owing to its distinctive architectural characteristics, ancient bridge heritage inherently possesses scientific value; moreover, through long-term coexistence with local residents, it has also been endowed by time and people with historical, artistic, and social values. Therefore, ancient bridge heritage serves not only as a landmark of local architecture but also as an integral part of regional history and culture. Taking it as a focal point for rural tourism development, this study seeks to explore new pathways for the revitalization and utilization of ancient bridge heritage in promoting rural tourism.

2. Theories and Practices of Ancient Bridge Heritage in Promoting Rural Tourism Development

2.1 Theories of Ancient Bridge Heritage and Rural Tourism

Ancient bridge heritage refers to the remains of human bridge construction activities, reflecting the construction capabilities of different historical periods. Such heritage possesses historical, technological, social, and artistic values. Its value includes both the tangible dimension, namely the physical structure and material components of the bridge itself, and the intangible dimension, which encompasses the historical, cultural, and symbolic connotations embedded within the bridge heritage^[1].

Rural tourism is a vital component of the rural revitalization strategy, aimed at accelerating the promotion of rural revitalization and achieving the modernization of agriculture and rural areas. The "Opinions of the Central Committee of the Communist Party of China and the State Council on Further Deepening Rural Reform and Solidly Promoting Comprehensive Rural Revitalization" issued in 2025 further emphasized: advancing the deep integration of rural culture and tourism, implementing pilot projects for cultural industries to empower rural revitalization, and enhancing the specialization, refinement, and standardization of rural tourism^[2].

Therefore, regions should develop characteristic rural tourism tailored to local conditions, creating brands with distinct local features. With growing urban pressures, people increasingly yearn for the tranquility of rural life. Accordingly, developing distinctive attractions based on local natural and cultural landscapes has become essential to rural tourism. Ancient bridge heritage, embodying collective memory and regional identity, also carries profound historical and cultural value. Prioritizing ancient bridges in rural tourism development can not only activate and utilize this heritage but also improve local landscapes, enhance regional image, create employment, stimulate tourism growth, and ultimately advance rural revitalization.

2.2 Domestic Similar Case Practices

China's bridge construction dates back over 4,000 years to the late Yangshao Culture, when archaeologists uncovered rudimentary bridge forms near semi-subterranean houses. Across four developmental stages—the embryonic period (pre-Qin to Han), growth (Wei, Jin, Sui, Tang), prosperity (Song, Yuan), and maturation (Ming, Qing)—and shaped by diverse topography, numerous ancient bridges of exceptional structure and value have been preserved. In recent years, local governments and cultural tourism departments have increasingly promoted bridge heritage as a core attraction, integrating it into tourism economies and fostering successful destinations.

Currently, well-established tourist attractions that feature bridge heritage as their main focus or promotional highlight include the Zhaozhou Bridge Park in Hebei Province. The park showcases the Zhaozhou Bridge (Anji Bridge), the world's oldest extant stone arch bridge, as its central attraction. Surrounding the ancient bridge, the park features auxiliary sights such as the Kanyuan Pavilion, the Moon-Viewing Corridor, and a Museum of Bridge-Building Artisans, collectively forming a comprehensive cultural complex dedicated to promoting the history and cultural value of ancient bridges.

Another example is the Hanshan Temple (Maple Bridge Temple) in Suzhou, Jiangsu Province, a national AAAA-level scenic spot. Originally built during the Tianjian era of the Liang Dynasty in the Southern Dynasties period, it gained widespread fame thanks to the renowned Tang dynasty poet Zhang Ji, who spent a night near Maple Bridge on his journey home and was inspired to write the celebrated poem "Night Mooring at Maple Bridge." To this day, Hanshan Temple continues to center its promotional and tourism resources around Maple Bridge, attracting a large number of visitors each year.

Ancient bridge heritage embodies intrinsic historical and cultural value, which can be leveraged to enhance tourism appeal through targeted interpretation and promotion. While sites such as Zhaozhou Bridge Park and the Maple Bridge at Hanshan Temple benefit from greater accessibility, improvements in China's transportation infrastructure have shifted tourist preferences toward the uniqueness of attractions, local customs, and cultural depth, rendering distance a less decisive factor in visitation decisions.

Located in southwestern China, Guizhou Province is characterized by its mountainous terrain and numerous rivers, which have contributed to the preservation of a wealth of ancient bridge heritage. The local cultural and tourism authorities have integrated these heritage resources into regional tourism planning, striving to promote Guizhou's distinctive "bridge culture" and highlight the high-quality adaptive reuse and development of these historical structures. A notable example is the Xiaoqikong Ancient Bridge in the Xiaoqikong Scenic Area of Libo County. The local government has positioned the ancient bridge as a core attraction, developing the surrounding site to draw visitors from across the country. This initiative has generated multifaceted benefits, including enhanced conservation and utilization of the bridge heritage, as well as positive socioeconomic impacts for local communities.

Bridge Conservation: Scientific preservation constitutes the prerequisite for the sustainable utilization of ancient bridge heritage. Without appropriate conservation, environmental and anthropogenic factors may cause irreversible damage, resulting in the loss of historical, cultural, and artistic values. The Xiaoqikong Scenic Area exemplifies a conservation model that integrates structural restoration with contextualized development. By completing safety repairs in 2024 and aligning preservation with the region's natural landscape and cultural traditions, the site not only ensures the authenticity and integrity of the bridge but also reactivates its cultural significance through tourism. In this way, heritage conservation and functional revitalization are mutually reinforced, preventing the marginalization of ancient bridges following the decline of their original transportation role.

Social Dimension: With their distinctive form and long history, ancient bridge heritage has witnessed generations of local life and become an important symbolic landmark for the community. They carry collective memory and a sense of spatial identity among villagers, serving as an emotional anchor for

those who have left their hometowns. The development of the Xiaoqikong Ancient Bridge scenic area has not only contributed to the preservation of the bridge heritage and boosted the local economy—it has also created a spiritual bond where local residents and away migrants can reconnect emotionally and share their sense of nostalgia.

Economic Impact: Ancient bridge heritage not only embodies profound historical and cultural connotations but also serves as a powerful engine for regional economic development. In the context of the rapid growth of rural tourism and the cultural industry, these heritage assets are being transformed into tourist attractions, cultural landscapes, and local brands, generating multi-level economic benefits across sectors such as accommodation, catering, and cultural and creative industries. For example, the Xiaoqikong Ancient Bridge Scenic Area received over 6.2 million visitors in 2023, representing a 35.9% increase compared with 4.56 million visitors in 2022, and contributed to Libo County's total of approximately 26.9 million tourists in 2023, a 43% year-on-year growth. This remarkable achievement clearly demonstrates the distinctive role of ancient bridge heritage in stimulating local economic vitality, strengthening tourism-driven economies, and promoting high-quality regional development (see Fig. 1) [3]. Similarly, transforming Bian Bridge into a comparable scenic area could effectively promote local economic growth.

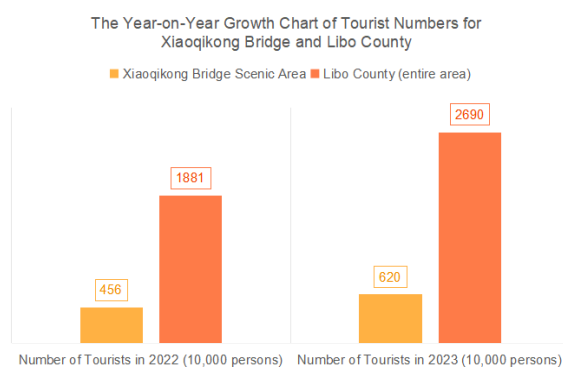


Figure 1 The Year-on-Year Growth Chart of Tourist Numbers for Xiaoqikong Bridge and Libo County

3. Overview and Value of Bian Bridge in Sishui, Jining

3.1 Overview of Bian Bridge in Sishui

Bian Bridge in Sishui, Jining is situated over the Si River between Bianqiao Village and Quanlin Village in Quanlin Town, Sishui County, Jining City, Shandong Province. Initially constructed during the late Tang Dynasty, the bridge has undergone multiple repairs and maintenance throughout successive dynasties. Two major renovations took place—one in the 21st year of the Dading era of the Jin Dynasty (1181 CE) and another in the 9th year of the Wanli era of the Ming Dynasty (1581 CE)—during which components such as railings and balusters were partially restored. The Bian Bridge, a three-arch masonry structure (25 m long, 7 m wide, 6.5 m high), is oriented east–west with ramps at both ends. Surrounding facilities such as a cultural square, signage, and a monument provide visitor information. As the oldest surviving bridge in Shandong Province, it has been well preserved and was designated a National Key Cultural Relic in 2006.

3.2 The Value of Bian Bridge in Sishui

Historical Value: Constructed in the late Tang Dynasty and continuously renovated throughout successive dynasties, the Bian Bridge in Sishui has endured for over a millennium, embodying significant historical value. As a unique category of ancient architecture, it not only constitutes a material witness to historical processes but also provides irreplaceable resources for historical research. Notably, during the Anti-Japanese War, the "Bianqiao Anti-Japanese Student Army"^[4] emerged around the bridge, marking the earliest locally organized armed resistance in the area. This event not only mobilized local patriotic sentiment but also attracted broader societal attention and support. Consequently, the Bian Bridge exemplifies the dual role of ancient bridge heritage as both a bearer of architectural continuity and a repository of critical historical memory.

Scientific Value: The Bian Bridge in Sishui, Jining, together with the Zhaozhou Bridge in Hebei and

the Lugou Bridge in Beijing, represents a significant exemplar of ancient Chinese stone arch bridge technology, all recognized as National Key Cultural Relics Protection Units. Chronologically, it occupies a transitional stage between the single-arch Zhaozhou Bridge (Sui Dynasty) and the multi-arch Lugou Bridge (Jin Dynasty), reflecting the evolution of structural techniques. Its enduring stability demonstrates the scientific rationality of ancient engineering practices in load distribution, foundation treatment, and material application. As a well-preserved specimen, it not only provides critical evidence for the study of traditional bridge construction and technological inheritance but also offers valuable insights for contemporary civil engineering design and practice.

Artistic Value: The artistic significance of the Bian Bridge lies in its harmonious integration of structural rationality and aesthetic form.^[5] Its siting enhances the surrounding landscape, exemplified by the unique phenomenon of “Twin Moons at Bian Bridge,” where the arches reflect the moonlight upon the water, a scene celebrated as one of the “Ten Scenic Spots of Sishui.” This interplay of architecture and environment embodies the aesthetic ideals of unity between nature and human creation, rendering the bridge both a functional structure and a refined cultural landscape.

Socio-cultural Value: Bridge heritage serves as an annals of history and a crystallization of culture, representing the most widely distributed, most numerous, and longest-lasting category of architectural heritage in society. Due to its unique attributes, ancient bridge heritage has accompanied people for centuries and, through this long-term coexistence, has been endowed with rich cultural connotations, such as love, parting, and homesickness. Moreover, during traditional festivals, local residents often gather near these bridges to hold various customary activities, such as rituals for blessings and prayers for good fortune in the coming year.

3.3 Current Situation of Tourism Development of Bianqiao in Sishui, Jining

Compared with the well-developed tourism models of Zhaozhou Bridge, the Maple Bridge at Hanshan Temple, and the Xiaoqikong Bridge, the development of the Bian Bridge in Sishui, Jining remains relatively limited, leaving substantial potential unrealized. Field investigations reveal two primary challenges: first, the absence of a sustainable and integrated development strategy, which restricts the systematic utilization of cultural and natural resources; and second, the insufficient revitalization of its tourism functions, resulting in low visitor engagement and limited cultural dissemination. Addressing these issues is essential for transforming the Bian Bridge into a distinctive cultural tourism landmark that not only showcases its historical and aesthetic value but also contributes to local economic growth and rural revitalization.

3.3.1 Lack of a Sustainable Overall Development Strategy

Although Bian Bridge in Sishui holds cultural value comparable to that of Zhaozhou Bridge, Fengqiao Bridge, and Xiaoqikong Bridge (see Table 1), its development and utilization remain relatively limited. As shown in the table, while the three bridges differ in construction periods, each embodies distinctive regional cultural significance and holds substantial historical research value. Moreover, they respectively represent the technological achievements of different eras in ancient Chinese bridge construction, reflecting remarkable engineering ingenuity and offering insights for modern construction practices. In addition, each bridge integrates local natural and cultural landscapes and features exquisite carvings of high artistic value, underscoring their outstanding cultural significance.

However, unlike Zhaozhou Bridge and Fengqiao Bridge, which have established mature preservation and utilization models, Bian Bridge remains confined to a static display mode, limiting its tourism appeal and potential. Furthermore, unlike the Xiaoqikong Scenic Area, where holistic planning, marketing strategies, and infrastructure development have enabled the seamless integration of the ancient bridge with its natural surroundings, Bian Bridge lacks a systematic tourism framework and fails to connect with nearby resources such as the Quanlin Scenic Area and the Bian State Ancient City ruins. Consequently, the absence of a sustainable, integrated development strategy has hindered the full realization and utilization of its cultural and tourism value.

Table 1 Comparison Table of Basic Information for Bian Bridge, Zhaozhou Bridge, and Maple Bridge

	BianBridge	ZhaozhouBridge	FengBridge
Construction Period	Late Tang Dynasty (ca. late 9th C.)	Sui Dynasty, Kaihuang Era (595–605 AD)	Liang Dynasty, Tianjian Era (502–519 AD)
Historical Value	The oldest extant stone arch bridge in Shandong, bearing regional memory and history of the War of Resistance	World's oldest and largest open-spandrel stone arch bridge, a milestone in bridge history	Immortalized by the poem "Night Mooring at Maple Bridge", becoming a timeless cultural icon

Scientific Value	Demonstrates rational arch force distribution, a mature example of multi-arch technology	Advanced structural design and innovative mechanical principles, with profound influence on later generations	Technically modest, but a testament to the stone bridge construction traditions of the Jiangnan watertowns
Artistic Value	Exquisite carvings (parapets, stone lions, dragon patterns), forming the scenic "Twin Moons at Bian Bridge"	A unity of engineering and aesthetics, simple yet majestic	Integrated with poetry, gardens, and temples, rich in cultural artistic conception

3.3.2 Insufficient Efforts in Revitalizing Tourism Functions

Although Bian Bridge has been designated as a National Key Cultural Relic Protection Unit and is recognized as the oldest surviving stone arch bridge in Shandong Province, its limited public promotion has resulted in low public awareness. Unlike Zhaozhou Bridge, which is widely known through educational curricula, or Xiaoqikong Bridge, which is actively promoted via official websites and local tourism channels, Bian Bridge remains relatively unfamiliar to potential visitors. This lack of visibility not only restricts tourist participation but also hinders the dissemination of its cultural value. Furthermore, the supporting infrastructure around Bian Bridge in Bianqiao Village, Quanlin Town, Sishui County, remains inadequate. Despite its proximity to attractions such as the Quanlin Scenic Area and the Bian State Ancient City ruins, the site's remote location results in a shortage of accommodation, dining, and entertainment facilities. The absence of sufficient lodging options and a public sightseeing transportation system limits visitors' ability to engage in extended and in-depth tours, diminishing opportunities for immersive cultural experiences and constraining the comprehensive development of the site as a tourism destination.

4. Ancient Bridge Heritage and Rural Tourism Development

As carriers of rural history and culture, ancient bridges—with their historical significance, cultural connotations, and scenic value—can serve as core attractions for rural tourism. Through scientific conservation and strategic utilization, such heritage can attract non-local visitors, stimulate tourism-related industries, and generate employment opportunities, particularly for young local residents, mitigating labor outflow. Moreover, tourism development can enhance village infrastructure, sanitation, and environmental quality, while integrating local agricultural products—such as sweet potatoes and honey peaches—into the scenic area can create regional brands, promote industrialized consortiums, expand market reach, and realize the synergistic effects of cultural tourism on rural economic revitalization.

5. Exploring Pathways for Ancient Bridge Heritage to Drive Rural Tourism

5.1 Highlighting the Tourism Features of the Bian Bridge Itself

Distinctive Value of Ancient Bridge Heritage in Tourism Development: Many domestic scenic areas face homogenization, manifested in repetitive resource types, superficial cultural content, and uniform spatial layouts, which diminish their long-term attractiveness. In contrast, ancient bridges, as historical relics, embody profound cultural heritage, unique engineering aesthetics, and significant landscape value. Their forms and craftsmanship are closely integrated with local geography, history, and folk traditions, endowing each bridge with distinctive identity and characteristics. Thus, developing tourism attractions centered on ancient bridge heritage can enhance regional cultural distinctiveness and aesthetic diversity, effectively avoiding the uniformity typical of conventional scenic areas. Located in the heart of Chinese Confucian culture, the Bian Bridge in Sishui holds profound historical and cultural significance. Building on this heritage, the scenic area can be developed as a cultural tourism destination that integrates exhibitions, interactive experiences, and traditional arts. Digital technologies such as VR can enhance participation and retention, while intangible cultural heritage festivals featuring local music, opera, crafts, and folk performances offer immersive experiences that deepen visitors' connection with regional traditions.

5.2 Improving Tourism Infrastructure Construction

To develop the Bian Bridge into a cultural tourism destination, it is first necessary to construct or renovate basic tourism and rest facilities in the surrounding area to address visitors' essential needs for transportation, dining, and accommodation. Relevant cultural tourism and transportation authorities should conduct comprehensive surveys and assessments of the vicinity, and, based on field conditions,

improve public transport infrastructure—for example, by establishing scheduled daily shuttle services to facilitate access for non-local tourists. Local residents should be encouraged to develop homestays as needed, thereby meeting visitors' accommodation and dining requirements while simultaneously increasing household income. In addition, the local government should provide fundamental supporting infrastructure near the scenic area, including parking lots, public restrooms, and visitor centers, to create a convenient and comfortable tourism environment. Furthermore, the scenic area should be clearly marked on commonly used digital mapping platforms such as Amap and Baidu Map, and directional signage should be installed in the surrounding city and town areas to assist self-driving tourists in locating the site efficiently.

5.3 Highlighting Cultural Tourism Products and Services

Given that much of the historical and cultural information of the Bian Bridge is implicit, visitors engaging only in superficial sightseeing may acquire limited understanding of its observable features while remaining largely unaware of its deeper cultural and historical significance. To address this, the scenic area can consolidate information about the Bian Bridge and surrounding attractions into a cloud-based database and develop corresponding cultural tourism applications or WeChat mini-programs. Visitors could then access these platforms at any time for self-directed exploration, thereby promoting the dissemination of ancient bridge culture. Furthermore, as the scenic area is situated in a rural setting, local residents—who possess the most intimate knowledge of the bridge's history and culture—can serve as guides. Visitor service centers could facilitate such local-guided introductions, enhancing tourists' understanding of both the bridge and regional customs. Additionally, the scenic area could design experiential activities tailored to families or couples, and provide commemorative cultural tourism products reflecting the characteristics of the site, thereby strengthening visitor engagement and recognition of the scenic area.

6. Conclusion

In summary, this paper has examined the values and functions of Bian Bridge in Sishui, Jining, and, by comparing it with well-operated ancient bridge tourist areas in China, has identified both the unique value of Bian Bridge heritage and the challenges it faces in promoting rural tourism. However, if local government authorities or relevant enterprises incorporate ancient bridge heritage, with Bian Bridge as a representative, into local rural tourism planning, it could effectively stimulate the development of the local tourism industry, increase employment opportunities for villagers, promote cultural inheritance, and foster a positive cycle of economic growth. This, in turn, would inject new vitality into the realization of rural revitalization.

References

- [1] Huang Xiong. *Research on the Connotation and Value of Living Bridge Heritage*[D]. Huazhong University of Science and Technology, 2013.
- [2] Central Committee of the Communist Party of China and the State Council. *Opinions on Further Deepening Rural Reform and Solidly Promoting Comprehensive Rural Revitalization*. [EB/OL] (2025-01-01)[2025-08-26]. https://www.gov.cn/gongbao/2025/issue_11906/202503/content_7011166.html
- [3] Liu Xiang, Yang Zhonghao, Wangxiao. *Pathways to Promoting Rural Revitalization through Ancient Bridge Tourism: A Case Study of Ancient Bridges in Yunlong County*[J]. *Rural Economy and Science & Technology*, 2024, 35(16): 106-110.
- [4] Sishui County People's Government. *A Complete History of the Bianqiao Anti-Japanese Student Army*[EB/OL] (2012-09-19) [2025-08-26]. http://www.sishui.gov.cn/art/2012/9/19/art_104435_2758473.html
- [5] Zhou LI. *Research on Structural Types and Characteristics of Ancient Bridges in Hunan Province*[D]. Hunan University, 2008.