



Research on the Influence of Sustainable Development Renovation of Abandoned Buildings on Residents' satisfaction under Nostalgia Based on Structural Equation Model -- Taking the Eastern Suburbs Memory of Chengdu as an Example

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Abstract

In the era of urbanization and modernization, how to transform old abandoned buildings in cities is a problem that urban planners need to face. The rise of urban "nostalgia" has penetrated into many fields such as social and cultural life, and the government has taken this opportunity to protect and transform abandoned buildings. Taking the east suburbs memory of Chengdu as an example, this paper analyses the transformation of cultural construction of space. The paper argues that the Eastern Suburbs Memory realizes the transformation from industrial production space to nostalgia space through material space transformation, emotional space transformation and space practice. Building a structural equation model by these three factors for the former, this paper discusses the different ways of reforming the abandoned building's influence on residents satisfaction. The result shows that emotional space transformation has the greatest impact on residents' satisfaction, followed by space practice and material space transformation. This paper provides constructive suggestions for urban management and reconstruction.

Keywords- *nostalgia; abandoned buildings; resident satisfaction; urban renewal*

1. INTRODUCTION

In the 21st century, the development of the city into the industry restructuring and transformation period, the layout change of city space, once played an important role in the economic construction was abandoned traditional manufacturing factories, how to make the historical and cultural heritage in don't hinder the modernization of the city at the same time, reasonable use let its coruscate gives new vitality, become the modern city construction needs to solve the problem.

Since the end of last century, a large number of valuable industrial relics in the city have been demolished, the emotions and memories of several generations of industrial workers have been erased, and the glory of the city's industrial construction has been gradually forgotten. In recent years, the transformation and utilization of industrial relics has received the attention of the government and the public, coupled with

the influence of modernization and urbanization, the nostalgia of urban citizens is becoming more and more significant. Under the influence of urban nostalgia, nostalgic urban reconstruction and design are rising day by day. Nostalgic urban reconstruction can be called reuse, that is to transform and replace the space of historical relics. This kind of recycled nostalgic space has been very common in China, such as Shanghai Red Square Creative Park, Guangzhou Red Brick Factory and Chengdu Eastern Suburbs Memory, etc. This kind of space introduces the cultural and creative industry into it, making itself not only a creative tourist destination in the city, but also a nostalgic space for local and foreign residents to recall the past.

Based on the above background, this paper takes the east suburbs memory of Chengdu as the research object, through the literature search method and questionnaire survey, collect related newspaper and online discussion as text data, discusses in the nostalgic feelings under the

influence, the sustainable development of the abandoned building, through the questionnaire research transformation way affect residents' satisfaction with the abandoned building mechanism, and related constructive Suggestions are put forward.

2. LITERATURE REVIEW

In the context of globalization, the topic of nostalgia has become the focus of academic attention at home and abroad. The research on nostalgia has gradually developed from the initial field of psychology to anthropology, sociology, architecture and marketing.

In recent years, due to the attention paid to urban industrial relics, some scholars have realized the need to protect old cities and historical buildings in China's urban reconstruction [1], and nostalgia has also been applied in the field of urban management. Chinese scholars have done more empirical studies on nostalgic urban reconstruction. For example, Liang Lu took The Chain restaurant "Encounter Chang'an" in Xi'an as an example to explore the perception and local construction of nostalgic urban consumption space [2]. Li Fanji made a comparative analysis of the local construction and identity of nostalgic restaurants from the aspects of material space and emotional space with two cases of nostalgic restaurants with different characteristics in Guangzhou [3]. Jia Liping takes Qingdao as an example to study urban nostalgia and the construction of local consciousness of urban residents [4].

3. RESEARCH HYPOTHESES AND MODELS

The Eastern Suburbs Memory of Chengdu is the earliest and most ambitious industrial development area in the urban area, which has witnessed the development process of Chengdu's industry from scratch to strong. In the 21st century, with the acceleration of urbanization and industrial transformation, the once prosperous eastern suburb industrial zone gradually declined. In order to creatively solve the problem of abandoned old buildings, Chengdu municipal government has preserved them as industrial heritage. The Eastern Suburbs Memory is transformed from a traditional factory into a nostalgic space, which involves two dimensions of material space transformation and emotional space transformation. In addition, due to the uniqueness of its space, Eastern Suburbs Memory has also carried out spatial practices, introducing diversified commercial practices, which mainly include various business activities in the park, such as cafes, food, bars and various themed activities.

3.1. Material space transformation

Eastern Suburbs Memory transforms the original industrial building space into a space with consumption function, and transforms the abandoned machinery and equipment into landscape pieces with aesthetic value. In addition, the design and ornament of visual symbols realize the transformation of material space.

Architecture is the most intuitive carrier of a city's history, culture and memory. Eastern Suburbs Memory of Chengdu realizes the transformation from industrial production space to consumption culture space by transforming the original architectural space and production machinery and equipment in terms of functions. Most of the buildings, including the factory, have been completely preserved, and the appearance of the building retains the original sense of historical vicissitudes. For the interior of the industrial building, we removed all the original mechanical equipment, and improved and designed it on the basis of the original building space. In addition, the designer moved some of the abandoned machinery and equipment outside the factory building and designed it for artistic processing, making it a landscape piece with ornamental features.

3.2. Emotional space transformation

Emotional experience is to arouse some emotions of consumers in the process of nostalgic experience and resonate with consumers' emotions. Nowadays nostalgia is becoming more and more common, people are more and more inclined to choose products with nostalgic properties in the process of consumption.

Nostalgia consumption is closely related to one's family and personal life experience and trajectory. In general, people tend to become attached to their familiar environment. Consumers' attachment to nostalgic space is reflected in the special emotional connection between people and places, plus the unique regional environment and regional culture; Nostalgia consumption is also a special emotional experience that consumers desire to "go back to the past". As the old industrial base of Chengdu, Eastern Suburbs Memory bears the memories of generations of workers, as well as the childhood memories of countless workers' children.

3.3. Space practice

"Space practice" refers to a series of material practice activities, behaviors and final results around space [6]. The space practice of memory in the Eastern Suburbs Memory mainly includes various theme activities and various business activities held in the park.

The park has gathered nearly 100 high-quality cultural and creative and fashion and art enterprises, forming a cultural and creative industrial park. In

addition, East Suburban Memory holds monthly animation-themed events. Eastern suburbs Memory also have different scales and styles of live music performance, cafes, bars, theaters, specialty restaurants, shopping shops and other businesses, and most of the commercial operations are closely related to the theme of "music".

In short, Eastern Suburbs Memory realizes the transformation from abandoned factory space to urban nostalgia space through material space transformation, emotional space transformation and space practice, and realizes the sustainable development of abandoned buildings.

3.4. Satisfaction and S-O-R theory

Zeithaml et al. (1993) believe that satisfaction is generated after experience, and the individual's psychological and emotional state may be affected by social factors and psychological conditions, resulting in changes in attitude, intention and demand, as well as external factors such as atmosphere and group interaction [7]. The dependent variable of this paper is residents' satisfaction. There are many influencing factors of satisfaction. Scholars have discussed residents' satisfaction with the transformation of the surrounding environment from the aspects of expectation, expectation difference, perceived quality and perceived value. Combined with the definition of Zeithaml, this paper believes that residents' satisfaction is the result of comparison between the expectation of the reconstructed land before and after the renovation of abandoned buildings and the field experience after the renovation.

S-O-R theory holds that environment, as a stimulus, will cause individual emotional changes and ultimately affect individual behaviors [8]. Combined with S-O-R theory and literature on the influencing factors of satisfaction, this paper takes material space transformation, emotional space transformation and space practice as the antecedents of residents' satisfaction. Specifically, in S-O-R theory, "S" refers to environmental changes perceived by residents. "O" refers to a series of psychological processes in which residents form attitudes, which can be used as an intermediary variable. "R" in this paper represents the satisfaction of residents.

Based on S-O-R theory, this paper proposed the following hypotheses:

H1: Material space transformation has a positive impact on residents' satisfaction.

H2: Emotional space transformation has a positive impact on residents' satisfaction.

H3: Space practice has a positive impact on residents' satisfaction.

4. RESEARCH DESIGN AND DATA ANALYSIS

In this study, the independent variables are material space transformation, emotional space transformation and space practice. The scale refers to Liu Bin's literature and is adapted based on network evaluation and other text materials [6], each independent variable has three questions. The dependent variable is resident satisfaction, and the scale refers to the research of Yoon et al. [9], including "Are you satisfied with the Eastern Suburbs Memory compared to expectations?", "On the whole, are you satisfied with the transformation of the Eastern Suburbs Memory?" and some concerning questions. The research designed the questionnaires and printed them into paper materials. The questionnaires were collected offline in the Eastern Suburbs Memory of Chengdu. A total of 120 questionnaires were collected, and 113 valid ones were obtained after sorting.

4.1. Data analysis results

4.1.1. Reliability and validity analysis

Cronbach's α coefficient was used to evaluate the reliability of the scale. The Cronbach's α coefficient of each latent variable was between 0.7830.862, which was higher than the baseline of 0.7. The combined reliability CR ranged from 0.789 to 0.863, both higher than the baseline of 0.7. The AVE ranged from 0.557 to 0.678, both higher than the baseline of 0.5. This indicates the reliability of the measurement scale in this study, as shown in Table 1.

Then, a fully correlated model was built in Amos for validity test of discrimination, as shown in Figure1. The method of comparing the correlation coefficients between the square root of the latent variable AVE and the latent variable is shown in Table 2. As shown in Table 2, the AVE square root of latent variables are all greater than the correlation coefficients between latent variables, indicating that the scale has good discriminant validity.

4.1.2. Structural model checking

In this study, Amos26.0 software was used for data analysis of the research model, as shown in Figure2. The results are shown in Table 3.

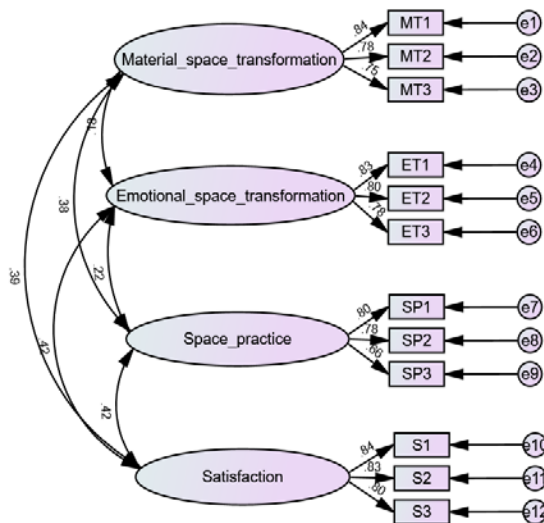


Figure 1. confirmatory factor analysis

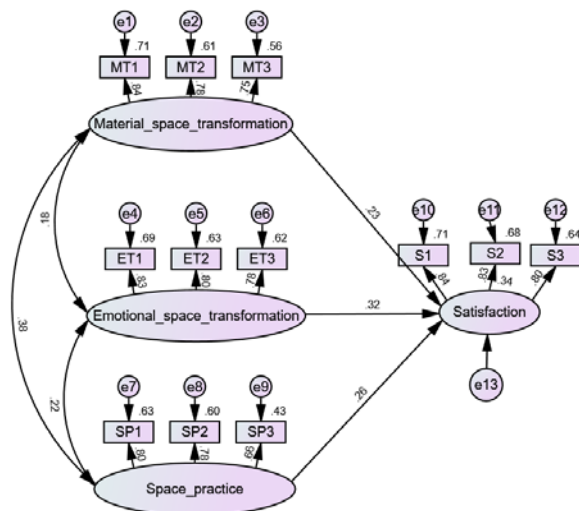


Figure 2. research model

As shown in Table 3, material space transformation ($\beta=0.234$, $P < 0.05$), emotional space transformation ($\beta=0.32$, $P < 0.01$) and space practice ($\beta=0.26$, $P < 0.05$) all positively affected residents' satisfaction, and H1, H2 and H3 were all supported. Among them, the structure path coefficient of emotional space transformation is the largest and the significance is higher. It shows that the emotional experience brought by the reconstruction of Eastern Suburbs Memory with nostalgic the-me is a more important factor to determine residents' satisfaction.

In addition, the structural validity test indexes in the model all reached the standard, indicating that the data fit well with the theoretical model.

Table 1. RELIABILITY AND VALIDITY ANALYSIS RESULT

Latent variable	Observation item	Factor load	α	CR	AVE
MT	MT1	0.843	0.833	0.834	0.626
	MT2	0.781			
	MT3	0.746			

ET	ET1	0.828	0.841	0.845	0.645
	ET2	0.795			
	ET3	0.785			
SP	SP1	0.795	0.783	0.789	0.557
	SP2	0.776			
	SP3	0.66			
S	S1	0.844	0.862	0.863	0.678
	S2	0.826			
	S3	0.8			

Table 2. DISCRIMINANT VALIDITY ANALYSIS RESULT

	MT	ET	SP	S
NT	0.791			
ET	0.180	0.803		
SP	0.375	0.224	0.746	
S	0.390	0.421	0.420	0.824

Note: the value on the diagonal is the square root of AVE

Table 3. PATH TEST OF MODEL

route	Unstandardized Coefficients	standardized Coefficients	S.E.	C.R.	hypothesis
MT→					
S	0.192	0.234*	0.095	2.016	support
ET→					
S	0.33	0.32**	0.114	2.903	support
SP→					
S	0.256	0.26*	0.12	2.134	support
X ² /df=1.247, GFI=0.914, IFI=0.977, CFI=0.976, RMSEA=0.05					

Note: ** indicates $P < 0.01$, * indicates $P < 0.05$

5. CONCLUSIONS AND RECOMMENDATIONS

This paper takes the Eastern Suburbs Memory of Chengdu as the research object, discusses the transformation of its sustainable development, and verifies the impact of different and transformation modes on residents' satisfaction. The results show that physical space transformation, emotional space transformation and space practice positively affect residents' satisfaction, of which emotional space transformation has the greatest influence, followed by space practice and material space transformation.

Historical and cultural heritages in cities are not renewable cultural resources, but also masterpieces with historical, artistic and cultural values. The prevailing wind of "nostalgia" enables the preservation and utilization of urban relics. With the acceleration of urban modernization, industrial heritage is the carrier of urban culture and historical memory, and the transformation of industrial heritage as a cultural nostalgia space is a topic that urban planners and builders need to pay attention to. The research conclusion also shows that the reconstruction of abandoned buildings with nostalgia as the theme can greatly affect residents' satisfaction.

As a model for the transformation of industrial relics, the Eastern Suburbs Memory has its success, but it also has some problems. For example, there is a great conflict between music elements and nostalgic symbols in the combination, and the park's commercial color is too

heavy and other reasons dilute the sense of nostalgia; the high consumption in the park causes the social division between consumer groups and so on. In fact, every city has its unique culture, has its unique industry history and civilization, history and civilization is carrying emotion among urban residents and city shapers should be combined with the unique culture of urban reform and function transformation, attaches great importance to the shaping of the emotional space, rather than simply copying other industrial heritage.

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