

ORIGINAL ARTICLE

Revitalizing historic opera stages through
adaptive reuse: Strategies for architectural
heritage conservation in rural ChinaHongru Ge¹, Zhijie Zhang², and Qingchi Xian^{1*}¹Department of Global Convergence, Faculty of Art History, Kangwon National University, Chuncheon, Gangwon, Republic of Korea²Department of Law and Society, Faculty of BSc Finance, University of Bristol, Bristol, United Kingdom

Abstract

The iconic opera stages in the rural areas of China are cultural heritage sites; however, the majority of them are being ruined by the fast urbanization process, a lack of resources, and knowledge on how to preserve them. This study examines the cultural dimensions of the adaptive reuse of historic opera stages in rural China, the challenges encountered during restoration, and their influence on surrounding communities. Five case studies were conducted, and a total of 400 survey questionnaires were collected from the selected opera stage sites. The findings revealed a mean score of 4.5 for the perceived importance of preserving opera stages, indicating a significant cultural impact. The standard deviations (0.6–0.9) were narrow, showing consistent perceptions of cultural preference among communities. Key barriers reported by interview participants included financial limitations (20/25), structural degradation (18/25), and difficulty in balancing modern use with cultural integrity (15/25). Field observations confirmed these issues; for instance, the Qianlong Theater required extensive restoration due to poor structural conditions. At the same time, adaptive reuse promoted economic growth in the participating areas, with tourism increasing by 20–50 percent. The most notable boost occurred in the Qianlong Theater (50%), while 90 percent of respondents from the Taizhou Theater reported a positive economic impact. Cultural revitalization also played a crucial role, with 10–20 cultural events held annually at each site as part of community engagement. In summary, adaptive reuse represents a sustainable strategy for preserving rural cultural heritage in China, fostering local economic growth and cultural tourism. However, financial and structural challenges must be addressed to ensure long-term preservation of these buildings.

Keywords: Adaptive reuse; Cultural heritage; Opera stages; Heritage conservation; Rural China

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1. Introduction

The old opera stages in rural China represent not merely physical structures but also one of the greatest cultural milestones, marking both the continuity and vitality of local traditions and social life. The stages have long served as communal gathering places where performances of traditional Chinese operas, such as the *Peking*, *Cantonese*, and

Kunqu (昆曲; one of the oldest extant forms of Chinese opera) operas, are held. These shows have a long history of supporting local identities through the telling of tales of heroism, local morals, and local history, frequently performed in local accents and dialects with references to local folklore.

However, with rapid urbanization and modernization in China, these opera stages are increasingly threatened by degradation and obsolescence. As urban landscapes shift to accommodate new infrastructure and business centers, many of these cultural heritage sites are deteriorating. The preservation of such opera stages is therefore important not only as architectural heritage but also for protecting the cultural identity that they embody (Yi & Kuroda, 2024).

1.1. Problem statement

Although these stages hold significant historical and cultural value, they are all in poor condition, primarily due to environmental factors, financial constraints for restoration, and urbanization pressure. Consequently, these stages, which used to be the core of traditional culture, may well be lost to the sands of time.

Therefore, it is crucial to identify how to adapt these buildings to modern needs without compromising their historical and cultural significance. Although adaptive reuse can be a potential solution, it has not been widely acknowledged in the context of rural China, particularly for opera stages. Thus, we examine sustainable approaches to adaptive reuse that can preserve the integrity of these buildings while integrating them into contemporary society.

1.2. Objectives

The main objective of this study is to explore the most effective practices in the adaptive reuse of historic Chinese opera stages in rural China. In addition, the study aims to:

- (i) Discuss the cultural and historical values of old opera stages and focus on the preservation of local traditions and community identities.
- (ii) Determine the major challenges to the conservation of these structures, including the degradation of the environment, financial constraints, and impacts of modernization.
- (iii) Examine the concept of adaptive reuse and its possible sustainability measures as an approach to preserving these opera stages.
- (iv) Conduct case studies and provide examples of actual adaptive reuse projects that can illustrate practical solutions.
- (v) Propose an adaptive reuse model that can strike a balance between maintaining historical integrity and adapting to modern needs.

1.3. Research questions

The research questions of this study are as follows:

- (i) What are the historical, cultural, and architectural characteristics that define historic opera stages in rural China?
- (ii) What are the key challenges faced in preserving these opera stages, and what factors contribute to their deterioration?
- (iii) How can adaptive reuse serve as an effective strategy for the conservation of historic opera stages in rural China?
- (iv) What are the most effective practices and case studies of adaptive reuse of similar cultural heritage sites that could be applied to opera stages?
- (v) How can adaptive reuse contribute to the revitalization of rural areas and foster community involvement in heritage conservation?

1.4. Significance of the study

This study proposes an approach to preserve an important yet poorly researched feature of Chinese cultural heritage—historic opera stages. In addition, it provides a practical and sustainable framework for redefining the concept of adaptive reuse to ensure that these cultural landmarks remain relevant in a rapidly evolving world.

Furthermore, the study adds value to the emerging literature on architectural heritage preservation and provides viable insights for policymakers, heritage practitioners, and local communities. Moreover, the findings of this study may serve as a reference for other rural areas experiencing similar challenges, not only in China but also globally (Plevoets & Van Cleempoel, 2012).

In addition, it highlights the importance of cultural tourism in the conservation process. Adaptive reuse of these buildings would allow them to once again become active community gathering spaces, learning centers, and venues for cultural exchange—reviving their original social functions as they once were. This, in turn, contributes to promoting local economies and enhancing cultural vitality in rural areas (Y. Yang *et al.*, 2025).

The integration of adaptive reuse with modern needs would not only help preserve architectural heritage but also demonstrate how modern technologies and design approaches can bridge the gap between past and present, ensuring that future generations continue to recognize the historical and cultural value of these opera stages.

2. Literature review

2.1. Heritage conservation and architectural preservation in China

Conservation of heritage in China has gained increasing attention, especially as the country faces rapid urbanization and industrialization. Threats to heritage conservation have also emerged as the maintenance of historic building sites, including historic opera stages, is increasingly constrained by modern infrastructure and economic pressures associated with urban development. Although China has instituted several preservation policies and programs, gaps remain in the implementation of these policies, particularly in rural areas where financial and technical resources are limited.

The preservation of historical buildings, such as opera stages, demands a balanced strategy that is both historically respectful and contextually appropriate for modern use. Researchers and scholars argue that rural heritage sometimes does not receive sufficient support to thrive, resulting in damage to or conversion of buildings without consideration of their cultural value. Therefore, adaptive reuse represents a promising approach to preserving cultural heritage while incorporating new functionality. Nonetheless, the low rates of adaptive reuse in rural areas remain problematic due to financial constraints and limited familiarity with such practices (Vafaie *et al.*, 2023).

2.2. The perception of adaptive reuse in architectural heritage conservation

Adaptive reuse can be defined as the redevelopment of historic buildings while maintaining their architectural and cultural value. This approach has gained increasing attention in the field of architectural preservation due to its environmental advantages and potential for sustainable development. Adaptive reuse enables old buildings with cultural value to remain functional while serving the community in a new context, thus ensuring their continued existence and relevance in an ever-changing world.

The implementation of adaptive reuse in China has been limited in the case of rural opera stages, though it has been applied to a variety of heritage buildings, such as industrial facilities and temples [4]. Scholars indicate that adaptive reuse can not only help preserve cultural heritage but also revitalize the surrounding communities, thereby breathing life into heritage structures and their locations, and engaging the community in social practices, learning, and tourism.

Nevertheless, adaptive reuse in rural China presents significant challenges. Specifically, the structural integrity of old buildings, the lack of experienced conservation

workers, and the difficulty in balancing modern functions with cultural heritage preservation (Kee & Chau, 2020). These issues highlight the necessity of developing approaches that address both the architectural and cultural value of rural heritage sites.

2.3. Challenges in adaptive reuse of opera stages in rural China

Although adaptive reuse represents a promising approach for preserving opera stages of rural China, several challenges remain, including financial constraints in sustaining large-scale restoration programs. Most rural communities lack the economic capacity to finance such projects, which are funded either through government tenders or personal investments that are not easily available (Xiong *et al.*, 2023).

Another significant challenge is the physical deterioration of these opera stages. Having existed for centuries, many of these buildings are in poor structural condition, making restoration work costly and technologically difficult. In some cases, modern materials and restoration techniques conflict with conventional methods, leading to a loss of architectural authenticity (Zhu, 2024).

Finally, adaptive reuse projects cannot thrive without active community participation. Local communities should play a critical role in decision-making that involves participatory engagement (Shen *et al.*, 2022), ensuring that adaptive reuse projects reflect their cultural identity and meet local needs. A lack of such engagement may result in projects that fail to gain local support or satisfy community expectations.

2.4. Case studies of adaptive reuse in China

Several relevant case studies on adaptive reuse have shown how this approach has been useful for the conservation of heritage structures and in revitalizing them. One of the most significant examples is the conversion of former industrial sites into cultural and creative domains, including the 798 Art District in Beijing, which exemplifies the successful integration of industrial architecture with its new function as art galleries and community spaces (Vardopoulos *et al.*, 2023). This complex serves as an effective model of adaptive reuse that contributes to both architectural and cultural heritage preservation in China and provides valuable insights for rural contexts.

In rural settings, the Shengjing Theater in Zhejiang province represents a successful adaptive reuse model. The theater was transformed into a multipurpose venue for hosting performances and community activities while maintaining its original structure. Similarly, the Taizhou

Theater in Zhejiang province has been converted into an art gallery that has contributed to the modernization of regional culture and the overall development of tourism (J. Wang & Zakaria, 2025).

Although these examples demonstrate the potential of adaptive reuse in rural areas, it is imperative to note that such initiatives must be carefully planned and supported through appropriate funding and active community involvement to achieve long-term success. The experiences from these cases provide limited insight into the future prospects of adaptive reuse projects in rural China, particularly those involving traditional opera stages.

2.5. Theoretical framework: Theories of conservation and adaptive reuse

Authenticity theory and cultural sustainability theory form the theoretical foundation of the concept of adaptive reuse in the context of cultural heritage conservation.

According to Knapp (2024), authenticity theory highlights the significance of preserving the original features of a building while allowing its adaptation for new functions. Under this theory, adaptive reuse should prioritize the conservation of structural integrity while accommodating modern needs.

The theory of cultural sustainability emphasizes the need to preserve cultural heritage while fostering the development of sustainable communities. In this context, adaptive reuse not only promotes the long-term sustainability of culture by preserving historic buildings but also ensures their continued relevance and functional integration into modern society (Knapp, 2024).

Together, these theories provide a conceptual basis for understanding the challenges and opportunities associated with the adaptive reuse of opera stages in rural China. By adopting these theories, adaptive reuse can be viewed as a means of bridging the past and the present while maintaining the cultural significance of these heritage sites.

2.6. Data and methods

The study was conducted using a mixed-methods research design, in which both qualitative and quantitative data were collected and analyzed. The adaptive reuse practices in traditional opera stages located in rural China were examined, with reference to the strategies, challenges, and outcomes of such interventions.

The mixed-methods approach combines qualitative (e.g., interviews, field observations) and quantitative techniques (e.g., surveys, statistical analyses) to provide a more holistic understanding. The qualitative data capture the cultural and social dimensions, whereas the

quantitative data reflect measurable outcomes, such as economic benefits (Shi & Huang, 2025).

2.7. Case study selection

Five opera stages (Table 1) were selected based on their geographical diversity and architectural significance. All the stages are located in different rural regions of China, ensuring variation in socioeconomic conditions, cultural contexts, and architectural styles. The selection was made to encompass a broad spectrum of challenges and opportunities in adaptive reuse under different conditions. Furthermore, the stages were selected for their historical and cultural significance, as they serve as key landmarks within their respective communities. This diversity enables a detailed examination of adaptive reuse practices across multiple rural contexts.

This research employed case studies to provide empirical illustrations of adaptive reuse projects. These case studies were selected based on the following criteria (Table 2):

In this study, the selected case studies served as the foundation for data collection and analysis.

2.8. Data collection methods

Data were collected through four different approaches: Document analysis, interviews, surveys, and field observations. These approaches were useful in addressing the various aspects of the research questions.

2.8.1. Document analysis

Document analysis was conducted to obtain information on the historical background, architectural characteristics, and policy context related to the opera stages and their maintenance (Table 3). The process of document analysis included the following steps:

- (i) Reviewing status reports and policies, as well as governmental policies on heritage preservation.
- (ii) Examining building documentation and conservation strategies related to the selected opera stage case studies.
- (iii) Analyzing research journal articles, case studies, and cultural heritage documents to explore trends in adaptive reuse.

A preliminary process through which a necessary body of knowledge can be gained before the actual work includes document analysis, which provides insight into the present nature of conservation practices, government policies, and architectural characteristics. This approach helps establish a robust theoretical and situational foundation for the study (Zhao & Kim, 2025).

Table 1. Case study

Case study	Location	Original construction year	Year of adaptive reuse	New function	Architectural features
1	Shengjing Theater, Shengjing village, Zhejiang province	1920	2017	Cultural space	Wooden beams, central stage
2	Dongguan Opera, Dongguan town, Guangdong province	1885	2015	Community center	Open-roof, wooden frame
3	Qianlong Theater, Qianlong village, Jiangsu province	1800	2018	Museum	Carved wood, decorative pillars
4	Jiujiang Opera, Jiujiang town, Jiangxi province	1900	2020	Education center	Roof arches, intricate wood carvings
5	Taizhou Theater, Taizhou city, Zhejiang province	1850	2016	Art gallery	Historic stone foundation, curved roof

Table 2. Case study selection criteria

Selection criteria	Description
Geographic diversity	Selected opera stages from rural regions in China, including Zhejiang, Sichuan, and Jiangsu, reflecting different socioeconomic and geographic conditions.
Cultural and architectural significance	Opera stages with a long history and cultural importance, and those that represent traditional architectural styles.
Recent adaptive reuse	Stages that have undergone adaptive reuse in the past 5–10 years, ensuring relevance to contemporary conservation practices.

Table 3. Document analysis

Document type	Relevance	Example
Heritage conservation reports	Provides insight into national and provincial preservation policies	<i>Ministry of Culture's Heritage Preservation Plan</i>
Architectural reports	Provides detailed information on architectural features and restoration plans	<i>Qianlong Opera Stage Restoration Plan</i>
Academic literature	Provides best practices and case studies from other regions or countries	<i>Journal of Architectural Conservation</i>

2.8.2. In-depth interviews with stakeholders

In-depth interviews were conducted to obtain the views of stakeholders, including key figures in adaptive reuse, such as architects, local government officers, and community leaders. The interviews were conducted for approximately 20–25 min with 25 participants from the following groups to:

- Architects: Gain insights into design challenges in integrating new functionalities while preserving the old structures.
- Government officials: Consider policy choices and budgetary decisions related to adaptive reuse.
- Cultural heritage experts: Determine best practices for maintaining architectural integrity while introducing new functions.

- Community leaders: Establish local attitudes toward and interest in adaptive reuse projects.

Semi-structured interviews allowed participants the freedom to express their views while ensuring that key themes were covered. This approach facilitated a deeper understanding of the decision-making and implementation processes involved in adaptive reuse.

2.8.3. Local community survey

A total of 400 survey questionnaires were distributed across the five case study locations (Table 4), with 50–100 local residents sampled from each location according to population size. The survey targeted residents aged 18 years and older and was structured to ensure diversity in gender, age, and level of community involvement. To minimize selection bias, a random sampling method was utilized to provide all eligible individuals with an equal chance of participation.

The sampling process was designed to capture the community's understanding of cultural heritage preservation, the perceived significance of adaptive reuse, and the potential implications for local tourism and economic development. Data obtained from the survey were analyzed to understand community support for adaptive reuse and their opinions regarding the preservation of traditional opera stages.

Qualitative information was also collected to assess community attitudes and suggestions regarding adaptive

reuse. A Likert scale (1–5) was used to quantify responses (e.g., “How important is the preservation of the opera stage for local culture?”), with 1 indicating “Not important” and 5 indicating “Extremely important.”

The surveys were effective in collecting information from respondents that is valuable because it allows the quantification of community support and attitudes toward adaptive reuse initiatives. This technique can be integrated with qualitative interviews to provide a more comprehensive and statistically meaningful information (Wu *et al.*, 2025).

2.8.4. Field observations

Field observations were conducted to assess the condition of the existing physical structures and the usage of the opera stages, to evaluate the effectiveness of adaptive reuse practices (Table 5). The observation process included:

- (i) Conducting site visits to each case study location to directly examine the opera stages.
- (ii) Performing photographic documentation to record both the original and modified architectural details.

Table 4. Survey questions

Survey question	Response	Purpose
How important is the preservation of the opera stage for local culture?	Scale: 1–5	Measures the perceived cultural significance of the open stage among local communities
Do you support adaptive reuse of the opera stage?	Yes/No	Measures community support for adaptive reuse projects
What would you like to see in the future reuse of the opera stage?	Open-ended	Gathers community suggestions for future use

Table 5. Field observation

Field observation data category	Description	Example
Structural integrity	Notes on the condition of architectural elements (e.g., roof, beams)	Documenting structural degradation
Modern modifications	Changes made to adapt the stage for new functions (e.g., seating, lighting)	Recording the integration of modern materials
Community use	Observations of how local residents engage with the space (e.g., performances, events)	Noting the frequency of public events held at the opera stage

- (iii) Taking detailed field notes to capture how the community interacts with the opera stage and how the space is adapted for new purposes.

The physical condition of the opera stages and their impact caused by adaptive reuse were observed during field observations. Several factors were noted that can be overlooked in interviews or surveys, thereby providing valuable insights into the success of adaptive reuse.

2.9. Data analysis

Both analytical methods, including qualitative and quantitative techniques, were applied to analyze all of the information gathered and to draw general conclusions.

2.9.1. Qualitative analysis

Qualitative analysis was conducted on interview transcripts, open-ended survey responses, and field observations (Zhao & Kim, 2025) through the following steps:

- (i) Coding significant passages to identify descriptions of challenges, issues, and perspectives on adaptive reuse.
- (ii) Categorizing related codes into higher-level themes (e.g., cultural significance, design challenges).
- (iii) Interpreting findings to address the research questions using the identified themes.

2.9.2. Quantitative analysis

Descriptive statistics were used to summarize survey data, including response frequencies, distributions, and measures of central tendency and variability, such as the mean, mode, and standard deviation.

The mean can be calculated using the following formula:

$$\mu = \frac{\sum X_i}{N} \quad (1)$$

where X_i represents the individual data points and N is the total number of observations.

The standard deviation can be calculated as follows:

$$\sigma = \sqrt{\frac{\sum (X_i - \mu)^2}{2N - 1}} \quad (2)$$

where X_i are the data points and μ is the mean.

Pearson's correlation coefficient was assessed to determine the relationship between community support and factors, such as cultural significance and economic impact (Equation [3]).

$$r = \frac{\sum (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum (X_i - \bar{X})^2 \sum (Y_i - \bar{Y})^2}} \quad (3)$$

Where:

- r is the Pearson's correlation coefficient, measuring the strength and direction of the linear relationship between the two variables.
- X_i represents the individual values of variable X (e.g., cultural significance scores).
- Y_i represents the individual values of variable Y (e.g., community support or economic impact scores).
- \bar{X} is the mean of variable X .
- \bar{Y} is the mean of variable Y .
- Σ denotes summation across all observations.

2.10. Ethical consideration

The investigation into the adaptive reuse of traditional opera stages in rural China addressed ethical issues associated with community involvement and cultural heritage with particular care. Informed consent was obtained from all participants, who were clearly informed about the purpose of the study and their right to voluntary participation. Participant privacy was protected through confidentiality and anonymity measures, and all collected data were anonymized and securely stored. Participation was completely voluntary, and individuals were free to withdraw from the study at any time without consequences (Ouyang *et al.*, 2025).

Cultural sensitivity was maintained by observing the local traditions, acknowledging the cultural significance of the opera stages, and minimizing interference with community life. The research process emphasized transparency and accountability, and the study results were disseminated publicly.

3. Results

This section presents the analysis of data collected from five case studies of opera stages in rural China, along with the findings from interviews with key stakeholders, surveys of local communities, and field observations. The findings are organized into three main categories: Cultural significance and community perception, challenges in adaptive reuse, and the impact of adaptive reuse on local communities.

3.1. Cultural significance and community perception

A key objective of this study was to assess the impact of adaptive reuse of opera stages on the cultural value of these buildings. In addition, this study evaluated the perception of the local community toward adaptive reuse.

3.1.1. Survey data on community perception toward adaptive reuse

The survey provided valuable insights into how local residents perceive the adaptive reuse and preservation

of traditional opera stages. A total of 400 responses were collected across the five case study sites. For example, respondents were asked: "How important is the maintenance of the opera stage to local culture?" Responses were recorded using a five-point Likert scale, ranging from 1 (*Not important*) to 5 (*Extremely important*).

The overall mean of 4.5 out of 5 indicates the significance of all traditional opera stages. The values of the standard deviation indicate that the perception regarding the cultural significance is relatively consistent across communities, with minimal variation in responses (Table 6).

Figure 1 illustrates the community perceptions of the cultural significance of the adaptive reuse of opera stages, highlighting the cultural role of these structures.

3.2. Challenges in adaptive reuse

This section focuses on the challenges identified during the adaptive reuse process, based on interviews with stakeholders and field observations.

3.2.1. Interviews on adaptive reuse challenges

Several challenges in the adaptive reuse of opera stages were identified through interviews with stakeholders, including architects, government officials, and community leaders (Table 7).

Financial constraints were most frequently cited: 20 of 25 participants noted insufficient funding for preservation projects. In addition, most participants reported structural degradation as a barrier to adaptive reuse, especially in opera stages with deteriorated structures and obsolete infrastructure.

3.2.2. Field observations on structural conditions of opera stages

Field observations showed that the physical condition of the opera stages varied by site (Table 8).

Based on Figure 2, the Shengjing Theater and the Taizhou Theater are in relatively good condition, while the Qianlong Theater requires restoration due to its poor

Table 6. Community perceptions of the cultural significance of opera stages

Location	Mean score	Standard deviation
Shengjing Theater	4.5	0.7
Dongguan Opera	4.4	0.8
Qianlong Theater	4.7	0.6
Jiujiang Opera	4.3	0.9
Taizhou Theater	4.6	0.7

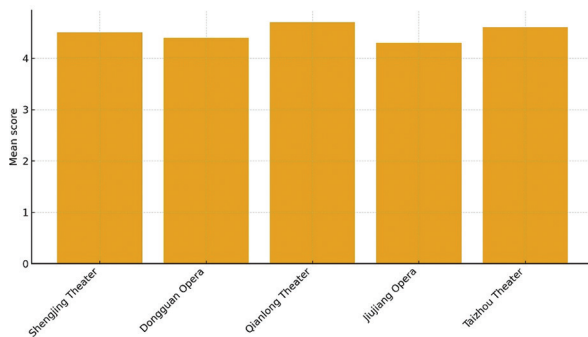


Figure 1. Community perceptions of the cultural significance of opera stages
Source: Diagram by the authors

structural state.

3.3. Impact of adaptive reuse on local communities

The impact of adaptive reuse on local communities, particularly in terms of economic benefits, tourism, and cultural revitalization, is discussed in this section.

3.3.1. Survey data on the economic impact of adaptive reuse on local communities

One of the key survey questions assessed local residents' perceptions of whether the adaptive reuse of opera stages contributed to the local economy. The majority of respondents reported economic benefits, indicating broad community recognition of the economic value generated by such projects (Table 9).

Based on Figure 3, adaptive reuse is perceived to positively impact local economies, with Taizhou Theater receiving the highest proportion of positive responses (90%).

3.3.2. Tourism and cultural revitalization

Tourism increased at most case study sites, particularly at opera stages repurposed for public events or functioning as cultural attractions. Data from local tourism agencies are presented in Table 10.

Figure 4 illustrates the relationship between increases in local tourism and the number of cultural events held at each opera stage. The findings revealed that opera stages with a greater focus on adaptive reuse for cultural activities, such as Qianlong Theater, show the highest tourism increase.

Collectively, these findings suggest that the adaptive reuse of opera stages in China has played an important role in conserving heritage, promoting urban and rural community involvement, and supporting economic recovery in rural China. Although financial constraints and structural degradation persist, the overall benefits,

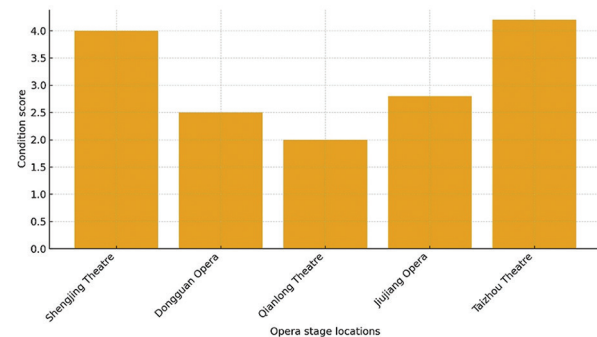


Figure 2. Structural condition of opera stages
Source: Diagram by the authors

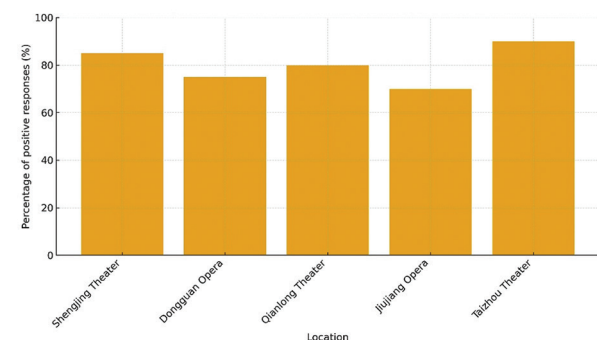


Figure 3. Economic impact of adaptive reuse on local communities
Source: Diagram by the authors

Table 7. Challenges in adaptive reuse

Challenge	Frequency (n=25 interviews)
Financial constraints	20/25
Structural degradation	18/25
Balancing modern use with cultural integrity	15/25
Lack of skilled labor	12/25

Table 8. Structural condition of opera stages

Location	Condition	Need for restoration
Shengjing Theater	Good	Minor repairs to structural beams
Dongguan Opera	Fair	Major restoration needed for the roof
Qianlong Theater	Poor	Extensive restoration required for the foundation
Jiujiang Opera	Fair	Moderate repairs for the stage area
Taizhou Theater	Good	Minor esthetic improvements

particularly the positive effects on the local tourism sector and cultural activities, indicate that adaptive reuse is an effective approach for preserving valuable cultural heritage sites.

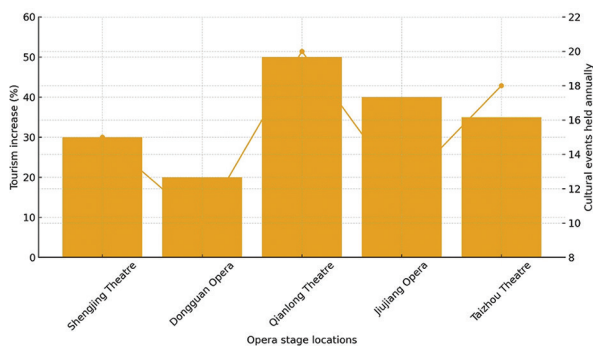


Figure 4. Tourism and cultural revitalization
Source: Diagram by the authors

Table 9. Economic impact of adaptive reuse on local communities

Location	Percentage of positive responses
Shengjing Theater	85
Dongguan Opera	75
Qianlong Theater	80
Jiujiang Opera	70
Taizhou Theater	90

Table 10. Tourism and cultural revitalization

Location	Increase in tourism (%)	Cultural events held annually
Shengjing Theater	30	15
Dongguan Opera	20	10
Qianlong Theater	50	20
Jiujiang Opera	40	12
Taizhou Theater	35	18

4. Discussion

The results obtained from case studies, interviews, surveys, and field observations provide valuable insights into the adaptive reuse of historic opera stages in rural China. These findings highlight the significance of adaptive reuse for preserving cultural heritage while addressing modern needs, such as economic development, tourism, and cultural revitalization. This section discusses the key findings, the identified challenges, and the broader aspects of adaptive reuse in the context of heritage preservation in rural China (Ma & Roosli, 2025).

4.1. Cultural significance and community perception

This study aimed to examine how the adaptive reuse of traditional opera stages influences their perceived cultural significance and community perception. The findings

revealed that, across all case studies, opera stages are of great cultural importance, with community perceptions of cultural significance showing a mean of 4.5 and relatively low standard deviations. This indicates that there is general agreement in the communities regarding the significance of these structures in sustaining cultural identity.

The community's strong interest in maintaining opera stages aligns with findings from other studies, which highlight the importance of preserving cultural heritage in rural areas (Chen *et al.*, 2025). In rural China, opera stages are not merely structural buildings but serve as cultural centers for local people, where they gather to enjoy traditional arts, share common ideals, and preserve their regional dialects and local lore. These stages are also symbolic representations of local history, reflecting the craftsmanship and architectural styles of particular regions.

Although adaptive reuse enables these spaces to evolve with community needs, it is vital that the cultural integrity remains intact. Adaptive reuse should be performed in a way that does not interfere with the architectural and cultural heritage of the opera stages, as observed at Qianlong Theater, which scored the highest in terms of cultural perception (4.7/5). Adaptive reuse of these buildings can be successful and may create a local source of pride and cultural engagement, as individuals tend to be more involved when the project reflects their culture.

4.2. Challenges in adaptive reuse

Although the community demonstrated strong support for maintaining the opera stages, several challenges were identified in adaptive reuse, particularly financial constraints and structural degradation. Such challenges were mostly reported by the interviewed stakeholders, with 20 out of 25 participants identifying financial limitations as the major challenge to implementing adaptive reuse. The expensive nature of heritage preservation and the underfunding of rural preservation projects are common issues in China's heritage preservation efforts (Wei *et al.*, 2025). The ability to obtain financial support plays a fundamental role in the longevity of adaptive reuse projects, as restoration initiatives may require specialized expertise and costly materials.

Another significant challenge is the structural weakness of opera stage buildings. Many opera stages required considerable restoration, except for the Shengjing Theater and the Taizhou Theater, where the conditions were fairly good. For example, Qianlong Theater requires extensive restoration at its foundation, whereas Dongguan Opera requires major repair on its roof. These buildings are very old, and harsh environmental conditions in certain rural locations have contributed to their deterioration. This

finding is consistent with other studies on the vulnerability of heritage buildings to natural wear and environmental hazards (Q. Yang *et al.*, 2025). Restoration work should not only address the esthetic elements of these structures but also ensure their structural integrity, enabling them to remain safe and habitable.

Finally, only 15 of the participants addressed the issue of balancing modern functions with cultural integrity. This issue is particularly significant when dealing with adaptive reuse projects, as modern modifications can pose risks to the original construction design when integrating new contemporary devices (e.g., illumination, furniture, and sound systems). Such integration is intended to enhance both the historical and functional qualities of the buildings, and this can only be achieved by harmoniously merging the old and the new (Zheng *et al.*, 2025). This is a delicate process that should be carefully planned, with regular consultation between heritage experts and local communities to ensure that relevant decisions do not compromise the cultural and historical value of the site.

4.3. Effect of adaptive reuse on local communities

The survey results indicated that the community-related benefits of adaptive reuse were the most prominent, particularly in terms of economic development, tourism, and cultural revitalization. The majority of respondents reported that adaptive reuse plays a crucial role in the regional economy. For example, 90 percent of respondents in the Taizhou Theater case study reported that the reuse of the opera stage had provided economic benefits to the local community. This finding aligns with previous studies, which suggest that adaptive reuse not only preserves cultural heritage but also supports local economies through tourism and employment opportunities (S. Li, 2023).

This was especially evident in the tourism sector, as an increase in the number of tourists (20–50%) was observed at the case study sites. Tourism increased by 50 percent at the Qianlong Theater, which may be attributed to its successful transformation into a cultural destination and museum. Adaptive reuse transforms these heritage buildings into lively places that appeal not only to tourists but also to local communities, thereby enhancing the local tourism sector. These opera stages also host cultural activities, such as performances and festivals, establishing them as focal points of culture and centers of social life.

The success of adaptive reuse can also be assessed by the number of cultural events held annually. For example, Qianlong Theater hosts around 20 cultural events annually and is considered the center of the local cultural scene. Such activities range from classic performances to educational and community-based events, demonstrating the cultural

value of the stage. Although fewer events were reported, Jiujiang Opera and Dongguan Opera also showed a strong commitment to preserving their cultural heritage through adaptive reuse. These events provide opportunities for local artists and performers to showcase their talents, helping to sustain traditional arts within the community.

4.4. The role of adaptive reuse in rural heritage conservation

Adaptive reuse of opera stages in rural China represents a sustainable approach to heritage preservation. It enables these historical buildings to be utilized while maintaining their cultural and architectural significance. Through adaptive reuse, modern functions are incorporated into these old buildings, thereby preserving cultural heritage while establishing a connection with modern society. This process is particularly vital in rural regions, where many old buildings are often forgotten or demolished to make way for new facilities and structures (Z. Li *et al.*, 2025).

In summary, adaptive reuse offers one of the most feasible approaches to preserving the cultural heritage of rural China. The effectiveness of the projects presented in the case studies, particularly those involving community participation and cooperation with experienced heritage professionals, demonstrates that adaptive reuse can both preserve cultural values and stimulate economic development. However, several challenges persist, particularly in the form of financial constraints and structural degradation, thereby necessitating government involvement, financial investment, and local participation for the success of such projects.

4.5. Recommendations for policy and practice

This study provides insights for policymakers and heritage conservation practitioners. The benefits of adaptive reuse for local communities and cultural tourism highlight the necessity of increasing investment in rural heritage preservation projects. Policy programs should focus on:

- (i) Securing funding for adaptive reuse projects, which may include government grants, tax incentives, and attracting additional investors.
- (ii) Developing local capacity for restoration and conservation work by training artisans and craftworkers in heritage conservation methods (W. Wang, 2024).
- (iii) Encouraging local community participation in the decision-making process so that adaptive reuse projects reflect the cultural values of local communities.

This study highlights the success of adaptive reuse as a tool for preserving traditional opera stages in rural China (Di, 2021). The findings indicate that adaptive reuse can provide a solution for rural areas, supporting cultural

preservation, economic development, and community engagement.

Although challenges remain, particularly regarding financial constraints and structural degradation, these findings suggest that adaptive reuse is a feasible and long-term solution for safeguarding these heritage sites. Future adaptive reuse projects, supported by appropriate policies and community engagement, can ensure that these opera stages continue to serve as cultural centers for future generations.

4.6. Modernization versus heritage preservation

A pressing concern in adaptive reuse is the potential risk of turning heritage sites into museums—the process of transforming a historically inhabited cultural location into an inert museum exhibit that has lost all physical and societal functionality. Although adaptive reuse represents a potential approach for reviving the appeal of heritage buildings, it is feared that such places might be commoditized and lose their initial cultural value (Shen *et al.*, 2022). Adaptive reuse projects can, in certain instances, focus on esthetics and commercial qualities to the extent that cultural authenticity is compromised, and the traditional practices, performances, and community engagement that characterized these places are lost.

The relationship between modernization and heritage preservation is particularly significant, especially when dealing with historic sites that are culturally and socially important. Adaptive reuse projects need to achieve a balance between preserving historical integrity and incorporating modern functions so that such places remain alive and meaningful to local communities. Otherwise, it can result in heritage sites being turned into tourist attractions that forfeit their original purpose, diminish in cultural significance, and detach from their historic context (Safford, 2014).

5. Conclusion

Adaptive reuse of traditional opera stages in rural China represents a sustainable approach for maintaining cultural heritage while addressing the changing demands of modern communities. This study has examined the significant cultural, economic, and social effects of adaptive reuse with reference to five case studies of opera stages in rural China. The study employed a variety of methods, including surveys, interviews, field observations, and data analysis, to provide valuable insights into the challenges and achievements of these conservation efforts.

The findings indicate that these opera stages hold considerable cultural significance for their communities, with strong local support for their preservation. Community perceptions were largely consistent, as reflected in the mean scores, demonstrating that local

residents regard these structures as integral to their cultural identity. Despite their cultural significance, adaptive reuse initiatives face substantial challenges, particularly in terms of financial constraints and structural degradation. Limited funding and infrastructure degradation have hindered restoration efforts, especially in less populated areas with scarce resources.

Several benefits of adaptive reuse were identified, particularly for the local economy, tourism, and cultural revitalization, across all case studies. The increase in the number of tourists and the corresponding increase in cultural activities suggest that adaptive reuse has the potential to boost local communities and economic growth. For example, the successful adaptive reuse of Qianlong Theater and Taizhou Theater demonstrates that adaptive reuse is a promising approach for transforming cultural landmarks into vibrant tourist and community destinations while contributing to the survival of traditional art forms and performances.

These examples of successful adaptive reuse of cultural heritage projects indicate that this method can support the sustainable preservation of rural cultural heritage. It enables opera stages to remain functional for their communities by being remodeled to accommodate present practices while retaining their historical value. However, such projects require additional financial resources, community engagement, and collaboration with heritage experts. The study highlights the need to integrate governmental policy with private sector investment to provide the necessary funding to ensure the successful adaptive reuse of cultural landmarks.

In summary, adaptive reuse of opera stages in rural China can be seen as a means of revitalizing local economies, fostering cultural pride, and preserving architectural heritage. Although challenges remain, particularly concerning financial constraints and structural degradation, the positive findings of this study suggest that adaptive reuse can serve as a major mechanism for preserving China's rich cultural heritage amid modernization. By investing in these projects at both local and national levels, the legacies of these cultural treasures can be preserved for future generations, allowing them to continue serving as thriving centers of community life, artistic development, and cultural identity.

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Conflict of interest

The authors declare that they have no competing interests.

Author contributions

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Ethics approval and consent to participate

All participants provided informed consent before involvement in the study.

Consent for publication

All participants agreed to the anonymous use of data for publication.

Availability of data

The datasets generated and analyzed during the present study are available from the corresponding author upon reasonable request.

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