



Barriers to Public Participation in Urban Green Infrastructure in China from Stakeholders' and Residents' Perspective, A Case Study in Yangzhou

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ABSTRACT

Public participation has always played an important role in urban design and planning. Urban green infrastructure is a part of urban planning and design. This research uses a policy review and semi-structured interviews with residents and stakeholders. The findings suggest that the lack of public participation in urban green infrastructure projects is the result of a combination of both government and the general public. Residents have low interest in participating in urban green infrastructure due to social cultural, public competence and lack of community spirit. Stakeholders have tried to avoid public participation in projects due to limited participation methods and limited project timeline. Citizen participation can be increased through improved technical support, media advocacy and legislation and regulations.

KEYWORDS

Public Participation; Urban Green Infrastructure; Planning; Yangzhou; Planning Policy.

1. INTRODUCTION

The Chinese government has become aware of the poor living environment in the cities, caused by high-speed development, and has taken a number of measures to address the environmental problems. Urban green space is the main element of China's urban environment policy. Chinese cities have undergone a large amount of urban infrastructure development in line with the policy. The construction of green infrastructure in China's cities has been a huge project, with significant amounts of money invested.

The lack of public participation in the design and planning of green infrastructure projects in China has led to bad outcomes; these include projects that do not reflect the soul of the city, are too uniform [1] and have a dearth of local characteristics, as well as parks that lack a human touch in their overall design, do not have public acceptance and have low usage rates, resulting in a waste of resource. At the same time, some completed green infrastructures on the edge of the city are not patronised by citizens, placing a huge financial burden on the maintenance and management of the parks [2].

The purpose of the study is to investigate possible effective measures and methods to improve public participation in UGI projects in China. This paper will investigate the barriers to public participation from both the stakeholders' perspective and the lay public's perspective. The main area of research in this paper is public participation in the planning and design of UGI projects. There are more studies on public participation in China for large projects related to the environment [3][4][5]; when the environmental impact of a project is significant, it impacts the health of the surrounding residents or involves their relocation, and as such, consultation with them is required. However, UGI projects are

rarely considered to create a great impact and are therefore very importance for public participation. Research shows that public participation in UGI projects in most cities in China remains low [6][7].

2. LITERATURE REVIEW

2.1. Urban Green Infrastructure(UGI)

UGI can be defined as: a natural life support system—an interconnected network of waterways, wetlands, woodlands, wildlife habitats and other natural areas; greenways, parks and other conservation lands; working farms, ranches and forests; and wilderness and other open spaces that support native species, maintain natural ecological processes, sustain air and water resources and contribute to the health and quality of life for communities and people” [8]. The quantity and quality of UGI in cities positively correlate with public health [9]. Green spaces effectively relieve stress and provide more social space to improve social health [10]. With rapid economic development and unrestricted urbanisation, China is experiencing a large urban green space deficit [11]. Because the urban living environment is deteriorating every year, posing a threat to public health, the concept of green infrastructure (GI) is gradually attracting the attention of China's government [12]. In response, China put forward the idea of building an ecological civilisation, emphasising sustainable development from 2012. Urban green space coverage has begun to increase in some southern cities due to policy support [13].

Despite a large amount of UGI in China, the distribution of green space in cities lack equity, with UGI investment generally higher in developed urban areas and neglected in less developed areas [14]. The low level of public participation in China's UGI projects has led to a lack of knowledge of whether the limited urban green space is meeting the requirements of citizens [15].

According to the Standard for classification of urban green space, GI is divided into five categories in China, including city park, residential green space, productive green area, protective green area and other green space. In this study, the main types of GI mentioned are city park, residential green space and other green spaces within the urban area. These three categories of GI have a greater impact on the lives of residents. According to the Standard, a city park refers to a larger green space that is open to the public, has recreation as its main function, and can carry out various outdoor activities. Residential green space is the space that can be greened within the residential area, including residential public green space, residential road green space and residential green space, etc. Other GI refers to green spaces that have a direct impact on the quality of the urban ecological environment, the leisure life of residents, the urban landscape and the protection of biodiversity. These include scenic spots, water conservation areas, nature reserves, scenic woodlands, urban greenery isolation zones, wetlands, landfill restoration green spaces, etc.

2.2. Stakeholders in UGI projects

In the design and planning of urban green infrastructure, the main stakeholders are the people who influence the process and outcome of the project and the people who are affected by it. The stakeholders in green infrastructure in China are divided into four categories: government departments, professional advisory groups, private organisations and residents affected by the project[16]. The Chinese government has adopted a public-private partnership model for urban green infrastructure development.

This public-private partnership has effectively alleviated the government's financial constraints [17]. China's green infrastructure development is mainly led by the government, which directly determines the other stakeholders and how they participate [18]. Private organisations are construction companies and design companies that have been awarded projects in public tenders held by the government.

Therefore, public participation in urban green infrastructure in China is mostly led by government departments, mostly through website announcements seeking comments based on the law, but also through the use of online questionnaires distributed by the government [19][20]. Since there is little public participation in UGI projects in China, the stakeholders in this study mainly refer to government departments, professional advisory groups, and private organisations that can directly influence UGI projects.

2.3. Research on Barriers to Public Participation

Arnstein uses an eight-level hierarchy theory to illustrate the different levels of public participation in urban planning and design[21]. As represented in Table 1, Arnstein argues that the first and second stages are non-participatory processes, in which the public cannot participate [21]. The third, fourth and fifth stages are symbolic stages, where citizens have the right to be informed and can provide advice but cannot make further decisions. At the sixth level of partnership, the citizen is on an equal footing with the manager, discussing and deciding on the project together. At the seventh and eighth levels, citizens are able to manage projects directly.

Table 1. Eight level of public participation (Arnstein ,1969)

8	Citizen control	Degrees of citizen power
7	Delegated power	Degrees of tokenism
6	Participation	
5	Placation	
4	Conclusion	
3	Informing	
2	Therapy	Non-participation
1	Manipulation	

3. METHODOLOGY

This chapter discusses the overall aims and objectives for the dissertation and methods used to conduct the research. The study has adopted a qualitative approach with the use of interviews as the primary data source and policy review and literature review as Secondary data. One city was selected as a case study to investigate and understand the barriers to public participation policy in UGI projects in China and to suggest improvements.

3.1. Case study

This study will use a case study approach because the Chinese policies from the central government are broad and different cities implement strategies for UGI projects that are in line with their regulations and in accordance with their circumstances. Gomm stated that case studies can be used to study complex social issues and can be used for in-depth research[22]. Yangzhou, located in Jiangsu Province, China, was selected as a case study city. The study area of this research is the central urban area of Yangzhou which shows in Figure 1, including Hanjiang District, Guangling District and Jiangdu District, covering an area of 2,358 square kilometres [23].

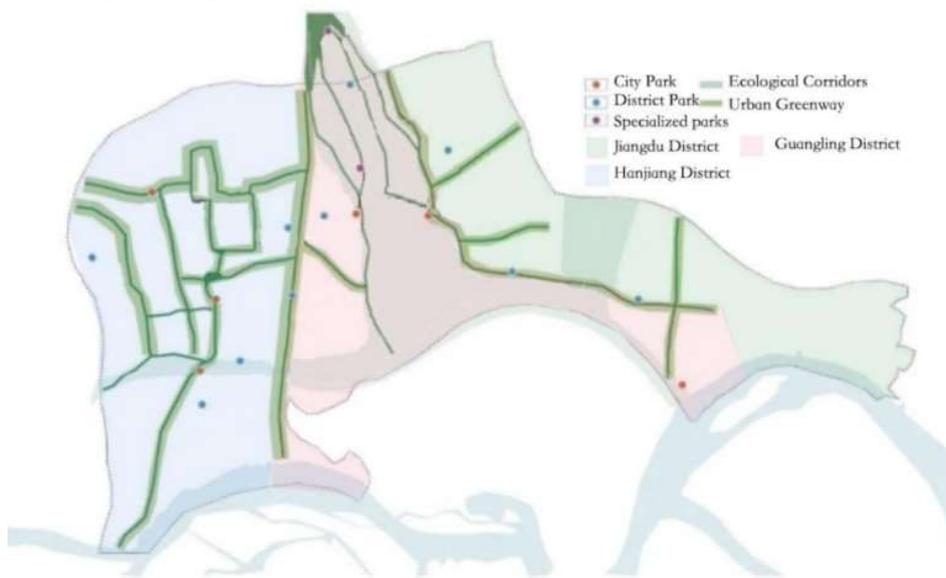


Figure 1. Special Plan for the Development and Protection of the Park System in Yangzhou City,(Yangzhou Planning Bureau,2018)

Yangzhou was chosen as a case study city for three main reasons. Firstly, in recent years, Yangzhou's central urban area has developed a large amount of urban green infrastructure[24]. Yangzhou's UGI area has grown rapidly, with a growth rate of 56.73% in 2010 and 70% by 2020[25]. The high quantity and quality of Yangzhou's large urban green infrastructure construction in several years make Yangzhou an ideal representation. Secondly, the significant number of urban green facilities built in Yangzhou involves multiple stakeholders, and how these stakeholders view and approach public participation is important and representative[26]. Thirdly, studies on public participation in UGI projects have mostly focused on megacities in China such as Shanghai and Beijing [27][28]. These cities were the first to embrace China's opening up to the outside world, both with a strong economic base and a population that is more receptive to Western ideology, and are not representative in terms of public participation in most cities in China. As a medium-sized city, the barriers to public participation in the UGI project in Yangzhou are more representative of a wider range of Chinese medium-sized cities in China.

3.2. Data Collection Methods

1) Policy Review and Literature Review

Policy reviews were found to be a suitable methodology for this research. Policy reviews can provide insights into the ways in which citizens can participate in UGI projects, and can also identify whether legislation is a barrier to successful public participation.

2) Semi-structured interview

Interviews will be used to investigate how the lay public and stakeholders involved in the project within Yangzhou city perceive public participation in UGI design and planning. The total sample size for interviews with locals was 24 and consisted of eight residents from each of the three districts in the Yangzhou urban area. Five stakeholder interviewees selected for the research all have more than three years' experience in the planning and design in UGI project in Yangzhou and have participated directly in the project within the past five years. Participants' recruitment Information is presented below in Table 2.

Table 2. Participants' recruitment Information t five years.

Participants	Position
Government Officer	1 people Urban Planning and Design Institute
Design Company	1 people in State-owned Enterprises
	1 people in Private Sector
Consultant Company	1 people in State-owned
	1 people in Enterprises
The lay public	8 residents in Hanjiang district
	8 residents in Jiangdu district
	8 residents in Guangling district

The interviews questions mainly covered three parts, as follows:

- (1) the interviewees' willingness and experience of UGI public participation.
- (2) the main barriers to the interviewees' public participation in UGI in Yangzhou.
- (3) the aspects of public participation in UGI projects in Yangzhou that interviewees think can be improved.

Prior consent for the interviews was obtained from all the interviewee, and they were informed of the topic of the research and relevant content beforehand. The interviews were conducted on the condition of anonymity.

3) Conducting interviews

Majidargues that a pre-interview pilot study can be effective in helping interviewers to improve their interviewing skills and enhance the quality of the interview [29] . Before conducting the interviews, a pilot study was used to interview three residents of Yangzhou city in advance and some of the questions in the interview were modified according to the pilot study. Online interviewing is a flexible form of interviewing that can fit the busy lives of interviewees and does not need a certain space. The interviews were conducted online interview, with WeChat App, and notes were taken of the interviews or anonymised audio was recorded.

All the interviews are conducted between July and August 2022. Stakeholder interviews lasted about 45 minutes and lay public interviews lasted 20 minutes. As the public has limited knowledge of the UGI project, the interviews focused on the public perceptual barriers and the ways in which citizens expected to be involved in the UGI project. Stakeholders were more knowledgeable about the UGI project and were therefore more comprehensive in their interviews.

4. POLICY REVIEW

The policy review includes all existing legislation on public participation in UGI projects in China as the UGI case study is related to urban planning and design. Therefore, some regulations or ordinances in the urban planning and design or other relevant documents on green infrastructure with relevant information are also included.

1) Law and policy

There is no specific law on public participation in public infrastructure in China, and the regulations on public participation in UGI projects are mentioned in the Urban Planning Law [7].According to the Urban and Rural Planning Act, the government needs to respect the willingness of the people before forming a plan, but how to respect the wishes of the people is not mentioned.

After the 1990s, the planning and design process became more ‘open tendering and the government was no longer the single participant in the project. In major projects in large cities, external consultants are sometimes sought, such as in the Lujiazui project in Shanghai[30] and the CBD in Guangzhou [31].

However, most city governments still consider the planning act as a technical one, with the government designing or commissioning design and planning firms to participate, and entrusting experts or officers to determine competition results [32]. The design and planning stages are mainly carried out by appointed firms and the policy does not require them to conduct an urban planning survey with citizens. To reduce the time and cost of the project, most companies choose not to conduct a public engagement process [33].

2) Other official documents

Table 3. Regulations on the UGI project

Year	Name of regulations	Public Participation	Description of public participation	Method
1992	<i>Urban Greening Ordinance</i>	×	×	×
1993	<i>Regulations on urban greening planning and construction indicators</i>	×	×	×
2000	<i>National Garden City Implementation Standards</i>	✓	1 Government needs to conduct a satisfaction survey on people about urban green spaces 2 Contact details of the national investigation team are published in the main media at least two days in advance of the team’s arrival for public comments	1 Satisfaction survey 2 Public opinion collection from telephone, e-mail
2002	<i>Outline for the preparation of an urban green space system plan</i>	×	×	×
2003	<i>General Urban Green Space Design Guidelines</i>	×	×	×
2005	<i>Urban Wetland Park Planning and Design Guidelines</i>	×	×	×
2006	<i>Scenic Area Ordinance</i>	✓	In the preparation process of plans for scenic area, the government should collect suggestions with relevant departments, the public and experts; if necessary, public hearings should be held.	1 Public hearings 2 Public opinion collection
2006	<i>National Parks Management Approach</i>	×	×	×
2010	<i>Urban Landscaping Evaluation Criteria</i>	✓	The government is required to conduct a civic evaluation about UGI project, and the number of survey sample should not be less than 1000th of the city’s population.	Satisfaction survey
2010	<i>China Habitat Environment Award Evaluation Index System</i>	✓	The government needs to establish a public hearing system of public participation in planning, construction and management, which is effectively implemented.	Public hearings
2016	<i>Greenway planning and design</i>	×	×	×
2017	<i>Urban design Regulations</i>	✓	When preparing the urban design, the relevant authority should widely consult the experts and the public through various forms such as discussion, publication and online comments. Before approval, the result should be publicised in accordance with the law, and the period of public notice should not be less than 30 days. The results of the urban design should be published within 20 working days from the date of approval through the government information website and the main local media	1 Public opinion collection form telephone, e-mails, 2 Press conference

Following a series of laws and regulations promulgated by the central government, Yangzhou has developed more detailed regulations under the guidance of policies from the central government. Rules for the Implementation of the Yangzhou City Planning Public Notice System were enacted in 2007. The rules require the collection of residents' opinions in the early stages of urban planning, but do not provide any penalties for noncompliance. Under the rules, every urban plan formed in Yangzhou must be published on the Urban Planning Bureau website, with 20 days' duration required for master plans, 15 days for detailed plans, 15 days for zoning plans, and 10 days for modification plans. Citizens' comments during the publication period will be annexed to the plan results and sent to the examination department[34]. Regulations on the UGI project is shown in Table 3.

5. INTERVIEW RESULTS

1) Perceptual Barriers

Perceptual barriers were the most frequently mentioned in the interviews. At the level of social values, public attitudes towards government and public attitudes towards the UGI project have a great impact on public participation. The lay public generally lacks awareness in terms of public participation in UGI projects. Some citizens mentioned that they should participate but they do not know how they could engage in the process. Few residents in the interviews had any experience participating in UGI projects or other urban planning or design projects.

At the individual level, citizens were not very interested in participating in UGI projects for their own reasons, and some were not even willing to engage. When asked if they would like to participate in the planning and design of UGI projects, the interviewees often felt embarrassed. On the one hand, they thought their participation in UGI projects was the responsibility of citizens, but on the other hand, they have various personal reasons and concerns about participating. The interviews also revealed that residents were more likely to participate in surveys after or before UGI projects and give evaluations and feedback after the projects were completed.

2) Political barriers

Most of the residents being interviewed did not know which department took responsibility for citizen participation. The remaining residents indicated that it might be organised by the Urban Planning Bureau, but they were not sure. The process of UGI planning and design in Yangzhou lacks laws and regulations that clarify the steps for public participation and the relevant authorities for organising it. Half of the interviewees mentioned that they would not be involved in the UGI project because there was no mandatory requirement for the relevant authorities to take into account their own opinions and therefore they were not sure their opinions would influence the outcome. In the stakeholder interviews, it was noted that officials deeply involved in the planning and design of UGI were not given the authority to organise public participation in the government regulations[34].

Meanwhile, stakeholders mentioned that the planning and design of UGI projects in the city have time requirements, as most of the projects have limited time for design and planning projects and do not have enough time to organise public participation, and indicated that public participation may reduce the efficiency of the projects. However, in interviews with professional advisors, the professional advisors stated: If we spend a set amount of time consulting the residents and then go through with the designer and then finalise the proposal. This is something that can be done very efficiently if it is well organised. It's just that our current government departments don't involve the public very much, and when such a link is really put in the process, then it is very efficient because the expression of the design often requires the ideas of the most direct clients, and when the public's ideas are fed back to the designers, then the whole project will be more efficient instead.

3) Logistical barriers

The stakeholders who were interviewed gave more answers to logistical barriers. In the interviews with stakeholders, they all mentioned the lack of experienced experts for public participation in UGI projects in Yangzhou. Because of the large number of people within the city of Yangzhou, it is important to develop a mature public participation system. However, there is little practice or research related to how to conduct civic engagement or how to choose civic engagement, and most stakeholders have little knowledge of it.

All the Barriers mentioned in the interviews are summarized in Table 4.

Table 4. Barriers mentioned in the interviews

Category	Description
Perceptual Barriers	<i>The government will take fully responsibility of all the public infrastructure including planning and design of UGI projects.</i>
	<i>Citizens lack civil society in China and citizens do not aware that they can participate in discussing any public issues.</i>
	<i>Citizens are unwilling to voice their opinions because they do not have relevant knowledge in UGI.</i>
	<i>Citizens do not have the time to get involved in UGI project because they are very busy in working and looking after their families.</i>
	<i>Citizens do not sure their opinions matter and whether can influence the final outcome.</i>
	<i>Lack of enough NGOs to organise public participation and collect public opinion.</i>
	<i>Citizens are only willing to participate in UGI projects around their residential areas and do not want to join in other UGI projects in the city.</i>
	<i>The role that the Chinese NGOs are currently playing in the public participation is limited.</i>
	<i>The level of knowledge and education of the lay public is not sufficient to participate in UGI projects.</i>
	<i>Citizens believe that citizen representatives are not empowered during public participation.</i>
Political Barriers	<i>Most of the government representatives are not used to the participatory approach as the administrative culture is traditionally organised in a strictly hierarchical way and government always act as the leading role in the top-down management framework</i>
	<i>Lack of supervision of the public participation process for UGI projects in the Chinese bureaucracy.</i>
	<i>Lack of legislative regulation of the public participation process and penalties for lack of public participation process.</i>
Logistical Barriers	<i>Project information is not easily accessible to the lay public and the project is not transparent to the general public</i>
	<i>Lack of experts with experience in public participation in the stakeholders.</i>
	<i>Department dealing with citizens' opinions is not easily accessible to the lay public and most people do not know where to give their comments.</i>
	<i>Most UGI projects have limited time and are required to be completed in a short period of time, thus not leaving enough time for public participation.</i>
	<i>The general public raise their comments mainly through reports, letters and visits the department directly and the interactive techniques adopted during the participation process is still insufficient.</i>
	<i>There are no laws and regulations specifying who should involve in and the units involved.</i>

4) Suggested methods mentioned by interviews

In the discussion of methods of public participation in the UGI project, the lay public and stakeholders mentioned both online and offline forms.

Stakeholders and the general public diverged when it came to citizen participation. The general public did not have much desire to deeply participate in UGI projects, preferring to use online participation as it is more time efficient. Due to the traditional nature of society, the public believed that UGI projects are irrelevant to them and should be the responsibility of the government and that they should be incentivised for their participation. Most of the public's understanding of public participation methods comes from prior activities by the government or other stakeholders, and they lacked an understanding of the wider opportunities for citizen participation in the UGI project. On the other hand, stakeholders had greater expectations about public participation and tended to institutionalise it. However, their perspective is based on the premise there is a broad willingness to participate, which is contrary to the public's subjective notions and lacks support from the lay public. Participation methods referred to by interviewees are summarized in Table 5.

Table 5. Participation methods referred to by interviewees

Participation methods mentioned by interviewees	
Online	App questionnaire
	Online discussion
Offline	Project hearings
	Organise community exhibitions
	Press conference

According to all interviewees, the lay public's knowledge of the forms and citizen participation protocols is derived mostly from methods referred to in existing laws and regulations such as hearings or questionnaires; however, China's laws and regulations do not adequately prescribe the process of public participation in UGI projects. As a result, citizens expected little from the only forms of public participation available to them and therefore had limited interest in it. Also, they were not aware of other systems of participation. Stakeholders possessed a broader knowledge about different methods to enlist public participation, but they were constrained by technology, policy and public support, making it difficult to leverage the potential public participation in the UGI project.

6. DISCUSSION

1) Public Competence

The lay public's lack of relevant knowledge of UGI planning and design became one of the main reasons for them not being willing to participate in the UGI project. It was also one of the reasons why stakeholders believed that it would reduce the efficiency of the project. In the recommendations made by experts to improve citizen participation, it was also expected that citizen representatives with a high level of knowledge would be involved and increase the efficiency of the work. This democratic system in which representatives are selected to speak on behalf of the people is considered to be a low level of public participation, in which the public does not share power and participate in decision-making [35]. The models of participation desired by the general public, such as online questionnaires, online groups and the organisation of events in school are all methods of direct democracy. Although the general public avoids participation due to a lack of professional knowledge, they still expect to be involved in UGI projects in a more direct way. Planning and design companies also lack sufficient knowledge of citizen participation. Citizen participation is not an inefficient method for UGI projects,

but instead helps the design and planning outcome to be efficient in line with the wishes of the people. People can truly benefit from UGI projects only if the design and planning ideas are widely accepted by citizens.

2) Limited participation methods

During the interviews, many interviewees stated they did not have enough time to attend public engagement events. China has the highest proportion of dual-earner couples in the world (more than 90%), and most people have difficulty dealing with the conflict between work and family [36]. In China, a culture of overtime is prevalent and considered normal, occurring not only on work days but also on weekends [37]. As a result, it is difficult for citizens to find enough time to participate in UGI projects or other public issues. Because of their limited time off, the public is more interested in spending time with their families rather than participating in public affairs.

3) Limited project timeline

Almost all stakeholders mentioned that there was a short timeline for the UGI project and that public participation was more likely to reduce project efficiency and lengthen the project duration. Due to environmental problems and the huge population demand for public urban infrastructure projects in China, urban infrastructure projects often need to be completed quickly to meet large requirements [38]. The limited time available for projects provides stakeholders with a reason to reduce public participation. However, a mature and effective public participation process does not affect the project cycle, but can instead increase the efficiency of the project [39].

Public participation in UGI projects should be a relationship of shared decision-making rather than a one-sided method of disseminating information. A system of public participation should also make the public aware of when and how they can participate, which will allow them to decide whether to participate at all or organise their time to do so as their availability permits. Setting a fixed period of time for public participation in UGI projects and communicating the deadline before the project starts does not reduce public participation. In addition, how public participation should be organised should be specified in detail in the regulations, which would legitimise the activities of the organisation managing the public participation and assign them with rights.

4) Lack of community spirit

The interviewees who were members of the lay public showed more interest in UGI projects within the residential area than other forms of green space projects within the community. Historically, the concept of 'community' has most often been interpreted in China as a kinship network where members of an extended family live in a geographical area and look after each other, especially in hard times. China's socio-economic reforms, mass migration and rapid urban transformation have profoundly changed the composition of urban communities[40]. In Chai Mei's study, it was found that the sense of community identity was fragile due to the rapid movement of the Chinese urban population, which weakened communication between residents[41]. The lack of community spirit has led to difficulties in community governance, with collective discussion proving to be challenging because residents struggled to organise themselves effectively [42].

In China, NGOs often work with the government under an outsourcing arrangement to provide community services and carry out community governance [43]. The lack of community spirit can affect how the effectiveness of efforts to organise public participation in the community. In fact, the government lacks confidence in NGOs and when NGOs do not have a practical role in community organisation, the government will restrict their development and directly take over the service and management of the community . Numerous community issues need to be addressed by the government, and the interviews confirmed that people prefer the government to organise citizen participation. However, government policies and regulations do not contain specific provisions for public participation in UGI projects, and only refer to regulations for the public evaluation of

completed UGI projects. Therefore, the government does not pay much attention to public participation in UGI projects, as they believe they have done their job.

7. SUGGESTED IMPROVEMENTS

Based on the above barriers to public participation, suggested improvements to the current participatory process are: (1) technical support; (2) media advocacy and; (3) legislation and regulations.

1) Technical support

Engaging the public requires technique support. Participatory communication should be included in the process of public participation. Participatory communication differs from the traditional 'educate and inform' approach and involves the public by sharing knowledge[44], enabling the public to gain knowledge and participate in the project at the same time. Collaborative learning (CL) is a good way to combine technology and concepts to help people learn. This approach satisfies the desire for direct citizen participation and also allows citizens to acquire the relevant knowledge to participate in UGI projects. The interview results showed that the public preferred online participation. Studies have shown that digital media technologies can be effective in increasing citizen participation [45]. Playful public participation is an effective way to engage citizens in the planning and design of UGI projects. This approach not only increases civic engagement but also contributes to increased social innovation, building lasting public trust and collective reflection used a digital interactive multiplayer game named Redesirez to organize citizen discussions about urban things in a community in Den Bosch, a medium-sized Dutch city[46] [47] [48]. In the game, citizens identified more with their citizenship and increased their knowledge, while planners and designers learned about citizens' aspirations for the city. This fun and educational format also made it easier for parents and children to join in, turning the UGI project into an educational and family-friendly activity. This type of participation was the result of various people working together and placed certain technical demands on public participation. It required the cooperation of experts in various fields. In China, this new type of participation is not yet widely used.

Focus groups are also an effective way to engage citizens in planning. Engaging a focus group is a research method that is widely used in the field of sociology. It involves one or more group discussions, in which participants collectively focus upon a topic selected by the researcher, who presents them with a set of questions. The focus group approach is used to seek the views of citizens on many issues relating to urban planning [49].

2) Media advocacy

Due to poor awareness of public participation and the lack of transparency about information on UGI projects, the mass media involvement is essential to improving public participation in China. Media coverage plays a significant role in civic education [50], and the dissemination of information about public participation by mainstream media can encourage citizens to take responsibility for public participation. The media is also a platform for widespread communication, with online media being able to disseminate information more widely and organise more civic engagement activities than other platforms [51]. Media outreach for UGI projects can be carried out through the official accounts of platforms that are familiar to citizens. A platform that is familiar to the citizens will receive more views, increasing the visibility of information about the UGI project to the public. Official accounts lend an air of legitimacy to public participation, and increase citizens' trust in the participatory activity.

3) Legislation and regulations

Public participation is severely restricted in the choice of leaders and the formulation of public policy in China; public participation in UGI projects is restricted by legislation, which confuses the public.

Public participation takes place throughout the project process. This prevents planning, design and even construction from being dominated by the ideas of specific project personnel [52].

Legislation and regulations need clarity as to what the basic units of public participation in UGI projects are and what kind of people can be involved in what kind of projects. According to the interviews, citizens generally prefer to participate in UGI projects in their own communities. Therefore, it is possible to categorise the UGI projects according to the level of citizen participation. Citizens can be more involved in UGI projects in their communities, using focus groups, collective learning and other methods to discuss and reflect on the results of planning and design directly. For large city parks and other green infrastructure projects within the city, the range is wide and the number of citizens affected is also large. Feedback for such UGI projects can be organised in the form of online participation to maximise the reach of public participation. After government departments have approved the final design and planning, these results will need to be communicated to the public and undergo a process of public consultation before construction.

Suggested process of public consultation in UGI project is shown in Figure 2.

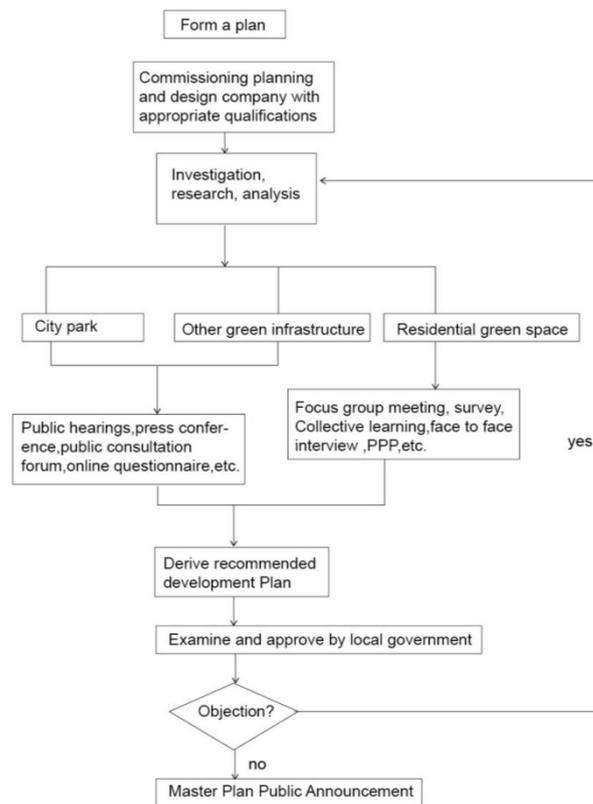


Figure 2. Suggested process of public consultation in UGI project

8. CONCLUSION

Barriers to public participation in UGI projects are due to several reasons. Traditional social factors have led to disinterest in public participation by the lay public as well as by the government. The availability and capacity of social groups in society to organise citizen participation are limited by policy. Citizens themselves, due to a lack of understanding of public participation, believe that ordinary citizens cannot participate in UGI projects because they consider them to be too specialised. Citizens are reluctant to engage in public participation on UGI projects due to the stresses of their own lives, and the lack of a clear participation process. On-site participation processes also take too

much time and the venue may not be easily accessible. Due to the high demand for UGI in the city, most projects have a short completion period. This limited time results in short citizen engagement sessions and does not allow for a comprehensive process to collect public comments.

In response to these barriers to citizen participation, the government and the design and planning firm could add technical tools to increase citizen participation. Citizen engagement could be well organised through communication, collaborative learning and fun ways of participating. The use of social media communication is also a way to improve public participation. Posting information about UGI projects in the social media can make the information about the UGI projects more accessible to more citizens. Because of the wider reach of the social media, it is possible to communicate to more participants. Legislation and relevant regulations are also important, which can increase the clout of citizens' statements. With a defined process for citizen participation in UGI projects, the projects can better meet the requirements of the residents.

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