

Analysis of the Differences in the Perception of Vernacular Architecture Renovation Among Different Generations

Haiyong Shen, Yujiao Shang
5713618@qq.com, 1721138269@qq.com

Shenyang Jianzhu University Shenyang, China

Abstract—China is in the tide of striding forward the urban renewal, and the transformation and protection of vernacular architecture is an important part. People as the main body of architectural living space environment, their perception of vernacular architecture transformation cannot be ignored. This thesis takes the Laoshan area of Qingdao city as the object of investigation, uses questionnaire distribution and field survey to get the data, as well as uses SPSS statistical analysis tool to calculate the residents of different ages' perceptions of vernacular architecture. The survey results show that villagers in Laoshan area have different perceptions of vernacular building renovation, specifically in terms of transformation purpose, method, and concept, and the differences between different generations is more prominent. The older group is more inclined to live by themselves in the cognition of the transformation purpose, and the younger group's view on the willingness of architectural transformation is different from that of the older group. Therefore, in the process of rural architecture transformation, we should consider the views and needs of different groups, which will help to promote the revival of traditional village culture further. This research is also of great significance to the follow-up urban renewal.

Keywords- Renovation; data analysis; generational differences

1 Introduction

Local architecture is formed by the accumulation and summation of the existing construction experience of residents in their long life. It is limited by the natural environment and influenced by historical information and regional humanities. The vernacular architecture finally presents a kind of cultural treasure rather than a material product. Vernacular architecture represents not only the architecture itself but also the regional characteristics of a region, and the preservation of architecture is the preservation of the regional culture of that place. Therefore, in recent years, it has attracted lively discussions among scholars at home and abroad. With the deepening of urbanization, the survival of the traditional vernacular dwellings is becoming increasingly difficult. the fortune of vernacular dwellings is unsure. Architects in China are trying to find out the present situation and prospect of the protection and development of residential homes by studying the transformation, utilization, and transformation modes of different residential dwellings.[1]. The Institute of Vernacular Architecture, founded in 1989 with Professor Chen as the core, collected the research cases of traditional vernacular architecture villages in China, which provided a reference for domestic scholars to study vernacular architecture further. At the

same time, foreign scholars have also carried out a series of rural reconstruction practices, the conservation of vernacular buildings in the old town district of Sakon Nakhon, and obtained methods from the concepts of community participation and protection based on theory.[2]; Cyprus case explores the environmental sustainability in the protection of vernacular architecture. [3]. Scholars at home and abroad have done much research on vernacular architecture based on different research perspectives and time and space scales. However, there are types of research from the perspective of the difference between generations. We propose that generational differences are meaningful despite some theoretical and methodological challenges [4]. Scholars at home and abroad have also made different explorations on the importance of studying the difference between generations, such as reviewing the demand of different generations for local architectural space, which is of great significance in solving the interaction barrier between different generations. [5]. In addition, the cognitive differences between different generations' groups' satisfaction with public space are significant for promoting rural space reconstruction, enhancing rural elasticity, and building sustainable rural communities [6].

The vernacular architecture in Laoshan area of Qingdao not only has the geographical characteristics of China's coastal areas, but its architectural forms are also unique. However, under the influence of tourism industry and the rise of B&B industry, some vernacular architecture in the Laoshan area has lost its regional characteristics in the renovation. How to keep a layer of cultural space-time in rural space-time and bring architecture and people into the same cultural magnetic field has also become an essential topic in studying vernacular architecture. This paper investigates villagers' cognition of architectural transformation in different ages in the Laoshan area to explain the space demand of different generations for local architecture.

2 Materials and Methods

2.1 Survey area selection basis

The unique landform and suitable climatic conditions of Laoshan Mountain make Laoshan Mountain extremely rich in human resources, such as fishery resources and Taoist culture. In addition, it is worth exploring the local architecture in the Laoshan area, where the villages follow the winding landscapes of Laoshan. The houses are staggered and undulating. Looking from the distant road, the town with red tiles and green trees is full of layering and dynamic feeling. In particular, the facade of the building, made of granite accumulation, is different from ordinary masonry and reinforced concrete. The large volume of stone gives people a feeling of honesty and simplicity, which makes them feel more secure and can also achieve a better effect of keeping out the cold and moisture. After the reform and opening-up period, a professional fishing and transportation industry chain have gradually formed. With the vigorous development of the tourism industry, the surrounding facilities of the Laoshan Scenic Area have become more and more perfect. Villagers have also joined in the development and construction of the scenic area. Relying on the geographical advantages of the Taiqing Scenic Area and its proximity to mountains and seas, hotels, accommodation, tourism products, and other industries are in a constant stream. Since 2014, Laoshan Scenic Area has cooperated with local communities to explore theme B&B. As the first demonstration unit, The Dongmai Yao Village has achieved considerable economic benefits and popularity, and has led other surrounding villages to follow

suit. Although the local government has taken measures to prevent the local buildings from being demolished and built, some local villagers hope to pursue higher economic benefits and renovate the facade and interior without changing the original building structure. Some villagers do not consider issues such as retaining the regional characteristics of their village due to the lack of high design level and cultural literacy, resulting in a weak awareness of the concept of conservation of vernacular architecture, which destroys the sense of atmosphere of the whole vernacular architecture.

The cognitive differences between different generations have led to the diversification of their ideas on vernacular architecture renovation. To better realize the "bottom-up" renovation, understanding the true wishes of aborigines between different generations provides a new topic for further architectural renovation.

2.2 Research Methods

First, from September 2021 to May 2022, we visited three villages in the Laoshan area of Qingdao, namely Ximaiyao, Dongmaiyaoyao, and Liuqinghe, and conducted on-site interviews with villagers through a random household survey in August 2022. The main contents focused on the local villagers' willingness, life influence, cognition, and other issues in the renewing vernacular architecture. According to the results of the pre-survey results, the questionnaire outline was adjusted and improved.

Second, the village currently has a majority of middle-aged and seniors, with fewer young people. To ensure the accuracy and completeness of the data, an online questionnaire was also used to investigate the young people, which finally yielded the data and information required for the research. The respondents of this investigation included people of different generations and genders.

Finally, the collected data were analyzed by SPSS (Statistical Product and Service Solutions). The Chi-square test is a nonparametric test used to determine whether there is a relationship between two categorical variables [7]. The Chi-square test (cross-analysis) and statistical data frequency method were used to study whether there are differences, and whether the differences are significant or not can be inferred from the obtained results.

Open the SPSS data file in the data editor, and then select items from the menu to manipulate the data or make statistical analysis. The specific method as Figure 1. By importing data, screening samples, and analyzing whether there is significance between column (X) and row (Y) (P value is less than 0.05 or 0.01), if there is significance, select the percentage (the value in brackets) and describe the specific differences.

To perform a chi-square test of independence in SPSS

- Choose **Analyze** → **Descriptive Statistics** → **Crosstabs**
- Put one of the variables in the **Row(s)** box .
- Put the other variable in the **Column(s)** box .
- Click the **Statistics** button.
- Check the box next to **Chi-square**.
- Click the **Continue** button.
- Click the **OK** button.

Fig. 1 Perform a chi-square test of independence in SPSS

3 Results and Discussion

3.1 Results

Finally, 102 households have been investigated, and 92 valid questionnaires have been collected, with an efficiency rate of 90.20%. The basic information of respondents is shown in Table 1.

Table 1 Characteristics of Sample Respondents

Characteristics of Sample Respondents (N=92)			
	Individual characteristics (%)	Frequency	Percentage (%)
Age group			
	under 30	6	6.52%
	30-40	28	30.43%
	40-50	26	28.26%
	50-60	13	14.13%
	60+	19	20.65%
Gender			
	male	32	34.78%
	female	60	65.22%
Permanent Residence			
	Our Village	68	73.91%
	Qingdao City	24	26.09%
Aboriginal people			
	Yes	81	88.04%
	No	11	11.96%

As can be seen from the sample description, among the respondents in this survey, villagers aged 30-50 account for the majority, with women accounting for 30.44% more than men.

Most of the interviewees are native residents. Using cross-analysis, the variables were introduced into the arithmetic program separately, and the results show that different age samples show significant differences in building construction time, housing, and materials selected. Table 2. Table 3.

Table 2 Building construction time for people of different generations

X\Y	Building construction time for people of different generations			
	1990-2000	2000-2010	After 2010	Total
under30	1(16.67%)	1(16.67%)	3(50%)	6
30-40	12(42.86%)	14(50%)	0(0.00%)	28
40-50	10(38.46%)	3(11.54%)	0(0.00%)	26
50-60	3(23.08%)	0(0.00%)	0(0.00%)	13
60+	3(15.79%)	0(0.00%)	0(0.00%)	19

Table 3 Materials chosen for the construction of people of different generations

X\Y	Materials chosen for the construction of people of different generations			
	Laoshan local granite	Brick and concrete	Both of the first two	Total
under30	1(16.67%)	2(33.33%)	3(50%)	6
30-40	2(7.14%)	7(25%)	19(67.86%)	28
40-50	13(50%)	7(26.92%)	6(23.08%)	26
50-60	10(76.92%)	2(15.38%)	1(7.69%)	13
60+	16(84.21%)	3(15.79%)	0(0.00%)	19

Specifically, the higher the age of villagers, the higher the proportion of granite as building materials. Granite is the primary building material for villagers over 50 years old, especially for those over 60 years old. The above indicates that the older the residents are, the more complete the vernacular architecture is. Among the 40-50 year olds, 38.46% of the houses were built between 1990 and 2000, and 11.54% were made after 2000. Villagers under the age of 40 have newer buildings in their homes, more diversified use of local materials, and started to use brick and concrete mixed materials.

There was variability ($p < 0.05$) in the purpose of renovation of vernacular buildings among villagers of different age groups. Specifically, villagers under the age of 30 chose more evenly. the sample of villagers aged 30-40 chose mainly to renovate the B&B. when asked about the purpose of renovation in the group aged 40-50, 73.08% of the residents wanted to renovate it for their own residence and 26.92% wanted to renovate it for industries such as B&B. Among the age group of 50-60, 92.31% intended to renovate it for their own residence. 94% of the villagers over 60 years old wanted to renovate it for their own few residence, and 5.62% wanted to renovate it for B&B like other buildings in the same village. Table 4.

Table 4 The purpose of building renewal between generations

Results of cross-sectional (chi-square) analysis									
Topic	Options	Your age (%)					Total	χ^2	p
		under	30-40	40-50	50-60	60+			
Purpose of the renovation	Renovation for owner-occupancy	2(33.33)	4(14.29)	19(73.08)	12(92.31)	18(94.74)	55(59.78)		
	Converted into a B&B	2(33.33)	22(78.57)	5(19.23)	1(7.69)	1(5.26)	31(33.70)	51.637	0.000**
	Converted into a restaurant	2(33.33)	2(7.14)	2(7.69)	0(0.00)	0(0.00)	6(6.52)		
	Total	6	28	26	13	19	92		

* $p < 0.05$ ** $p < 0.01$

Table 5 The purpose of building renewal between generations

Topic	Options	Your age (%)					Total
		under	30-40	40-50	50-60	60+	
The best way to renovate vernacular buildings	Completely remodeled by yourself	2(33.33)	3(10.71)	6(23.08)	3(23.08)	0(0.00)	14(15.22)
	Government or relevant departments to guide their own transformation	0(0.00)	5(17.86)	5(19.23)	6(46.15)	6(31.58)	22(23.91)
	The government or relevant departments to carry out individualized repairs for each household	3(50.00)	20(71.43)	6(23.08)	3(23.08)	7(36.84)	39(42.39)
	Government unified transformation into urban residential forms	1(16.67)	0(0.00)	9(34.62)	1(7.69)	6(31.58)	17(18.48)
Total		6	28	26	13	19	92

From the above table, it is clear that the cardinality test to investigate the optimal renovation method for vernacular dwellings is significantly different by age. Under the age of 40, the government or relevant departments take personalized repair for each household as the leading factor, The 40-50 age group has an average cognition of the renewal way of vernacular architecture. Residents in the 50-60 year old and over 60 year old age groups are not very willing to completely renovate on their own, mostly they want the government to step in, and their perception feels that renovation will promote the economic development of their village and also provide security for their livelihood. A 63-year-old male said "I want to convert my home building into a B&B like some residents in the same village, so I can solve my economic problems." This age group, being older, is more tolerant of the visitors who come to live here and do not feel too much affected.

As seen from the Figure2, there are also differences in using frequency statistics to study the optimal transformation methods of rural houses in different generations. People before the age of 40 generally believe that the transformation of existing rural buildings can promote the economic

development of the village and enhance its popularity of the town. Most residents of villagers in the 40-50 age group reached a consensus on promoting the economic development of their villages. In addition, a small number of villagers believe that some vernacular buildings have been transformed into B&Bs causing damage to the existing village environment, a small number of residents thought that it affected the daily life of the locals. The 46-year-old female villager said: " There are many vernacular buildings in the village that have been converted into B&Bs. summer is the peak tourist season, and the tourists who come here sing and drink until late at night, affecting the sleep and rest of the children at home" Most villagers aged 50-60 and over 60 years old prefer that the transformation of vernacular buildings into B&Bs is beneficial to village development.

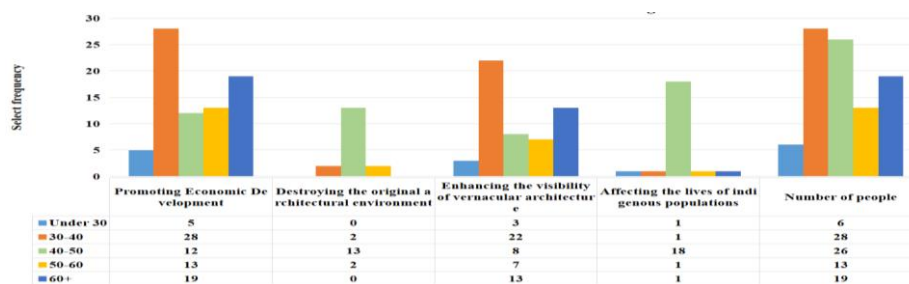


Fig.2 Different generations' perceptions of vernacular building renovation

3.2 Discussions

As people grow older, the purpose of building renovation is more inclined to meet their actual needs. Older villagers have become accustomed to the traditional way of life, and younger people are more inclined to the purpose of free renovation. When the villagers answered the way of vernacular architecture renovation, they chose the most, hoping that the government or relevant departments would carry out personalized renovation according to each family's situation, or government-guided renovation. No matter which kind of renovation, its guiding subject tends to be government-led, operated by villagers, and the local villagers are still accustomed to the "top-down" renovation. The general trend of villagers' views on reconstructing vernacular architecture is that the advantages outweigh the disadvantages. Villagers aged 40-50 years old prefer a quiet and comfortable environment to the promotion of village economic development because they have children at home to take care of.

4 Conclusions

With the continuous advancement of Qingdao's urban renewal project, the form and function of vernacular architecture in The Laoshan area have changed, but what remains unchanged is the people who have settled down over the years. By analyzing the cognitive differences of vernacular architecture among different generations we can draw the following conclusions: there are significant differences in the purpose of vernacular architecture transformation among different generations, which leads to the disunity of the current old and new architectural styles in the Laoshan area; There are differences in the choice of transformation mode with different generations, but the overall trend is consistent; There are significant differences in views on the

transformation of vernacular architecture, mainly because different generations have different needs and cognition of living environment.

Different generations of people play corresponding essential roles in the space-time of vernacular architecture. We can't ignore every group. By studying the cognitive differences of the transformation of vernacular architecture among different generations, local villagers can increase their sense of belonging to vernacular architecture and find their value in vernacular architecture. The results of this data analysis are helpful in providing samples and references for understanding the genuine wishes and actual needs of local villagers in the future rural building reconstruction process. Although the number of pieces selected in this paper needs to be improved, its results can hopefully provide some reference for studying the renovation of vernacular buildings from the perspective of intergenerational differences. Under the national urban renewal boom, we also hope that the government, based on the protection of vernacular buildings, will pay attention to the transformation wishes of the various groups, create conditions for villagers' public participation, and let villagers participate practically, so as to jointly solve the existing pain points and realize the "bottom-up" villagers and the "top-down" government. This will enable the villagers to work together to solve the existing pain points, and realize the "bottom-up" and "top-down" renewal and renovation by the government.

References

- [1] Pan, Y., Ye, X. (2013). Discussion of Strategies on Vernacular Dwellings Transformation, Utilization and Renovation. *Applied Mechanics and Materials*, 357: 380–383.
- [2] Pattananurot, P. (2014). The Conservation of Vernacular Buildings in the Old Town District of Sakon Nakhon. *Journal of Mekong Societies*, 10(2), 181-196.
- [3] Philokyprou, M. Michael, A. (2021). Environmental sustainability in the conservation of vernacular architecture. The case of rural and urban traditional settlements in Cyprus. *International Journal of Architectural Heritage*, 15(11), 1741-1763.
- [4] Cohen, S., Janicki-Deverts, D. (2012). Who's stressed? Distributions of psychological stress in the United States in probability samples from 1983, 2006, and 2009. *Journal of Applied Social Psychology*, 42(6), 1320–1334.
- [5] Vick Ter, L., Mohd Isa, M.H. (2020). Architecture Spaces to Promote Intergenerational-Friendly Environment. *MAJ - Malaysia Architectural Journal*, 2(2): 43–49.
- [6] Zhao, X., Ju, S., Wang, W. (2022) Intergenerational and gender differences in satisfaction of farmers with rural public space: Insights from traditional village in Northwest China. *Applied Geography*, 146: 102770.
- [7] DeCoster, Jamie, Heather Claypool, (2004). Data analysis in SPSS. <http://www.stat-help.com/spss.pdf>