

Current Situation and Development Prospects of Planning and Construction of Old Neighborhoods--Taking Jiefang District of Jiaozuo City, Henan Province as an Example

Wentao Shi ^{1,a}, Qijian Ding ^{1,b}

¹ Henan University of Science and Technology

^a 3044372106@qq.com, ^b 2752424846@qq.com

Abstract. With the accelerated development of urbanization in Henan Province, the old neighborhoods in the Jiefang District of Jiaozuo City are facing increasingly prominent problems, such as functional decline, aging of the physical environment, and disappearance of historical and cultural characteristics. This contrasts with residents' pursuit of higher quality of life. From the residents' perspective, this study aims to explore solutions to the problems of old neighborhoods by visiting and analyzing the current situation of old neighborhoods in Jiaozuo Jiefang District from the residents' perspective. The research methodology includes field visits and survey data analysis in order to get a comprehensive understanding of the current situation and problems of the old neighborhoods. The team will put forward practical suggestions for renovation to improve the quality of life of the residents and improve the living environment. The research is not only limited to the description of the problems, but also focuses on proposing innovative and feasible solutions to provide useful references and suggestions for the renovation and development of the old neighborhoods in Jiaozuo Jiefang District.

Keywords: Older neighborhoods; public building planning; quality of life.

1. Introductory

As the process of socialist modernization with Chinese characteristics steps into a new era and a new stage, China's economic development has also changed from the original scale and speed to quality and efficiency, and has entered a new stage of high-quality development [1]. It is also in this context, the planning and construction of old neighborhoods because of its important position in the overall layout of the country to be vigorously promoted by the state. With the acceleration of urbanization, the old neighborhoods in Jiaozuo City, Henan Province are facing many problems, such as functional decline, aging of the physical environment, and the disappearance of historical and cultural characteristics. In the contradiction between the residents' pursuit of higher quality of life and the actual level of community services, the renovation of old neighborhoods has become one of the urgent problems to be solved in Jiaozuo's Jiefang District nowadays. The urban renewal method of "owner-led, community-led, government-led, and supported by all parties" proposed by the 19th CPC National Congress points out the direction for the planning and transformation of old neighborhoods [2]. The purpose of this study is to start from the perspective of students, through the Jiaozuo city liberation district old neighborhood visits and investigation and analysis of the status quo, for the old neighborhoods facing many problems, put forward the team's views and insights of the transformation, for the old neighborhoods of public construction planning to provide reference and reference. This paper will provide a literature review of the theory and practice of transformation of old neighborhoods, focusing on the planning and design of public building space inside old neighborhoods, with a view to providing effective strategies and suggestions for solving the problems existing in old neighborhoods.

2. Research and Analysis

Jiaozuo Jiefang District is the core area of Jiaozuo City. This area boasts well-developed commercial districts, modern shopping centers and office buildings, as well as a number of government agencies and financial institutions. It is also home to cultural facilities such as

museums and libraries, providing citizens with a wealth of cultural and recreational activities. The residential communities in the Liberation District are relatively mature and well-equipped with infrastructure such as education, healthcare and transportation. There are various types of parks and recreational facilities in the community, providing residents with a comfortable and livable living environment. At the same time, Jiefang District is also the transportation hub of Jiaozuo City, with a convenient transportation network that makes it easy for citizens to travel and conduct business. As the central area of the city, Jiefang District of Jiaozuo City gathers various functions such as politics, commerce and culture, and is the driving force of Jiaozuo City's development and an important representative of the city's image. These characteristics make Jiefang District the core development area of Jiaozuo City, and discussing the problem of old neighborhoods in this district is of great significance in promoting the high-quality development of the city.

The neighborhoods in Jiaozuo City are very rich and diverse. According to data from the city planning department, there are about 120 old neighborhoods in the city, covering about 20% of the area; 26 new neighborhoods have been built in the last five years, covering a total area of 20 million square meters [3]. These old neighborhoods were built in the early years, and there are problems such as serious aging of infrastructure, as well as relatively aging demographics and lack of community vitality. Nevertheless, these old neighborhoods still carry the history and memory of urban development, which is important for preserving urban cultural heritage and promoting community cohesion. Therefore, it is particularly important to incorporate the transformation of old neighborhoods into urban renewal planning, to improve the living quality and environmental outlook of old neighborhoods through renewal and transformation, to create a more livable living environment for residents, and to promote high-quality urban development.

3. Problems and Analysis of Older Neighborhoods

3.1 Problems with the current state of infrastructure

Aging infrastructure in older neighborhoods is one of the most prominent problems. Long-term use and lack of maintenance lead to obsolete, dilapidated and damaged infrastructure. For example, common facilities such as streetlights, signage, and firefighting equipment are aging badly and maintenance and updating are not timely, which affects residents' daily life and safety [4]. In a study of old neighborhoods in the Jiefang District of Jiaozuo City, it was found that more than 60% of streetlights had functional failures, more than 40% of firefighting facilities were in an unusable state, and that directional signs were generally old, with lagging information updates. In addition, due to the long-term lack of effective maintenance, about 70% of residents reported a large degree of damage to infrastructure, including public lighting, sewer systems, and water supply lines

3.2 Spatial planning issues

There are many deficiencies in the spatial planning of old neighborhoods, which are mainly manifested in the low quality of greening and poor traffic roads. In the actual visit, nearly 70% of the neighborhoods have serious parking space shortage problem due to the construction did not fully consider the parking space and other supporting facilities, the lack of parking space seriously affects the surrounding environment and residents' life. At the same time, the slow growth and inadequate management of greening facilities lead to low environmental quality [5]. In addition, due to historical planning constraints, about 75% of the internal traffic routes in the neighborhoods are simple in design and cannot effectively respond to the current traffic demand, often leading to congestion at entrances and exits and chaotic internal traffic

3.3 Managing security issues

The varying quality of property management services and weak management systems in old neighborhoods are issues that need to be focused on during the renovation. The survey found that more than 70% of residents were dissatisfied with the existing property management services, with

major problems including slow response to maintenance services, substandard cleaning of common areas and lack of security monitoring facilities. Meanwhile, lack of funding is a common problem, with about 60% of the neighborhoods having difficulties in carrying out necessary repairs and updates due to insufficient funding. As a result of inadequate community service facilities, social activities among residents are limited and neighborhood relations are relatively indifferent, which together affect the overall safety and harmony of the community [6].

4. the effect of People's Ratings of Infrastructure Accessibility on Satisfaction with the Renovation of Older Neighborhoods

4.1 Correlation analysis

4.1.1 Data pre-processing

After careful observation and analysis of the questionnaire data, we found that part of the data to be used for this question belongs to text-based data, where we need to quantify it, and Table 1 shows the quantitative table of user ratings for different technologies.

Table 1 Quantification of data

Infrastructure accessibility	quantitative coefficient
It's very unsatisfactory.	1
unsatisfactory	2
general	3
dissatisfied	4
very happy	5

4.1.2 Shapiro-Wilk test

The quantitatively processed data presented lower dimensional characteristics, and in order to analyze the impact of ratings on usage more closely, we planned to use Pearson correlation analysis. However, it should be noted that Pearson correlation analysis has certain requirements on the normality of data distribution. Therefore, before conducting the correlation analysis, we first need to test the normality of the extracted indicator data to ensure that the data meet the prerequisites of the analysis.

Table 2 Normality test

variable name	skewness	kurtosis	S-W test
Overall satisfaction	0.773	0.98	0.77 (0.71)
environment	-0.23	5.75	0.89 (0.43)
infrastructure	1.56	-3.71	0.66 (0.08)
sense of security	1.73	-7.09	0.79 (0.12)
Community Atmosphere	-0.78	1.97	0.57 (0.17)
Management services	-1.03	5.34	0.97 (0.32)

From the results of the normality test in Observation Table 2, all the indicator data passed the test at the 5% significance level, which indicates the normality of the data distribution. The next step can be taken.

4.1.3 Pearson correlation analysis

After the above detailed data analysis, we have confirmed that the data as a whole show the characteristics of normal distribution, which provides a strong basis for further statistical analysis. Next, we will apply Pearson correlation analysis to explore the specific effects. The formula for calculating the number of relationships is as follows:

$$\rho = \frac{E(xy) - E(x)E(y)}{\sqrt{E(x^2) - E^2(x)} \sqrt{E(y^2) - E^2(y)}} \quad (1)$$

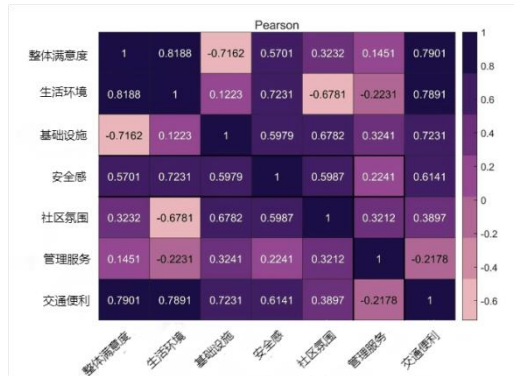


Figure 1 Heat map of correlation coefficients

According to Figure 1, we analyze that the overall satisfaction is relatively mainly influenced by the satisfaction with the renovation of old neighborhoods, with a correlation coefficient of 0.745 in absolute value, the living environment is mainly influenced by the people's sense of security, with a correlation coefficient of 0.792 in absolute value, and the infrastructure is mainly influenced by the atmosphere of the community, with a correlation coefficient of 0.773 in absolute value.

5. Recommendations for Planning, Construction and Renovation of Old neighborhoods

Planning, construction and renovation of older neighborhoods is crucial to improving the quality of life of residents and community development. Based on the results analyzed in the above model, we will propose a series of coherent recommendations to ensure the smooth implementation and effectiveness of the renovation plan.

5.1 Infrastructure rehabilitation

To address the problem of aging infrastructure in old neighborhoods, we suggest adopting a multi-party, co-financing model for maintenance and renewal. The government, residents and social capital can co-finance [7] the maintenance and renewal of infrastructure on a regular basis, thus injecting new vitality into the neighborhoods

5.2 Public Activity Venue Improvements

In order to meet the fitness and social needs of residents, we propose to build a "ten-minute fitness circle" and joint community construction of sports facilities or elderly activity centers. Such facilities will provide residents with convenient places for fitness and socialization, and promote communication and interaction among neighbors [8].

5.3 Greening of the spatial environment

Improving the environmental quality of neighborhoods is an important step to enhance the quality of life of residents. We suggest strengthening management to reduce the phenomenon of indiscriminate parking and occupying public green space [9], and improving the quality of greening. At the same time, regular planting is carried out on both sides of the main roads, and trees with beautiful shapes are planted to create a pleasant living environment.

References

- [1] Yang Junjian; Qin Jinling. Research on the problem of urban community construction in the social transition period--Taking Jiaozuo City of Henan Province as an example Research on Letters, Visits and Social Contradictions,2017,138-150.
- [2] Deng Yan, Lv Pan, Yang Qianqian. Exploration of Old Town Renewal Based on Historical Inheritance--Taking Yichuan Old Town as an Example[J]. Architecture and Culture,2024,(02):180-183.DOI:10.19875/j.cnki.jzywh.2024.02.055.
- [3] Zhang Han. Research on Party Building in Urban Communities Leading Grassroots Social Governance in the New Era--Taking Jiaozuo City of Henan Province as an Example[C]. Henan University of Science and Technology,2021.
- [4] Retired from the army does not fade a lifetime of firefighting love - remember Jiaozuo City, Henan Province, Shanyang District, New Town Street, Yixiang community residents Wang Xingshan[J]. The fire community (electronic version),2021,7(07):56.
- [5] Liu Xiaolun. Research on the supply problem of public cultural services in urban communities--Taking Jiefang District of Jiaozuo City as an example[C]. Henan University,2017.
- [6] Yu Jianhui. Innovative and Harmonious Urban Community Construction--Taking Jiefang District of Jiaozuo City, Henan Province as an Example[J]. Chongqing Administration (Public Forum),2012,14(06):48-51.
- [7] Shi Shuyi. The old neighborhood transformation avoid tiger head, snake tail [N]. Economic Daily News,2024-03-18(003).
- [8] HUANG Huan, WANG Xia, ZHENG Gang. The happiness of "one key directly"[N]. Quzhou Daily, 2024-03-19(004).
- [9] LI Qiang,LIU Weijun. Construction of sustainability evaluation index system for old neighborhood renovation under high-quality development--Taking Jibei area as an example[J].Engineering Construction,2024,56(03):55-59.DOI:10.13402/j.gcjs.2024.03.038.