

# ***Study on the Livable Community Streets Based on the Investigation of Residents Living Conditions-Take Xi'an as an Example***

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**Abstract:** Livable community streets are a key livelihood issue that the whole society pays attention to. Researchers from around the world visited neighborhood streets in different countries to explore the livability of different urban neighborhoods. There are also many research gaps. Therefore, based on the ancient capital of Xi'an with a long history of thousands of years, this paper collects questionnaires on the livability of the city's residents in the downtown area of Xi'an on the livability of their living areas in the city. A comparative analysis is carried out to study the livability of the community streets in the downtown area of Xi'an. The study found that the living conditions, per capita income, and sanitation conditions in different regions are different, and the livability of community streets is also different. People are happy to live in clean neighborhoods and want to renovate and rebuild their homes and neighborhood streets. Promote national integration, neighbors go out of the house to communicate.

**Keywords:** livable community streets, urban renewal, residents living conditions

## **1. Introduction**

With the development of economy, the process of global urbanization is accelerating. According to the report of The United Nations (UN), most people in the world have already lived in urban environments, whose proportion is expected to rise to 66% by 2050 [1]. In the process of the gradual expansion of the city scale, the deficiencies of many cities in the early planning of construction are gradually highlighted, which are reflected in the old urban road congestion, travel inconvenience, poor sanitation and other aspects. Simply increasing road density and widening vehicle roads to meet the traffic demand cannot fundamentally solve the inherent shortcomings of the old urban planning. With the gradual increase of land pressure, finding scientific optimization methods for the old city according to local conditions is of great significance for realizing the sustainable development of the old city and improving the livability of the community streets [2].

The livability of the community streets is an important indicator to evaluate the optimization effect of the old city, especially when many streets have become uninhabitable and need to be rebuilt [3]. Livable is a complex multifaceted concept described as "desires related to life satisfaction in a particular place" [4], which can be used to identify well-being and modifiable environmental

characteristics that affect health [5]. Aura's research shows that local culture and place identity are crucial to residents' sense of place, and some residents are often proud of historical and cultural elements in their living environment [6]. Li et al. found that there is a strong positive correlation between green vegetation, income, housing value, education level, street community life [7], and Well-being [8]. Lloyd et al. analyzed three key structures of the social dimension of livable: community, social interaction and social cohesion [9]. Peter et al. studied the relationship between the livable of community streets and the high-density living in central cities and neighborhood satisfaction [10].

The construction of community streets in Chinese cities has also received more and more attention from the government. In March 2021, the Fourth Session of the Thirteenth National People's Congress passed the 14th Five-Year Plan for National Economic and Social Development of the People's Outline of Long-term Vision and Goals for 2035, which states that 'implement urban renewal, complete the transformation of 219,000 old urban districts built at the end of 2000, basically complete the transformation of old factories in big cities, transform a number of large old blocks, and transform a Criticism of villages in cities' [11]. As the ancient capital of thirteen dynasties in ancient China, Xi'an has a very long history. As the leading region in Northwest China, Xi'an started urban development and construction very early. In the continuous expansion of the city, it began to face aging houses in the old city and poor community street environment. And other issues. The functions of the urban land in Xi'an are relatively mixed, with coexistence of residence and service, equal emphasis on life and tourism, interweaving of tradition and modernity, with a land area of 1 282.83 h m<sup>2</sup>. The commercial land is concentrated on both sides of the North-South, East-West Streets and Jiefang Road, and the residential land is concentrated along the edge of the city wall. A large number of historical buildings in the old city are gathered in the Sanxue Street area in the south and Muslim Street area in the west, and there are relatively few green spaces [12]. How to improve the livability of the old urban area of Xi'an is still an outstanding issue.

In this study, we first investigated the livability of residents in the downtown area of Xi'an in the form of questionnaire to fully understand the ideas of community residents. Secondly, combined with the characteristics of different community streets, we analyze and discuss the influencing factors of the differences in livability of different communities. Finally, we put forward suggestions for the construction of community streets in the downtown area of Xi'an based on the residents' ideas.

## 2. Method

This study selects the students of Chang'an Dublin International Transportation College to investigate the living conditions and livable of residents in the central area of Xi'an (inside the city wall of Xi'an) from November to December 2022. This questionnaire survey had collected a total of 184 questionnaire results from residents in the central area of Xi'an, which covers residents belonged to different communities and streets with different backgrounds, living habits, and living conditions in the central area of Xi'an. The investigated people in this survey are mainly concentrated in the age group of 19-49, accounting for 66.85% of the total questionnaires. The residence time of investigated people is mainly concentrated in 0-10 years, accounting for 59.05% of the total questionnaires. The monthly income (including the elderly and children without income) is mainly concentrated at 3400-6700 yuan/month, accounting for nearly 30% of the total questionnaires. Most of the residents surveyed have received higher education, with college, undergraduate and above accounting for the total number of questionnaires is close to 70%, of which 60% are men and 40% are women. The details of the residents who received the questionnaire are shown in Table 1.

Table 1: Detailed information of respondents.

Question	Answer	Proportion(%)
Residence time(Year)	0-5	38.10
	6-10	20.95
	11-20	20.00
	21-30	9.52
	Over 30	11.42
Age(Year)	18-34	36.96
	35-49	29.89
	50-64	23.91
	65-80	7.61
	Over 80	1.63
Average monthly household income per capita (Yuan/Month)	Less than 650	1.63
	650-1400	8.15
	1400-2200	17.39
	2200-3400	26.63
	3400-6700	29.89
	Over 6700	16.30
Highest education	Never went to school	3.26
	Primary school	9.24
	Middle school	19.02
	Technical school/junior college	30.43
	Bachelor degree or above	38.04
Gender	Male	59.24
	Female	40.76

This questionnaire surveyed multiple dimensions, including: familiarity with neighbors in the street (whether they often meet, trust each other and ask for help); advantages and disadvantages of living in this street; whether feel comfortable; the convenience of services and facilities within a ten-minute walk from home; the physical environment and style of the house; the environmental health, natural disasters, climate change, consumption and income imbalance in the community; the severity of the problem and whether know how to deal with it.

In order to have a clearer understanding of the living conditions and life livable of residents in different communities and different streets, this study divides the streets in the central area of Xi'an according to their location, administrative division, and different ethnic groups to divide the central area of Xi'an into Nine different small areas (as shown in Figure 1) were compared and analyzed, and 104 questionnaires with better completion status were selected as analysis samples, and according to the SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis method (Harvard Andrews (Andrews) In 1971, this analysis framework was put forward in the "Company Strategic Concept".) Analyze the situation of traffic, sanitation and environment in the central area of Xi'an through questionnaire survey and visits.



Figure 1: Zoning map of downtown area of Xi'an.

### 3. Result

#### 3.1. Overall Questionnaire Results

According to the overall questionnaire survey, the residents in downtown Xi'an are relatively satisfied with the services and facilities within a ten-minute walk from their homes (Figure 2). Among them, 65% of the total number of people have very convenient and convenient tasks; most residents are also very happy to go out of the house to communicate with the neighbors in the neighborhood to get closer to each other, but everyone's communication is limited to knowing each other. More than 60% of the residents know each other and say hello, but only 12% of the residents think Each other is trustworthy and will seek help from each other (Figure 3); however, residents give poor feedback on the physical environment of the house they live in. Over 30% of respondents were dissatisfied with the quality of the homes they lived in, with a small number saying it was very bad (Figure 4). Most residents think that their lives have been affected by many aspects, and 76% of the respondents think that the outbreak of COVID-19 since 2019 has seriously affected their lives, ranking first, followed by persistent temperature Increased urban heat waves and sanitation problems from garbage and sewage (Figure 5).

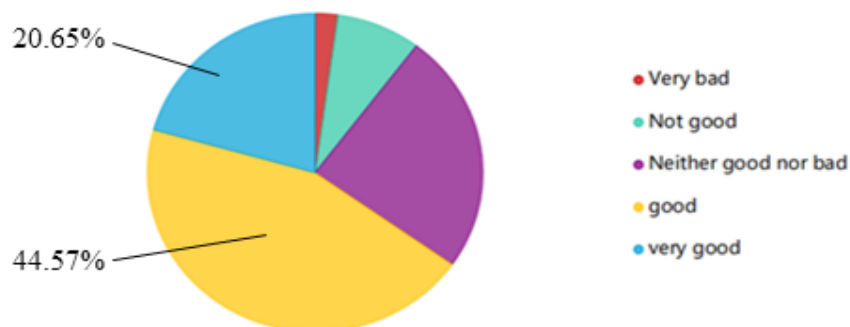


Figure 2: Ten-minute work convenience for residents in downtown Xi'an.

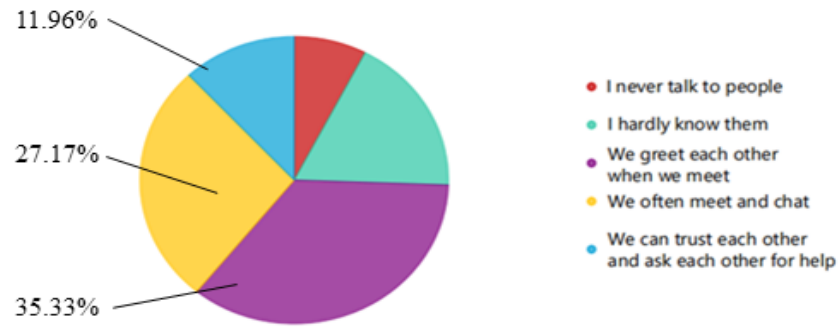


Figure 3: The degree of familiarity between residents and neighbors in downtown Xi 'an.

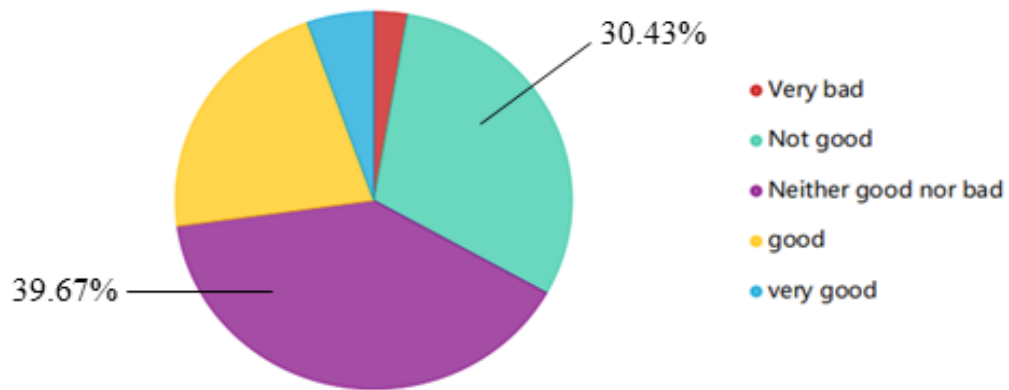


Figure 4: Physical environment of residential houses in downtown Xi 'an.

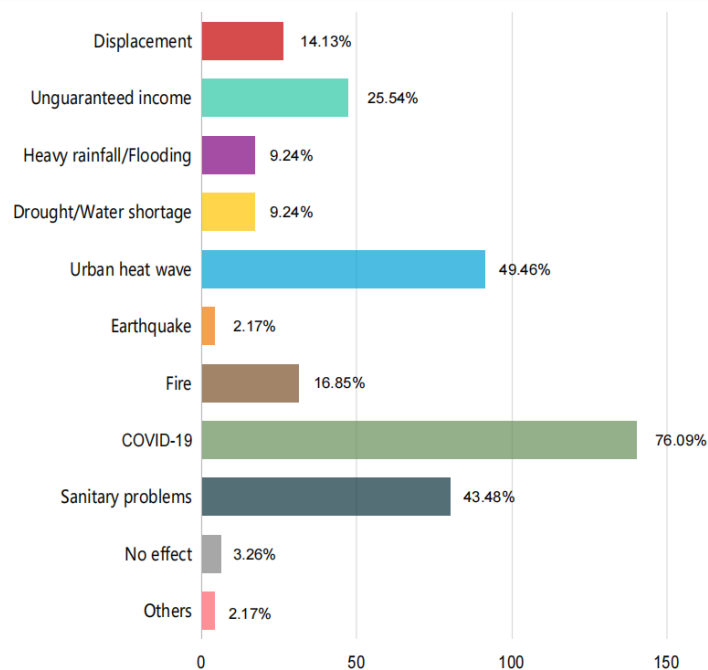


Figure 5: Scale map of influencing factors of residence in the downtown area of Xi'an.

### 3.2. Analysis of Advantages and Disadvantages

This research integrates the advantages and disadvantages of the streets in the community where residents in the central area of Xi'an think they live in the questionnaire, and conducts word frequency statistics, selects twelve advantages and disadvantages that are filled by a large number of people, and obtains their frequency and filling. The ratio of the number of people (because there may be problems such as missing synonyms in word frequency statistics, the real ratio should be slightly higher) (as shown in Table 2), it is found that the first advantage for residents in the central and main urban area of Xi'an is convenience, which benefits from the convenience of transportation and shopping. Convenience of food, education, and more than 60% of the residents mentioned convenience, but at the same time convenience brings about the disadvantages of dense population and traffic congestion; aging housing is also a long-standing problem. Derivative questions, comparative analysis of advantages and disadvantages, many conveniences are both advantages and disadvantages. Some residents like the lively and crowded environment, but a large number of residents do not like it.

Table 2: Statistics on the advantages and disadvantages of living areas considered by residents in downtown of Xi'an.

Advantage	Proportion(%)	Disadvantage	Proportion(%)
Convenience	63.11	Traffic congestion	22.33
Moderate price	13.59	Bad environment	16.50
Convenient travel	53.40	Bad hygiene	8.74
Near infrastructure	28.16	Old house	27.18
Delicious food	11.66	Noisy	6.80
Shopping	9.71	Poor air quality	8.74
Education	6.80	High consumption	14.56
Bustling with noise	7.77	Population density	6.80
Good environment	17.48	Low safety factor	1.94
Comfortable	1.94	Hot	6.80
Historical	4.85	Lots of rubbish	3.88

### 4. Discussion

There is also a great correlation between many advantages and disadvantages. The advantages and disadvantages proposed by residents living in different community streets are not the same. According to the livable degree of residents in different street communities, the livable degree is ranked from low to high as 1 -5. as shown in Table 3, for areas 1, 4, 6, 7, 8, and 9, we analyze separately according to their livable while areas 2, 3, and 5 have fewer samples and are not representative.

Table 3: Livable Index of Residents in Different Regions.

Area	Index	Area	Index
1	3.25	7	3.46
4	3.61	8	3.67
6	4	9	3.75

From Figure 6, it can be clearly found that the residents of Area1 have a very different opinion from the advantages of residents in other areas. They do not feel the convenience of street traffic in the community, but think that their community has good infrastructure. Through field visits to Area 1, Area 1 is located in the northwest and adjacent to the city wall. Most of the areas are government units or family homes. They have good infrastructure construction. There are supermarkets, hospitals and schools around each community, as well as parks and green spaces. In entertainment venues, residents can meet their needs without leaving their homes. Residents living in Area 8 pay more attention to convenient transportation and a lively environment. Area 8 is mainly located on both sides of North Street, surrounded by many subway stations, adjacent to main roads and traffic arteries, and adjacent to Bell and Drum Towers. There are many leisure citizens and tourists, and it is very lively.

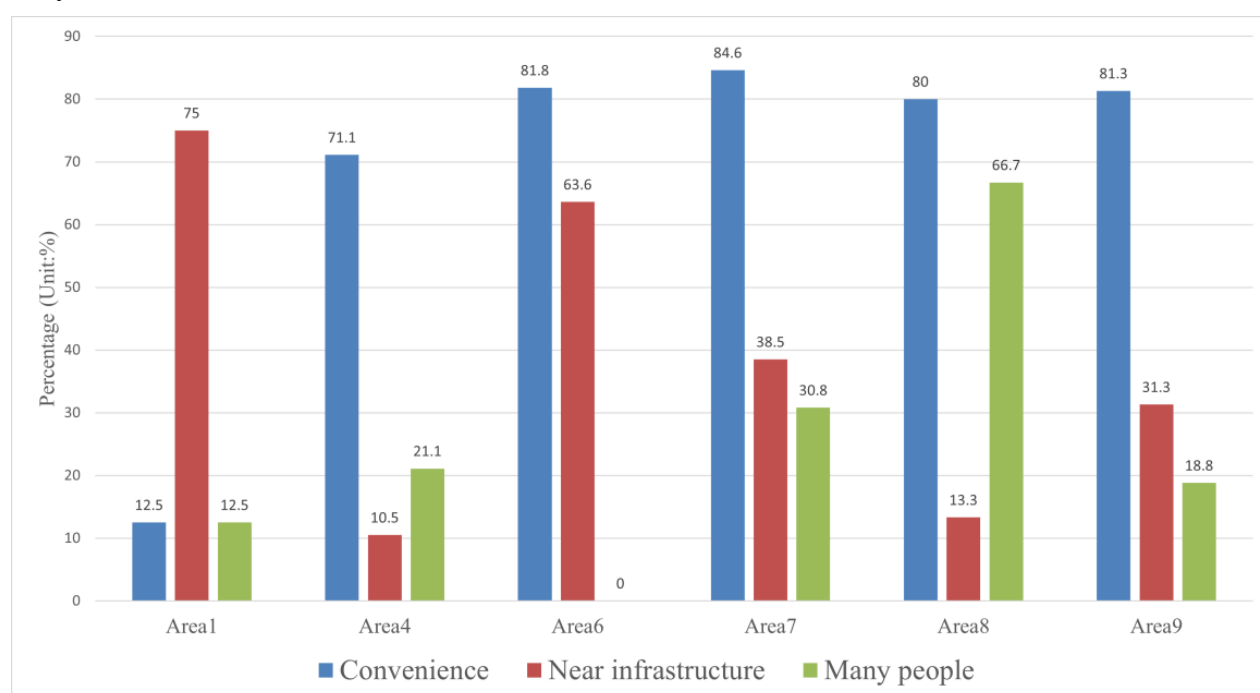


Figure 6: Advantage statistics of different areas.

According to Figure 7, most of the residents of Area6 and Area 9 think that the problem of old houses is very serious. Through field surveys, the local area is not a village in the city and old-fashioned self-built houses, but most of them are low-rise units with average living conditions, but in the area Some areas near 9 have undergone micro-renovation, and the unbalanced residents who have not been remodeled make them think that their houses are very old, and the environmental problems caused by the old houses in area 6 are more serious. According to the on-site investigation, some streets are under construction, roads are rebuilt or houses are remodeled, which has brought a lot of environmental pollution.



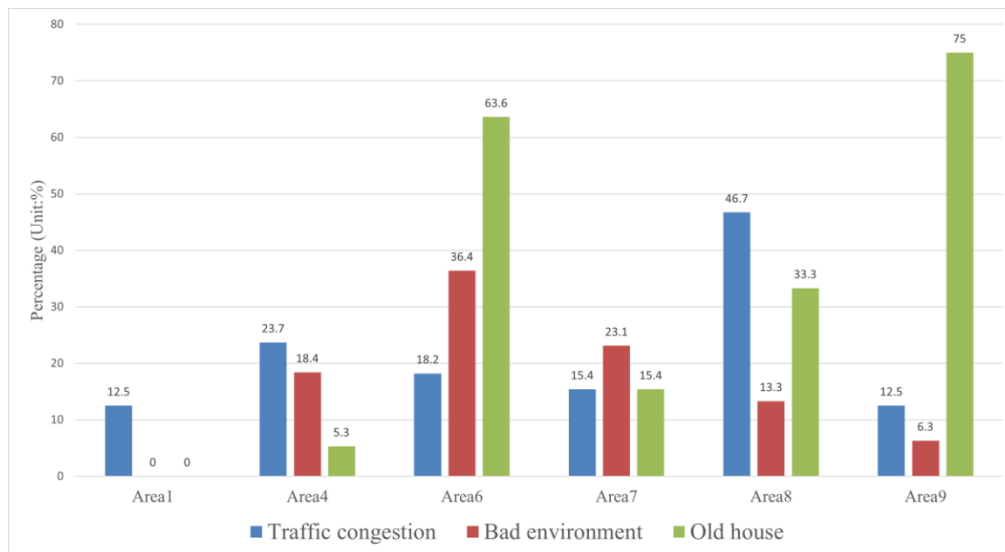


Figure 7: Disadvantage statistics of different areas.

## 5. Conclusion

**Strengths:** It is very convenient to be located in the central area of Xi'an. The subway roads extend in all directions. Residents can easily go to most parts of Xi'an when they step out of their homes. Some communities have good living facilities, which can meet most of the living needs of residents, with good habitability. Xi'an has a long history and has a strong historical background. Many residents enjoy the influence of the historical and cultural atmosphere brought by the place of life. The culture brought by history promotes the development of local tourism and brings economic development to the local area. It provides jobs for nearby residents, promotes the flow of people, makes many community streets very lively, and makes the city more bustling.

**Weaknesses:** With the increasing number of cars and the influence of historical and cultural factors on the main road in the downtown area of Xi'an, there are two main roads passing through the city center, causing congestion in the urban area and entering and leaving the city. The population density in the central area is too large, and residents Traveling and commuting to and from get off work is long. The houses in the central urban area are aging and in disrepair. The sanitation and safety problems in the urban villages have seriously affected the livability of the community streets. Some old urban villages need to walk for a long time to get public transportation, which affects the normal life and travel of residents.

**Opportunities:** The government has begun to renovate old houses, increase subway lines and stations, increase community green space, and use the rich historical heritage to carry out micro-renewal of old communities to rejuvenate the community. With the normalization of COVID-19 control and the advent of the post-epidemic era, community residents can better go out of their homes for entertainment and communication, transform the community, the economy is gradually recovering, and community streets will be more livable.

**Threats:** With the further development of Xi'an, the heat island effect in the central area of Xi'an may continue to affect the lives of residents, and it is difficult to improve the heat in summer. Xi'an is a city of ethnic integration. There are a large number of ethnic minority residents in the central area of Xi'an. How to promote the communication between residents of different ethnic groups is also a big threat in the renewal of the community.



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