



# Influence of the Courtyard Renovation in Historical and Cultural Blocks on the Residents' Sense of Place A Case Study of Beijing Fayuan Temple Block

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**Abstract.** Due to high population density and a shortage of public space resources, the historical and cultural blocks represented by Fayuan Temple Block in Beijing are facing numerous challenges. Protecting the block while realizing urban renewal and development and improving residents' living standards is a difficult task. Renovating courtyards is a key aspect of restorative construction and overall protection of historical and cultural blocks in Beijing. It has a significant impact on residents' lives and requires their recognition and support. To gauge residents' attitudes toward the courtyard renovation, this study introduces the theory of sense of place and measures the impact of the courtyard renovation projects on residents' sense of place through a survey of residents in Fayuan Temple Block. The analysis of the survey data indicates that the residents of the block have a high level of recognition of the renovation projects in terms of local attachment and local identity, while their sense of local dependence is relatively low. This study suggests that to enhance residents' sense of local dependence, they should be allowed to share more of the commercial dividends brought about by community renewal and development. This will increase their overall emotional recognition of community renovation projects.

**Keywords:** Historical and cultural blocks · Courtyard renovation · Sense of place

## 1 Introduction

Historical and cultural blocks play an essential role in the inheritance and development of urban history and culture. Beijing, home to 33 historical and cultural blocks, accounting for 33% of the old city area, has adopted a combination of government guidance, financial investment, voluntary resident participation, expert guidance, and social supervision to renovate the alleys and courtyards in the region. The renovation of dilapidated courtyards in these blocks is key to the protection of the historical and cultural aspects.

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M. F. b. Sedon et al. (Eds.): SSHA 2023, ASSEHR 752, pp. 19–30, 2023.

[https://doi.org/10.2991/978-2-38476-062-6\\_4](https://doi.org/10.2991/978-2-38476-062-6_4)

This study introduces the “sense of place” theory and uses the Fayuan Temple block in Beijing as an example to measure the impact of courtyard renovation projects on residents’ experiences and emotions. The study points out that the governance of historical and cultural blocks should not focus solely on traditional rational spatial planning thinking but also on creating and maintaining residents’ sense of place.

## 2 Background and Theory

### 2.1 Fayuan Temple Block

Fayuan Temple Block is one of the thirteen cultural elite areas in the overall planning of Beijing, which embodies the early historical pattern of the city. With a well-preserved overall style, it serves as a residential living area [1] with residential function as its primary purpose. The total population density in the block is as high as 29,000 people per square kilometer, much higher than the average of 20,000 people per square kilometer in the central urban area of Beijing. Half of the permanent residents in the block live in crowded and super-crowded courtyards, making them eager to improve their living conditions.

The renovation and transformation of courtyards have become the focus and breakthrough of the practice of block governance. Since 2018, residential courtyards in the block have undergone renovation. As of December 2021, 50.73% of the traditional courtyards in the block have been renovated. Relevant government departments have recognized the importance of public participation in the renovation work, coordinating and communicating with residents at various stages of the project, which strengthens their recognition of the renovation projects.

In addition to the measures mentioned above, it is important to introduce the concept of “sense of place” as a measurement dimension. Sense of place refers to the way people relate to and feel about the place in which they live [2]. The renovation of courtyards affects residents’ perception and emotional experience of the community, as well as their perception of the entire city and its identity. This study aims to clarify how courtyard renovation projects will impact residents’ perception of the place and determine the basis of public opinion related to public interest projects in the community, as well as whether there is room for improvement.

### 2.2 Sense of Place

The concept of sense of place emerged in response to the problems associated with global urbanization since the 1970s, such as the loss of local characteristics and ambiguity of local identity. It refers to people’s perception of a specific environment, the emotional attachment and satisfaction between people and places, the construction and identification of identity, and the relationship between humans and land with cultural and social characteristics. It is a dynamic process [3]. The behavioral and cognitive schools of environmental psychology emphasize [4] that sense of place is essentially the stimulus-response strategy of human beings to the environment. This concept includes the study of physical space and psychological perception and is the product of multidisciplinary integration. Duan Yifu refers to the universal attachment of human beings to

familiar places as “topophilia” [5]. Since the 1970s, the sense of place has become one of the core theories of geographical research, urban and rural planning. This theory has been proven to be beneficial to the effective protection of residents’ rights and interests, the orderly inheritance of regional culture, and the overall protection [6] of the regional environment in the practice of urban and rural construction.

The common dimensions of the sense of place are Place Attachment, Place Dependence, and Place Identity. In the research of B.S. Jorgensen, Place Attachment refers to the emotional connection between individuals, groups, and a specific space, which may be within a geographical scope or refer to a community containing cultural and human factors. Place Dependence refers to the potential ability of places to satisfy people’s pursuit of personal interests and goals. Local Identity is a more complex concept, referring to an aspect of self-cognition, a part of personal cognition related to the real environment, which includes complex paradigms of consciousness and subconsciousness, such as concepts, beliefs, preferences, feelings, values, goals, behavioral tendencies, and skills related to the environment [7].

### 3 Questionnaire Design

From the three dimensions of the sense of place: place attachment, place identity, and place dependence, an offline questionnaire survey has been conducted in this study on the residents of Fayuan Temple Block through 15 items which are measured by Likert

**Table 1.** Dimensions of the impact of courtyard renovation in historical and cultural blocks on residents’ sense of place

Dimensions	Measurement items	Scores				
		1	2	3	4	5
		I strongly disagree	Disagree	General	Agree	Very much agree
X1 Place attachment	X11 I am glad to see the courtyard renovation in the Fayuan Temple blocks					
	X12 The courtyard renovation makes my stay in the Fayuan Temple neighborhood more comfortable					

(continued)

**Table 1.** *(continued)*

Dimensions	Measurement items	Scores				
		1	2	3	4	5
		I strongly disagree	Disagree	General	Agree	Very much agree
	X13 The courtyard renovation makes me willing to live on this block for a longer time					
	X14 The courtyard renovation makes me feel that this block is better than that without renovation					
	X15 Renovated courtyards make me feel closer to the neighborhood					
X2 local identity	X21 In the Fayuan Temple block I am familiar with, the courtyards are a landmark architectural form					
	X22 Renovated courtyards help remind me of the neighborhood					

*(continued)*

**Table 1.** (continued)

Dimensions	Measurement items	Scores				
		1	2	3	4	5
		I strongly disagree	Disagree	General	Agree	Very much agree
	X23 Courtyard renovation makes me proud to be a member of the Fayuan Temple Block					
	X24 Renovated courtyards can better represent the appearance of the Fayuan Temple block					
	X25 Renovated courtyards contribute to the continued culture of the Fayuan Temple block					
X3 Local dependence	X31 The courtyard renovation has increased the number of places I can move around in the block					
	X32 The renovated courtyards have made my life more interesting					

(continued)

**Table 1.** (continued)

Dimensions	Measurement items	Scores				
		1	2	3	4	5
		I strongly disagree	Disagree	General	Agree	Very much agree
	X33 The courtyard renovation improves my possibility of obtaining economic benefits in Fayuan Temple Block					
	X34 The courtyard renovation in the block has raised my cost of living					
	X35 The courtyard renovation in the block has improved my quality of life					

five-level scale, ranging from strongly disagree to strongly agree. The study has classified the data according to demographic characteristics in terms of gender, age, educational background, length of residence in the community, and working conditions. See Table 1 for details.

## 4 Data Collection and Statistical Analysis

### 4.1 Analysis of the Appropriateness of the Questionnaire Survey Results

The results of the questionnaire survey in this study are mainly analyzed from the aspects of data reliability, validity, and normality test. In terms of data reliability, with the use of the SPSS18.0 software, the Cronbach’s coefficient (Cronbach’s Alpha) value stands at 0.901, and the Cronbach’s Alpha value is 0.909, which means the data has a high internal consistency and reliability; In terms of data validity analysis, KMO test and Barlett sphericity test have been used for the questionnaire. The KMO value is 0.878, while the significance level of Barlett’s sphericity test is 0.000, which is suitable for factor

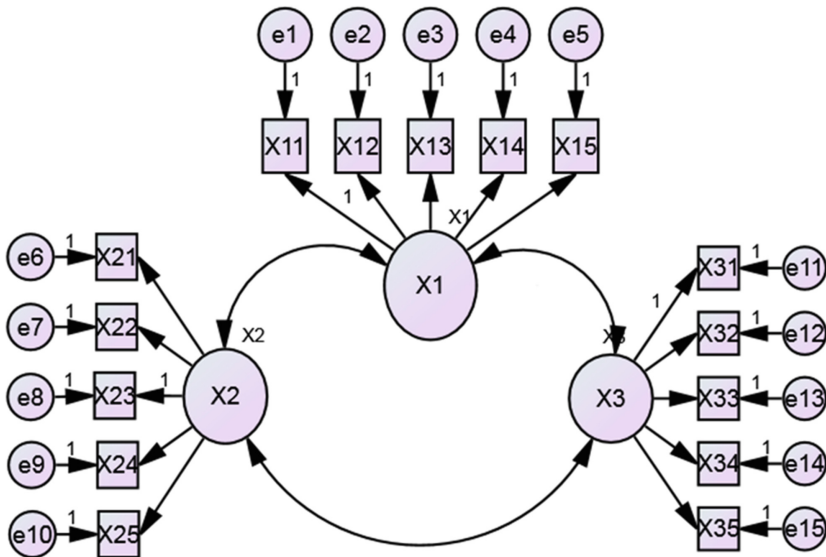


Fig. 1. Structure of Confirmatory Factor Analysis

analysis. The software AMOS17.0 is used to make a structured chart of the confirmatory factor analysis of user participation description, as shown in Fig. 1.

Convergent and discriminant validity tests are conducted. The factor loadings are all greater than 0.5, the standard errors of the factors are all positive, and the scale has passed the significance test, which indicates that the scale has convergent validity and that the data of all model variables are normally distributed.

## 4.2 Overall Descriptive Statistical Characteristics of Data

The respondents of this questionnaire mainly live in the Fayuan Temple Block, and the questionnaires are distributed by sending. A total of 105 feedback questionnaires have been received after pretreatment, 100 of which are valid, with an effective recovery rate of 95.2%. The basic characteristics of the sample distribution are reasonable, representative, and effective.

After further quantitative statistical analysis of the sample characteristics on the indicators, it is found that marked differences in the three indicators of local attachment, local identity, and local dependence on the courtyard renovation projects in the block are revealed among different groups of residents.

Firstly, from the perspective of gender characteristics, courtyard renovation has a balanced impact on both male and female groups in terms of local attachment and local identity, but there is a significant difference in local dependence. The most prominent difference is reflected in the 13th question, where the average value of women is 3.06, while that of men is 2.57, as shown in Fig. 2. Secondly, from the perspective of age characteristics, different age groups show varying degrees of the sense of place in the 15 indicators of the three dimensions. The group under 40 years old exhibits a stronger

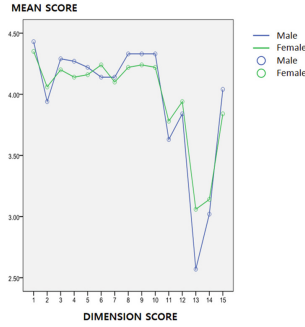


Fig. 2. Assignment of gender characteristics on indicators

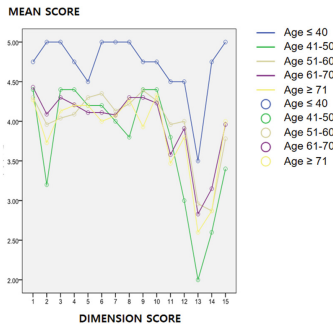


Fig. 3. Assignment of age characteristics on indicators

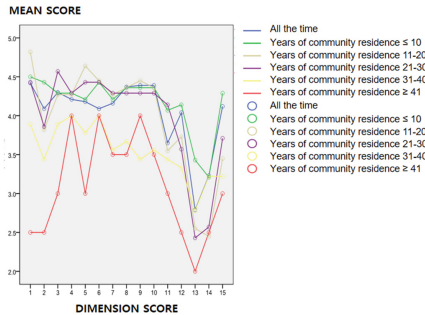


Fig. 4. Assignment of community residence time characteristics on indicators

sense of place, indicating a greater recognition of the courtyard renovation, as depicted in Fig. 3.

In addition to age, the length of time residents has lived in the community is also introduced as a parameter in the survey. Residents are divided into two groups: those born in the community and those who have moved into the community. For the latter group, five-time periods are set based on their length of time living in the community.



Across all age groups, residents who have moved into the community but have lived there for more than 41 years show low recognition in the 15 indicators. This may be due to the fact that the courtyard renovation project has a significant impact on their interests, as shown in Fig. 4.

Thirdly, in terms of occupational status, the majority of the respondents are retired and show the strongest local attachment and local identity, along with higher recognition of local dependence. This could be due to their reduced exposure to the impacts of courtyard renovation projects, as well as their year-round residency in the community, resulting in stronger feelings towards the courtyards, as depicted in Fig. 5.

Lastly, data analysis of respondents with varying education levels reveals that as education level improves, residents tend to have a higher recognition of courtyard renovation projects and perceive a more positive impact on their sense of place, as depicted in Fig. 6. This cannot be simply understood as education being the sole determinant of residents' perception of the renovation projects, but it does indicate that education is an important factor.

According to the sampling results in Table 2, 82% of the residents in the community have not received higher education. As such, the attitude of these residents towards the renovation project has a significant impact on the overall data.



Fig. 5. Assignment of sample characteristics of occupational status on indicators

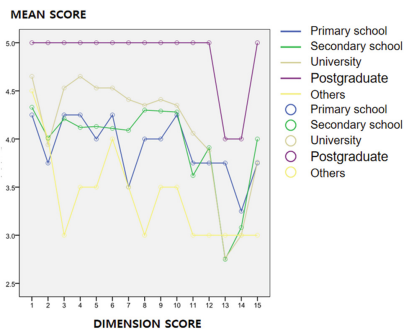


Fig. 6. Assignment of sample characteristics of educational status on indicators

### 4.3 Data Distribution Statistics

The data collected from the questionnaire are imported into SPSS18.0 software for statistical analysis, and the score distribution, average score, and standard deviation of each item variable can be obtained. The specific distribution is shown in Table 2.

From the descriptive statistical analysis of the survey data in Table 2, the courtyard renovation projects in historical and cultural blocks have a certain impact on the measurement items of residents' sense of place.

Firstly, among the five items used to measure local attachment, item 1 has garnered the highest recognition from residents. This indicates that residents generally hold a positive attitude towards courtyard renovation, which strengthens their emotional connection to the community and increases their willingness to live there for a longer duration. However, with regards to the impact of courtyard renovation, residents do not feel significantly stronger about the improvement of living conditions.

Secondly, with regards to local identity, due to the historical and cultural significance of the community, the majority of the residents surveyed (57%) were born in the community, and those who have lived there for more than 20 years make up 68%. They generally acknowledge that the courtyard is the iconic architectural form of the Fayuan Temple block since courtyards play a significant role in their memories of the block. Residents have acknowledged the positive significance of courtyard renovation on the

**Table 2.** Descriptive statistics of scale variable data of the questionnaire

Dimensions	Indicators	Score distribution (%)					Mean value		Standard deviation
		1	2	3	4	5			
X1	X11	0	2	6	43	49	4.39	4.21	0.695
	X12	3	7	14	39	37	4		1.035
	X13	0	5	5	50	40	4.25		0.770
	X14	0	6	6	49	39	4.21		0.808
	X15	0	4	10	49	37	4.19		0.775
X2	X21	0	3	10	52	35	4.19	4.23	0.734
	X22	2	4	9	50	35	4.12		0.879
	X23	0	4	6	48	42	4.28		0.753
	X24	1	2	4	53	40	4.29		0.729
	X25	0	3	4	55	38	4.28		0.683
X3	X31	3	11	23	39	24	3.7	3.48	1.049
	X32	2	8	19	41	30	3.89		0.994
	X33	12	28	33	21	6	2.81		1.089
	X34	4	27	35	25	9	3.08		1.022
	X35	4	7	17	35	37	3.94		1.090

style and features of the block, as well as its role in continuing the block culture. These findings demonstrate that courtyard renovation enhances residents' sense of identity.

Finally, regarding local dependence, residents have shown the lowest level of recognition towards the courtyard renovation projects, indicating room for improvement in terms of the potential for the renovation projects to increase residents' demand for the block. The effectiveness of the renovated courtyards in areas such as housing and entertainment needs to be further improved. Although residents support the renovation projects emotionally and acknowledge their cultural significance, they generally do not perceive them as highly relevant to their interests.

## 5 Conclusions and Suggestions

Courtyards are the main traditional architectural form in the Fayuan Temple. Most of the residents in the block were born and grew up here, and during their long time of living, they have developed a deep emotional connection with the block and its courtyards. The survey results indicate that residents have a high level of recognition of the courtyard renovation projects in terms of local attachment and local identity, and most residents support the courtyard renovation in the block and recognize its emotional and cultural significance. However, when it comes to meeting the needs of residents in the renovation project, residents in the block have different feelings, and the overall index is lower than the first two dimensions, which affects their overall recognition of the courtyard renovation projects. This involves three aspects. First, only a few of the renovated courtyards have been made available for public use, and as a result, residents' available space for activities in the block has not been significantly expanded due to the renovation projects. Secondly, the workers participating in the renovation project are all recruited from outside the block, which fails to provide new job opportunities for the residents of the block. Thirdly, the new commercial space formed by the renovation projects in the block is often operated by companies and individuals from outside the block, such as cultural exhibition halls and cafes, which is not closely related to the residents of the block, and they fail to enjoy the commercial dividends brought by the renewal and development of the block. These reasons help explain why residents' local independence is not markedly boosted by the renovation projects.

According to the above analysis, the community can start from the following three aspects to improve the problem of residents' lower local dependence: ① it is urgent to further speed up the evacuation of residents and illegal demolition of buildings, increase the progress of the courtyard renovation projects, put more renovated quadrangles into public use so that residents have a sense of compensation for the fewer neighborhoods. ② Consider providing job opportunities for block residents in the courtyard renovation projects and offer vocational training to increase their income. ③ Protect the small businesses originally owned by block residents and guide them to integrate into the new block pattern. Adjust the commercial layout to better serve the daily needs of residents, not just tourists. It is significant to adjust the commercial layout of the block to serve the daily life of the residents of the block more than to meet the needs of tourists. All these can increase the ability of the community to meet their living needs and can increase the possibility of economic benefits in the courtyard renovation projects.

**Acknowledgement. Fund Project:** Seed Funding Project of Beijing City University (KYZZ202006).

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