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The role of stakeholders and their participation network in decision-making of urban renewal in China: The case of Chongqing

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ABSTRACT

Since the late 1970s, China's fast growth of economy and urbanization have driven large-scale urban renewal projects. To deal with complex urban problems, urban renewal requires integrated, coordinated and multi-faceted strategies involving a wide range of stakeholders. A deeper understanding of the stakeholders in the decision-making process is an essential step towards sustainable urban renewal. This paper aims to understand the stakeholders and their participation in the decision-making of urban renewal in China, using the case of Chongqing. Data were collected through in-depth interviews and a questionnaire survey. Stakeholder Analysis and Social Network Analysis were complemented as the research methodology. First, the stakeholders involved in urban renewal decision-making were clarified. Second, the characteristics, including knowledge, power, and interest of each stakeholder, were analyzed. Third, the relationships between stakeholders were probed, and the structure of their network was examined. Finally, policy implications were drawn to the issues of stakeholder participation in urban renewal decision-making in China.

1. Introduction

Since the reform and opening-up policy in the late 1970s, the economy and urban population have experienced rapid growth in China (Qian, 2010). It has led not only to new construction but also large-scale demolition and reconstruction in the name of urban renewal. Urban renewal, also named urban regeneration, brings improvement in the existing urban areas, which is a sound approach to cope with urban decay and achieve multiple socioeconomic goals (Adams & Hastings, 2001; Couch, 1990; Zheng, Shen, & Wang, 2014). Since the expansion of urban renewal projects, building demolition and reconstruction have climbed to a high level. Between 2011 and 2015, there were at least 460 million m² of buildings being demolished in China (Zhang & Zeng, 2016).

As with all multi-dimensional and complex public issues, there is a wide range of stakeholders involved in urban renewal projects. Commonly, the government-led urban renewal decision-making exists in the majority of cities in China (Zhou, Zhou, & Liu, 2017). Large-scale urban renewal projects usually trigger a spectrum of social problems in practice, e.g., social injustice and inequality, due to a lack of understanding and recognition of the stakeholders (Liu, Xu, Zhang, & Zhou, 2012; Zhuang, Qian, Visscher, & Elsinga, 2017).

Sustainable urban renewal combines the stimulation of economic

activities and environmental improvements with social vitality (Colantonio & Lane, 2007). In the social dimension, sustainability considers two elements: ethical values and norms (e.g., equity and justice) related to the broad engagement of stakeholders (Vallance, Perkins, & Dixon, 2011). A rational stakeholder participation mechanism is emphasized as a crucial approach to benefit sustainable urban development in many research studies (Couch & Dennemann, 2000; Garcia, 2004; Kaza, 2006).

In urban renewal projects, the decision-making is greatly influenced by the relationship between different stakeholders, the characteristics of partnership, as well as the power structure, mechanism, etc. (Zheng et al., 2014). In practice, stakeholder systems are recognized as a combination of isolated individuals/organizations, who are not subjected to constant interaction (Caniato, Vaccari, Visvanathan, & Zurbrügg, 2014). Nevertheless, it is argued that the stakeholders are mostly interdependent (Brugha & Varvasovszky, 2000; Elias, Cavana, & Jackson, 2002; Zhuang et al., 2017). Assessing the systems can help stimulate their involvement and interactions, and thus influence project success (Vance-Borland & Holley, 2011). However, until now, little research has systematically studied the roles of various stakeholders and how they interact with each other when participating in urban renewal decision-making in China. Therefore, an in-depth understanding of various stakeholders in urban renewal decision-making is

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vital to deal with social problems, thus improving the sustainability of urban renewal in China.

The research study as reported in this paper aims to understand the stakeholders in urban renewal decision-making in China. It answers: who are the stakeholders? What are their characteristics? Moreover, what are the relationships between them? As the representative city in southwest China and an active city in urban renewal projects, Chongqing was selected as the case city in this research. This paper is structured as follows. First, it reviews the stakeholders' participation in urban renewal decision-making in China. Then, it describes the research methodology. Following this, this paper analyzes the stakeholder characteristics and their relationships. Finally, the discussion and conclusions are presented.

2. Review of past studies in decision-making and stakeholder participation in urban renewal in China

2.1. Decision making of urban renewal

Globally, in recent decades urban renewal has played a vital role in improving life quality and will continue bringing significant changes in urban areas in the near future (Chen, Jia, & Lau, 2008; Shen, Yuan, & Kong, 2013). It is crucial to meet the needs of resident stakeholders in more high-quality buildings and neighborhoods in the old urban areas, but sustainably. Many scholars believe that urban renewal makes excellent contributions to economic development, social mix and equality through relocating in-situ residents into new neighborhoods with a decent living conditions and environment (August, 2016; Lel vri r, 2013). However, in many cases, it also brings about unsustainable consequences such as social contradictions, loss of urban culture, etc. (Yau & Chan, 2008). To better tackle urban problems, decision-making of urban renewal has become a hot research topic in global urban studies. In the perspective of decision criteria/methods, Juan, Roper, Castro-Lacouture, and Ha Kim (2010) presents a model for making the optimal decision (rehabilitation or redevelopment) for urban renewal in Taipei City. Wang et al. (2014) developed a framework of decision-making factors and supporting information to facilitate sustainable land use planning in urban renewal projects. Regarding collaborative decision-making, Mayer, van Bueren, Bots, van der Voort, and Seijdel (2005) combine the decision-support tool and simulation game to support the collaboration of different stakeholders in the decision-making of urban renewal. Maginn (2007) explores the broad strategic potential of applied ethnography and collaborative planning theory in realizing more effective stakeholder participation and the decision-making processes in urban renewal projects.

Although many academic and practical works have been done on this issue, such efforts cannot always achieve the positive goals since it is not easy to reduce social inequality and cleavages by addressing to all needs from the wide range of stakeholders in different contexts (Dempsey, Bramley, Power, & Brown, 2011; Hemphill, Berry, & McGreal, 2004; Pendlebury, Townshend, & Gilroy, 2004). In Western countries, such as the UK and the Netherlands, even collaborative governance is built among governmental sectors, consultants, affected residents, and developers, etc., the different discourse power and sense of inequality are always the top causes of conflicts between stakeholders (Dodson, 2006). Compared with the western counterparts, in China the strong power of government in urban renewal makes this situation of conflict even more apparent and outstanding (Li, Kleinhans, & van Ham, 2018). To deal with the issues, the priority is to understand each of the stakeholders in the specific context.

2.2. Stakeholder participation in urban renewal decision-making in China

In China, government intervention exists in economic development and public policy delivery. It cooperates with market power to achieve capital accumulation through land reuse such as urban renewal under

the joint effects of socialist histories and current global trends (Li et al., 2018). Although it has brought about many desirable achievements, many problems such as gentrification, social inequality, and loss of culture, etc., are apparent (Suo, Wu, & Tian, 2015). Chinese governments have developed a number of participatory and deliberative institutions, such as public hearings and consultative meetings, to promote stakeholder participation in public projects and maintain social stability (Enserink & Koppenjan, 2007). In 2013, a national reform policy “*The Decision on Major Issues Concerning Comprehensively Deepening Reforms*” was released (CD, 2013). It required the government to shift its role by building itself into a service-oriented government and delegate its power to other participants in public issues. However, there is no one-fits-all approach to stakeholder participation in urban renewal decision-making. To optimize stakeholder participation, it is still a challenge due to the unique institutions and social culture in China (Li, Ng, & Skitmore, 2012b; Yi, Liu, Lang, Shrestha, & Martek, 2017).

The success of public projects is based on the recognition of participant interdependence (De Bruijn & Ten Heuvelhof, 2010). Only the joint efforts of various stakeholders and the exchange of information, resources, and targets can result in the realization of sustainable urban development (Enserink & Koppenjan, 2007). Such an approach is considered as necessary to reach a consensus and so it is widely applied in the western world. Learning from this idea, it calls for a good participative institution based on the in-depth understanding of diverse stakeholders in the complex socio-economic system in China (Tang, Wong, & Lau, 2008; Zhuang et al., 2017).

Stakeholders refer to “any group or individual who can affect, or is affected by, the achievement of the organization's objectives.” (Freeman, 2010; Li, Ng, & Skitmore, 2012a; Petts & Leach, 2000). Based on this definition, precisely, stakeholders in urban renewal decision-making are those who participate in the decision-making process or influence the decision-making, whose interests are positively or negatively affected by the decision results.

In China, decision-making of urban renewal is not just a ‘single-decision.’ It should consider types of projects, site selection, renewal mode, timing, and macro urban development, social risk, etc. through a complex process. Therefore, there are different stakeholder groups involved in the decision-making. In many cases, the government retains the strong power on urban governance through the dominant control of policy release, resource allocation, and service delivery, etc. (He & Wu, 2005). The public here refers to the general public and the affected residents. In earlier times, they have often been excluded from the decision-making process (Hui, Wong, & Wan, 2008). In addition, the developers also play a vital role in the implementation of urban renewal projects, but it has been criticized that the market power also affects the decision-making in some instances (Li et al., 2018). The third parties, such as consulting parties, NGOs, financial institutions, etc., also provide valuable support in decision-making, but they are barely discussed in the relevant studies (Liao, 2013).

Stakeholder characteristics and their relationships are seen as key factors of policy and management system (Bryson, Patton, & Bowman, 2011). Regarding stakeholder characteristics, power and interest are two essential elements to categorize the stakeholders (Grimble & Wellard, 1997; Schmeer, 1999). The former refers to the extent a stakeholder can influence the decision; the latter means the concerns/expectations of a stakeholder, and the level at which one is affected by the decision. As government-led projects combined with market power and have high impact on the public, the types of stakeholder interest of urban renewal decision-making in China can be categorized as “administration & politics”, “marketing performance”, “community benefits”, or a combination of the above two or three (Liu, 2006; Qian, 2009). Although governmental sectors have diverse functions and objectives, they all adopt regulation, policy and law enforcement to comprehensively benefit the urban development and social stability (Zhuang et al., 2017). This type of interest can be summarized as “Administration & politics”. “Marketing performance” refers to the

economic benefits that some private sectors want to maximize. “Community benefits” means various civil society concerns about the affected communities, such as community environment, living comfort, equity, and justice, etc. (Qian, 2009). Moreover, the stakeholders' knowledge about urban renewal decision-making, and the sectors they belong to, also have a strong influence on their perception and what they can contribute to the projects (Yau & Chan, 2008).

3. Methodology

3.1. Combination of stakeholder analysis and social network analysis

The growing recognition of key stakeholder roles to the success of the policy, project, business, etc., leads to the increasing popularity of Stakeholder Analysis in different fields (Brugha & Varvasovszky, 2000; Elias et al., 2002; Prell, Hubacek, & Reed, 2009). Stakeholder Analysis is widely used in analyzing and supporting multi-actor project management, participatory decision making, and other cooperative activities (Lienert, Schmetzer, & Ingold, 2013; Scholes, 1998). It is a method to analyze stakeholder characteristics through identifying the stakeholders and understanding their power, interests, attitudes, etc., in the system (Brugha & Varvasovszky, 2000; Mushove & Vogel, 2005).

Although Stakeholder Analysis has been broadly applied, it has received some criticism about its academic rigor and quality in practice, especially when utilized for a large group of stakeholders (Prell et al., 2009; Reed et al., 2009). Therefore, quantitative methods are sometimes added for the purposes of data triangulation (Lienert et al., 2013; Prell et al., 2009). Today, more attention has been given to the social network which influences the attitudes and behavior of different stakeholders (Scott, 2017; Wasserman & Faust, 1994).

Social Network Analysis (SNA) focuses on “identifying and comparing the relationships within and between individuals, groups, and systems in order to model the real-world interactions” (Burt, Minor, & Alba, 1983; Otte & Rousseau, 2002; Ramalingam, 2006). It has been adopted in several broad research areas, including project management, collaborative governance, organizational study, supply chain, etc. (Badi, Wang, & Pryke, 2017; De Nooy, 2003; Lee & Kim, 2011; Wey, Blumstein, Shen, & Jordán, 2008). However, this approach also has some drawbacks. As described by Freeman (2004), Social Network Analysis depends heavily on graphic representation and relies on the use of mathematical and computational models. It can systematically indicate the existence of an interactive relationship but does not illustrate what is behind the situation, such as the key causal influences.

Stakeholder Analysis stands in a broad view concerning stakeholder characteristics, and Social Network Analysis can systematically explore the formal and informal relationships between the stakeholders. In many research studies, the two analytical methods are combined to explore the stakeholder systems, since the one can address the question that the other cannot answer in depth (Caniato et al., 2014; Lienert et al., 2013; Prell et al., 2009). In this research, the complementary support of both methods is newly adopted in urban studies in the Chinese context. It helps to move beyond a mere description of the formal institutional arrangement and gain deeper insights into the dynamics underlying the stakeholder structure in urban renewal decision-making.

In this research, the mixed methods of Stakeholder Analysis and Social Network Analysis, with quantitative and qualitative data were processed into triangulation analysis to enrich the holistic understanding of the results, which are explained in our discussions. As shown in Fig. 1, this research covers the following four major steps. Step 1, to make an inventory of the stakeholders involved through a literature review and interviews; Step 2: to characterize and categorize the identified stakeholders based on stakeholder characteristics, including power level, interest level, knowledge level, type of interests, type of sectors, etc., using Stakeholder Analysis (data source: interview and questionnaire survey); Step 3: to explore the interdependencies

between different stakeholders and stakeholder groups, using Social Network Analysis (data source: questionnaire survey); and Step 4 to discuss the key findings and synthesise/propose policy implications.

For the Stakeholder Analysis part, a *power* versus *interest* grid was introduced as a stakeholder evaluation tool for mapping and comparing the power and interest level of all stakeholders (Bryson et al., 2011; Patton, 2008). For the Social Network Analysis part, network diagrams were utilized to map out the stakeholder interactions. Moreover, based on the interaction among different stakeholders, Degree Centrality, Closeness Centrality (Eigenvector), and Betweenness Centrality were adopted to analyze the network characteristics. Degree Centrality represents the level of interconnection by measuring the number of ties that a stakeholder has with other ones (Rongerude & Christianson, 2014). The high value of degree centrality means that a stakeholder is more likely to have access to information and to influence the decision-making. However, the interconnection does not mean the stakeholder can reach many other stakeholders in the whole network. To describe the connectedness of one stakeholder in the network, the Closeness Centrality (Eigenvector) was applied. It can measure the degree of connection to other relevant stakeholders concerning overall network structure (Lucio & De la Cruz, 2012). Betweenness Centrality is based on the number of shortest paths passing through the stakeholder. The stakeholder with higher scores can play the role of ‘middleman’ that provides shorter pathways of interaction between two other stakeholders (Otte & Rousseau, 2002). It is also a measurement of the amount of control that a stakeholder can exert within the network.

3.2. Study area

Chongqing, one of five municipalities directly under the Central Government, was selected as the case study. It is the core and largest city in southwest China. The urban development features of Chongqing are considered as a typical sample in China (Zhou et al., 2017). Due to the policy issued by the Chongqing Municipal Government in 2008, urban renewal projects were considered as one of the key urban development strategies (Liu et al., 2012). There was 336.49 ha area of residential buildings demolished through large-scale urban renewal from 2010 to 2014 (CSB, 2016). Characterised by the massive redevelopment of buildings and neighborhoods, Chongqing provides plenty of cases and resources for researching urban renewal.

As the capital of Chongqing, Yuzhong District has played a significant role in the history of Chongqing's urban development. In 2016, there were 11 urban renewal projects in the area of 232,402 m² being planned and implemented in Yuzhong District, affecting 3612 households. It represents one of the hotspots of urban renewal comparing with other districts in Chongqing. Thus, Yuzhong District is selected as the representative district in Chongqing for data collection.

Two methods of data collection were applied in Yuzhong District, Chongqing: semi-structured interviews and a questionnaire survey, which were conducted between July and November 2016. The data collection focused on the projects in the residential area, which represent most of the urban renewal projects. At the time of the data collection, most of the targeted buildings/neighborhoods were built in the 1970s to 1990s, and many of the affected residents were vulnerable groups.

3.3. Interviews

Semi-structured interviews were conducted to verify the stakeholder list made by scholarly authors and collect the data for the analysis. In the preliminary list of authors, there were 28 stakeholders in urban renewal decision-making being identified. The targeted interviewees were selected based on the following principle: (1) They represent one of the preliminarily listed stakeholders; (2) They have experience in participating in urban renewal decision-making. Since it is difficult to interview every stakeholder respectively (especially

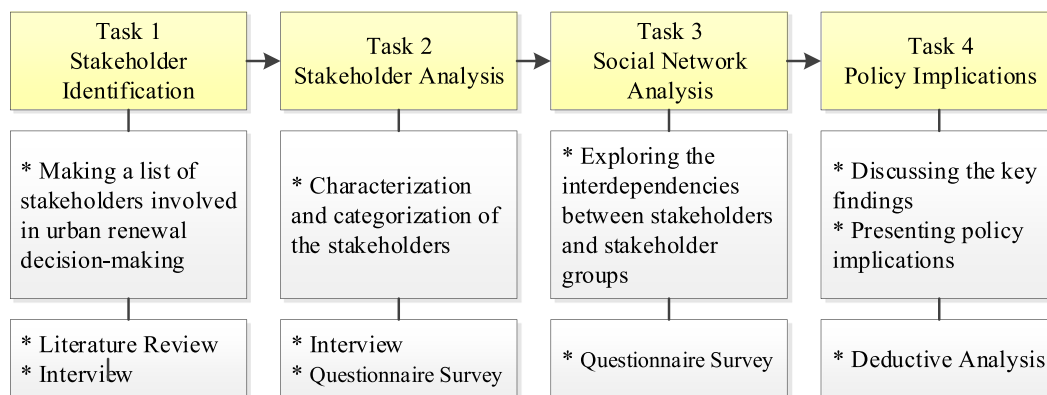


Fig. 1. Research process.

Table 1
Groups and background of the interviewees.

Group	ID	Role/position	The function of department and qualification
Municipal government	I1-M	Government officer	Working in Commission of Development and Reform; urban development specialist
	I2-M	Government officer	Working in Bureau of Urban Planning; Urban planning specialist, > 25 years' working experience
	I3-M	Government officer	Working in Administration of Land, Resources, and Housing; over 10 years' experience in land management in urban renewal projects
	I4-M	Government officer	Working in Commission of Urban-Rural Development; over 15 years' experience in urban renewal projects (shanty town)
District government	I5-D	Government officer	Working in the Bureau of Land and Resources; land use planning and land management specialist
	I6-D	Vice Director	Working in Bureau of Housing Management; over 20 years' working experience in land expropriation
	I7-D	Vice Director	Working in the Bureau of Urban Planning; urban planning specialist
	I8-D	Vice Director	Working in Commission of Development and Reform; urban development specialist, 10 years' experience in urban development planning
Local administrative organization	I9-LA	Director	Working in Sub-district Administrative Office; specialist of grass-roots work in urban renewal projects
	I10-LA	Director	Working in Neighborhood Committee; specialist of grass-roots work in urban renewal projects
Consulting party	I11-C	Professor	Working in a university; over 15 years' research and practical experience in urban renewal projects
	I12-C	Researcher	Working in a university; professionals of urban renewal
	I13-C	Researcher	Working in a university; professionals of urban renewal and urban planning
	I14-C	Professor	Working in a university; over 10 years' research and practical experience in urban renewal
	I15-C	Director	Working in a planning and design institute, professionals of urban planning and renewal
Land-related organization	I16-LR	Manager	Working in Regional Platform Company; over 15 years' practical experience in land management in urban renewal projects
Developer	I17-RE	Manager	Working in a private real estate company; over 10 years' practical experience in real estate development
	I18-RE	Manager	Working in a private real estate company; over 15 years' practical experience in real estate development
Financial institution Public	I19-F	Officer	Working in China Development Bank; specialist of feasibility studies of urban renewal projects
	I20-P	Citizen	A resident of a neighborhood that will be renewed
	I21-P	Citizen	A resident of a neighborhood that will be renewed
	I22-P	Citizen	General public
	I23-P	Citizen	General public

government sectors), finally, there were 23 individuals representing most of the listed stakeholders in 8 stakeholder groups being reached. The representatives include government officials, professors, real estate managers, and citizens, etc., who have gained rich practical experience and sufficient knowledge in urban renewal in Chongqing. Table 1 below shows the profiles of the interviewees.

During the interview, the interviewees were asked: (1) to verify the preliminary stakeholder list; (2) to clarify the stakeholder roles they represent; (3) to summarize the interest of the represented stakeholder and other stakeholders they had contacted or were familiar with, in terms of administration & politics, marketing performance, community benefits, combination; (4) to illustrate the cooperation and conflict between them and other stakeholders; and (5) to answer a series of open-ended questions about the current problems or barriers related to urban renewal decision-making.

The preliminary stakeholder list was adjusted and completed thanks to the help of the professionals from the interviews. After the interview, the list was finalized by adding 8 more stakeholders, including 2 municipal governmental sectors (Bureau of Letters and Calls in Municipal Government and Bureau of Supervision), 4 district governmental sectors (Bureau of Letters and Calls, Bureau of Civil Affairs, Bureau of

Business, and Bureau of Supervision), and 2 land-related organizations (District Land Regulation and Reserve Center and Land and Housing Ownership Registration Center). Therefore, there are finally 36 stakeholders being identified in urban renewal decision-making. The verified stakeholder list is shown in Table 2 below.

3.4. Questionnaire survey

The questionnaire survey was designed and addressed to the verified list of 36 stakeholders (Table 2). The respondents were selected based on the following principle: (1) They represent one of the listed 36 stakeholders; (2) They have experience in participating in urban renewal decision-making. The questionnaires were purposely distributed to all of the listed stakeholders via personal delivery and e-mail. Finally, a total of 46 valid questionnaires covering all the listed 36 stakeholders were collected. The questionnaire comprised two parts. The first part was designed to understand the knowledge, power and interest-level concerning urban renewal decision-making, in the perspectives of the selected stakeholders. The data was measured by a five-point Likert scale (0, 2.5, 5, 7.5, and 10), where 0 represents no or minimum knowledge/power/interest, and 10 means very high level. In the second

Table 2
Stakeholders and their sectors in urban renewal decision-making in Chongqing, China.

Sector	Stakeholder
Municipal government	M1. Bureau of Urban Planning M3. Commission of Urban-Rural Development M5. Bureau of Finance M7. Bureau of Supervision ^a
District government	D1. Bureau of Urban Planning D3. Bureau of Housing Management D5. Commission of Development and Reform D7. Bureau of Municipal Administration and Landscape D9. Bureau of Civil Affairs ^a D11. Office of Legislative Affairs D13. Other specific departments
Local administrative organization	LA1. Sub-district Administrative Office
Land-related organization	LR1. Regional Platform Company LR3. Land and Housing Ownership Registration Center ^a
Developer	RE1. Real Estate Developer
Financial institution	F1. China Development Bank
Consulting party	C1. Planning/Design Agency C3. Real Estate Appraisal Agency
NGO	N1. Community NGO
Public	P1. Affected resident
	M2. Administration of Land, Resources, and Housing M4. Commission of Development and Reform M6. Bureau of Letters and Calls ^a M8. Other special departments D2. Bureau of Land and Resources D4. Commission of Construction and Transportation D6. Bureau of Letters and Calls ^a D8. Bureau of Finance D10. Bureau of Business ^a D12. Bureau of Supervision ^a LA2. Neighborhood Committee LR2. District Land Regulation and Reserve Center ^a C2. Scholar C4. Building Safety Appraisal Agency N2. Non-community NGO P2. General public

^a Means that the stakeholder is added to the list based on the interviews.

part, the respondents were asked to indicate all the other organizations/individuals with whom they interact within urban renewal decision-making.

For data analysis, the knowledge, power and interest levels were divided into five groups measured on the mean score X : no or minimum ($X = 0$), very low ($0 < X \leq 2.5$), low ($2.5 < X \leq 5$), high ($5 < X \leq 7.5$), and very high ($7.5 < X \leq 10$). Since these factors were self-reported, the values were triangulated to check the general consistency by the interviewees. If inconsistency emerged, the respondents would be contacted again to verify the answer. Discursive questions (e.g., describing the roles and duties) would be asked to confirm the correctness of the value if the respondent insisted on his/her own opinions. The scores about those characteristics given by the respondents were mostly consistent with interviewee opinions. Furthermore, the interactive relationships between different stakeholders were analyzed in UCINET (Borgatti, Everett, & Freeman, 2002). Adopting UCINET, interactive networks were generated to map out the connectivity of stakeholders, and the parameters of Degree Centrality, Closeness Centrality (Eigenvector), and Betweenness Centrality were calculated to describe the network characteristics.

4. Results

4.1. Identifying stakeholders

To compile a list the stakeholders in urban renewal decision-making, a priority is to clarify the scope of the decision-making process. Based on the authors' knowledge and practical experience, the list is shown in Fig. 2. In addition, the overall process can be simplified and presented as 7 steps involving 8 stakeholder groups (sectors).

Then, according to the in-depth interviews, as many as 36 stakeholders in 8 sectors mentioned above were finally identified in the urban renewal decision-making process. The list of stakeholders is summarized in Table 2.

In urban renewal decision-making, the municipal government does not take the responsibility to initiate urban renewal projects. Instead, the role of relevant government sectors is mainly to guide the work of district government, to oversee and evaluate the process, and to approve the final decision, etc. District government is lower than municipal government and mostly responsible for the decision and involves in the main decision-making process. More than ten district governmental sectors with the function of planning, construction, land,

housing, development, finance, etc., cooperatively make use of their power. The local administrative organization is the 'grassroots-level' government, which consists of two sub-levels (Sub-district Administrative Office and Neighborhood Committee). They both do the groundwork such as residents' investigation, coordination, policy advocacy, etc., to support urban renewal decision-making. The land-related organization is state-owned and serves as a platform for land development issues. Financial Institution only includes one stakeholder (China Development Bank). Apart from the finance of local administration, the loans from China Development Bank are the common financial source of urban renewal projects. Consulting parties are the key professionals, whose opinions are a vital basis for government decision-making about urban renewal.

4.2. Analysis of stakeholder characteristics

The level of power and interest in urban renewal decision-making is shown in power vs. interest grids in Fig. 3, grouped according to the sector, knowledge level, and type of interest. The figure drawn from the questionnaire survey data, is based on the mean score of each parameter for the identified 36 stakeholders. Then, taking mean score "5" of power and interest levels as the threshold, all the stakeholders can be divided into the following four categories: players, subjects, context setters and crowd (Patton, 2008). **Players** have a strong discourse power on decision-making, and their interests are also strongly affected by the outcomes. **Subjects'** interests can be strongly affected by the outcomes, but they have relatively small power in making decisions. Conversely, the **context setters** have strong discourse power, but little direct interest which can be affected by the decision. The **crowd** cannot exert much influence on decision-making and are also not strongly affected by the outcomes.

Fig. 3 shows 22 stakeholders taking "administration & politics" as their primary interest, including all players and context setters. Both players and three out of four context setters are from district government. It indicates that the district government has a higher power in the decision-making process. As the players, Bureau of Housing Management (D3) and Commission of Construction and Transportation (D4) are the principal actors. As the context setters, Bureau of Urban Planning (D1), Bureau of Land and Resources (D2), and Commission of Development and Reform (D5) are another critical district governmental sector. These key district governmental sectors are cooperatively making vital contributions to the decision-making of urban

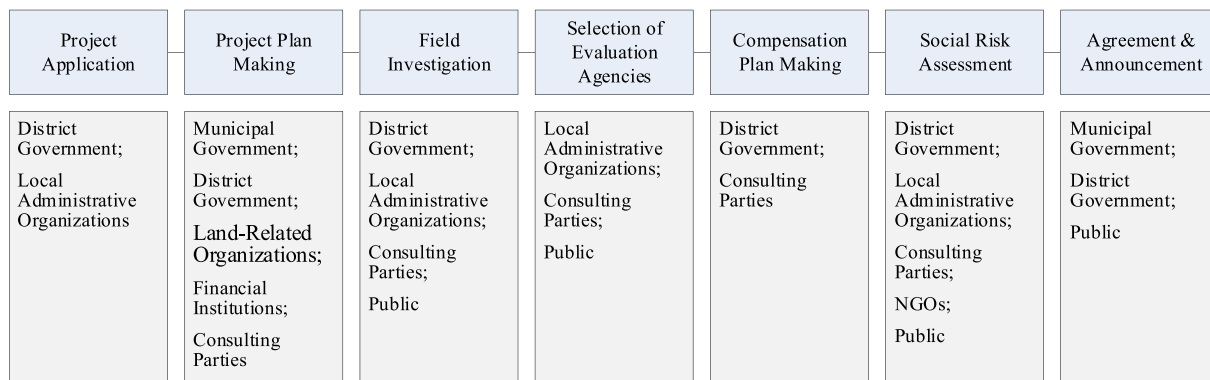


Fig. 2. Simplified urban renewal decision-making process and stakeholder groups in Chongqing, China (by Authors).

renewal in housing, construction, urban planning, land use management, and urban development, respectively. These sectors exert much influence on decision-making in various aspects. However, because of the current government accountability mechanism, many of them do not hold sufficient responsibility for the unintended outcomes (interviewee I6-D and I8-D). The Commission of Urban-Rural Development (M3) is the only context setter belonging to the municipal government, which makes urban construction policy and coordinates other sectors in the municipal level. Since municipal government mainly plays the role of guider and approver, its influence on urban renewal decision-making is relatively low compared to that of district government.

Subjects comprise six stakeholders from five sectors. The discourse power of local administrative organizations is relatively weak (interviewee I9-LA and I10-LA). As the grass-roots authorities, Sub-district Administrative Office (LA1) and Neighborhood Committee (LA2) make much effort to deliver information and coordinate the conflicts between the public and the other stakeholders. They can hardly influence the major decision-making of urban renewal, but bear the consequences if the affected residents complain or protest about the policy or decision. In addition, local administrative organizations do have a few experts (planning, land policy, etc.) to support the groundwork. There are no specific regulatory documents or policies precisely on the functions of each sector in urban renewal projects. Therefore, the relevant government sectors are not willing to be involved because it is not considered as their obligation. As stated by the interviewee from the Sub-district administrative office (interviewee I9-LA), “It leads our job to being inefficient and ineffective, and poses huge conflicts especially when doing policy advocacy and collecting opinions of the affected residents.” Real estate developers (RE1) contribute to urban renewal through investing in the urban land. They are profit-oriented, whose interests and objectives are to maximize their profit through land development. Their investment strategy in urban renewal projects highly depends on the information from the governments. However, due to the developers holding massive resources, in many instances, they also have some discourse power that both formally and informally influence the decision-making process (interviewee I7-D and I17-RE). Affected residents (P1) and community NGOs (N1) are rooted in the neighborhood. As the in-situ stakeholders, they both experience the impact of urban renewal projects, so their primary interest is to protect community benefits. However, they are rarely offered opportunities to be involved in the project (interviewee I6-D, I11-C, and I13-C). Since they must move out of the place, all they care is to gain enough information and participate in the decision-making process to maximize their compensation or get an ideal relocation (interviewee I10-LA, I11-C, I20-P, and I21-P).

Surprisingly, consulting parties, especially planning/design agencies (C1) and scholars (C2), have the expertise in urban renewal decision-making, but all of them are grouped in the ‘crowd’. Their professional services should be essential references for decision-making. Nevertheless, the results show that their influence on decision-making

is limited. In many instances, their suggestions are not what the government expected (interviewee I11-C, I13-C, I14-C, and I15-C). In practice, consultants often adopt the stance of the governments and use their expertise to demonstrate the rationality of government needs. Moreover, because of the lack of rational accountability, consultants are not accountable for their work (interviewee I14-C and I15-C).

4.3. Network structure

The Interaction Network between different stakeholders is shown in Fig. 4, grouped according to the sector, knowledge level, and type of interest. Based on the data from the questionnaire survey, the stakeholders’ integration in the decision-making process can be analyzed in a network perspective via their connectivity. Fig. 4 shows no single stakeholder standing out as the dominant center in the network, and only a small number of stakeholders have fewer than four connections. Non-community NGOs (N2) and general public (P2) are the only exceptions disconnected to others. N2 is barely involved in most cases, due to the lack of formal participation channels and a shortage of expertise to make contributions. P2 also engage in urban renewal projects through the internet, mass media, etc., mainly through public supervision with almost no direct interaction with other stakeholders.

In Fig. 4, the results show that stakeholders from the district or municipal governments tend to be involved in more interactions. In Chongqing, there is no designated department in full charge of urban renewal decision-making. Instead, the main relevant function is separated into several sectors. In municipal and district government, there are around 21 sectors, directly and indirectly, involved in the decision-making process. In practice, the division of rights and obligations causes potential problems such as overlap of functions, objective deviation, unnecessarily long decision-making time, complex approval process, and buck-passing, etc., (interviewee I4-M, I6-D, I12-C, and I13-C).

The network structure is also described by the degree, closeness and betweenness centrality of each stakeholder and summarized with rankings in Table 3. The results demonstrate that there is no single stakeholder that can fully control the network, since the scores of top five ranked in degree, and closeness centrality is relatively close. According to the centrality measures, the Bureau of Housing Management (D3) ranks the first in all three types of centrality, which can be recognized as the key stakeholder. Similarly, the Bureau of Urban Planning (D1), Bureau of Land and Resources (D2), and Commission of Construction and Transportation (D4) are also crucial stakeholders for their high rankings. They play the core roles both in district government and the entire network. Outside of the district government, Scholars (C2) and Sub-district Administrative Office (LA1) are also identified as the core roles, ranking within the top five in all three centralities. In China, C2 scholars not only focus on academic research but also act as independent consultants for many public projects.

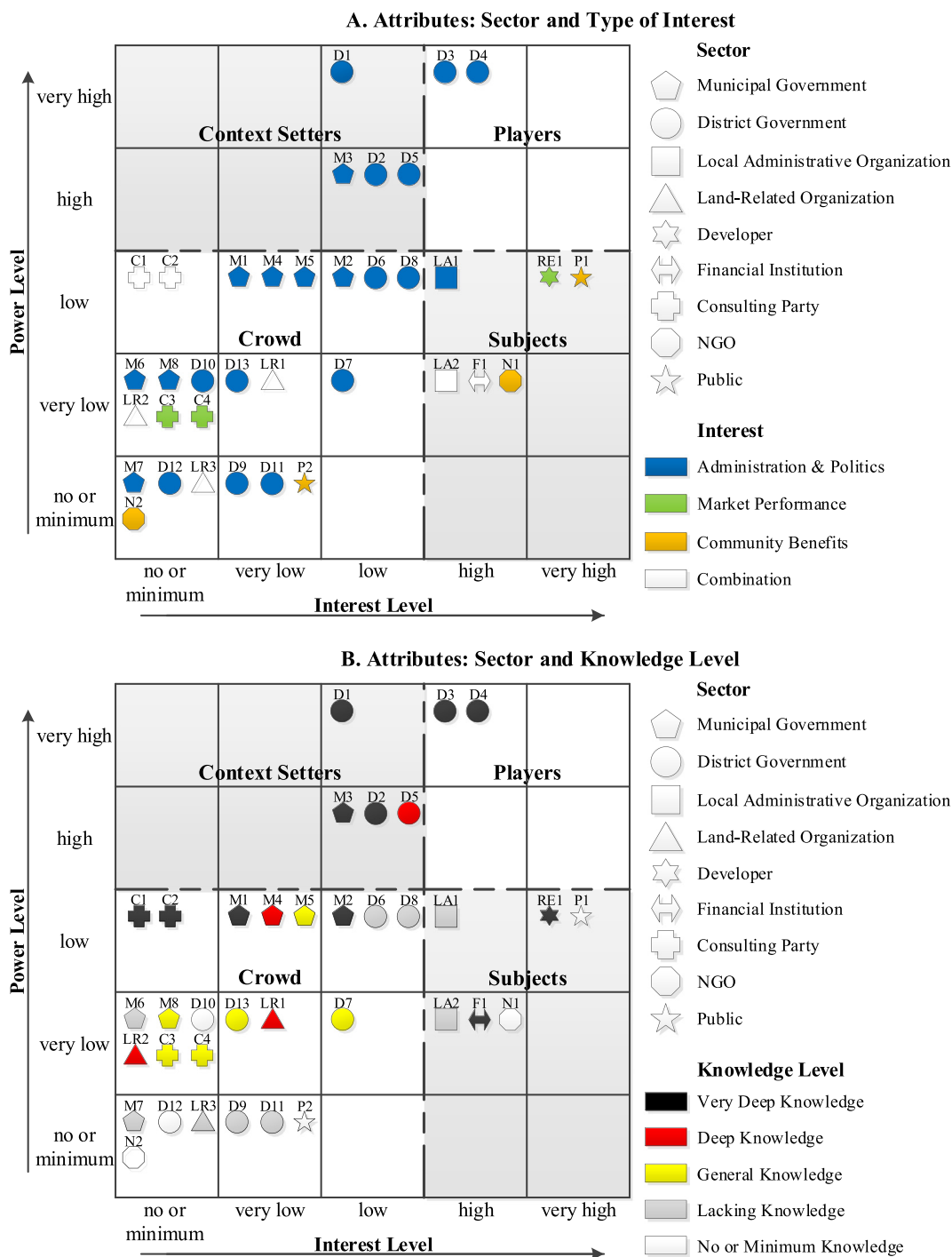


Fig. 3. Power vs. interest grid, grouped according to (A) sectors and type of interest, (B) sectors and knowledge level.

Although C2 and LA1 are reported as having limited power in urban renewal decision-making, their connectedness reflects their importance in the entire network. They both play essential roles and have many connections with others.

In addition, Real Estate Developer (RE1), Regional Platform Company (LR1) and Affected Residents (P1) rank high in betweenness, but low in degree and closeness centrality. It means that they are not the core roles but, in reality, control the flow of information among many other ones in the network. The information, resources, and demands of RE1 are essential for the success of the projects. Formally, RE1 is not allowed to interfere the urban renewal in the decision-making process. Nonetheless, it is common that developers make a deal with

governmental sectors before the final decision is to be made (interviewee I7-D, I12-C, I14-C, I17-RE, and I18-RE).

In many cases, the potential renewal projects are located in a relatively low-investment-value area that is far from the city center. Land expropriation and building demolition account for the significant cost of renewal projects. If governments provide substantial financial support to the primary land development, once there is no developer bid for land development, it will become a huge financial loss. Thus, to promote urban renewal projects in those areas, district governments tend to attract investment before making the decision and guarantee there is at least one developer who will bid for it. Nevertheless, as the profit-oriented sector, to maximize the value of the investment, the

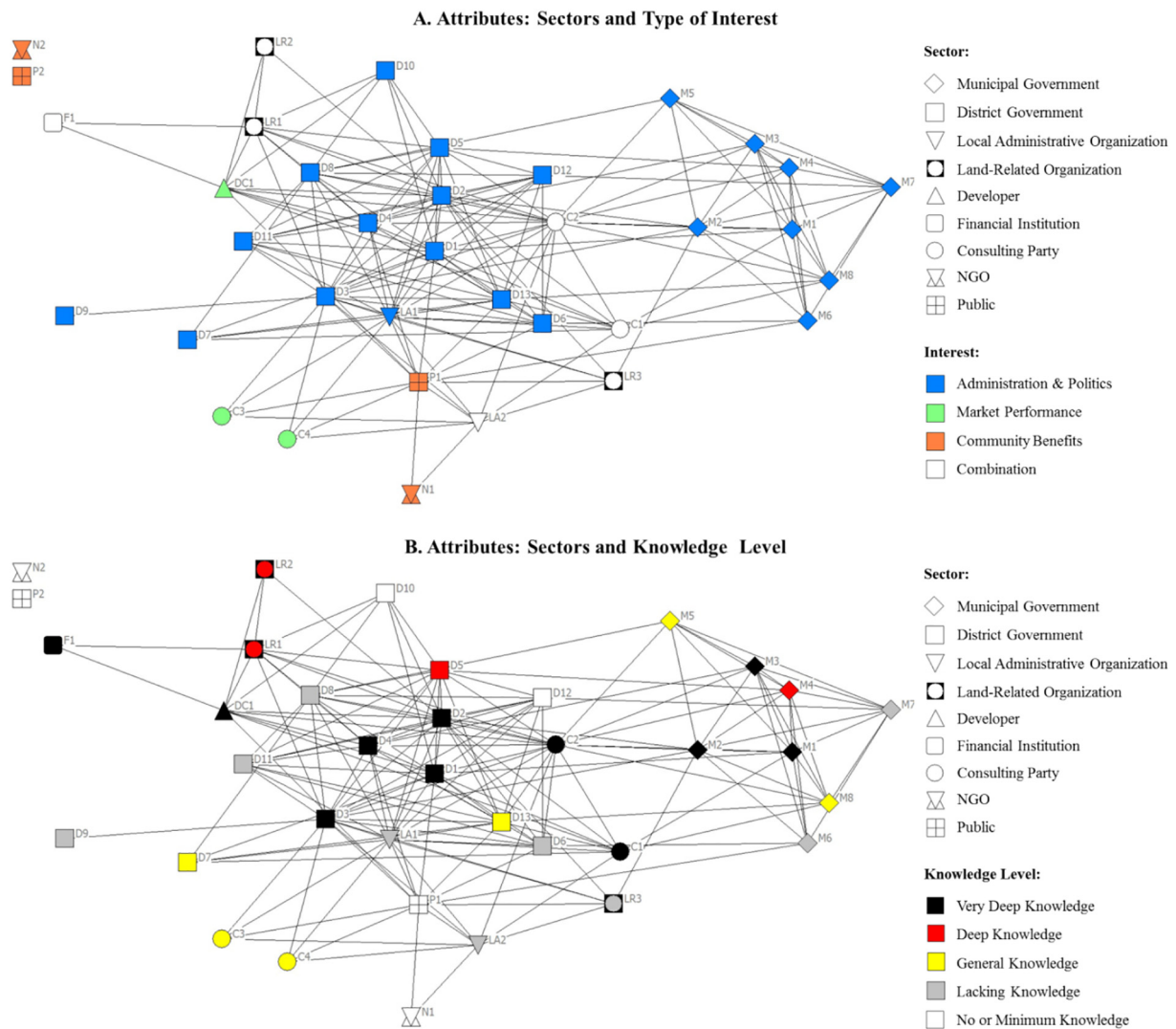


Fig. 4. Interaction network, grouped according to (A) sector and type of interest, (B) sector and knowledge level.

developers may ask different governmental sectors for special policy support, or may even change the current plan. LR1 connects financial institutions, private sectors and the government in land development issues. It holds and transfers much essential information to relevant stakeholders. The living conditions and willingness of P1 are one of the top considerations of decision-makers, so there are also many information exchanges between them and other stakeholders.

4.4. Network characteristics by different groups

To better understand the relationships within the network of urban renewal decision-making as the whole, group centralities are applied to describe the network characteristics in different stakeholder groups. As it is shown in Table 4, three types of centrality measures are aggregated by type of sector, type of interest and knowledge level.

Regarding sector types, district government, local administrative organizations are well connected in the network. Consulting parties, developers, and the public can likewise be recognized as “brokers” of information. Municipal government also has a good connection in terms of degree centrality. However, although it is in the top administrative level in the network, it is relatively peripheral to its low closeness centrality and does not show importance in the information delivering for its low score of betweenness centrality. Municipal government should approve many relevant plans or documents. However, the long

duration of the approval process and complex interaction between sectors may affect the efficiency of the decision-making process (interviewee I3-M, I4-M, and I6-D).

In the perspective of interest type, not surprisingly, the results show that administration & politics dominates the interaction network, scoring the highest closeness and betweenness centrality. In contrast, market performance and community benefits are rather peripheral in the network. Although the purpose of urban renewal is to benefit the public (interviewee I2-M, I3-M, I4-M, I5-D, I6-D, I7-D, and I8-D), as part of the public, the stakeholders representing community benefits do not play a central role at all. Furthermore, the data also denote that the combined interest is of great significance in the network. The actors in this group are all the third parties either led by the government or even state-owned.

Considering knowledge level, it is clear that the stakeholders who have profound knowledge about urban renewal decision-making stand in the central positions in the entire network. This group ranks the first in all three types of centrality measures, which means that it has strong control of the interaction and information flow. However, knowledge level is not polarized between the groups which play vital roles, and which are slightly involved. The group with lacking knowledge rank the second in all three measures. One with no or minimum knowledge also has a high value of betweenness centrality. It refers that these stakeholders with low knowledge level are also essential components of the

Table 3
The centrality measures of stakeholders.

Code ^a	Degree centrality		Closeness centrality		Betweenness centrality	
	Degree	Rank	Eigenvector	Rank	Betweenness	Rank
D3	19.000	1	0.289	1	70.485	1
C2	19.000	1	0.283	5	58.272	2
D2	18.000	3	0.289	1	39.557	4
LA1	18.000	3	0.285	3	33.383	5
D1	17.000	5	0.285	3	26.394	7
D4	15.000	6	0.268	6	16.604	11
D5	13.000	7	0.238	7	12.392	15
D13	13.000	7	0.233	8	12.967	13
D8	13.000	7	0.227	9	16.789	10
P1	13.000	7	0.175	13	43.747	3
D12	11.000	11	0.209	10	10.404	16
M2	11.000	11	0.129	17	20.103	9
D11	10.000	13	0.204	11	0.498	26
D6	10.000	13	0.191	12	6.681	19
C1	10.000	13	0.158	14	12.836	14
LR1	10.000	13	0.156	15	21.829	8
RE1	10.000	13	0.146	16	26.940	6
M1	10.000	13	0.111	19	8.292	18
LA2	9.000	19	0.118	18	16.358	12
M3	9.000	19	0.098	22	4.154	22
M4	9.000	19	0.096	23	5.071	20
M8	8.000	22	0.096	23	4.304	21
M7	8.000	22	0.072	27	4.022	23
M5	7.000	24	0.082	26	2.959	24
M6	7.000	24	0.071	28	9.150	17
D10	6.000	26	0.109	20	0.458	27
LR3	6.000	26	0.104	21	2.051	25
D7	5.000	28	0.096	23	0.300	28
C3	4.000	29	0.070	29	0.000	29
C4	4.000	29	0.070	29	0.000	29
LR2	3.000	31	0.048	31	0.000	29
F1	2.000	32	0.024	32	0.000	29
N1	2.000	32	0.024	32	0.000	29
D9	1.000	34	0.023	34	0.000	29
N2	0.000	35	0.000	35	0.000	29
P2	0.000	35	0.000	35	0.000	29

The "bold number" represents the top 7 ranking in each type of centrality.
^a Note: D1 = Bureau of Urban Planning, D2 = Bureau of Land and Resources, D3 = Bureau of Housing Management, D4 = Commission of Construction and Transportation, LA1 = Sub-district Administrative Office, C2 = Scholars, LR1 = Regional Platform Company, RE1 = Real Estate Developer, P1 = Affected residents.

Table 4
Group centrality measures.

Category	Group	Degree	Closeness (Eigenvector)	Betweenness
Type of sector	Municipal government	8.625	0.094	7.257
	District government	11.615	0.205	16.425
	Local administrative organizations	13.500	0.202	24.871
	Land-related organizations	6.333	0.103	7.960
	Developers	10.000	0.146	26.940
	Financial institutions	2.000	0.024	0.000
	Consulting parties	9.250	0.145	17.777
	NGOs	1.000	0.012	0.000
	Public	6.500	0.088	21.874
	Type of interest	Administration & politics	10.818	0.168
Market performance		6.000	0.095	8.980
Community benefits		3.750	0.050	10.937
Combination		9.500	0.145	18.558
Knowledge level	Very deep knowledge	12.000	0.179	23.636
	Deep knowledge	8.750	0.135	9.823
	General knowledge	6.833	0.108	3.422
	Lacking knowledge	9.111	0.144	9.881
	No or minimum knowledge	5.333	0.086	9.102

network which partly control the interaction and information.

5. Discussion

5.1. Stakeholder participation in the view of stakeholder analysis and social network analysis

This study demonstrates that stakeholder analysis and social network analysis are clearly complementary. The combination of these two methods provides an insight into the stakeholder participation in urban renewal decision-making. Stakeholder analysis is a state-of-the-art tool in non-technical assessment procedures (Caniato et al., 2014). It reveals the structure of knowledge, power, and interest of stakeholders in decision-making, by considering the already-acknowledged stakeholders as well as the informally involved ones. In this research study, the stakeholder analysis shows the dominant discourse power of “Administration & Politics”, especially the district government. In addition, scholars always act as independent consultants in urban renewal projects in China. However, being the stakeholders with “Very Deep Knowledge”, it is perhaps surprising to find that consulting parties cannot exert much influence on decision-making, and also are not strongly affected by the outcomes. This finding is contrary to the findings of many earlier studies about public projects and policies, since their consulting services are the important basis of the decision (Lee & Chan, 2008; Skaburskis, 2008). Furthermore, although real estate developers cannot formally be involved in the decision-making process, they can nevertheless still exert their influence through informal relationships with governmental sectors.

In this research study, social network analysis also consolidates some findings from stakeholder analysis, but also provides additional findings through the quantitative and graphic perspectives. As the grass-roots government, although local administrative organizations are powerless in decision-making, they share lots of connections with other stakeholders. It means they play an important role through cooperation and coordination during the decision-making process. Municipal government sectors are in the top decision level, but they are quite peripheral in the network: the systemic collaborations between them and the other stakeholders are not strong. Moreover, it is apparent that the affected residents are strongly affected by the outcomes, yet do not hold much power in the decision-making. However, this does not mean they are marginalized in the network. The connections they hold indicate that the affected residents can indirectly influence the decision-making at a fundamental level. Through social network analysis, the heterogeneous and complex interaction network is more fully exposed to scrutiny and their significance is better understood. The

heterogeneity and complexity result in mutual communications, cooperation, and information exchanges. As it is stated by Sandström and Carlsson (2008), the high level of interaction can facilitate communication, prevent conflicts, and promote joint-action especially when there exist many connections between diverse types of stakeholders. However, it can also lead to the dissatisfaction of many stakeholders. It may reduce the possibility of the action of the key stakeholders since they have to satisfy many participants (Bodin & Crona, 2009).

The integrated use of stakeholder analysis and social network analysis has resulted in added benefits, in particular by providing a deeper understanding of the urban renewal decision-making in China. The results not only give a holistic picture of the system but also assess the problems of stakeholder participation in detail. Based on this, it is evident that the combination of these two analyses provides better implications on the way to solve the problems and improve the system.

5.2. The complexity of government sectors

As the results show, the complex interaction is apparent between governmental stakeholders. In China, although governments hold strong power in decision-making, there are many governmental sectors in different administrative levels involving in local urban renewal projects. Nevertheless, their functions and responsibilities are not well-defined when cooperating in the decision-making process. Because of these, although some government sectors can strongly influence the decision-making in planning, housing, urban land, development, etc. separately, none of them can be fully responsible for the success of projects, and no one has the power to hold all the cards. The lengthy time for project application, investigation, evaluation, making relevant plans, reaching agreements, etc., is both costly, and carries risk, and also creates difficulties and low-efficiency for cooperating with other stakeholders. Not surprisingly, according to Huxham, Vangen, Huxham, and Eden (2000), ‘tangles of ties’ may also lead to ‘partnership fatigue’, reduce transparency and accountability, and limit the contacts with outsiders.

If we wish to draw comparisons to this mainland China study, by taking two Asian counterparts, Hong Kong and Singapore as examples, most issues relevant to urban renewal are responsible by one sector (namely, the Urban Renewal Authority in Hong Kong, and Urban Redevelopment Authority in Singapore) (Law et al., 2009). By setting up a focused authority, it is meaningful to increase the efficiency of the decision-making process and resolve the issues of overlap of functions, buck-passing, etc., usually found in the much larger bureaucratic and hierarchical governments. Thus, centralizing the functions and powers of urban renewal to fewer sectors can be a reference model to follow, and indeed, one with implications for China.

5.3. Informal interference of market power

In China, government-led urban renewal projects have been criticized for being overly dependent on market power before 2011 (Li et al., 2018; Liao, 2013). In 2011, a new regulation “*Regulation on the Expropriation of Buildings on State-owned Land and Compensation*” was issued by the central government. It disallows the involvement of developers in urban renewal decision-making to avoid the interference of market power (Li et al., 2018). Developers can only bid for the land development right when land expropriation and building demolition are finished. Due to the high capital cost and limited fiscal budget, it is a risk for the governments to initiate urban renewal projects on the lands with low investment value. Therefore, building the informal relationship with developers in the decision-making process can effectively control the risk of the governments. However, informal relationships also represent informal collaboration and information exchange, which may lead to the loss of accountability and controllability of the system (DeLeon & Varda, 2009; Stone, 2008). Owing to the lack of transparency and accountability in the informal relationships, the involvement

of developers not only affect the decisions but also results in their subsequent engagement in urban planning, land use planning, land expropriation, etc. Thus, this approach may affect the quality of planning made by the government and violate the interests of the public. Due to the importance of financial resources and need for fiscal balance, attempts to exclude the market power is not always feasible. Thus, formally including but also regulating the collaboration between developers and other stakeholders in the decision-making process can be a solution. The formal regulations can provide a formal role for developers in the urban renewal decision-making process. It should strictly define their rights and obligations and restricts their informal interference in some stages (e.g., making compensation plan).

5.4. Negative perceptions of public participation

In China, conflicts between the public (especially the in-situ residents) and other key stakeholders constantly arise, for example, the disagreement of the decision about the projects or relevant plans (e.g., compensation plan) (Hin & Xin, 2011; Li et al., 2018). The lack of facilitation for public participation has often been considered as the leading cause and has been criticized in many research studies (Enserink & Koppenjan, 2007; Li, Liu, & Li, 2012; Tang et al., 2008). Yet, in western society, broad public participation is considered as one of the key success factors of public projects (Brabham, 2012; Haffner & Elsinga, 2009). Therefore, scholars addressing the situation in China have argued that by introducing more public participation approaches and empowering the public can resolve the issue in China (Tang et al., 2008; Zhang & Fang, 2004). However, the authors of the research study in this paper found out that few stakeholders believe the added values of public participation. The public, including both the general public and the affected residents, do not have a positive perception of authorities and professionals. Indeed, they barely trust decision-makers. Thus, they do not believe they can exert great influence in the urban renewal decision-making process, even if their participation can be enhanced. However, from the perspective of the professionals in the government and consulting parties, they indeed care about the voice of the public. Nevertheless, the professionals doubt if the public is eager to make contributions. They suspect that what the affected residents are really most concerned about is to maximize their compensation or get the ideal relocation. In many instances, the compensatory demands of in-situ residents go beyond several times of the market value, demands which are excessive. Different attitudes of stakeholders represent the different awareness of the role of the public. It can also be one reason for the absence of NGOs in urban renewal projects.

5.5. Needs of specific laws, regulations, and accountability

Specific laws, regulations, and accountability have been frequently mentioned by many professionals during our research. Without specific laws and regulations about urban renewal decision-making, the powers, functions, and obligations of different stakeholders are not clearly defined. This lack of clarity not only poses problems between plenty of governmental sectors, but also results in the inefficient work of local administrative organizations, low discourse power of third parties and the public. Without rational accountability, the stakeholders with power can keep influencing decision-making without taking into account the unintended consequences of their actions. As stated by Cheung and Leung (2007), government accountability can enhance the satisfaction of citizens, especially the powerless ones. In urban renewal, accountability can strengthen the responsibility of government sectors and increase their willingness to cooperate with less-empowered groups.

6. Conclusions

The study reported in this paper probes the stakeholder

characteristics and their relationships in urban renewal decision-making in Chongqing, China. It shows that Stakeholder Analysis and Social Network Analysis can be jointly used in urban studies in the Chinese context, to better evaluate and understand the stakeholders in a whole system. This paper takes Yuzhong District in Chongqing as the study area and identifies 36 stakeholders. The results show the high complexity of stakeholder characteristics and the interaction network between them during urban renewal decision-making. Since most of the urban renewal projects in China are government-led, naturally, governments play the dominant role in the decision-making process. However, too many governmental sectors in different administrative levels involved in the process also pose great barriers to cooperation. The informal participation of developers can reduce government fiscal risk, but may create a side effect on the outcomes. The lack of public participation is seen as the primary cause of conflicts between the public and other stakeholders. Nevertheless, introducing more public participation approaches and giving more empowerment to the public may not work out successfully because most stakeholders, including the public themselves, hold negative perceptions of public participation.

Regarding the stakeholder participation, one of the top issues is to centralize the administrative functions and powers to fewer focused sectors, which could deal with the administration of urban renewal much more efficiently. In addition, informal relationships between developers and government sectors can be more formalized to reduce the risk of current problems. Specific laws and regulations about urban renewal also are needed to define the powers and functions of different stakeholders in detail. Furthermore, an accountability mechanism should be set up to enhance stakeholder responsibilities and increase the willingness of influential stakeholders to cooperate with less-empowered groups.

Due to the unique market institutional and social culture in China, further studies will be done to explore the problems in the urban renewal decision-making process. Based on this study, it is possible to establish a framework of urban renewal decision-making to support participatory urban renewal.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.cities.2019.03.014>.

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