

Take Boundary Space as an Example: Explore the Transformation of Urban Informal Space under the Improvement of Space Quality

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Abstract: In the process of urbanization, residents automatically divide urban space into formal and informal forms based on their own needs. Urban informal space is formed spontaneously by the residents and represents the life demands of the disadvantaged in the city. However, urban spatial isolation and unfair resource allocation mechanism cause many difficulties in urban informal space governance. Due to the limitations of current governance policies and the needs of economic development and ecological environment, it is particularly important to take good care of the informal space, which can have an important impact on urban vitality. To ensure and improve the quality of informal space dwellers' lives, it is necessary to adopt more suitable quality improvement methods which are different from those applied in ordinary urban spaces. This paper focuses on the positive effect of flexible spatial boundary design on improving the quality of informal space and takes the reconstruction of two old streets in Chengdu and Shanghai as examples. Boundary space interactive design protects the diversity and vitality of the city and significantly improves the quality of residents' living space.

1. Introduction

"Urban informal space" is a kind of bottom-up and self-growing space built by people based on their own living needs without formal power control and clear planning [1, 2]. Informal areas provide many cheap services for cities and represent diversified ways of life for vulnerable urban groups. Informal employment and informal economy born in these areas significantly promote the development of urbanization [3]. The existence of the informal phenomenon is also the result of the social and economic distribution inequality, procedural inequality in the development process and political system background inequality. From the perspective of the importance of governance, on the one hand, the right of people living in these areas to enjoy public services equally needs to be met; on the other hand, the standardized urban planning policy tries to frame informal space into a standard mode, resulting in the phenomenon of homogeneous cities. Therefore, for the urban development of China, it is particularly necessary to study the planning and governance measures for informal space.

Using literature research and empirical research methods, this paper tries to find out the chronic problems and characteristics that should be preserved and then discusses the approaches to improve its spatial quality. In the sight of urban space justice and spatial characteristics, it is of great significance to govern informal space well, which is an inevitable requirement to improve the quality of urban space. While spatial isolation and other factors hinder governance, landscape reconstruction plays a certain role in protecting and improving the city's vitality. By collecting and summarizing academic achievements in these fields, this study provides research ideas and clues for the quality improvement of informal spaces in urban micro-renewal.

2. The dilemma of urban informal space governance

2.1 Urban spatial isolation

The isolation of urban space includes the isolation of urban material space, social space and psychological space [4]. Isolation has brought obvious negative effects. First, the scope of activities is limited. For vulnerable groups, various obstacles in space facilities will limit their use of the public domain. Secondly, physical space isolation is easy to internalize into psychological estrangement, leading to value cognition differences [5]. People of different social classes congregate in different settlement areas. The social attributes enjoyed by users are not given full play, and the mutual exclusion of social classes results in the loss of urban vitality [6]. Informal space repels some residents of formal space due to its chaotic characteristics, making the region remain backward for a long time.



Figure 1. Spatial isolation of Mexican cities

2.2 Unfair resource allocation

In the process of urbanization, local governments often sacrifice spatial justice for economic benefits. As a result, urban informal space is in a weak position compared with formal space, which is reflected in geographical location, infrastructure, residents and other aspects. Urban informal space can be simply divided into two types: one is the old blocks that have been long developed in the urban center for a long time; the other is the rural-urban fringe formed in the rapid development of urbanization or the new residential areas formed by occupying land [7]. Their geographical position is at a disadvantage, and they are often selectively abandoned because of the policy of "concentrating superior forces to develop core areas" in planning, thus losing development opportunities [1]. In addition, the infrastructure construction in the region is inadequate, most of which are in disrepair and have problems of cutting corners. The public in the space is also at a disadvantage. Due to low income, low education level and low social status, they have weak awareness of rights protection and lack approaches to fight for spatial justice for themselves. Therefore, public services cannot be fairly enjoyed, and their living environment is much inferior to that of the regular urban space.

3. Analysis of existing problems of informal space quality

In the wave of urbanization, low-income groups such as low-level laborers with low education, street vendors operating at a low cost, and the elderly who cannot keep up with the pace of modern life are often excluded from the areas that have been planned and designed to meet the standard requirements. These irregular spaces embedded in the city result from self-construction, self-maintenance and self-renewal of residents, usually showing the image of decay, shabby and disorder [8].

3.1 Problems of informal space

1) Limitations of policies

For informal urbanization and its spatial consequences, the government firstly controls the increment, dismantles the stock and takes back the land. In the case that informal urbanization still cannot be dealt with, the government uses market forces to carry out transformation and upgrading in the way of urban renewal [9]. Under the influence of comprehensive state-led planning and local

government competition system, top-down urban planning and construction maximize profits. Over-exploitation of space resources has ignored the use-value of residents' survival and development needs and stimulated the residents to consciously resist and practice.

It is clear that the governance approach of restricting, suppressing and cramming informal spaces into the framework of norms is not sustainable. Take the street economy, which briefly emerged in 2020, as an example: to alleviate the market economic depression caused by the epidemic, local governments normalized the mobile street vendors, and the centralized street set up by the government provided them with opportunities to set up their stalls legally. However, soon after this, the reverse process of the normal environment being formalized appeared in various cities [10]. The direct reason for this phenomenon is that government planning is difficult to meet the actual needs of street vendors. The free movement of street vendors is still seen as a major threat to public order in the city. The regularized management of street vendors has stripped the subjective initiative of individuals due to the rigid management principles of formal departments, resulting in new social exclusion and trust crisis.

2) Economic model problems

The economy of informal space lacks overall planning and control, and its development mode mainly follows the market choice. As a result, there exists the phenomenon of coexistence of scale economy and small-scale production mode and the possibility of complementary mainstream lifestyle and alternative lifestyle [1]. China's informal economy is highly mixed with regular urban space in a high-density urban environment. Except for street vendors, informal employment's spatial location and work-housing relationship are often difficult to identify and ignore by the general formal urban planning and governance system [11]. In addition, land in these regions is relatively cheap, and many warehouses and factories gather here. Due to extensive management, these lands failed to obtain higher economic benefits and caused a great waste of land resources and had a negative impact on the surrounding environment [12].

3) Ecological environment requirements

In the practice of solving the problem of bad ecological environment in informal space, people mainly carry out restoration work from the technical point of view, such as garbage classification treatment, environmental sanitation remediation, greening and landscape construction. These projects are often one-off and local, so ecological restoration is discontinuous and unsustainable [13]. In this case, the natural ecosystem of urban communities has not been systematically restored and improved. Although the measures taken by various social groups have improved the spatial appearance and local areas, the momentum of continuous deterioration of the ecological environment has not been well contained either. Fundamentally, it is because there is no consensus, ecological construction mechanism and sustainable ecological restoration ability among the diverse social subjects in the community. Therefore, it is necessary to introduce the consciousness, method and mode of community governance into the practice of community ecological restoration and promote community ecological restoration with the power of community governance [13].

3.2 The necessity of informal space transformation

As a place where the urban disadvantaged groups live, informal space has important and positive significance for the city's development and social equity. The residents here are simple and lively, and they retain the original lifestyle and cultural characteristics of a city before the wave of modernization swept it. On the one hand, informal space effectively supplements the urban housing supply system. On the other hand, informal space is also a buffer for migrants to enter the city, which plays an important role in regulating [1].

This governance model, which is different from the formal space, makes informal space fuller of humanistic care, breeds diversity, inclusiveness and creative urban culture, and generates relatively close neighborhood relationships between people. In addition, flexible and convenient internal transportation and strong accessibility also make informal urban spaces full of vitality [14].

4. Analysis of lifting countermeasures based on boundary space

As the connecting space between the street and the community, boundary space affects the vitality of the street externally and the environment of the community internally, and its importance is self-evident. Under the guidance of the principle of spatial justice and the realization of the people's vision of a better life, people's expectations for the transformation of informal spaces are not only at the governance level but also hope that the regional space can reach the level of beautiful and livable formal space. From the perspective of improving the quality of the boundary space, it induces its boundary effect, provides a place for enriching people's urban life, can stimulate the vitality of urban streets, and enable them to make their due contributions to the city [16].

1) Chengdu Yongfeng Community Shared Street

Designers and planners try to fully explore the existence value of boundary space and use it to stimulate the generation of urban vitality. Chengdu Yongfeng Home Shared Space is a project that links the old residential area "isolated" from the city with the surrounding nodes. The designer removed the negative green space of the partition at the boundary of the community, released more public space to the street, and blurred the line between cars and people. The transformed street space can meet the community's needs for daily leisure and festival activities. These interactive shared facilities beautify the space and remind and guide residents and foster a conscious sense of morality and social responsibility [17]. The various community activities introduced in it gradually become a part of local life and will continue to attract more people to come, thus becoming a new name card of the city. A good street can provide a normal channel for public communication and an easy balance between the public sphere and the private sphere of the city. In such a street environment, differences between neighbors are tolerated and respected. Over time, communities can develop stable public relations, which, if maintained for a long time, will form the character of a street or even a city, that is, the "human touch" that we can often feel and cherish.



Figure 2. Chengdu Yongfeng Community

2) Boundary reconstruction of Zhoujiadu Street in Shanghai

Shanghai Zhoujiadu Street, located in the south of the Expo Site, is a high-density living block with many large residential communities. One of the most typical is Changwu Community, which has no space for community public activities. A monotonous and hard arc wall is strictly separated from the outside world. The transformation of this boundary is the restoration and improvement of the community's public environment, taking into account the living needs of all kinds of people. The interactive design of paragraph space eliminates the sense of partition caused by the wall, making it a central space where both the residents of the inner community and the tourists of the outer street can get a sense of participation. The reconstructed public space has gained a friendly nickname in the frequent interaction with residents, precisely because it provides a reasonable area for spontaneous activities of residents, accurately matches their actual needs, integrates the beautiful space into the urban fabric, and enforces the community public culture with the power of design.



Figure 3. Zhoujiadu Street in Shanghai

5. Conclusion

Under the background of urban reconstruction in full swing, some scholars began to worry about the gradual disappearance of urban informal space. As cities become more and more "regularized", the urban characteristics rooted in citizens are also getting far away from us, so it is particularly important to explore a proper way of governance and transformation. However, there are still many gaps and misunderstandings in China's informal urban planning governance standards and strategy.

Although urban informality has been recognized as an important phenomenon in Chinese cities, there are still many shortcomings in the practical measures of planning and governance. In terms of the overall governance model, China has begun to solve the problems of informal settlements and public space under the public's participation in recent years. However, under the current institutional framework, "regularization" or regulation is still the main governance scheme.

From the perspective of urban planning, we should recognize the informal phenomenon and hold an objective and positive attitude towards its existence. Secondly, humanized planning, management and supervision should be adopted to reduce its negative impact on surrounding urban functions. Finally, the dynamic sharing of boundary space could be promoted to break the physical separation between informal space and formal space. This is what makes a city more user-friendly, more inclusive and more welcoming in the future.

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