

Research on Landscape Justice under the Background of Community Renewal

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Abstract A city is a complex giant system, in which landscape is a process, and emphasizes the regulation of social relationships in the process of creating landscape, rather than simply creating a kind of landscape. In response to the slogan of high-quality development of China, communities, as the earliest developed but declining old areas in Chinese cities, are the focus of current urban renovation work. By studying the latest research theories in the process of community renewal, it is concluded that there is a close relationship between “community renewal” and “landscape justice” or “public participation”. Based on this, research related to community renewal and landscape justice were sorted out, and suggestions for future research focus were proposed.

Keywords Community renewal, Landscape justice, Gentrification, Public participation

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According to the *Report on Cities in the World in 2022: Looking into the Future of Cities* released in 2022, there were currently 33 cities with a population of more than 10 million in the world, and the global urbanization rate is expected to reach 68% by 2050. In the context of the rapid development of the world economy and technology, cities in the post-industrial period are facing huge transformation needs, and urban renewal has become a hot topic.

In the construction of the new century, social contradictions have undergone historic changes. In the report of the 19th National Congress, it is clearly pointed out that social contradictions in China have been transformed into contradictions between the people's pursuit of a better life and unbalanced and inadequate development, and social development will also have an impact on urbanization development. According to the Statistical Bulletin of the People's Republic of China on National Economic and Social Development in 2023, the urbanization level of China's permanent resident population reached 66.16% by 2023. At present, under the background of accelerating urbanization in China, urban development needs a new type of space supply model to deal with the contradiction of “unbalanced and insufficient aspects”, focusing on making up for the defects of cities in quality, environment, culture and other aspects, so as to comprehensively improve the quality of urban development.

In recent years, along with the slowdown of China's economic growth, the urbanization process has gradually shifted from being dominated by new cities to a period of medium-low speed development with quality and connotation as the core. The earliest developed

and declining old areas are the top priority in the reconstruction of old cities. The characteristics and existing problems of most old residential areas have common features, which is a difficult problem that every city has to face and solve in the process of improving its quality. In the past, the development of urban renewal in China was dominated by government-led enterprises, but now it emphasizes public participation, and the former promotion of urbanization and construction of new urban areas has been transformed into the promotion of stock planning and micro-renewal^[1].

In the face of the huge theme of “community renewal”, it is necessary to discuss such issues as “community construction”, “micro-renewal” and “renewal of old communities”, as well as how to promote and improve the high-quality development of cities through measures of community renewal. Meanwhile, attention should be paid to the issue of “landscape justice”. With the progress of community renewal, the content of “landscape justice”, how to determine the scope covered, and even how to establish and implement related strategies are worth thinking and exploring. In this paper, “landscape justice” under the background of community renewal was studied.

1 Related research in the process of community renewal

A city is a complex system, as well as an organic combination of multiple functions. People in a city are the main body of life, and a community is the place where people carry out urban life. Therefore, communities are a particularly important part of urban space. In the early urban planning and design work, under the

influence of the functional zoning of rationalist concept, problems such as formatization, lack of vitality and injustice appeared in urban community planning^[2]. Community planning should be a fair and diversified consultation process, during which stakeholders should be mobilized to participate, so as to fully reflect its cultural, social and pluralistic nature in community planning^[3].

1.1 Progressive design of the process of community renewal

Rational design, as opposed to progressive design, is a product of the “Age of Reason” in the 18th century. Its content is to assume the situation of future planning through static planning under linear thinking, namely pursuing a hypothetical and uncertain ideal future^[3]. However, this theory is proved to be unfeasible through practice, because the trajectory and situation of urban development cannot be completely preset. Therefore, the theory of gradualism developed by the thinker Charles Lindblom came into being. He proposed the method of “continuous finite comparison”, namely the gradualist method. Its purpose is not to set a long-term idealistic goal but to achieve final overall harmony by adjusting and solving current problems in real time, and it is emphasized that the voice of individuals and groups should be guaranteed in this process.

Under the condition of ensuring the harmony of the overall planning, the local area design should be adjusted and transformed to promote the balance between the community residents, professional staff and relevant stakeholders, so as to promote the realization of community renewal.

The practice of community participatory

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progressive design has three stages. Firstly, different forms of seminars with the public as the main body are held to collect suggestions and ideas from various groups. Secondly, using the “superposition method”, professionals lead the public discuss the results of seminars, actual community status, government strategies and funds and other specific issues, and set up projects. Thirdly, through the cross-cooperation of experts in various fields, specific program design is carried out according to the results of the previous stage, and the implementation construction is carried out after the feedback of the public^[1].

1.2 Public participation and democratic design in the process of community renewal

The time of public participation in China is relatively late, focusing on the improvement of public quality and policy system reform, and the landscape design combining with the community is relatively scarce. However, with the progress of society, the needs of the people, including both material and spiritual needs, continue to increase. In the level of spatial planning and landscape design, to meet people’s spiritual needs, it is most fundamental to enhance people’s sense of participation.

Three key points of public participation are as follows. Firstly, the role of professionals in the process of public participation should be determined. Design professionals should organize citizen participation, integrate and adjust conflict issues, negotiate the defense of different values, and maintain a good relationship basis for public participation. Secondly, the good effect of public participation is based on good relationship. For community stakeholders, to realize public participation and balance public interests, it is necessary to establish a good

network of relationships and communication with the public. Thirdly, the ways of public participation should be diversified and humanized. The cross-integration of human psychology, behavioral science, social psychology and other disciplines should be promoted, and targeted and reasonable participation forms should be developed according to the characteristics and needs of different groups^[4].

2 Research on landscape justice

2.1 Analysis of domestic and foreign research status

2.1.1 Foreign research status. Western countries began to study “landscape justice” as early as the early 21st century, but the number of published articles was still relatively small (Fig.1). The research field focuses more on political science and economics, and mainly on the formulation of relevant laws, regulations and policies and the study of environmental governance system, such as “building a just system of society”, “improving ecological service system and urban management”, “brownfield restoration and its sustainable development” and other issues^[5]. Compared with the content of “environmental justice”, landscape justice puts more emphasis on solving more focused and specific problems in the relationship between man and nature, and on human participation and needs during the process of solving problems.

Citespace software was used to analyze relevant articles on “landscape justice”, and it is concluded that the words with high frequency were “biodiversity”, “ecology”, “public health”, “climate”, “accessibility”, “protection”, “drainage system”, etc (Fig.2).

2.1.2 Domestic research status. In China, the research on landscape justice has just started (Fig.3). Relevant research covers multiple

fields and different fields, and the discussion among different disciplines also has various characteristics and emphases.

The high-frequency words related to “landscape justice” included “environmental justice” and “spatial justice”. Through the analysis of different keywords by citespace software, keywords with high frequency in articles about “environmental justice” were “ecological civilization”, “ecological justice”, “climate justice”, “environmental protection”, “public participation”, “distributive justice”, etc (Fig.4). Keywords with high frequency in articles about “spatial justice” included “spatial production”, “urban renewal”, “urbanization”, “urban governance”, etc (Fig.5), and a new topic of “urban rights” emerged in 2018 (Fig.6).

2.1.3 Development trends of studies at home and abroad. Based on the analysis of highlighting words in relevant articles on “landscape justice” at home and abroad, it is concluded that the keywords in new directions in recent years included “health”, “politics”, “management”, “efficiency”, “participation”, “viewpoint”, “energy justice” and “social justice”, etc (Fig.6).

2.2 Distribution justice of urban green space

2.2.1 Policies and regulations for distribution justice. Related research was started earlier in western countries than China. In 1969, the designated national environmental policy act of the United States stipulated that a safe, healthy, productive, aesthetic, and culturally diverse environment should be created for all Americans^[6]. In addition, among European and American countries, France is represented by its landscape architecture system (Table 1). The legal system of landscape design guarantees social fairness and justice in the following two aspects: firstly, the law guarantees the individual rights and interests of every citizen; secondly, it protects citizens’ right to public participation. It is precisely this policy background that makes French landscape architecture show a healthy development trend, and the concept of equity is naturally integrated with the landscape design industry under the guidance of reasonable policies and norms^[7].

At present, China’s laws and regulations pay little attention to landscape justice, mainly focusing on environmental justice (Table 2). However, due to the differences between landscape justice and environmental justice, it is needed to refer to the relevant laws and regulations of “environmental justice” when laws and regulations related to “landscape justice” are studied, and laws and regulations applicable

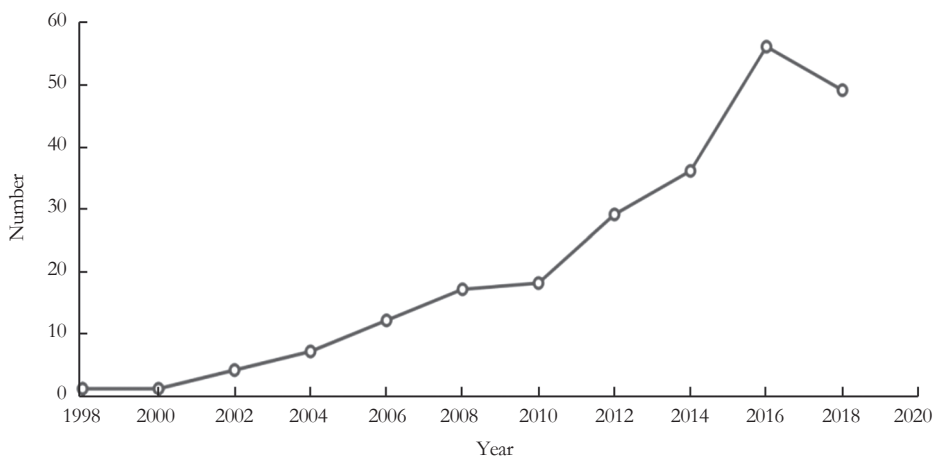
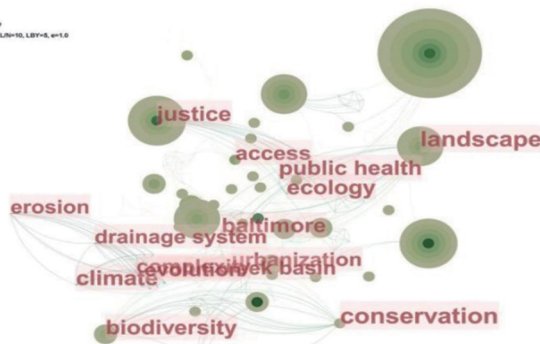


Fig.1 Annual change in the number of published English articles on “landscape justice”



Year	Number
2011	26
2012	33
2013	45
2014	35
2015	44
2016	33
2017	27
2018	33
2019	36
2020	43
2021	29



Fig.4 Co-occurrence map of keywords about “environmental justice”



Fig.5 Co-occurrence map of keywords about “spatial justice”

2.2.2 Evaluation criteria for distribution justice. At present, there is no systematic evaluation system of distribution justice, but scholars in different fields at home and abroad have studied it from different levels. Foreign studies on the distribution justice of urban green space show that the factors causing the inequality are often related to different races and income classes. However, due to different national conditions, the distribution justice of urban green resources in China is different from that in foreign countries^[9].

According to the investigation and research, the resource distribution of urban green space is more inclined to high-income groups, young people and white people (western countries), while lower-income groups, the elderly and special groups are easily ignored. The existing studies can be roughly divided into two levels: public service and ecological pattern.

From the perspective of public service, the number of studies on the accessibility of green space is the largest. Chinese scholar Yu Kongjian first proposed the use of landscape accessibility to evaluate the quality of urban greening. This evaluation method has been widely used in various studies, and can reflect the fairness of green space distribution in a certain sense. Zhao Menglei et al. used the two-step mobile search method to improve the accuracy and flexibility of research on green space accessibility, and better reflect the rationality of distribution and layout of green space. However, distribution equity is reflected not only in the accessibility of green space but also in the quantity, size and quality of green space and whether it inclines to vulnerable groups^[10]. Hu Yang et al.^[11] studied the distribution justice of green space resources

in Chaoyang District of Beijing by calculating the share index and location entropy of green space services enjoyed by disadvantaged groups. Yang Chen et al.^[12] evaluated the distribution justice of green space resources in the central urban area of Chongqing through Gini coefficient and Lorentz curve.

From the perspective of ecological pattern, models such as ARIES, EcoAIM and InVEST are commonly used in current foreign studies to evaluate and weigh ecosystem services, among which the InVEST model has been introduced and used in China^[13]. For instance, Li Xiang et al. studied the cultural aspects of ecosystem services in Beijing, quantified the data through questionnaires and mathematical models, and obtained citizens' subjective feelings about landscape and their willingness to pay. Zhou Xiang et al.^[14] studied the fairness of urban green space pattern in Shenzhen based on behavioral scale, and evaluated the fairness of green space pattern in four scenarios through the neighborhood analysis method in ArcGIS.

At the same time, there are different views on the study of this issue. Wolch et al. proposed from a critical perspective that blindly expanding the scale of urban greening would lead to "urban gentrification" and exacerbate the inequities in a city^[15]. Melissa et al. proposed a theoretical framework of "forest justice", and it asserts that urban residents have the right to control their own appropriate wild food and health

systems, including access to natural resources and participation in related decision-making processes^[15].

2.3 Process justice in the process of green space supply

Process justice refers to whether the various rights of the public are satisfied during the various stages of urban green space planning and construction, and whether the public has the rights to know, make decisions, supervise and create during the planning and construction of urban green space.

2.3.1 Evaluation of process justice. For the production process of urban green space, in order to evaluate its procedural justice, it is necessary to conduct a careful evaluation of the regulation process among various subjects. The core contents are as follows: ① the identification and significance of various social groups in the planning and management of urban green space; ② the influence of community residents on planning decisions, namely whether community residents are invited to participate in the development of the plan; ③ how people negotiate and face conflicts when making decisions; ④ how are people's expectations of different classes reflected in the formulation of distribution and application rules^[9,11,16].

At present, the research on the procedural justice of urban planning in China is still in the exploratory stage. Urban green space is one of urban public infrastructure, and the public's

participation in its planning, construction and later management is relatively low, and the vulnerable groups' expression of their right to speak is also very limited.

2.3.2 Public inquiry and public consultation. Public participation is a procedure and process advocated by landscape justice, and should be fully embodied and carried out in every link of urban greening construction. Participatory planning in the United States has been relatively mature, using visualization technology, manual interaction and other ways to collect the needs of marginalized groups in reality. In China, similar practices, such as hearings, review meetings, media announcements, etc. have been adopted to solicit public opinion, achieve policy diversification, and accept social supervision. Wang Di divides the process of public participation into three stages: ① collecting information and understanding the needs of the masses; ② taking multi-subject participation as an effective design scheme; ③ implementing project report and feedback.

Due to the progress of science and technology, public participation can be carried out more effectively. New technologies and new media, such as PPGIS, geodesign visualization tools, geographic information system, etc., are gradually introduced, which provides a lot of technical support for the development of public participation and promotes the public participation in the construction of urban green space^[17-18].

2.4 Social and economic benefits of urban green space resources

Urban green space can provide people with a variety of ecological, social, economic and other benefits, but it is also the root of injustice. Although domestic and foreign scholars have discussed the various benefits of urban green space, there are relatively few studies on the evaluation from the perspective of spatial justice, which will be the focus of future research.

In recent years, due to the increasing dependence of the state on land finance, the area of public green space in China has shown a downward trend, which also reflects the unbalanced development of urban greening in China.

Wendy Chen conducted a quantitative test on the panel data of land fiscal revenue and total area of urban green land in 285 Chinese cities from 2001 to 2009, and found that the positive correlation between land revenue of local government and the area of urban green space, especially park green space, became negative during the process of urbanization in China.

Top 21 Keywords with the Strongest Citation Bursts

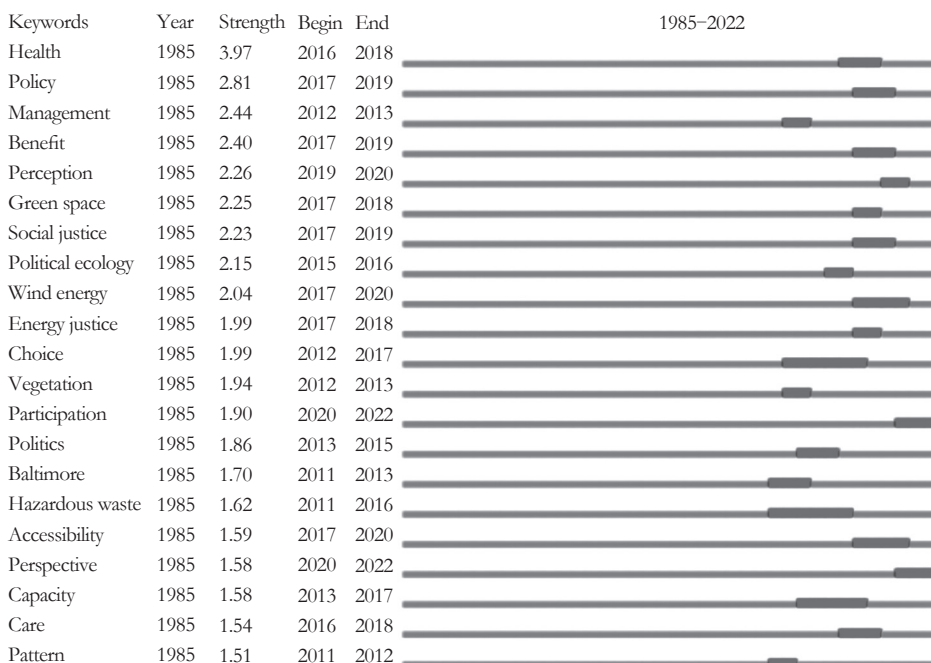


Fig.6 Co-occurrence map of highlighting words of "landscape justice"

By using the simultaneous equation model of econometrics, Zhao Liang et al. confirmed the role of urban green space in urban development through empirical analysis of various investment types, urban space (especially urban green space) and GDP structure, but pointed out that the output of urban green space is still far less than the GDP output of residential land; the pure capitalization operation of urban space production will inevitably lead to the shortage of urban space and the injustice of spatial distribution, and the fairness of urban space can be ensured only through the government's macro-control^[9]. Xiao Yang applied the Hedonic method to evaluate the willingness to pay for public green space in Shanghai and the degree of spatial equity. It is found that public green space in Shanghai has no significant impact on the housing price in China, and residents have a strong preference for private green space in the community. It is highly likely that the justice problem of China's urban green space is caused

by "private green space", which further affects the low-income class^[9].

2.5 Strategies for alleviating the injustice of urban green space

2.5.1 Discussion on the scale grade and form of green space. Focusing on smaller communities can help all social classes and ethnic groups make equal use of urban green space. Ngom et al. believe that linear green space has a better effect in improving the fairness of regional green space distribution^[6].

2.5.2 Creating more diverse green space. In Latin America, Wende et al. proposed that some urban green space mainly constitutes urban landscape that meet the consumption needs of the middle class, and it is a spatial production process aiming at the economic interests or political power of capital. In its operation process, the utilization of vulnerable groups is isolated and hindered^[9]. Lbes emphasizes that in combination with different social backgrounds and natural environments, and from the three aspects of

space layout, space design and built environment, parks are divided in multiple dimensions^[9].

These studies have emphasized the diversity and inclusiveness of urban green space utilization to reduce the inequity of urban green space.

3 Summary and prospects

In the face of how to improve high-quality development of cities and solve the problems of "imbalance and inadequacy", the problem of "landscape justice" should be paid attention to. However, compared with other related topics, there are relatively few studies on it at home and abroad, and the concept of "landscape justice" is ambiguous. In the process of community renewal, the effective implementation of landscape justice is of great significance to improve residents' quality of life. However, there are still shortcomings in the research of landscape justice in China, and there is no effective connection between theory and

Table 1 French laws and regulations on landscape justice

Name	Content
<i>Law on Determination and Implementation of Planning Principles</i>	Land retention is required to ensure that facilities can be placed smoothly in natural spaces with or without trees
<i>Waterfront Act</i>	Guiding the planning, conservation and utilization, reproduction of values of coastal areas
<i>Law on Landscape Architecture</i>	It is emphasized that the resources of landscape architecture should be rationally developed and protected, and for the consideration of public interest, landscape architecture resources in a broad sense should be protected
<i>Law on Prevention and Control of Water Pollution</i>	Water sources, water distribution and water pollution control are supplemented
<i>Law on Territorial Development and Planning Guidelines</i>	Ensuring equal opportunities for every citizen throughout the territory, and achieving balanced development and the reproduction of value of the territory
<i>Law on Construction</i>	Providing consultancy for individual citizens, public groups, administrative bodies and more sensitive areas
Decree promulgated on July 12, 1990	Studying the prevention of the effects of disasters on economic activities, personal and property safety and the environment
Decree n°76-278	National government subsidies are provided for the planning and construction of green spaces such as promenades, parks and gardens open to the public
<i>Law on Urban Planning Reform</i>	Ensuring the stability of its capital chain with provincial construction tax investment, and ensuring that natural areas, especially forests, are open to the public

Table 2 Chinese laws and regulations on landscape justice

Name	Content
<i>Law on Urban and rural Planning of the People's Republic of China</i>	Article 4: improving the ecological environment, promoting the conservation and comprehensive utilization of resources and energy, and protecting cultivated land and other natural resources and historical and cultural heritage
<i>Measures for the Examination and Approval of the Compilation of Provincial Urban System Plans</i>	Article 4: in the compilation of a provincial urban system plan, natural and cultural resources and the ecological environment should be protected
<i>Measures for the Compilation of Urban Plans</i>	Article 4: during the compilation of an urban plan, it is needed to conserve and use resources intensively and protect the ecological environment Article 14: during the compilation of the overall urban plan, the major topics concerning resources and environmental protection shall be studied by experts in the relevant fields under the organization of people's government
<i>Administrative Measures for Urban Design</i>	Article 11: during the urban design of important streets and blocks, walking activities and green space should be expanded
Standard for Planning of Urban Green Space (GB/T 51346-2019)	The planned per capita area of regional green space within the urban development boundary shall not be less than 20 m ² . The per capita scenic and recreational green space in the planned urban area should be no less than 20 m ² , and should not be less than 10 m ² in the urban development boundary if there is no quantitative index to reflect the change of social gap
<i>Regulations on Urban and Rural Planning of Beijing</i>	Article 89: For those who violate the law by damaging the ecological environment and resource protection and harming the public interests, the organs and relevant organizations prescribed by law can institute civil public interest lawsuits against the parties concerned and investigate their liability for damages
<i>Code for Classification of Urban Land Use and Planning Standards of Development Land</i> (GB 50137-2011)	The planned per capita area of green space should not be less than 10.0 m ² , of which the per capita area of park green space should not be less than 8.0 m ² . The proportion of structural green space and square land in urban construction land is 10.0%-15.0%
<i>Standard for Urban Residential Area Planning and Design</i> (GB 50180-2018)	The per capita area of public green space is 2.0 m ² , and the minimum scale of a park in a residential area is 5.0 hm ²
<i>13th Five-year Plan for Ecological and Environmental Protection</i>	Section 6: by 2020, the per capita green area of urban parks will reach 14.6 m ² , and the green land rate of urban built-up areas will reach 38.9%

application practice.

Future research should focus on the following aspects.

3.1 Definition and analysis of the concept of "landscape justice"

In SCI retrieval, most articles have similar concepts, such as "environmental justice", "social justice" and so on. In SCI database, for research topics similar to "spatial justice", there is a lot of overlap in the research scope, and there is a lack of unified classification standards. Presently, academic journals in the fields of urban planning and landscape design have systematically discussed the distribution justice of urban green space in China, but these studies mainly focus on social justice. In human settlements, sociology and other disciplines, the "fairness" and "justice" in the distribution and utilization of various urban spaces have always been a research hotspot, while research on the justice of urban green space is still in a relatively new period. The academic community should conduct preliminary exploration on the research concepts similar to "spatial justice" such as "environmental justice" and "landscape justice", and then further define the concept of landscape justice.

3.2 Strengthening research on the promotion of the government's positive macro-control

Compared with the total amount of urban green space, the relationship between the government's land financial benefit and urban public green space has gradually changed from the previous positive correlation to negative correlation due to the continuous deepening of urbanization in China. Under the influence of capitalization, a large number of green space resources are unevenly distributed, and green space is lost in the process of urban space production. Only the positive macro-control of the government can ensure the fair distribution of green space from the sources^[6,8].

Therefore, in order to promote the government's positive macro-control of urban green space, appropriate laws and regulations should be studied on the basis of public participation to promote fairness from the preparatory work before the formulation of policies to the implementation of policies.

3.3 Promoting the integration of big data analysis and community participation

GIS technology can be used to investigate the green space behavior of different types of residents, and the gender, age, education level,

income and real estate status of different types of residents are compared to optimize the distribution of urban green space. In recent years, with the development of technology, more digital means can be introduced into urban planning and management to promote the procedural justice of planning and design of urban green space^[2,19-20].

With the rapid development of the Internet economy and the emergence of new data collection and management methods of big data, artificial intelligence and smart cities, urban space and individual characteristics of groups have been more accurately depicted, which will fill the defects of traditional spatial data with low accuracy and lack of social and demographic information. Meanwhile, through big data analysis, the mechanism of public participation in the construction of urban green space can be established, and all kinds of vulnerable groups are accurately identified to promote the realization of landscape justice.

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