

A Study on the Perception of Public Space in Displaced Relocation

Take Three Communities in Changan District as an Example

Qun Cao¹ Xiaojun Yang^{1,*} Shen Li¹ Wenjing Cai¹

¹ School of Tourism & Research Institute of Human Geography, Xi'an International Studies University, Xi'an 710128, China

*Corresponding author. Email: yangxiaojun@xisu.edu.cn

Abstract

The focus of the New Urbanization Strategy and Rural Revitalization Strategy has shifted from the material needs of residents to their needs for a better life and the improvement of quality of life. Based on the concept of quality of life, taking three remote relocation and resettlement communities in Chang'an District of Xi'an as an example, the evaluation index system of community public space is constructed. The research shows that: there are differences in residents' perceptions of public space comfort, security and pleasure dimensions in three communities before and after relocation and resettlement, and the perception order of community public space dimensions was the same after relocation and resettlement, but the use of accessibility, night lighting, pedestrian flow, community atmosphere and parking, and parking space factors differed significantly.

Keywords: Relocation and resettlement, community public space, resident perception

1. INTRODUCTION

Public space has the value of enhancing the public spirit of the community^[1] and improving the happiness of residents^[2]. The United Nations Conference on Habitat III emphasized that public space is the primary element in promoting urban development. With the implementation of the new urbanization and rural revitalization strategies, the quality of life of urban and rural residents and the quality of public space in urban communities, especially the public space of relocated communities, have become a hot topic of concern.

Throughout the development of public space, scholars from various disciplines at home and abroad have conducted extensive research, showing the phenomenon of multidisciplinary intermingling. The definition of public space by foreign academics is mainly based on ownership, control, access and use rights^[3]. Sociology and political science, geography and planning give social value, spatial meaning and spiritual connotation to public space respectively^[4]. J. Jacobs proposes to reshape public space^[5], Jan Gehl uses the "people-centered" PSPL research method to explore the issue of "public space - public life" in cities^[6]. At present, public space research in China is mainly

focused on the micro level of community^[7], which is a combination of physical space and spiritual space. The completed studies on community public space focus on the physical space level and lack the human-centered spiritual content^[8]. There are few quantitative studies on satisfaction with community public space^[9].

As a transitional community between urban and rural areas, the research on relocation and resettlement communities has mainly focused on the physical space level such as policy, resettlement and survival, and the perception level such as community safety and quality of life has received little attention. Based on the concept of quality of life, this paper takes three relocation resettlement communities in Chang'an District, Xi'an City as an example to construct a community public space evaluation index system, explore the perceptions of residents in community public space, and re-examine the current problem of neglecting people-oriented community public space.

2. RESEARCH METHODOLOGY AND EVALUATION INDICATORS

2.1. Research methodology

2.1.1. Importance-Performance Theory (IPA)

Using IPA analysis, the evaluation indicators of public space residents' perceptions before and after relocation and resettlement in the three communities were divided into four quadrants, with the X-axis indicating the satisfaction of community public space residents after relocation and the Y-axis indicating the satisfaction of public space residents before relocation and resettlement. The first quadrant is the advantageous area, where the satisfaction of public space residents before and after relocation is high and should be strengthened and maintained; the second quadrant is the improvement area, where the satisfaction of public space residents before relocation is high and that of public space residents after relocation is low, which shows the difference between the needs of community residents and the current situation of public space and needs to be improved; the third quadrant is the opportunity area,

where the satisfaction of public space residents before and after relocation is low and is currently important. The fourth quadrant is the maintenance area, where residents' satisfaction with public space is low before relocation and high after relocation, and should continue to be maintained.

2.1.2. Multiple comparison method

The main inquiry was to explore the differences between the factors of community public space after relocation and resettlement, and multiple comparisons were made on the basis of ANOVA for evaluation factors that were significantly different ($p < 0.05$).

2.2. Indicator system construction

Drawing on the 12 key words of Jan Gehl public space quality evaluation and Vikas Mehta public space evaluation indicators[3], a community public space evaluation indicator system was constructed (Table 1). Due to the unavailability of data on accessible entrances and street height and width ratios before relocation and resettlement, 24 indicators before relocation and 26 indicators after relocation and resettlement.

Table 1.Community public space indicator constructs, scoring criteria, and metrics

Evaluation Dimension	Evaluation Factor	Mark	
		Past	Now
Comfort	1 Air environment	55 points	55 points
	2 Summer ventilation and shade		
	3 Winter sunlight, wind blocking		
	4 Barriers to use		
	5 Environmental cleanliness		
	6 Activity facilities		
Security	7 Sanitation	45 points	48 points
	8 Educational facilities		
	9 Commercial facilities		
	10 Open-air facilities		
	11 Space range		
	12 Motor vehicles and nonmotor vehicles		
Pleasure	13 Parking lots, parking spaces	18 points	23 points
	14 Convenience of transportation		
	15 Night lighting		
	16 Surveillance facilities		
	22 Street aspect ratio D/H		
	23 Water environment		
	24 Natural landscape		
	25 Artificial landscaping		
	26 Community atmosphere		

3. CASE AREA PRESENTATIONS AND ANALYSIS OF EVALUATION FINDINGS

3.1. Overview of the case area

The case areas of this paper, Chadaokou New Village, Wenguobao Community and Lujawan Community, are all key resettlement communities that have been completed in the Three-Year Zero Action

Plan (2018-2020) for the Clearance of Shantytowns and Villages on Collective Land within the Xi'an City Bypass Highway. The quality of public space services and the perception and evaluation of residents vary among the three communities because of their different spatial layouts in terms of community location, resettlement patterns, commercial facilities, as well as the scale of public space and the degree and quantity of infrastructure improvements.

3.2. Analysis of evaluation results

3.2.1. Overall evaluation of community public spaces

(1) Residents' perceptions of public space comfort, security and pleasure dimensions before relocation and resettlement vary greatly. Before relocation and resettlement, residents of Chadaokou and Wenguobao communities had high comfort of public space in their original residence, and residents of Lujiawan community had high security and pleasure of public space in their original residence.

(2) There are differences in the perceptions of residents of different communities on the same dimensions of public space after relocation and resettlement. After relocation, residents of different communities perceive the comfort, safety and pleasure dimensions of public space in the same order: safety > comfort > pleasure; the scores of comfort, safety and pleasure dimensions of public space after the percentage system are: Lujiawan Community > Wenguobao Community > Chadaokou New Village.

Table 2. Percentage scores of public space evaluation dimensions before and after relocation and resettlement in three major communities

Evaluation Dimension		Comfort	Security	Pleasure
Past	Chadaokou New Village	80.05	74.04	74.44
	Wenguobao Community	74.93	71.6	71.94
	Lujiawan Community	76	78.07	80.28
Now	Chadaokou New Village	52.71	54.38	50.13
	Wenguobao Community	58.15	61.92	57.52
	Lujiawan Community	67.33	72.52	57.52

3.2.2. Evaluation of residents' perceptions of community public spaces

3.2.2.1. Evaluation of the degree of development of community public space

The three community public spaces after relocation and resettlement reflect three levels of development. 16 factors of the Lujiawan community public space are located in the advantageous and maintenance areas, with good dimensions of pleasure and security; 11 factors of the Wenguobao community public space are located in

the improvement and opportunity areas, with more room for improvement in the comfort dimension; 18 factors of the Chadaokou new village public space are in need of improvement, with poor perceptions of residents in all three dimensions. factors need to be improved, and residents' perceptions are poor in all three dimensions. Therefore, based on the overall evaluation and IPA analysis, the three communities' public spaces are classified as follows: Lujiawan community public space is more mature; Wenguobao community public space has more potential; and Chadaokou New Village public space is lagging behind in development.

3.2.2.2. Evaluation of the comfort of community public spaces

The three community public space amenity dimensions of use have accessibility, activity facilities, sanitation facilities, open space facilities, and spatial extent are all located in the improvement area, primarily because.

(1) The population is concentrated within the relocation and resettlement communities, and the supply and demand of activity facilities are not symmetrical, and the needs of different age groups, especially the elderly, are not taken into account; the internal health room in the community public space is not perfect, most residents are not adapted to and familiar with the new environment, and some residents are resistant to registering and queuing for medical treatment; the number of rest facilities in the community public space is insufficient, and residents generally obtain them through private channels. The number of resting facilities in community public space is insufficient, and residents generally obtain resting facilities through private channels or sit on informal seats. There is a single type and insufficient number of community public space facilities.

(2) The scope of public space has been reduced after relocation and resettlement, resulting in low satisfaction among residents; the facilities for activities for young and middle-aged people as well as open spaces occupy a large area, and except for the gazebo where chess can be played, the rest of the public space is unsuitable for use by the elderly, resulting in the idleness and waste of resources and space. The utilization rate of community public space infrastructure is low and the problem of wasted resources is serious.

There is a significant difference in the accessibility factor of public space use in Chadaokou New Village and Lujiawan community ($p=0.005$, $p<0.05$), mainly due to residents occupying activity facilities and open space facilities for drying.

3.2.2.3. Evaluation of the perception of safety in community public spaces

Satisfaction with the monitoring facilities, guard room, security, and safety facilities factors of the perception of safety in public spaces dimension of the community after relocation and resettlement was higher than before relocation and resettlement.

The satisfaction of the night lighting factor of the Lujiawan community public space security dimension is low, and there is a significant difference between it and the other two communities. The reason is that after relocation and resettlement, the number of street lights in Lujiawan community public space can meet daily needs, but only the main gate entrance and part of the main road are radiated with light at night, which seriously affects residents' travel and activities at night, and the community public space infrastructure is underutilized and resources are wasted.

Wenguobao community and the other two communities public space parking lot, parking space factor residents perception of large differences. Wenguobao community above-ground parking space range originally planned for public activity space and green space, above-ground parking space space layout is unreasonable resulting in space deprivation, above-ground parking lot and public activity area in the middle without isolation measures, community residents low sense of security.

Chadaokou New Village has the lowest level of satisfaction with the public space, compared to the other two communities. The main reasons are the small scope

of public space, insufficient number of public activity facilities, more serious occupancy by residents, and insufficient pedestrian flow in the public space of the community.

3.2.2.4. Evaluation of the pleasure of community public spaces

The dimension of community public space pleasure was poorly developed after relocation and resettlement, where the man-made landscape factor was located in the opportunity zone of all three community public spaces and the community atmosphere factor of Chadaokou New Village public space was located in the improvement zone.

Three community public space gazebos are severely undersupplied, making it impossible for residents to play chess, cards, sunbathing and other leisure activities, and resulting in low satisfaction with the pleasure of community residents. The number of community public space facilities is insufficient and the attractiveness of public spaces is low.

The community atmosphere factor of the pleasure dimension of public space in Chadaokou New Village differs significantly from other communities. The reasons for this are: the difficulty of integrating the physical and spiritual spaces of the residents of Chadaokou New Village after changing their place of residence, community residents lack public space identity and sense of belonging; the lack of active organization of various types of collective community activities in the community and the lack of public vitality.

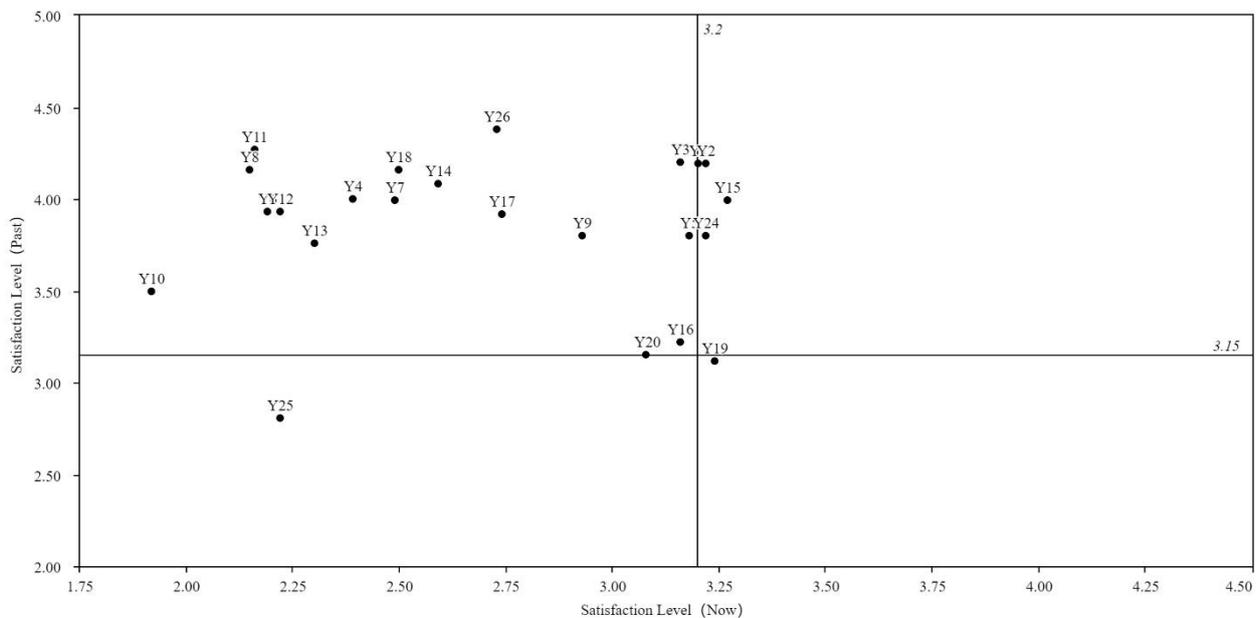


Figure 1 Quadrant of residents' satisfaction in public space before and after relocation and resettlement in Chadaokou New Village

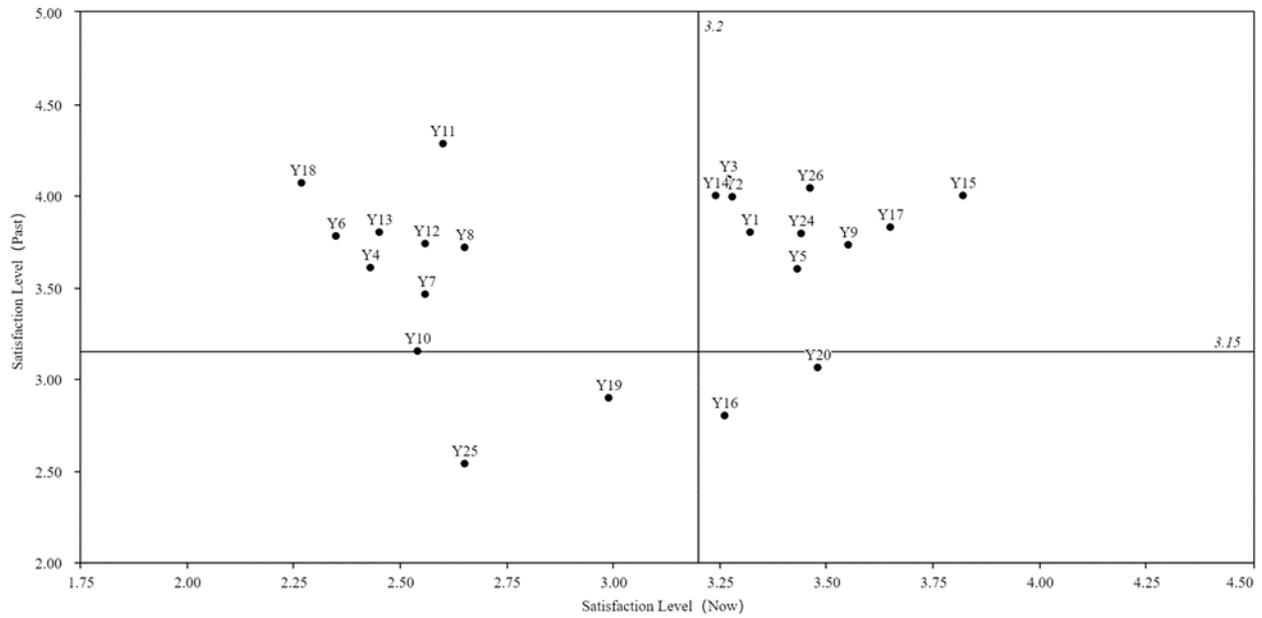


Figure 2 Quadrant of residents' satisfaction in public space before and after relocation and resettlement in Wenguobao Community

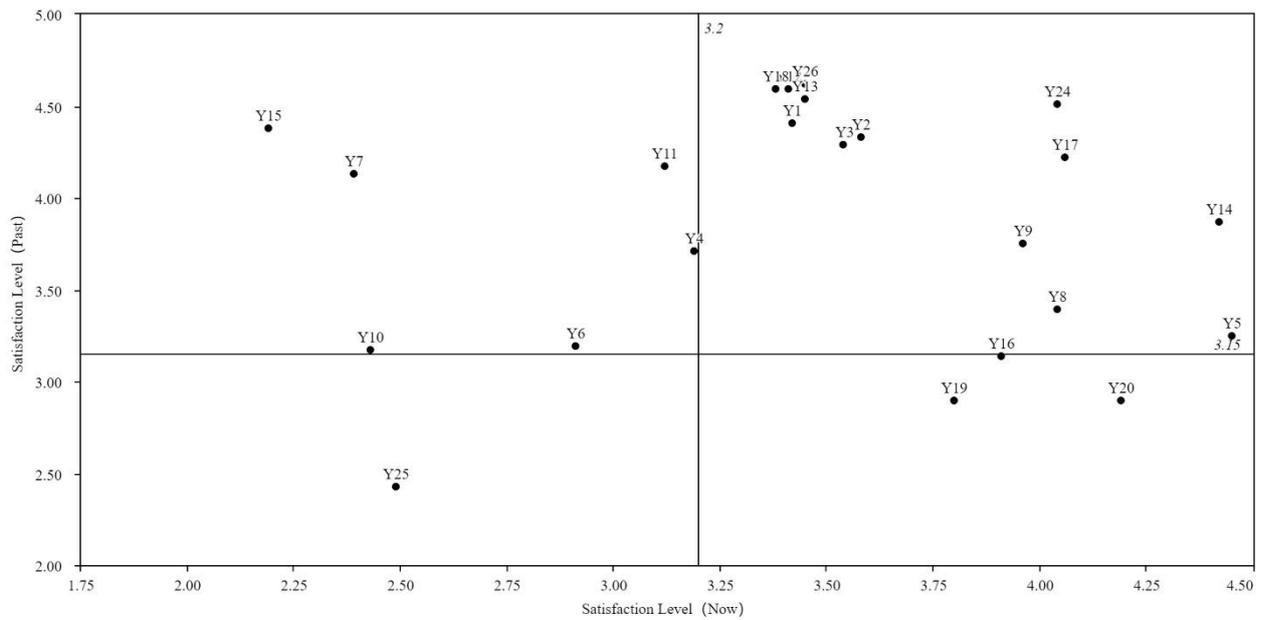


Figure 3 Quadrant of residents' satisfaction in public space before and after relocation and resettlement in Lujiawan Community

Table 3. Comparative analysis of evaluation factors of three major community public spaces

Evaluation Dimension	Factor	Name		Average value		Difference (I-J)	p
		I	J	I	J		
Comfort	Y4	Chadaokou New Village	Lujiawan Community	2.056	3.333	-1.278	0.005**
Security	Y13	Chadaokou New Village	Wenguobao Community	2.778	1.778	1.000	0.025*
		Wenguobao Community	Lujiawan Community	1.778	3.071	-1.294	0.007**
	Y15	Chadaokou New Village	Wenguobao Community	2.778	4.143	-1.365	0.005**

		Chadaokou New Village	Lujiawan Community	2.778	1.833	0.944	0.036*
		Wenguobao Community	Lujiawan Community	4.143	1.833	2.31	0.000**
	Y17	Chadaokou New Village	Wenguobao Community	2.5	3.929	-1.429	0.000**
		Chadaokou New Village	Lujiawan Community	2.5	3.944	-1.444	0.000**
Pleasure	Y26	Chadaokou New Village	Wenguobao Community	2.667	3.786	-1.119	0.004**
		Chadaokou New Village	Lujiawan Community	2.667	3.611	-0.944	0.009**
* p<0.05 ** p<0.01							

4. CONCLUSION

(1) A comparison of community public spaces before and after relocation and resettlement reveals that: residents' perceptions of comfort, safety and pleasure dimensions of community public spaces before and after relocation and resettlement are significantly different; the degree of improvement of facilities and functions of the three community public spaces after relocation and resettlement is higher than before relocation and resettlement, but residents' satisfaction with community public spaces is lower than before relocation and resettlement. After relocation and resettlement, residents have higher pursuit of quality of life, and there is more room for improvement.

(2) Based on the evaluation of community residents' perceptions of public space, it can be seen that the degree of public space development in relocation communities is positively correlated with residents' satisfaction. The residents of each community perceive the three dimensions of public space in the same order, but the specific evaluation factors are significantly different.

5. DISCUSSION

This paper can build a comprehensive evaluation index system for this type of community public space, which can have a certain radiation effect on other types of community public space; the introduction of IPA analysis and multiple comparison analysis into the evaluation of residents' perceptions of community public space provides a new perspective for the upgrading and transformation of community public space, which has universal applicability. In the next study, the sample size can be increased, the access to data can be expanded, and the credibility of the results can be improved; the floor height and population structure of the community can be incorporated into the evaluation indexes of community public space to build a more comprehensive evaluation index system.

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