

ORIGINAL ARTICLE

Disappearance of vernacular character in rural residences: An assessment of residents' requirements for rural residential façades and environments in Suzhou, Jiangsu, China

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Abstract

This study, framed within the context of the Harmonious and Beautiful Countryside policy, focuses on optimizing the living environment of rural housing by addressing the loss of diverse heritage in rural architecture and landscapes. Through fieldwork and importance-performance analysis methods, the research investigates the façades and environments of rural houses in Suzhou, Jiangsu, China. By incorporating the “vernacular” evaluation factors identified in previous studies, this study adopts a user-centered perspective to provide practical insights into rural cultural landscapes, thereby augmenting existing literature. The study reconstructs elements of rural residences and their environments to enhance residents' comprehension and yield more objective evaluation outcomes. Analysis reveals that both native and non-native residents share similar views on the importance and performance of various factors. Environmental quality and building functionality emerge as top priorities for residents, while Suzhou's efforts to preserve traditional architectural aesthetics are notably effective. However, field observations also highlight urbanization's impact on rural housing, such as the use of non-native materials that compromise traditional rural architectural styles. To tackle these challenges, this study proposes the following strategies for rural regeneration: (i) permit integration of new materials, technologies, and spatial configurations with traditional rural architecture; (ii) incorporate historical context, cultural continuity, traditional materials, and lifestyle needs into building renovations; and (iii) establish a dynamic regulatory mechanism for rural residential architecture to aid residents in optimizing their buildings and surroundings. These strategies aim to mitigate the effects of excessive urbanization and provide a user-centered approach for future research on rural cultural landscapes.

Keywords: Rural regeneration; Importance-performance analysis; Rural living environment; Needs assessment

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1. Introduction

In the pursuit of harmonious development between humans and nature, rural areas have evolved into integrated spaces that combine natural and residential environments. This integration represents a comprehensive system encompassing

ecology, human habitation, society and culture, and sustainable development (Wang *et al.*, 2022). Since the beginning of China's reform and opening up, the pace of urbanization has accelerated significantly. However, this rapid urban development has inevitably introduced numerous challenges (Lv, 2018). The unique characteristics of rural areas are primarily reflected in the forms and spatial features of rural landscape elements and their interrelationships. Yuan & Lin (2018) argue that industrialization and urbanization are the primary drivers of rural landscape decline, resulting in a reduction of local characteristics and a loss of diversity. In addition, urbanization has caused a dramatic decrease in rural populations and accelerated aging among rural residents, both of which indirectly exacerbate rural decline (Kweon & Youn, 2021). Chen & Zhang (2021) observe that past rural planning in China often followed a standardized approach, with excessive imitation posing a significant issue. This standardization has dissolved much of the diverse heritage inherent to rural areas. Yuan *et al.* (2017) further emphasize that rural development characterized by urbanized landscape architecture but lacking essential infrastructure and public services has inflicted irreversible damage on traditional culture and the ecological environment. Consequently, China's rural development has suffered from a gradual erosion of traditional rural culture and its inherent diversity (Montalvo *et al.*, 2019), with rural issues becoming increasingly pronounced (Fu & Dai, 2016). Issues such as homogenization, superficiality, and depopulation have emerged (Wang, 2020), reflecting a progressive loss of rural vernacular identity (Wang, 2019).

In response to these issues, China has introduced several policies over the years, including the New Socialist Countryside Initiative in 2005, the Beautiful Countryside program in 2008, the Rural Revitalization Strategy in 2017, and the Harmonious and Beautiful Countryside policy in 2023. These top-down strategies aim to address the aforementioned challenges in rural development and revitalize rural areas.

Current rural planning approaches rely heavily on top-down constraints, such as regulations and controlled detailed planning, focusing primarily on the perspectives of designers or village-level administrators while often overlooking bottom-up evaluations and the residents' needs for rural housing. Present studies on rural identity predominantly center on historical and cultural heritage (Zhang *et al.*, 2022). In existing studies on rural façades and their relationship with the environment, Jiang & Zhang (2016) identified several issues contributing to the degradation of rural building façades and their surroundings. These include unauthorized structural additions to building façades, inconsistent details such as

air conditioning units and electrical boxes, haphazardly installed rain shelters, and disorganized routing of municipal pipelines, compounded by a lack of public facilities. They argue that rural façade renovation requires a holistic perspective, one that considers the unique natural, economic, and cultural contexts of the local environment.

Similarly, Lin (2016) highlights that during the rural modernization process, urban construction professionals often use reinforced concrete to build monotonous, uniformly aligned buildings. This approach replaces the original natural village environment and communal spaces with plazas, fountains, and landscaped vegetation, contributing significantly to the destruction of rural architecture and environmental character. Chen & Zhang (2021) underline that the improper use of vernacular elements is a primary factor in the loss of rural identity. Overuse of vernacular elements leads to visual chaos, neglect results in a loss of rural character, and a general lack of understanding and research exacerbates these issues. Yuan & Lin (2018) emphasize that enhancing the living environment, improving esthetic quality, and optimizing rural functions are the primary objectives of rural revitalization efforts. However, much of the existing research adopts a top-down perspective. Kosanović *et al.* (2019) advocate for rural housing preservation and regeneration strategies that prioritize collective regulation and stakeholder-driven design strategies. Architectural façades and their surrounding environments are key elements of rural esthetics, and these are areas where residents can play an active role. Residents' needs are pivotal in shaping the architectural façades and environments of rural areas (Figure 1). To explore the underlying reasons for the current state of rural residential façades and to identify priorities for future façade and environmental regeneration, it is essential to consider the needs of the local resident population in the respective areas.



Figure 1. The esthetic image of Suzhou's traditional villages. (A) Feng Menglong village. (B) Weng Xiang village. Source: (A) <https://www.gooood.cn/feng-menglong-academy-of-classical-learning-by-9-town-design-studio-for-urban-architecture.htm>; (B) <https://www.163.com/dy/article/J10AF82U052482RT.html>

In many rural areas, aging buildings have made residential housing regeneration an urgent priority. Suzhou, as a rapidly urbanizing new first-tier city, provides valuable insights that can guide future rural development efforts in other regions. Quantifying rural identity in a way that is both comprehensible to local residents and capable of accurate assessment remains a significant challenge. This study approaches rural architectural identity by evaluating both the “architectural ontology” (Zhang *et al.*, 2022) and user perceptions, focusing on the esthetic presentation of building façades and the residential environment. By examining façade renovations in Suzhou’s rural houses, this study explores users’ subjective evaluations of current façades and environments, identifies existing issues in façade modifications, and proposes future renovation paths. This practical approach bridges the significant gap between theoretical framework and applied rural cultural landscape design in contemporary China (Wang *et al.*, 2022). The significance of this study is threefold: (i) it quantifies residents’ needs by integrating rural attributes with actual residential functions; (ii) it examines residents’ evaluations, needs, and the underlying factors shaping Suzhou’s rural esthetic, addressing gaps in bottom-up assessment methodologies; and (iii) it provides practical recommendations on content, policies, and design strategies for future renovation of aged rural housing from a user-centered perspective.

2. Methodology

2.1. Research subjects

This study focuses on rural residences and environments in Suzhou, Jiangsu, China, chosen for several reasons.

First, Suzhou serves as a representative example of a densely urbanized area and a national pilot for rural–urban integration. Throughout its development, from rural industrialization to the Southern Jiangsu Model and subsequently to rural–urban integration, Suzhou’s rural areas have exemplified the transformation experienced by developed, densely populated regions (Zhou, 2022). Studying rural Suzhou, therefore, provides significant insights. Suzhou serves as a model case, demonstrating the shift from rural–urban separation to integration and the application of rationalized planning standards (Fan, 2015). Findings on Suzhou’s rural façades may offer guidance for rural development in other parts of China.

Second, Suzhou’s strong regional characteristics – including its traditional rural esthetics, architectural façades, and social customs – imbue the area with high cultural value and form a rich resource base for distinctive landscape characteristics (Fan, 2015). The façades and environments of Suzhou’s rural housing are thus well-suited for evaluation from a user-centered perspective.

Finally, Suzhou’s urbanization rate highlights its rapid transformation. Between the Sixth (2010) and Seventh (2020) National Censuses, the urbanization rate increased from 70.07 percent to 81.72 percent, an 11.65 percent rise. The permanent population grew from 10.45 million to 12.74 million, with the urban population increasing from 7.32 million to 10.41 million (Suzhou Bureau of Statistics, 2012; Suzhou Daily, 2021). As of 2023, Suzhou’s rural population totaled 2.27 million, accounting for 17.52 percent of the city’s total population (Suzhou Bureau of Statistics, 2024).

Given this high level of urbanization, exploring rural areas within this context adds valuable insights. According to *Suzhou Daily* (2023), population data released by Suzhou Public Security in mid-2023 indicated that Suzhou’s actual population reached 16.19 million. Among them, the registered household population was 7.81 million, accounting for only 48.22 percent, while the floating population totaled 8.39 million, comprising 51.78 percent (Suzhou Daily, 2023).

In addition, migrant population statistics reported by *Gusuwang* (2018) highlight that Suzhou ranks first in Jiangsu province in both its migrant population size and migrant population index, solidifying its position as the largest immigrant city in the province. Migrants, including registered non-native residents and floating residents, account for 63.6 percent of the population, whereas local residents with Suzhou lineage represent only 36.4 percent. These data underscore Suzhou’s status as a city deeply integrated with its migrant population (*Gusuwang*, 2018).

For the purposes of this study, residents born in Suzhou are defined as native residents. In contrast, non-native residents include those without Suzhou birthplaces but holding Suzhou household registrations, as well as floating residents such as adult college students and non-registered workers. Both groups are crucial to understanding Suzhou’s social dynamics and were explored in this research.

In analyzing Suzhou’s rural areas, the study expands its focus beyond native rural residents. With ongoing rural development, a significant portion of Suzhou’s rural areas now accommodates non-native residents, including rural renters and short-term visitors who are not originally from Suzhou’s rural areas. Addressing their needs is critical to guiding Suzhou’s rural revitalization efforts. Consequently, this study incorporates evaluations from both native residents born in Suzhou and non-native residents living in Suzhou’s rural areas.

2.2. Method

Current evaluation standards for rural housing façades and environments largely focus on structural and safety aspects.

However, comprehensive international standards for urban housing performance are often not directly applicable to rural living environments. In the previous studies, hierarchical analysis has been a common method for evaluating rural housing and environments, typically from the perspective of designers or experts. This approach, however, often overlooks the viewpoints of residents themselves (Zhang *et al.*, 2022). In contrast, researchers such as Kevin Lynch have emphasized the importance of user-focused studies based on human perceptions to guide design (Fu & Dai, 2016).

This study adopts a performance analysis approach to examine user feedback, aiming to identify the key areas of concern for residents. Data were collected through questionnaires, interviews, and field surveys to establish evaluation criteria and gather user assessments. Quantitative analysis was employed to capture direct feedback on the importance and performance of various factors, providing insights into the actual needs of residents in the context of rural regeneration.

To quantify the gap between the importance users assign to specific evaluation factors and the perceived performance of these factors, this study employs the importance-performance analysis (IPA) method (Kwon *et al.*, 2016). Originally introduced by Martilla & James (1977) to assess automotive dealerships, IPA has since gained widespread application due to its intuitive and easy-to-understand framework. Despite its versatility, the application of IPA in analyzing rural living environments remains limited.

In this study, an IPA matrix was constructed based on elements related to rural residential structures, including façades and surrounding environments. This analysis identifies critical factors for façade regeneration and evaluates performance levels from the user's perspective. The findings provide targeted recommendations for stakeholders involved in future rural housing revitalization efforts.

2.3. Construction of the evaluation index system

This study takes into account the current status, goals, and demands of rural landscape construction in Suzhou. Data collection included interviews, literature reviews, and field surveys, with expert opinions solicited from relevant fields. Widely recognized perception elements were selected, objectively summarized, and statistically processed. Field research was conducted in Huayewei village in Suzhou's high-tech district and Jiuliqiao village in Wujiang district. Based on comprehensive analysis, the study finalized the selection of elements and indexes (Table 1).

Traditional exterior indexes, such as form design and façade design, represent the most direct expressions of architectural style, embodying the vernacular identity of local architecture. In contrast, spatial layout and functional indexes

are more implicit, reflecting the spatial textures shaped by the living patterns and habits of Suzhou's residents. Rural residents engage with their environments through multidimensional perceptions – functionality, comfort, cultural identity, and a connection with nature – but often lack the terminology to articulate these experiences. Compared to the façades of rural dwellings, spatial layouts have a more direct impact on residents' quality of life and emotional connections, highlighting the unique heritage of rural environments. Recognizing that respondents are primarily non-design professionals, the study identified six key components for evaluation: entrance, wall, doors and windows, roof, details, and environment. This restructured framework facilitates better understanding among respondents. Based on user perspectives, the study developed a subjective perception model for rural building façades and environments in Suzhou, encompassing a total of 14 evaluation indexes (Table 2).

2.4. Sample size

The sample size for this study was determined based on the Kendall sample estimation method (Qian *et al.*, 2024). According to this method, the recommended sample size typically ranges from 5 to 10 times the number of variables. For this study, 17 index layers corresponding to 17 variables were established, leading to an initial sample size range of 85 to 170 participants. To account for potential dropouts, a 10 percent increase was applied, resulting in a final adjusted sample size range of 94 to 187 participants.

Using data from the Suzhou migrant population research report, it was observed that native residents comprise 36.4 percent, while non-native residents account for 63.6 percent of the population (Gusuwang, 2018). Based on these proportions, the sample size for native residents should range from 31 to 62 participants, and for non-native residents, from 54 to 108 participants. After considering a 10 percent attrition rate, the adjusted sample size range becomes 34 to 68 for native residents and 60 to 119 for non-native residents.

Suzhou comprises six districts (Gusu, Wuzhong, Xiangcheng, Huqiu, Suzhou Industrial Park, and Wujiang) and four county-level cities (Changshu, Zhangjiagang, Kunshan, and Taicang). Among these, Gusu district and Suzhou Industrial Park with their 100 percent urbanization rates, were excluded from the sampling framework. The remaining districts and cities were included, with survey sample sizes distributed according to the proportion of the rural population in each district (Table 3) (Zhang *et al.*, 2023). Accordingly, Kunshan and Changshu, which have the highest rural population proportions, require the largest sample sizes, while Xiangcheng and Huqiu districts, with the smallest rural populations, require the smallest sample sizes.

Table 1. Quantification of vernacular indexes for rural building façades and environments





Hierarchical factors		Indexes	Source
Spatial layout		The entry is identifiable.	Fu & Dai, 2016; Yuan & Lin, 2018.
		Whether the indoor lighting condition is good?	Zhang <i>et al.</i> , 2023
		Whether the outdoor view of the rural building is good (whether the distance from the front building is sufficient)?	Zhang <i>et al.</i> , 2023
Structural form	Form design	 <p>Traditional local exterior wall forms are used.</p>	Zhang <i>et al.</i> , 2022; Source of the reference image: https://www.sohu.com/a/822354254_420849 .
		 <p>Traditional roof forms are used.</p>	Zhang <i>et al.</i> , 2022; Source of the reference image: https://www.pinterest.com/pin/11188699072433910/ .
Decoration and finishing	Exterior design	Doors and windows are made of excellent-quality materials and reflect local cultural characteristics.	Zhang <i>et al.</i> , 2022; Source of the reference image: http://www.360doc.com/content/23/1201/14/7654794_1105934212.shtml .
		 <p>Local traditional patterns, lines, or decorations (animal motifs, wall ornaments, etc.) are used.</p> 	Zhang <i>et al.</i> , 2022; Source of the reference image: http://www.360doc.com/content/22/0806/00/21414832_1042735145.shtml .
	Functional indexes	Accessibility features and accessibility of the building (e.g., wheelchair ramps and handrails).	Fu & Dai, 2016
		The indoor temperature is suitable.	Zhang <i>et al.</i> , 2023
		No wet spots, water damage, or mildew inside the house.	Zhang <i>et al.</i> , 2023
Public space	Traditional public space (These are spaces formed throughout human history that serve as venues for collective activities and repositories of cultural memory. Such spaces are characterized by distinct regional, social, and cultural attributes.)	Is there any traditional public space around the building (ancestral hall, cultural wall, etc.)?	Fu & Dai, 2016; Yuan & Lin, 2018; Zhou <i>et al.</i> , 2021; Xiong <i>et al.</i> , 2022.
	Modern public space	Is there any modern public space around the building (chess room, fitness space, recreation space, etc.)?	Fu & Dai, 2016; Yuan & Lin, 2018; Zhou <i>et al.</i> , 2021; Xiong <i>et al.</i> , 2022.
		Whether the building is in harmony with its surroundings?	Xiong <i>et al.</i> , 2022
		Are the pipelines around the building in order (electrical wires, water pipes, TV telephone lines, etc.)?	Zhang <i>et al.</i> , 2023

Table 2. Reconstruction of evaluation indexes based on building façade components

Evaluation object	Elements	Indexes
Rural residential façades in Suzhou	1. Entrance	1. The entry is identifiable.
		2. Accessibility features and accessibility of the building (e.g., wheelchair ramps, handrails, etc.).
	2. Wall	3. The indoor temperature is suitable.
		4. Traditional local exterior wall forms are used.
		5. No wet spots, water damage, or mildew inside the house.
	3. Windows and doors	6. Whether the indoor lighting condition is good?
		7. Doors and windows are made of excellent-quality materials and reflect local cultural characteristics.
		8. Whether the outdoor view of the rural building is good (whether the distance from the front building is sufficient)?
	4. Roof	9. Traditional roof forms are used.
	5. Detail	10. Use the local traditional patterns, lines, or decorations (animal, wall decoration, etc.).
	6. Environment	11. Is there any traditional public space around the building (ancestral hall, cultural wall, etc.)?
		12. Is there any modern public space around the building (chess room, fitness space, recreation space, etc.)?
		13. Whether the building is in harmony with its surroundings?
		14. Are the pipelines around the building in order (electrical wires, water pipes, TV telephone lines, etc.)?

Table 3. Relationship between sampling spatial distribution and sampling quantities across Suzhou districts

District	Rural population (thousand people)	Percentage (%)	Sampling quantity (people)	
			Native residents	Non-native residents
Wuzhong	312.1	13.75	5 – 10	8 – 16
Xiangcheng	49.6	2.19	1	1 – 2
Huqiu	61.8	2.72	1	1 – 3
Wujiang	374.3	16.49	5 – 12	10 – 20
Changshu	432.7	19.06	7 – 13	12 – 23
Zhangjiagang	358.9	15.81	5 – 11	9 – 19
Kunshan	435.9	19.20	7 – 13	12 – 23
Taicang	244.6	10.78	3 – 7	7 – 13
Total	2,269.9	100	34 – 68	60 – 119

2.5. Questionnaire design and survey

The survey questionnaire for this study consists of two parts. The first section collects demographic data, including respondents' place of birth, age group, educational background, and other relevant personal details. The second section evaluates respondents' perceptions of the current state of rural house façades and environments in Suzhou. A five-point Likert scale was employed for evaluation, with importance categorized as "very unimportant," "unimportant," "neutral," "important," and "very important," corresponding to scores of 1 – 5. Similarly, performance was rated as "very dissatisfied," "dissatisfied," "neutral," "satisfied," and "very satisfied," also assigned scores from 1 to 5. Expert opinions were

solicited to refine the wording of the evaluation indexes, minimizing potential biases that could affect the results (Zhou *et al.*, 2024). Refer to Appendix for the details of the questionnaire.

The questionnaires were distributed through an online platform (SoJump), and by July 31, 2024, a total of 165 responses were collected. Of these, 65 responses were from native residents and 100 from non-native residents, satisfying the specified sample size criteria. The collected data were analyzed to calculate the average scores for the importance and performance of evaluation factors, which were then plotted on an IPA chart. This approach facilitated the IPA evaluation of rural house façade indexes in Suzhou (Wu *et al.*, 2023).

2.6. Evaluation factor reliability and validity testing

The reliability and validity of the scales used in this study were assessed to ensure their accuracy. Cronbach's alpha coefficient was calculated to assess the reliability of the importance and performance scales. Reliability and validity analyses were conducted using SPSS 27 on the 14 factors of importance and performance. The Cronbach's alpha values were 0.963 for the importance factors and 0.960 for the performance factors, both exceeding the threshold of 0.7, indicating high reliability for both scales. Furthermore, the Kaiser–Meyer–Olkin value was 0.810, exceeding the recommended threshold of 0.8, signifying that the data were suitable for factor extraction and demonstrated robust validity.

3. Results

3.1. Demographic characteristics of respondents

This study analyzed the demographic characteristics of the respondents to assess whether the sample composition accurately reflects the population characteristics (Kwon *et al.*, 2016). The effective sample population exhibits the following key characteristics:

First, 60.61 percent of respondents were non-local residents of Suzhou, reflecting the city's significant immigrant population. Suzhou's attraction as a destination for work or study enriches its diversity. This diversity enhances the comprehensiveness of the research findings, indicating that the conclusions drawn from this study may be applicable to rural areas in other regions. Furthermore, these insights provide valuable guidance for Suzhou's future development.

Second, respondents aged 18 – 30 years old constituted the largest group (63 respondents, or 38.18%). This age cohort represents a crucial demographic for rural revitalization efforts, as their perspectives are critical for effectively implementing changes in rural housing and community development. The second largest groups were those aged 30 – 40 (50 respondents, or 30.30%) and 40 – 50 (36 respondents, 21.82%). These age groups play a pivotal role in shaping the current state of rural residential development, as their needs significantly influence the appearance of rural house façades and environments (Table 4).

3.2. Importance and performance analysis

Based on the survey data, statistical values were compiled to assess the importance and performance of various elements as perceived by residents in Suzhou. The importance and performance rating was derived from the mean values of respective indexes (Table 5).

From the perspective of importance, the rankings of elements are as follows: Windows and doors > Wall

Table 4. Attributes of respondents

Situation	Type	Number of people	Percentage (%)
Birthplace	Native	65	39.39
	Non-native	100	60.61
Age	Under 18 years old	2	1.21
	18 – 30 years old	63	38.18
	30 – 40 years old	50	30.30
	40 – 50 years old	36	21.82
	Over 50 years old	14	8.49
Educational background	Junior high school and below	3	1.82
	Senior high school	3	1.82
	College degree and above	159	96.36

Table 5. Importance and performance analysis of elements

Elements	Importance	Performance	Importance-performance analysis
Entrance	4.08	3.56	0.52
Wall	4.21	3.78	0.43
Windows and doors	4.25	3.78	0.47
Roof	3.97	3.88	0.09
Detail	3.82	3.76	0.06
Environment	4.17	3.75	0.42
Overall mean values	4.08	3.75	0.33

> Environment > Entrance > Roof > Detail. The scores for these elements ranged from 3.82 to 4.25, with Windows and Doors, Wall, and Environment receiving significantly higher importance ratings. Conversely, the detail score was markedly lower than the other elements, indicating that residents prioritize functional aspects, such as walls, doors, and windows, over finer architectural details.

In terms of performance, the ranking is: Roof > Windows and doors = Wall > Detail > Environment > Entrance. Performance scores ranged from 3.56 to 3.88, with the Roof, Walls, and Windows and doors achieving the higher performance scores. Notably, Entrance had the lowest performance score.

A significant negative correlation was observed between the importance and performance of the Roof element, while Windows and doors and Wall elements exhibited positive correlations.

From the perspective of the mean importance scores of various indexes, the following aspects received high expectations from residents:

- 1. The entry is identifiable.
- 3. The indoor temperature is suitable.
- 4. Traditional local exterior wall forms are used.
- 5. There is no wet trace, water trace, or mildew inside the house.
- 6. Whether the indoor lighting condition is good.
- 8. Whether the outdoor view of the rural building is good (whether the distance from the front building is sufficient).
- 12. Is there any modern public space around the building (chess room, fitness space, recreation space, etc.)?
- 13. Whether the building is in harmony with its surroundings.
- 14. Are the pipelines around the building in order (electrical wires, water pipes, TV telephone lines, etc.)?

The mean scores for these eight indexes exceeded 4.14, indicating a high level of expectation among residents regarding these aspects.

In terms of performance scores, the following indexes achieved mean scores greater than 3.75:

- 1. The entry is identifiable.
- 4. Traditional local exterior wall forms are used.
- 7. Doors and Windows are made of excellent-quality materials and reflect local cultural characteristics.
- 8. Whether the outdoor view of the rural building is good (whether the distance from the front building is sufficient).
- 9. Traditional roof forms are used.
- 10. Use the local traditional patterns, lines, or decorations (animal, wall decoration, etc.).
- 12. Is there any modern public space around the building (chess room, fitness space, recreation space, etc.)?
- 13. Whether the building is in harmony with its surroundings.

The difference between mean importance and performance scores reflects relatively poor performance. Specifically, both elemental and index-level scores indicate that performance ratings fall short of perceived importance. This suggests that there is room for improvement in the quality of rural residential building façades and their integration with the surrounding environment in the Suzhou region (Tables 5 and 6, Figure 2).

Table 6. Importance and performance analysis of indexes

Indexes	Importance		Performance		Importance-performance analysis
	Mean value	Ascending means	Mean value	Ascending means	
1. The entry is identifiable.	4.15	9	3.82	5	0.33
2. Accessibility features and accessibility of the building (e.g., wheelchair ramps, handrails, etc.).	4.00	11	3.30	14	0.70
3. The indoor temperature is suitable	4.21	6	3.73	9	0.48
4. Traditional local exterior wall forms are used	4.18	8	4.00	1	0.18
5. There is no wet trace, water trace, or mildew inside the house	4.24	5	3.61	12	0.63
6. Whether the indoor lighting condition is good	4.39	1	3.73	9	0.66
7. Doors and windows are made of excellent-quality materials and reflect local cultural characteristics	4.09	10	3.85	4	0.24
8. Whether the outdoor view of the rural building is good (whether the distance from the front building is sufficient)	4.27	4	3.76	7	0.51
9. Traditional roof forms are used	3.97	12	3.88	3	0.09
10. Use the local traditional patterns, lines, or decorations (animal, wall decoration, etc.)	3.82	13	3.76	7	0.06
11. Is there any traditional public space around the building (ancestral hall, cultural wall, etc.)?	3.82	13	3.61	12	0.21
12. Is there any modern public space around the building (chess room, fitness space, recreation space, etc.)?	4.21	6	3.79	6	0.42
13. Whether the building is in harmony with its surroundings	4.30	3	3.94	2	0.36
14. Are the pipelines around the building in order (electrical wires, water pipes, TV telephone lines, etc.)	4.36	2	3.67	11	0.69
Overall mean values	4.14	-	3.75	-	0.40

When examining the responses of native and non-native residents separately, native respondents rated the following indexes higher in terms of importance:

- 4. Traditional local exterior wall forms are used.
- 5. There is no wet trace, water trace, or mildew inside the house.
- 6. Whether the indoor lighting condition is good.
- 8. Whether the outdoor view of the rural building is good (whether the distance from the front building is sufficient).

Conversely, non-native residents provided higher ratings for the following indexes (Figure 3):

- 1. The entry is identifiable.
- 2. Accessibility features and accessibility of the building (e.g., wheelchair ramps, handrails, etc.).
- 3. The indoor temperature is suitable.
- 7. Doors and windows are made of excellent-quality materials and reflect local cultural characteristics.
- 10. Use the local traditional patterns, lines, or decorations (animal, wall decoration, etc.).
- 11. Is there any traditional public space around the building (ancestral hall, cultural wall, etc.)?

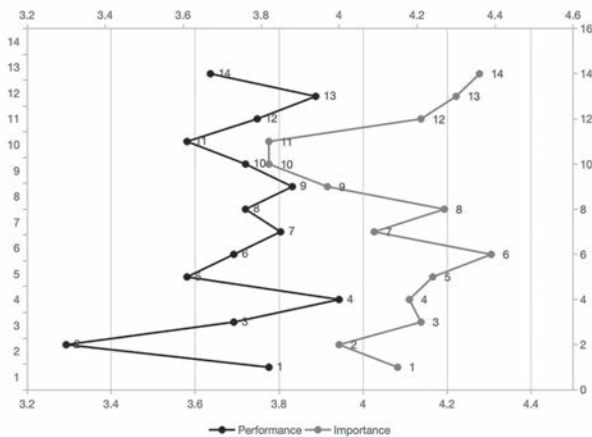


Figure 2. Comparison of importance and performance at index level. Source: Graph by the authors

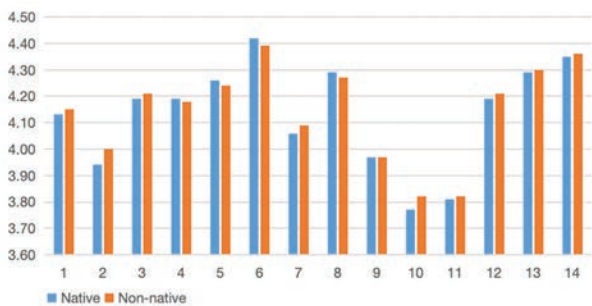


Figure 3. Comparison of importance between native residents and non-native residents. Source: Graph by the authors

- 12. Is there any modern public space around the building (chess room, fitness space, recreation space, etc.)?
- 13. Whether the building is in harmony with its surroundings.
- 14. Are the pipelines around the building in order (electrical wires, water pipes, TV telephone lines, etc.)?

In terms of performance, native residents rated higher on the following indexes:

- 1. The entry is identifiable.
- 3. The indoor temperature is suitable.
- 5. There is no wet trace, water trace, or mildew inside the house.
- 6. Whether the indoor lighting condition is good.
- 7. Doors and windows are made of excellent-quality materials and reflect local cultural characteristics.
- 9. Traditional roof forms are used.
- 11. Is there any traditional public space around the building (ancestral hall, cultural wall, etc.)?

In contrast, non-native residents rated higher on the following indexes (Figure 4):

- 2. Accessibility features and accessibility of the building (e.g., wheelchair ramps, handrails, etc.).
- 8. Whether the outdoor view of the rural building is good (whether the distance from the front building is sufficient).
- 10. Use the local traditional patterns, lines, and decorations (animal, wall decoration, etc.).
- 12. Is there any modern public space around the building (chess room, fitness space, recreation space, etc.)?
- 13. Whether the building is in harmony with its surroundings.
- 14. Are the pipelines around the building in order (electrical wires, water pipes, TV telephone lines, etc.)?

This differentiation highlights the varying perceptions and priorities of local and non-local residents regarding rural residential architecture in Suzhou.

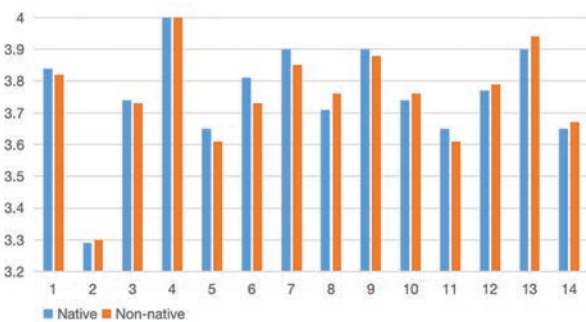


Figure 4. Comparison of performance between native residents and non-native residents. Source: Graph by the authors

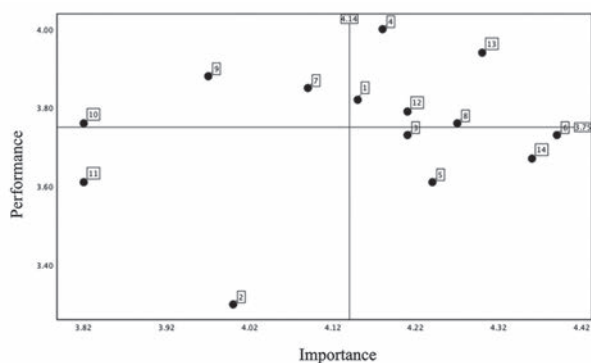


Figure 5. Importance-performance analysis of the indexes for all residents (the numbers correspond to the indexes). Source: Graph by the authors

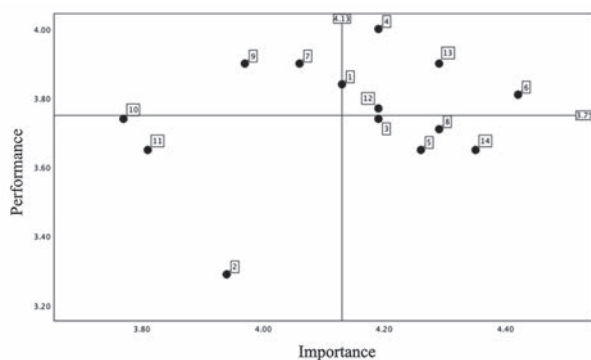


Figure 6. Importance-performance analysis of the indexes of native residents (the numbers correspond to the indexes). Source: Graph by the authors

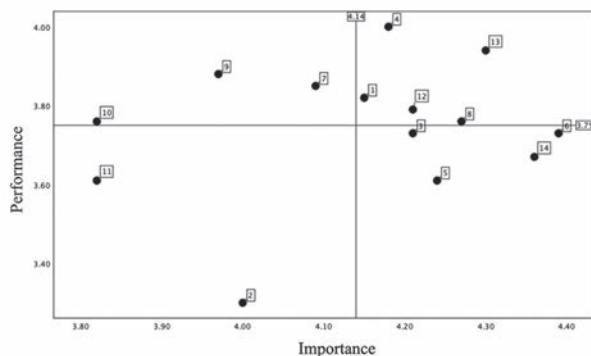


Figure 7. Importance-performance analysis of the indexes of non-native residents (the numbers correspond to the indexes). Source: Graph by the authors

Based on the above analysis of the importance and performance factors for rural house façades and environmental vernacularity, we conducted an IPA by setting importance as the horizontal axis and performance as the vertical axis. Using an overall mean of 4.14 for importance and 3.75 for performance as the quadrant intersection point, we constructed a two-dimensional, four-quadrant

coordinate graph. The mean values of importance and performance for each rural house façade evaluation factor were plotted as coordinates (X, Y) across the four quadrants, resulting in the IPA evaluation matrix (Figure 5). The IPA evaluation matrices for native and non-native residents (Figures 6 and 7) were constructed in the same way.

In this matrix, the first quadrant represents the “Continue to Maintain” area (Strength Zone), the second quadrant is the “Over-Emphasized” area (Maintenance Zone), the third quadrant is the “Low Priority” area (Expansion Zone), and the fourth quadrant is the “Urgent Improvement” area (Repair Zone) (Kim & Huh, 2019; Zhang *et al.*, 2023).

4. Discussion

In the matrix constructed based on the index assessments, the first quadrant, which indicates high importance and high performance, includes five indexes:

- 1. The entry is identifiable
- 4. Traditional local exterior wall forms are used.
- 8. Whether the outdoor view of the rural building is good (whether the distance from the front building is sufficient).
- 12. Is there any modern public space around the building (chess room, fitness space, recreation space, etc.)?
- 13. Whether the building is in harmony with its surroundings.

Among these, only Index 4 is explicitly related to exterior appearance. Field visits to various rural areas in Suzhou reveal that the characteristic white-wall appearance of Suzhou’s architecture is largely preserved, particularly in larger public buildings, such as the Suzhou Museum designed by I. M. Pei (1917 – 2019). The remaining indexes (1, 8, 12, and 13) are implicit, focusing more on functionality and residential comfort, which reflects a greater demand for functional comfort over esthetic appeal among residents. In the first quadrant, native residents and non-native migrants differ in their views on Indexes 6 and 8. Both indexes are rated as highly important and relate strongly to functionality, suggesting that issues such as view and lighting, stemming from locational or design limitations, align with the observed realities of rural areas in Suzhou. Therefore, in future revitalization efforts for rural residential buildings, prioritizing functional infrastructure and ensuring a livable environment will be essential (Figures 6 and 7).

The second quadrant, which reflects low importance but high performance, includes three variables:

- 7. Doors and windows are made of excellent-quality materials and reflect local cultural characteristics
- 9. Traditional roof forms are used.
- 10. Use the local traditional patterns, lines, or decorations (animal, wall decoration, etc.).

All three variables relate to traditional architectural forms. The characteristic white walls and dark tiles of traditional Jiangnan architecture are relatively well-preserved in Suzhou, and the overall rural appearance in most areas remains intact. However, field visits to two villages revealed that some buildings no longer retain these features. This observation aligns with data analysis showing low importance for traditional architectural details. While both native and non-native Suzhou residents recognize the unique cultural aspects of Suzhou's traditional architecture, functionality is prioritized over esthetic features. Urbanization has introduced a preference for functionality, practicality, and modern esthetics, which may lead to the perception that the characteristics of traditional rural dwellings are unnecessary or outdated. This city-centered value system has influenced the appearance of some rural residences in Suzhou, where traditional architectural features are often overshadowed by urban design trends.

The third quadrant, which indicates low importance and low performance, includes two variables:

- 2. Accessibility features and accessibility of the building (e.g., wheelchair ramps, handrails, etc.)
- 11. Is there any traditional public space around the building (ancestral hall, cultural wall, etc.)?

Field observations indicate that revitalization efforts for traditional Suzhou rural buildings seldom consider the provision of accessibility features, even in some renovated homestays. In addition, due to urbanization, cultural emphasis in southern Jiangsu differs from that in Lingnan, where ancestral halls are highly valued. The traditional “familiar society” is gradually being deconstructed, leading to a decline in collective spaces such as ancestral halls. This shift reflects the increasing individualism in rural areas and the diminishing role of collective traditions in daily life. In Suzhou, cultural significance is often more evident in building appearances rather than in dedicated spaces. With rural populations aging rapidly, ordinary residents have generally not considered age-friendly designs in rural homes, highlighting a critical need for integrated design planning and policy improvements to address accessibility and age-appropriate features in rural housing.

In the second and third quadrants, both native and non-native residents share similar perspectives, viewing traditional and culturally related indexes as relatively unimportant. This perspective reflects why the appearance of existing rural buildings has changed and appears less vernacular compared to the past. In actual rural façade renovation projects, residents tend to focus primarily on the technical and cost-related aspects of renovating older buildings. However, research shows that this purely technical and cost-focused approach can inadvertently reduce the vernacular character of rural houses.

A “familiar society” is characteristic of rural social relations, where social interactions are based on longstanding relationships rather than technical dependencies (Liu & Yan, 2022). This societal structure traditionally fostered similarity in living spaces, with residents constructing façades based on collectively passed-down experiences, forming locally distinctive vernacular styles. However, as urbanization and migration increase, the traditional familiar society, once bounded by rural areas, is gradually disintegrating. This breakdown has resulted in changes to traditional rural lifestyles and the erosion of the distinctiveness that once characterized rural façades and environments.

Traditional rural society is inherently static and locally bound (Fei, 2022), while modern society is highly fluid, leading to a phenomenon known as “flowing rurality” under the pressures of urbanization (Liu & Yan, 2022). Rural stakeholders are increasingly influenced by urban values, resulting in several trends: (i) a focus on functionality and (ii) the adoption of common building materials. When these urban-centric influences extend to rural façades, they often manifest as an overemphasis on functionality. This shift can result in disordered façade forms, inconsistent architectural spaces, altered environments, and the use of non-traditional building materials.

In the fourth quadrant, which reflects high importance but low performance, four variables are identified:

- 3. The indoor temperature is suitable.
- 5. There is no wet trace, water trace, or mildew inside the house.
- 6. Whether the indoor lighting condition is good.
- 14. Are the pipelines around the building in order (electrical wires, water pipes, TV telephone lines, etc.)?

These indexes are all implicit and relate to functionality and the living environment. Field visits reveal that as urbanization progresses, rural populations are aging rapidly, leaving many older homes vacant. This situation has led to an increase in deteriorated and even unsafe buildings. The poor living environment in these homes also detracts from the attractiveness of rural areas, making it challenging to retain or attract residents.

The data reveal that for both local and non-local residents, the functional and environmental needs of rural housing far outweigh esthetic and cultural demands. Traditional Suzhou rural dwellings, with their iconic white walls and dark tiles, are still preserved in many rural areas of Suzhou. However, field visits noted that some façades have been renovated with new materials, such as tiles replacing the original plaster (Figure 8). Therefore, rural house renovations should prioritize fundamental living environment improvements, including insulation,

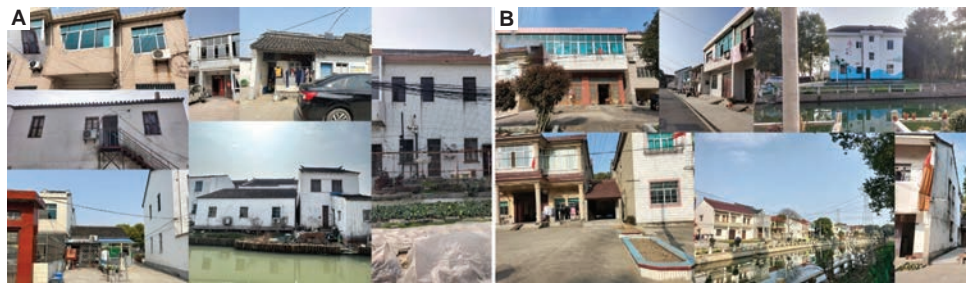


Figure 8. Rural building façades and environments in (A) Huayewei village and (B) Jiuliqiao village in Wujiang district, Suzhou city, Jiangsu province, China. Source: Photos by Sucheng Yao (2023)

thermal resistance, and waterproofing. Addressing these basic needs is essential to attract more people back to the countryside or to encourage rural tourism.

At the same time, rural façades shaped by local lifestyles and cultural values are an integral part of the rural cultural landscape, combining practicality with vernacular esthetics. While functionality often involves quick solutions or the use of urbanized building materials, vernacular character requires the passage of time to develop organically. Each era expresses rural vernacular in different ways. According to Tomanović *et al.* (2019), incorporating contemporary lifestyles and modern architectural trends into traditional buildings can breathe new life into rural architecture.

From a historical perspective, the functionality of residential spaces is indispensable, while a good rural living environment should integrate both functionality (physical space) and esthetics (emotional connection). In the process of modern rural residential regeneration, preserving the esthetic elements of traditional dwellings not only helps maintain the continuity of traditional culture but also strengthens residents' sense of belonging and cultural identity.

In the case of Suzhou's rural residences and environment, this study, based on IPA results and surveys conducted in two rural areas of Suzhou, identifies four key elements that contribute to the retention and use of rural vernacular character: traditional roof forms, building colors, traditional materials, and public spaces. These elements help sustain both the functionality and vernacular character of Suzhou's rural dwellings. For example, traditional roof forms are an important cultural symbol in Suzhou's rural architecture, while also serving functional purposes such as waterproofing, insulation, and ventilation. The distinctive color scheme of Suzhou's rural dwellings (white walls and black tiles) reflects strong regional characteristics.

The use of traditional materials helps preserve the unique heritage of the space. While many commercial spaces adopt this approach to present traditional

esthetics, incorporating such materials into rural housing renovations must be cost-effective compared to the high investments typically seen in commercial projects. Using traditional and reclaimed materials in rural residential and environmental revitalization efforts can help manage costs more efficiently. In addition, public spaces that combine functional uses, such as drying grain, with recreational areas allow both native residents and non-native residents to experience the rural environment in diverse ways.

In the analysis (Figure 5-7), the three indexes representing spatial layout (1, 6, and 8) all fall within the high-importance area, indicating that rural residents consider the spatial layout of rural homes to be highly important. The diversity of spatial layouts reflects the variety of rural lifestyles, serving as a key factor in generating rural heritage. In addition, spatial layout directly manifests the optimization of the rural living environment.

On one hand, lifestyle, climate, and cultural traditions influence the spatial layout of rural homes. Layout changes according to family size, functional needs, and daily habits, while relationships among family members, age structure, and social roles are reflected in the residential space. Each space maintains a certain degree of privacy and social order, allowing the spatial layout to embody the traditional lifestyle and social structure of Suzhou's rural areas. On the other hand, the orientation and layout of rural homes are rooted in traditional inheritance. Although some cultural symbols of the countryside may have faded from the façades of rural homes in the current era, rural living habits continue to extend residents' connection to the land.

Differentiated optimization strategies for native residents and non-native residents can be applied in rural housing façade and environment revitalization efforts, as the needs and concerns of these two groups share commonalities but also exhibit differences. Overall, both groups tend to prioritize functionality and residential comfort, placing less emphasis on the esthetics and cultural expression of traditional architecture. For native residents, there is typically a deeper emotional connection to the overall rural environment and architectural

traditions. However, in actual renovation projects, they are more likely to approach improvements from a cost and technical perspective, prioritizing practical living issues such as natural daylight, ventilation, and waterproofing. In contrast, non-native residents, influenced by urban living habits, are more inclined toward the integration of modern functional amenities, such as higher-quality heating systems or enhanced public spaces.

Therefore, future renovation strategies should strike a balance between functionality and tradition:

- (i). The primary focus should be on meeting the residential functional needs, including improving indoor lighting, regulating temperature, enhancing waterproofing, and ensuring a rational layout of utility lines around the building to enhance the livability of the residential environment.
- (ii). It is equally important to preserve rural culture and architectural characteristics by incorporating local decorative elements and materials into façade designs and optimizing the traditional spatial layout using modern techniques to maintain the unique historical and cultural characteristics of rural areas for residents' memories.

Furthermore, to address the differing needs of native and non-native residents, a dynamic management mechanism can be implemented to flexibly adjust renovation strategies. This approach ensures that rural housing revitalization efforts not only meet the current living needs of residents but also protect the cultural and ecological diversity of rural areas.

Avoiding excessive adherence to tradition while iteratively updating façade treatments is another effective way to preserve rural architectural character.

In summary, the following strategies are proposed for maintaining vernacular attributes in future rural housing:

- (i). Necessary integration

Optimize traditional spatial layouts and incorporate new materials and construction techniques where appropriate (Shi *et al.*, 2024).

Traditional rural spatial layouts were typically designed to accommodate historical lifestyles and environmental conditions, such as the need for collective living and agricultural activities. However, modern rural residents require spaces that meet contemporary demands, including more integrated functional spaces (e.g., kitchens and bathrooms), higher levels of privacy, more efficient indoor-to-outdoor transitions, and multifunctional space designs (e.g., living rooms and lounges). Optimizing the spatial layout can enhance functionality by redesigning the interior structure. For example, transforming the

traditional entrance living room in Suzhou rural homes into an open-plan living space can improve space efficiency and living comfort while respecting the original spatial layouts.

The use of modern materials for updating traditional houses can significantly improve their durability, energy efficiency, and living comfort. For instance, adding insulation to walls and using high-performance exterior paints preserves the building's vernacular character while enhancing functionality. In addition, using lightweight, durable roofing tiles can improve insulation, while sustainable materials, such as permeable bricks instead of traditional stone, can reduce environmental impact while maintaining the architectural style of Suzhou's rural homes.

The integration of modern construction techniques can also make the renovation of rural buildings faster, safer, and more cost-effective. For example, prefabricated components allow for customized replication of traditional forms while ensuring structural integrity. Digital tools, such as building information modeling or drone surveying, can assist in documenting the existing structure with precision, facilitating targeted repairs and revitalization efforts that blend tradition with innovation. Furthermore, advancements such as 3D printing allow for the rapid production of traditional building components, while generative artificial intelligence offers efficient design solutions for rural façades and environments.

However, it is essential to prioritize the local cultural and natural context throughout the integration process. Actively involving stakeholders during planning and construction ensures that renovated buildings reflect vernacular traditions while balancing practicality.

- (ii). Localized research

Emphasizing localized research that integrates historical, cultural, and traditional contexts is crucial for effective reconstruction and renovation (Monterroso-checa *et al.*, 2020). This approach strengthens connections to local settings, cultural diversity, and unique identity, aligning with the "thousand villages, thousand faces" concept (Chen & Zhang, 2021; Pietta & Tononi, 2021).

Historical studies of local architectural styles can provide valuable insights into spatial layouts, building techniques, and decorative elements. For instance, understanding how past designs adapted to local climate conditions or agricultural practices can inform modern renovations. By referencing these historical elements, renovations can preserve traditional characteristics while introducing modern improvements.

The use of traditional materials, such as locally sourced wood, stone, or clay, supports environmental sustainability

and ensures esthetic harmony with existing buildings. When combined with modern construction methods, these materials enhance durability and functionality while maintaining the authentic character of rural architecture. Actively engaging local crafts workers and builders, who possess expertise in these materials, should be prioritized in both the construction and research efforts. Such collaboration not only preserves traditional artisanry but also facilitates the incorporation of innovative solutions for the future.

(iii). Dynamic management mechanisms

Post-construction, rural housing should be maintained through dynamic management systems that continuously identify and address emerging issues. Effective rural housing management must adapt to changing environmental conditions (such as extreme weather or climate change) as well as demographic changes (such as population aging). This adaptability may involve upgrading insulation systems to improve energy efficiency during both summer and winter, or installing accessible facilities in areas with a high concentration of elderly residents.

Establishing a feedback loop – through ongoing assessment of maintenance efforts and collection of resident input – ensures continuous optimization of the system. This iterative process helps maintain rural homes as livable, functional spaces aligned with the community's evolving needs and vision.

5. Conclusion

This study offers valuable insights from a user perspective for landscape designers, architects, and other professionals, presenting fresh approaches to rural housing and environmental improvements within the broader framework of rural revitalization. By understanding these user-centered aspects, rural decision-makers can better integrate user needs into planning processes. In addition, this research contributes to the practical discourse on rural cultural landscapes, advocating for a balanced approach to sustainable rural landscape planning.

However, the study has certain limitations:

- (i). Limited representation of elderly respondents: The proportion of respondents aged 65 and older is low. Challenges such as literacy barriers and a reluctance to complete paper surveys hindered the collection of effective data from elderly individuals during field visits.
- (ii). Subjectivity in quantitative survey indexes: The survey methodology retains an element of subjectivity, which may affect the reliability of results.

To address these issues, future research could adopt a mixed-methods approach, integrating qualitative and

quantitative methods to achieve more comprehensive data collection. For instance, semi-structured interviews could help gather more effective insights from older participants.

Another key area for future exploration lies in the preservation of traditional decorative patterns, such as murals, carvings, and “kissing beasts” (animal motifs used in rooftop construction). For rural housing, determining how to adapt and present these traditional elements in modern contexts remains a crucial challenge for designers. Safeguarding these patterns and crafts is essential, requiring their adaptation to evolving times to ensure they are showcased in ways that honor tradition while enhancing their relevance and appeal in contemporary design. Establishing a bottom-up feedback mechanism, grounded in existing practices and research, would complement top-down efforts to preserve the vernacular character of rural façades. Such an approach would facilitate the targeted allocation of policies and funding, thereby increasing the efficiency of rural development and preservation. Moreover, it would provide both theoretical and technical support for the practical study of rural living environments.

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Conflict of interest

The authors declare that they have no competing interests.

Author contributions

Conceptualization: All authors

Formal analysis: All authors

Investigation: All authors

Methodology: All authors

Writing – original draft: Sucheng Yao

Writing – review & editing: Kanjaneer Budthimedhee

Ethics approval and consent to participate

Permission to participate in the study was obtained from each subject verbally.

Consent for publication

Not applicable.

Availability of data

Data will be made available from the corresponding author on reasonable request.

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Appendix

调查问卷 Questionnaire

尊敬的先生/女士:

您好,为了研究苏州地区乡村住宅与传统乡村记忆的关系,提高乡村人居环境,让居民可以“望得见山,看得见水,记得住乡愁”,因此制定此问卷。本次问卷为匿名调查,仅用于学术研究,请您根据自身体验进行填写,再次感谢。

Dear Madam / Sir:

Hello. In order to study the relationship between rural architecture and traditional rural memory in Suzhou, improve rural living environment, so that residents can "see mountains, see water and remember homesickness", so this questionnaire is formulated. It is anonymous and only used for academic research. Please fill it out according to your own experience. Thank you very much.

第一部分 基础信息

First part Basic Information

1.您的出生地?

a.本地人 b.非本地人

1.Your birthplace?

a.native b. non-native

2.您的年龄段?

a.18岁以内 b.18岁-30岁 c.30岁-40岁 d.40岁-50岁 e.50岁以上

2.Your age?

a.under 18 years old b.18 years old-30 years old c. 30 years old-40 years old d. 40 years old e. over 50 years old

3.您的学历?

a.初中及以下 b.高中 c.大专及以上

3.Your educational background?

a.junior high school and below b.senior high school c.college degree and above

第二部分 苏州乡村住宅外立面评价

Second part The Evaluation of Rural Residential Facade in Suzhou.

4.您对曾经去过/看过/居住过的苏州的乡村住宅入口区域的评价:

4.1 入口是否具有识别性

满意度: a.非常不满意 (1分) b.不满意 (2分) c.一般 (3分) d.满意 (4分) e.非常满意 (5分)

重要性: a.非常不重要 (1分) b.不重要 (2分) c.一般重要 (3分) d.很重要 (4分) e.非常重要 (5分)

4.2 进出口是否方便,住宅带有无障碍设施(如:供轮椅推行的无障碍坡道、扶手等)

满意度: a.非常不满意 (1分) b.不满意 (2分) c.一般 (3分) d.满意 (4分) e.非常满意 (5分)

重要性: a.非常不重要 (1分) b.不重要 (2分) c.一般重要 (3分) d.很重要 (4分) e.非常重要 (5分)

4.Your evaluation of the rural residential entry you have ever gone to/ see / live in.

4.1The entry is identifiable

Satisfaction:a.very unsatisfied(one points) b.unsatisfied(two points) c.general (three points) d.satisfied(four points) e.very satisfied(five points)

Significance:a.very unimportant(one points) b.unimportant(two points) c.general(three points) d.important(four points) e.very important(five points)

4.2 Accessibility, accessibility of the building (e.g. wheelchair accessible ramps, handrails, etc.).

Satisfaction:a.very unsatisfied(one points) b.unsatisfied(two points) c.general (three points) d.satisfied(four points) e.very satisfied(five points)

Significance:a.very unimportant(one points) b.unimportant(two points) c.general(three points) d.important(four points) e.very important(five points)

5.您对曾经去过/看过/居住过的苏州的乡村住宅的墙体评价:

5.1 室内温度适宜程度

满意度: a.非常不满意 (1分) b.不满意 (2分) c.一般 (3分) d.满意 (4分) e.非常满意 (5分)

重要性: a.非常不重要 (1分) b.不重要 (2分) c.一般重要 (3分) d.很重要 (4分) e.非常重要 (5分)

5.2 使用当地传统外墙形式 (图)



满意度: a.非常不满意 (1分) b.不满意 (2分) c.一般 (3分) d.满意 (4分) e.非常满意 (5分)

重要性: a.非常不重要 (1分) b.不重要 (2分) c.一般重要 (3分) d.很重要 (4分) e.非常重要 (5分)

5.3 房屋内部有无湿迹、水迹与发霉现象

满意度: a.非常不满意 (1分) b.不满意 (2分) c.一般 (3分) d.满意 (4分) e.非常满意 (5分)

重要性: a.非常不重要 (1分) b.不重要 (2分) c.一般重要 (3分) d.很重要 (4分) e.非常重要 (5分)

5. Your evaluation of the rural residential wall you have ever gone to/ see / live in.

5.1 Thermal insulation performance of wall(whether it can keep warm in winter and it can keep cool in summer)

Satisfaction:a.very unsatisfied(one points) b.unsatisfied(two points) c.general (three points) d.satisfied(four points) e.very satisfied(five points)

Significance:a.very unimportant(one points) b.unimportant(two points) c.general(three points) d.important(four points) e.very important(five points)

5.2 Traditional local exterior wall forms are used

Satisfaction: a. very unsatisfied (one points) b. unsatisfied (two points) c. general (three points) d. satisfied (four points) e. very satisfied (five points)

Significance: a. very unimportant (one points) b. unimportant (two points) c. general (three points) d. important (four points) e. very important (five points)

5.3 There is no wet trace, water trace and mildew inside the house

Satisfaction: a. very unsatisfied (one points) b. unsatisfied (two points) c. general (three points) d. satisfied (four points) e. very satisfied (five points)

Significance: a. very unimportant (one points) b. unimportant (two points) c. general (three points) d. important (four points) e. very important (five points)

6. 您对曾经去过/看到过/居住过苏州的乡村住宅的门窗评价:

6.1 室内采光状况良好

满意度: a. 非常不满意 (1分) b. 不满意 (2分) c. 一般 (3分) d. 满意 (4分) e. 非常满意 (5分)

重要性: a. 非常不重要 (1分) b. 不重要 (2分) c. 一般重要 (3分) d. 很重要 (4分) e. 非常重要 (5分)

6.2 门窗材料优良且体现地方文化特色 (图)



满意度: a. 非常不满意 (1分) b. 不满意 (2分) c. 一般 (3分) d. 满意 (4分) e. 非常满意 (5分)

重要性: a. 非常不重要 (1分) b. 不重要 (2分) c. 一般重要 (3分) d. 很重要 (4分) e. 非常重要 (5分)

6.3 乡村住宅户外视野是否良好 (与前方住宅距离是否足够)

满意度: a. 非常不满意 (1分) b. 不满意 (2分) c. 一般 (3分) d. 满意 (4分) e. 非常满意 (5分)

重要性: a. 非常不重要 (1分) b. 不重要 (2分) c. 一般重要 (3分) d. 很重要 (4分) e. 非常重要 (5分)

6. Your evaluation of the rural residential windows and doors you have ever gone to/ see / live in.

6.1 Whether the indoor lighting condition is good

Satisfaction: a. very unsatisfied (one points) b. unsatisfied (two points) c. general (three points) d. satisfied (four points) e. very satisfied (five points)

Significance: a. very unimportant (one points) b. unimportant (two points) c. general (three points) d. important (four points) e. very important (five points)

6.2 Doors and Windows of excellent materials and reflect local cultural

characteristics

Satisfaction:a.very unsatisfied(one points) b.unsatisfied(two points) c.general (three points) d.satisfied(four points) e.very satisfied(five points)

Significance:a.very unimportant(one points) b.unimportant(two points) c.general(three points) d.important(four points) e.very important(five points)

6.3Whether the outdoor view of the rural building is good (whether the distance from the front building is sufficient)

Satisfaction:a.very unsatisfied(one points) b.unsatisfied(two points) c.general (three points) d.satisfied(four points) e.very satisfied(five points)

Significance:a.very unimportant(one points) b.unimportant(two points) c.general(three points) d.important(four points) e.very important(five points)

7.您对去过/看到过/居住过的苏州的乡村住宅的屋面评价:

7.1 使用当地传统屋顶形式 (图)



满意度: a.非常不满意 (1分) b.不满意 (2分) c.一般 (3分) d.满意 (4分) e.非常满意 (5分)

重要性: a.非常不重要 (1分) b.不重要 (2分) c.一般重要 (3分) d.很重要 (4分) e.非常重要 (5分)

7.Your evaluation of the rural residential roof you have ever gone to/ see/ live in.

7.1Traditional roof forms are used

Satisfaction:a.very unsatisfied(one points) b.unsatisfied(two points) c.general (three points) d.satisfied(four points) e.very satisfied(five points)

Significance:a.very unimportant(one points) b.unimportant(two points) c.general(three points) d.important(four points) e.very important(five points)

8.您对去过/看到过/居住过的苏州的乡村的住宅立面细部评价:

8.1 采用当地传统图案、线条、小品装饰 (吻兽、墙面装饰等纹样)



满意度: a.非常不满意 (1分) b.不满意 (2分) c.一般 (3分) d.满意 (4分) e.非常满意 (5分)

重要性: a.非常不重要 (1分) b.不重要 (2分) c.一般重要 (3分) d.很重要 (4分) e.非常重要 (5分)

8. Your evaluation of the rural residential detail you have ever gone to/ see/ live in.

8.1 Use the local traditional patterns, lines, small decoration (animal, wall decoration, etc.)

Satisfaction: a. very unsatisfied (one points) b. unsatisfied (two points) c. general (three points) d. satisfied (four points) e. very satisfied (five points)

Significance: a. very unimportant (one points) b. unimportant (two points) c. general (three points) d. important (four points) e. very important (five points)

9.您对去过/看到过/居住过的苏州的乡村的住宅周边环境评价:

9.1 住宅周边是否有传统公共空间 (祠堂、文化墙等)

满意度: a.非常不满意 (1分) b.不满意 (2分) c.一般 (3分) d.满意 (4分) e.非常满意 (5分)

重要性: a.非常不重要 (1分) b.不重要 (2分) c.一般重要 (3分) d.很重要 (4分) e.非常重要 (5分)

9.2 住宅周边是否有现代公共空间 (棋牌室, 健身空间, 游憩空间等)

满意度: a.非常不满意 (1分) b.不满意 (2分) c.一般 (3分) d.满意 (4分) e.非常满意 (5分)

重要性: a.非常不重要 (1分) b.不重要 (2分) c.一般重要 (3分) d.很重要 (4分) e.非常重要 (5分)

9.3 住宅与周边的环境是否协调

满意度: a.非常不满意 (1分) b.不满意 (2分) c.一般 (3分) d.满意 (4分) e.非常满意 (5分)

重要性: a.非常不重要 (1分) b.不重要 (2分) c.一般重要 (3分) d.很重要 (4分) e.非常重要 (5分)

9.4 住宅周边的管线是否整齐 (电线、水管、电视电话线等)

满意度: a.非常不满意 (1分) b.不满意 (2分) c.一般 (3分) d.满意 (4分) e.非常满意 (5分)

重要性: a.非常不重要 (1分) b.不重要 (2分) c.一般重要 (3分) d.很重要 (4分)
e.非常重要 (5分)

9. Your evaluation of the rural residential environment you have ever gone to/ see / live in.

9.1 Is there any traditional public space around the building (ancestral hall, cultural wall, etc.)?

Satisfaction: a. very unsatisfied (one points) b. unsatisfied (two points) c. general (three points) d. satisfied (four points) e. very satisfied (five points)

Significance: a. very unimportant (one points) b. unimportant (two points) c. general (three points) d. important (four points) e. very important (five points)

9.2 Is there any modern public space around the building (chess room, fitness space, recreation space, etc.)?

Satisfaction: a. very unsatisfied (one points) b. unsatisfied (two points) c. general (three points) d. satisfied (four points) e. very satisfied (five points)

Significance: a. very unimportant (one points) b. unimportant (two points) c. general (three points) d. important (four points) e. very important (five points)

9.3 Whether the building is in harmony with its surroundings?

Satisfaction: a. very unsatisfied (one points) b. unsatisfied (two points) c. general (three points) d. satisfied (four points) e. very satisfied (five points)

Significance: a. very unimportant (one points) b. unimportant (two points) c. general (three points) d. important (four points) e. very important (five points)

9.4 Are the pipelines around the building in order (electrical wires, water pipes, TV telephone lines, etc.)?

Satisfaction: a. very unsatisfied (one points) b. unsatisfied (two points) c. general (three points) d. satisfied (four points) e. very satisfied (five points)

Significance: a. very unimportant (one points) b. unimportant (two points) c. general (three points) d. important (four points) e. very important (five points)