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ABSTRACT

Active resident engagement and effective organizer management are crucial for participatory neighborhood rehabilitation. Yet, existing public participation research focuses on residents, leaving the behaviors of organizers and their influence on outcomes less examined. Furthermore, most renewal studies treat the rehabilitation process as homogeneous and static, overlooking how stakeholders' objectives, strategies, and actions evolve throughout the project lifecycle. To address these gaps, this paper employs stakeholder theory to propose the Stakeholder Influence Model (SIM), which investigates the multifaceted influence of stakeholders on resident participation across different phases of neighborhood rehabilitation. Drawing on 44 in-depth interviews and a four-month participant observation in Wuhan, China, deductive content analysis reveals stakeholders' distinct influence strategies and both stimulating or disincentivizing effects on resident engagement. Specifically, indirect local government involvement, excessive delegation to neighborhood committees, and imbalanced power dynamics among residents are identified, jeopardizing the fairness, inclusiveness, and long-term viability of rehabilitation initiatives. By highlighting diverse stakeholders' evolving impacts, this study advances current understanding of participatory urban renewal. The proposed SIM provides a robust framework for analyzing stakeholder interactions and informs policy interventions aimed at fostering more equitable and inclusive urban rehabilitation in China.

1. Introduction

After witnessing displacement and gentrification caused by brutal demolition and redevelopment, rehabilitation has become a preferred paradigm for recent urban renewal efforts. Unlike the knock-down-and-rebuild strategy for redevelopment, rehabilitation is a restoration and enhancement, aiming to modernize backward urban areas to meet current development needs while allowing the original inhabitants to continue living and working in their habitats (Li et al., 2024). By minimizing the evacuation and displacement of the original inhabitants, rehabilitation effectively preserves collective memories and long-standing social ties (Pérez et al., 2018; Zhuang et al., 2019). Consequently, rehabilitation is recognized as a crucial strategy for sustainable urban renewal, particularly effective at the residential neighborhood scale (Pérez et al., 2018).

With a growing appeal for social sustainability, neighborhood rehabilitation is evolving from a top-down economic stimulus to a bottom-up social movement, thereby advocating resident participation. For neighborhood rehabilitation, resident participation (RP) refers to *any process that involves residents in problem-identifying and decision-making to enable public input to be manifested in rehabilitation decisions and outcomes* (IAP2, 2017). Anticipated benefits of participatory neighborhood rehabilitation include cultivating local insights and shared values (Uittenbroek et al., 2019). It reduces superfluous expenditure and delay (Creighton, 2005), thus enhancing the project's efficiency, effectiveness, and overall satisfaction (Suschek-Berger and Ornetzeder, 2010). For residents, participation acts as a channel for social learning, fostering the acquisition of knowledge and skills, and nurturing self-identity and confidence (Nienhuis et al., 2011). It also bolsters neighborhood cohesion (Dickens, 2013) and subjective well-being (Orchowska, 2019). Given these prospects, from the initial efforts in North America, the United Kingdom, and Europe to recent advancements in developing countries, participatory strategies have been integrated and institutionalized into renewal policies, serving as a

fundamental pillar in pursuing inclusive and resilient urban development.

However, participation practice is not always effective, marked by a low degree of engagement, lack of access, order and transparency, and minimal impact on decision-making (Li et al., 2024; Mohammadi, 2010; Swapan, 2014; Uittenbroek et al., 2019). Facing ineffective RP, scholars and government officials promptly attributed the problem to "apathetic" residents. Consequently, strategies are proposed to sensitize residents, enhancing their awareness, capacity, and actual behavior (Mohammadi, 2010; Swapan, 2014). Nevertheless, the policy census by Lowndes et al., 2001 and ethnographic observations by Mathers et al. (2008) in the U.K. challenge this perspective. Their cases show that residents' non-participation does not stem from indifference towards neighborhood issues. Instead, it is a conscious resistance to government-imposed participation initiatives (Mathers et al., 2008). Later, as participation practices become widely disseminated, a growing number of studies argue that the organizers bear significant responsibility for ineffective RP (Li et al., 2024; Li et al., 2024; López-Rodríguez et al., 2020; Uittenbroek et al., 2019). In this sense, a comprehensive analysis of organizers is imperative to curb their potentially arbitrary and irresponsible behaviors that undermine the effectiveness of participation practices and the success of neighborhood rehabilitation initiatives.

The stakeholder theory, distinguished by diverse disciplinary perspectives and analytical frameworks, is a powerful and widely used tool for examining organizers (Freeman, 1984; Olander and Landin, 2005; Reed et al., 2009). In urban renewal, nevertheless, established stakeholder studies focus on identifying and categorizing stakeholders, with few studies investigating stakeholder influence, let alone their impact on RP. Moreover, extant stakeholder influence research is based on the conventional framework proposed by Freeman (1984), which posits that stakeholders operate independently and directly influence the focal issue. This hub-and-spoke-like assumption of the organization-stakeholder relationship overlooks the influence of stakeholder interactions (Frooman, 1999). Hence, it is challenging to comprehend why some stakeholders, seemingly without direct involvement, can substantially influence decisions. Additionally, most renewal studies simplify the renewal process as a homogeneous and static entity, ignoring that the objectives and outcomes of renewal activities, attributes, behavior, and strategies of stakeholders change significantly over time (Mok et al., 2015). Despite widespread appeals from scholars (Freeman, 1984; Frooman, 1999; Mitchell et al., 1997; Mok et al., 2015; Olander and Landin, 2005), longitudinal stakeholder analysis that adopts a project lifecycle perspective remains scarce.

To fill these gaps, this study proposes an analytical framework for understanding stakeholder influence based on the stakeholder theory. Additionally, given the frequent occurrence of ineffective resident participation in neighborhood rehabilitation and the inherent responsibility of stakeholders in such occurrences, the framework is applied to this specific context. The objective of this research is to understand how stakeholders influence resident participation throughout the project lifecycle of neighborhood rehabilitation. Specifically, this research addresses three questions: 1) What are the different types of stakeholder influence? 2) How do stakeholders influence resident participation in neighborhood rehabilitation? and 3) How does stakeholder influence and its impact on resident participation evolve across various phases of neighborhood rehabilitation lifecycle? Insights into stakeholder influence are expected to curb undesirable behaviors and unhealthy relationships, promote effective resident participation, thereby contributing to a more inclusive and resilient urban (re) development.

2. Literature review

2.1. Stakeholder theory and analysis

The concept of stakeholder was coined by the Stanford Research

Institute in 1963 and further refined by R. Edward Freeman in 1984. Freeman (1984) defined stakeholders as "*any group or individual who can affect, or is affected by, the achievement of the organization's objectives.*" Since its introduction, stakeholder analysis has not only gained popularity but has also become essential in scholarly and practical fields. Stakeholder analysis generally refers to a comparative process that involves delineating phenomena, identifying stakeholders, and formulating engagement strategies (Reed et al., 2009). Established and validated approaches for stakeholder analysis include Power/Interest Matrix, Stakeholder Salience Model, Stakeholder Circle, and Social Network Analysis. Meanwhile, case studies, focus groups, and semi-structured interviews are preferred data collection methods (Yang et al., 2011). Each methodology offers unique advantages while possessing certain limitations. Consequently, scholars often employ a multi-methodological approach, integrating diverse models and data to conduct in-depth analyses and cross-validation (Reed et al., 2009; Yang, 2014; Zhuang et al., 2019), thus enhancing the robustness and precision of research outcomes.

While widely debated, the rationale for stakeholder research is roughly structured around the three dimensions (Donaldson and Preston, 1995): descriptive, instrumental, and normative. Descriptive research outlines phenomena and their relationships with stakeholders, while instrumental research seeks to achieve organizational objectives through analysis. Normative research advocates for the legitimacy of stakeholder engagement, thus grounded in moral or ethical considerations. Building on this theoretical foundation, the review by Reed et al. (2009) synthesizes various methodologies with distinct rationales, providing a structured approach to selecting methods that align with specific goals and contexts. Later, the study by Yang et al. (2011) highlights the effectiveness of stakeholder analysis in identifying key stakeholders and managing potential conflicts, broadening its applicability across various fields, including urban renewal. For example, Yang (2014) employs the Stakeholder Circle and Stakeholder Salience Model to categorize and prioritize stakeholders in an Australian district revitalization project. Rădulescu et al. (2016), focusing on a Romanian brownfield redevelopment project, pinpoint essential stakeholders and proposed targeted strategies for boosting their engagement. Using two neighborhood renewal projects in Chongqing, China, Zhuang et al. (2019) integrate Power/Interest Matrix alongside Social Network Analysis to investigate stakeholder interactions and their influence on urban renewal decision-making.

Despite these advances, in the realm of urban renewal, existing stakeholder research concentrates on identifying and categorizing stakeholders and quantifying the strength of their relationships. Few studies explore stakeholder influence or its subsequent impact on RP (Mok et al., 2015). Additionally, while Mitchell et al., 1997 note that "*power is transitory: it can be acquired as well as lost,*" Olander and Landin (2005) emphasize the necessity of continuously analyzing and updating stakeholder information throughout the project lifecycle. Yet, established research often overlooks the dynamic and temporal aspects of stakeholder influence. Longitudinal studies on this topic are particularly scarce, with few exceptions (Aaltonen and Kujala, 2010; Olander and Landin, 2005). This study addresses these gaps by providing a comprehensive analysis of stakeholder dynamics over time, specifically focusing on their evolving influence behaviors and the consequent effects on resident participation throughout various phases of urban renewal projects.

2.2. Stakeholder influence on resident participation

2.2.1. Direct influence

What are the different types of stakeholder influence? Established stakeholder research provides few explanations of the concept of influence, with Reed et al. (2009) as one exception. Reed et al. (2009) adopt the definition from social psychology, in which influence is defined as the "*process of affecting the thoughts, behavior, and feelings of another*

(Nelson et al., 1994)." The remaining studies focus on measurement rather than definition, with power being the commonly used attribute. Power is preferred as it is a determinant of stakeholders' capacity to influence (Nelson et al., 1994) and is "*a necessity to raise the impact level* (Olander, 2007)." For similar reasons, this research uses power to describe and analyze stakeholder influence.

Meanwhile, many efforts have been devoted to defining and categorizing stakeholder power. Etzioni (1964) provides a classical and concise classification. According to Etzioni (1964), power refers to "*an actor's ability to induce or influence another actor to carry out his directives or any other norms he supports.*" Stakeholders are deemed to possess coercive, utilitarian and normative power based on their physical, material and symbolic resources, respectively (Etzioni, 1964; Mitchell et al., 1997). This classification prioritizes the organizational attributes of stakeholders over their individual impact on the issue. Yukl (1998) expands on this by noting that power can also stem from personal sources. Building on Yukl's argument, this study argues that in addition to political and positional power, stakeholders may use leadership, charisma, integrity, enthusiasm and other personal traits to influence participation practices during neighborhood rehabilitation projects. Drawing from the above insights and relevant government documents, this study recognizes that stakeholders can exert four types of influence (Table 2.1): 1) **Assets**, 2) **Knowledge**, 3) **Traits**, and 4) **Position**.

Assets refer to a stakeholder's capacity and willingness to supply resources, and the ability to provide resources in a timely, stable and safe manner (Aragonés-Beltrán et al., 2017). Endorsed by resource dependency theory and exchange theory, the underlying assumption of **Assets** influence is that stakeholders obtain influence by controlling critical and needed resources (Henriques and Sharma, 2005). A stakeholder's influence becomes more pronounced as the focal issue increasingly relies on the stakeholder's resources (Pajunen, 2006). For resident participation, tangible resources include money, labor, technologies and services, venues, and equipment. Time allowance, permits, and licenses are common intangible resources.

Knowledge refers to the intelligence, expertise, and skills that stakeholders gain and accumulate through work and training (Beritelli and Laesser, 2011). Aragonés-Beltrán et al. (2017) subdivide it into K1. *Expert knowledge*, K2. *Professional competence*, and K3. *Individual strategies*. For resident participation, they respectively refer to knowledge regarding techniques, channels and measures acquired through thematic training; expertise accumulated from professional work and competence it brings; and personal strategies summarized after going through various rehabilitation and participation activities and interacting with diversified stakeholders.

Knowledge alone does not guarantee influence, which also relies on stakeholders' abilities to collect, process, share, and apply (Yukl, 1998). In this regard, the control over information is largely determined by individual **Traits** (Li et al., 2024; Parise, 2007), which can be organized into three distinct categories: T1. *Capability to shape values* includes leadership, infectiousness, and persuasiveness (French and Raven, 1959; Yukl, 1998). Stakeholders possessing these traits can sway others, inspiring target groups to follow directives even without fully grasping the advocated principles. T2. *Public image* includes charisma, enthusiasm, optimism, and generosity (Greene, 2010; Yukl, 1998). Influence driven by public image is about personal appeal, fostering relationships based on friendship or admiration. T3. *Interpersonal skills*. Individuals with well-developed interpersonal competencies, such as resourcing, networking, teamwork, communication, and negotiation skills, are more likely to accumulate resources and build coalitions for more significant impact (Li et al., 2024).

Position, in contrast, is determined by the environment in which stakeholders operate and is less related to individual traits (Greene, 2010; Yukl, 1998). **Position** influence stems from three main dimensions: P1. *Organizational position* refers to the influence stakeholders receive from their affiliated institution, determined by the institution's social role, qualifications, and reputation (French and Raven, 1959;

Greene, 2010; Yukl, 1998). P2. *Process position* influence arises from processes and mechanisms and is closely related to project nature (Aragonés-Beltrán et al., 2017; Beritelli and Laesser, 2011). For instance, residents generally have more decision-making power in the design phase of a rehabilitation project than in a redevelopment project. P3. *Hierarchical position* relates to the vertical position of stakeholders within their organizations (Beritelli and Laesser, 2011; French and Raven, 1959), determining stakeholders' prerogatives, duties, and responsibilities (Yukl, 1998).

2.2.2. Indirect influence

Despite the fruitful exploration of power in the above research frameworks, the shortcoming is evident: the influence of stakeholders' interrelationships on each other's behavior is overlooked (Henriques and Sharma, 2005). Frooman (1999) explains this indirect influence through the lens of resource dependence theory, and power is considered an attribute embedded in the relationship between stakeholders. Based on the type of dependency (yes or no) and degree of dependence (high or low) between a pair of stakeholders, Frooman (1999) proposes four types of indirect influence: 1) direct withhold, 2) direct usage, 3) indirect withhold, and 4) indirect usage. Aaltonen and Kujala (2010) amalgamate it with Mitchell et al. (1997)'s Stakeholder Salience Model, and refine the indirect influence into seven distinct categories. Using the case of a pulp mill project in Uruguay, Aaltonen and Kujala (2010) validate the applicability of the framework in analyzing stakeholders' indirect influences in construction projects. This framework also highlights the complexities similar to those encountered in neighborhood rehabilitation initiatives. These complexities include competing and conflicting interests that are often challenging to identify and reconcile. Moreover, both projects generate environmental and social impacts that transcend physical boundaries, involving a broad spectrum of social and community actors. Given these parallels, Aaltonen and Kujala (2010)'s framework is well-suited for uncovering hidden relationships and impacts in neighborhood rehabilitation, thereby addressing previously identified gaps in urban studies. Consequently, this research adopts Aaltonen and Kujala (2010)'s framework, proposing that stakeholders indirectly influence resident participation through seven distinct pathways:

Direct withhold/usage: Stakeholder A either ceases to supply critical resources to stakeholder B, referred to as **Direct withhold**; or dispenses resources but with conditions attached, termed as **Direct usage**. These conditions motivate Stakeholder B to adopt and execute RP in neighborhood rehabilitation or modulate B's undesirable behaviors.

Indirect withhold/usage: Stakeholder A influences stakeholder C to either stop providing resources to stakeholder B, termed as **Indirect withhold**; or to allocate resources to B but with added conditions, known as **Indirect usage**. This way of influence resembles **Direct withhold/ usage**. In this case, Stakeholder A′ chooses, or often can only use, the intermediary Stakeholder C to influence Stakeholder B's behavior.

Resource building: Stakeholder A increases its holdings of critical resources to a target stakeholder, like stock, credibility, and trust. Or critical resources for RP, such as policies, knowledge, or tactics. Hence, promoting Stakeholder A's perceived influence on the target stakeholder or RP. This is especially the case during the initial stages of the rehabilitation process, where stakeholders may lack sufficient resources to initiate or organize RP effectively.

Coalition building: Stakeholder A collaborates with other stakeholders to build synergies for RP and enhance its advocacy's credibility.

Conflict escalation: Stakeholders escalate existing conflicts to reshape the environment. Within this altered context, their advocacy for RP is more resonant and understandable to other stakeholders and the broader community.

Communication and credibility building: Stakeholders disseminate information through various channels to build credibility and a positive image, fostering an environment that encourages support and acceptance of their proposals, like RP.

Table 2.1
Stakeholder direct influence on resident participation shortlisted from the literature[1].

Type of Influence	Cd.	Subtypes and implication for resident participation	(French and Raven, 1959)	(Etzioni, 1964)	(Yukl, 1998)	(Pajunen, 2006)	(Reed, Graves et al., 2009)	(Greene, 2010)	(Beritelli and Laesser, 2011)	(Aragonés-Beltrán, García-Melón et al., 2017)	(Yu and Leung, 2018)	(Lu and Lange, 2021)	(USC, 1992)	(BZK, 1994)	(MOHURD, 2017)	(SC, 2020)
Assets	A1.	Possession/control of (in)tangible resources, e.g., money, labor, venue, technology, information, permit, etc.	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	A2.	Importance and necessity of resources for the focal issue				√									√	
	A3.	Timeliness, stability and security of resource supply	√		√		√		√	√		√			√	√
	A4.	Level of dependence on others for resources				√								√		
Knowledge	K1.	Expert knowledge	√		√			√	√	√	√	√	√	√	√	√
	K2.	Professional competence							√	√		√	√	√	√	√
	K3.	Personal strategies							√	√		√		√		
Traits	T1.	Capacity to shape values and beliefs, e.g., persuasiveness, credibility, and leadership.	√	√	√		√			√		√		√	√	√
	T2.	Public image, e.g., charisma, likeability, admiration, wisdom, generosity.			√			√		√					√	
	T3.	Interpersonal skills, e.g., resourcing, networking, teamwork, communication and negotiation skills.				√		√		√		√				
Position	P1.	Hierarchical position	√		√		√	√	√		√	√	√		√	√
	P2.	Organizational position (image of the organization)			√		√				√	√	√	√	√	√
	P3.	Mechanism position (position in a specific process/mechanism)				√			√	√			√	√	√	

Direct action: Stakeholders organize petitions, protests, boycotts, and roadblocks to compel other stakeholders to adopt and implement RP. This strategy aims to prompt immediate response and tangible changes through direct confrontation.

Building upon above direct and indirect influence strategies, this research proposes an analytical framework termed the Stakeholder Influence Model (SIM) (Fig. 2.1):

2.3. Neighborhood rehabilitation in urban China

The residential neighborhood in China refers to *an urban district with clear geographical boundaries where the primary purpose of land use is housing* (MOHURD, 2018). Those constructed before 2000 are commonly referred to as old neighborhoods and are the focus of recent rehabilitation initiatives (SC, 2020). Given extensive socio-political benefits, local governments remain the initiator and the primary financier of rehabilitation. Government-initiated neighborhood rehabilitation mainly aims to (SC, 2020): 1) restore building structures and exteriors; 2) improve the communal environment and amenities; and 3) boost community engagement and grassroots governance.

Meanwhile, RP is gaining recognition in China as a critical component in achieving sustainable neighborhood rehabilitation. The *2017 Symposium on the Pilot Programme of Old Neighborhood Rehabilitation* introduced the concept of resident participation to China's urban renewal policies, which is now articulated as Co-creation (*Gongtong Dizao*) in policy frameworks. To foster co-created urban neighborhoods, residents are actively involved in determining (MOHURD, 2017; SC, 2020): 1) whether to rehabilitate the neighborhood; 2) rehabilitation scope and content; 3) design plans and technology; 4) construction content and sequence; and 5) management mode and responsible body. These milestones, in turn, subdivide the neighborhood rehabilitation process into five phases: **Phase I - Intention and Setup; Phase II - Mapping and Assessment; Phase III - Planning and Design; Phase IV - Construction and Acceptance;** and **Phase V - Operation and Maintenance**.

Established policies also outline the responsibilities and roles of involved parties. Besides residents, recent cases show that five stakeholder groups are most relevant to RP in neighborhood rehabilitation in China (Li et al., 2024; Lu and Lange, 2021; SC, 2020): local government, neighborhood committee, design professional, implementation and construction unit, and consulting party.

The local governance structure in China encompasses three hierarchical levels: Municipality, District Government, and Sub-district Administrative Office. For neighborhood rehabilitation, the municipality crafts overarching policies, monitors project progression, and evaluates outcomes (SC, 2020). The district government's responsibilities include funding allocation, project approval, and recruiting and coordinating essential personnel such as designers, implementers, and consultants (SC, 2020). At the grassroots, the sub-district office implements these projects, handling policy training, task delegation, staff management, and site supervision. Despite the differentiated roles, all three levels are united in the commitment to urban development and social stability (SC, 2020). Therefore, like other urban studies (Li et al., 2024; Liu et al., 2018; Lu and Lange, 2021), this research views these three governmental tiers as an integrated entity, aiming to understand their collective impact on neighborhood rehabilitation and associated efforts.

In China, neighborhood committee is an institutionalized community-based organization that facilitates self-governance, self-education, and self-service among residents (NPCSC, 2018). The committee is established under government guidance and supported with empowerment and subsidies (NPCSC, 2018). Within neighborhood rehabilitation, neighborhood committee fulfills dual roles. It acts as the government's "spokesperson," relaying policies, implementing directives, and mobilizing residents to engage in civic duties (Liu et al., 2023). Simultaneously, it serves as residents' "family head," mediating internal conflicts, facilitating interactions with external parties, and safeguarding residents' interests and rights (Li et al., 2024; 2020). Besides neighborhood committee, residents may spontaneously form other community-based organizations, including homeowner committee, clan organization, self-management group, and interest group (Li et al., 2024; Lu and Lange, 2021; 2020). The presence, roles, and impact of these groups vary widely across neighborhoods (Lu and Lange, 2021). Given this variation, this study specifically focuses on the neighborhood committee's unique behavior in RP.

In neighborhood rehabilitation projects, designers and implementation units primarily manage plan design and field construction. They also take on roles such as surveyors or community planners, organizing lectures, surveys and workshops to gather and integrate residents' feedback into the decisions (Li et al., 2020; 2020). Consulting entities, including research institutions, non-government organizations (NGOs),
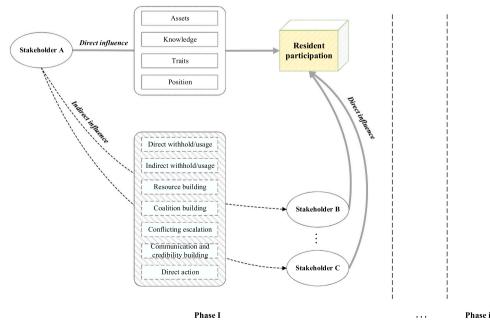

Fig. 2.1. The Stakeholder Influence Model (SIM) (Source: authors).

media, businesses, and pressure groups, also play a vital role (Li et al., 2024; Li et al., 2024). Their activities span education, platform creation, event planning, monitoring, and policy formulation when required (Li et al., 2020; Yu and Leung, 2018).

3. Methodology

The case study approach, frequently employed in stakeholder research, was applied to examine how stakeholders impact RP throughout the neighborhood rehabilitation lifecycle. Given this research's revelatory nature, the case study method enables an in-depth examination of the adaptability and comprehensiveness of the proposed Stakeholder Influence Model (SIM, Fig. 2.1) within the context of neighborhood rehabilitation. Additionally, this methodology enables a "thick description" of multifaceted and evolving stakeholder behaviors (Patton, 2014), providing a nuanced understanding of stakeholders' effects on RP.

3.1. Case study area

Wuhan, China, was selected as the case study area. Wuhan is the capital city of Hubei province, with 13 administrative districts (Fig. 3.1). As the largest city in central China in terms of both population size and gross regional product (GRP), Wuhan is a pivotal hub for central region development. From 2020–2023, Wuhan has rehabilitated 1560 aging neighborhoods, benefiting approximately 685,700 households.[2] Public participation practices emerged in 2008 and were institutionalized into urban renewal policies by 2020.[3] Such extensive endeavors furnish public, private and societal stakeholders in Wuhan with invaluable experience and insights to answer the research questions.

Wuhan's selection as the study area is also informed by its distinctive role within domestic and global urban hierarchies. Its status as a representative second-tier[4] and Beta city[5] creates a valuable context for examining stakeholder influence on RP. On the one hand, while first-tier cities exert significant domestic and global impact, second-tier cities host more aging neighborhoods and larger populations (Wei, 2020). Renewal studies in China focus on first-tier cities, leaving a gap in understanding due to the limited budgets, fewer social resources, and more conservative governance structures typical of second-tier cities. Therefore, as a representative second-tier city in China, insights from Wuhan are instrumental for calibrating and contextualizing findings from developed regions and offering lessons for other developing cities navigating similar constraints.

On the other hand, second-tier cities usually operate on tighter fiscal budgets for social services. The COVID-19 pandemic further exacerbates these financial challenges, significantly reducing urban development investments. A case in point is that government funding for neighborhood rehabilitation in Wuhan decreased from ¥70,000 per household in

early 2020 to less than ¥20,000 by the end of 2022 (Li et al., 2024). Additionally, the government allocates ¥100,000 per year to each neighborhood, but is expected to cover the entire cost of community services for 1000 to 2000 households (about 3000 to 6000 people) (Liu et al., 2023). Such fiscal austerity mirrors the trends witnessed in Western countries following the 2008 economic crisis. Given this parallel fiscal context, Wuhan can offer nuanced insights for Western countries navigating persistent budgetary challenges.

3.2. Data collection

Qualitative methods, including desk research, semi-structured interviews, and participant observations, were integrated to validate the SIM and address the study's second and third research questions: How do stakeholders influence resident participation in neighborhood rehabilitation? How does stakeholder influence and its impact on resident participation evolve across different phases of the neighborhood rehabilitation lifecycle?

Data collection began with desk research of policy documents, project records, and newspaper articles to create a database of neighborhood rehabilitation projects in Wuhan. This database cataloged each project's geographical location, rehabilitation details, and contact information for relevant agencies. Utilizing this database, initial contacts were made with government agencies and implementation units, who facilitated further connections with neighborhood committee members, design professionals, and consultants. Government interviewees were purposively selected from all three levels of local government across all inner districts (Fig. 3.1, Districts 1–7), focusing on departments involved in neighborhood rehabilitation. Representatives from neighborhood committees were carefully selected to cover each inner district, and design and construction firms were chosen to ensure representation of projects across Wuhan. For these non-resident stakeholders, leaders and managers were targeted for their deep insights into urban renewal and their ability to articulate institutional perspectives. Resident respondents were recruited through two approaches: a random selection from the public and a stratified method based on project locations from the database. This approach aimed to collect diverse viewpoints, representing various ages, educational levels, income brackets, and residential backgrounds.

During the interviews, participants were prompted to 1) describe neighborhood rehabilitation lifecycle and associated RP activities; 2) identify the phases of their involvement; and 3) discuss their and other stakeholders' influence on RP. Sampling across the six stakeholder categories continued until no new influencing strategies emerged. From May to September 2022, 44 interviewees were approached, including 9 government officials, 7 neighborhood committee directors, 7 design professionals, 5 construction practitioners, 7 consultant representatives, and 9 residents. Interviews, conducted face-to-face by one of the authors, lasted between 0.7 and 3 hours. The study followed Kaiser (2009)'s methodological framework to ensure confidentiality throughout the design and data collection phases. The interview protocol (first column of Table 3.2) was approved by the Human Research Ethics Committee (HERC) at the authors' institution. At the beginning of each interview, a confidentiality agreement was presented, stating that personal information would be pseudonymized and the data would be used exclusively for academic research. All participants consented to the recording, transcribing, and quoting of their statements.

Table 3.1 shows that the resident sample primarily includes middle-aged and elderly homeowners, complemented by younger tenants with higher education and income levels, aligning with demographic trends in old neighborhoods in China (Li et al., 2024). Non-resident respondents are urban renewal experts active across various administrative districts, with 3–5 years of experience in neighborhood rehabilitation, consistent with the recent implementation of rehabilitation policies in China's second-tier cities since 2020 (Li et al., 2024). Hence, the respondents are considered representative and equipped to

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[2] Calculated from government annual reports.

[3] See Li, Tao et al. (2024) for a detailed review of the history and policies of urban renewal and resident participation in Wuhan.

[4] The National Bureau of Statistics (NBS) categorizes Chinese cities into three tiers based on political status, administrative level, economic volume, and population size. Currently, there are 4 first-tier cities (Beijing, Shanghai, Guangzhou, Shenzhen), 31 s-tier cities, and 35 third-tier cities. Most of the second-tier cities are provincial capitals. Wuhan, as the capital of Hubei province, is among the middle level of provincial capitals in terms of economic size and population, and is thus a widely accepted second-tier city. For cities included in each tier, please see https://www.gov.cn/lianbo/bumen/202401/content_6926526.

[5] Globalization and World Rankings Research Institute (GaWC) classifies second-tier cities in China from Beta to Gamma- cities. Wuhan is designated as a Beta city, indicating moderate connections with the global economy. See https://www.lboro.ac.uk/microsites/geography/gawc/world2020t.html for a detailed list.
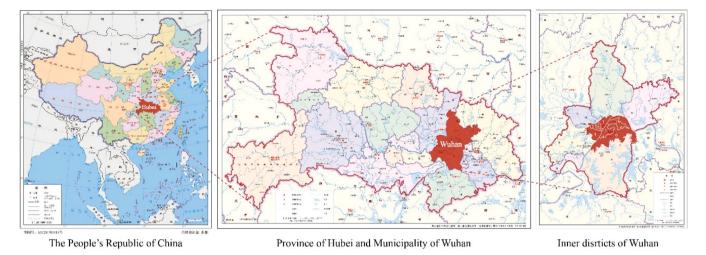
The People's Republic of China   Province of Hubei and Municipality of Wuhan   Inner disrticts of Wuhan

Fig. 3.1. Location of case study area. Note: From left to right, the source and review number of the three maps are: Ministry of Natural Resources of the People's Republic of China, GS(2019)1818; Department of Natural Resources of Hubei Province, 鄂S(2024)008; and Department of Natural Resources of Hubei Province, 鄂S (2024)008.

offer meaningful and varied insights into the study's research questions.

Moderate participant observation was utilized to align subjective perceptions with objective data, fortifying the validity of the findings. From April to December 2022, two authors visited 20 completed and 13 ongoing rehabilitation projects across Wuhan and participated in 15 RP events. Field notes, photographs, random interviews, and reflective journals were gathered during the observations (Fig. 3.2), focusing on four main themes: 1) rehabilitation tasks and related RP activities, 2) objectives, processes, and outcomes of RP activities, 3) involved stakeholders, and 4) stakeholder influence behaviors and impacts on RP. In the end, the study compiled a dataset including 44 audio recordings, 3 videos, 65 interview transcripts (44 from semi-structured and 21 from impromptu interviews during observations), 218 photographs, 56 field notes, 23 project reports, 53 policy documents, and 43 news articles.

3.3. Data analysis

Deductive content analysis was adopted to analyze the dataset, aiming to examine the applicability and effectiveness of the SIM in neighborhood rehabilitation context and the varied influence behaviors of stakeholders on RP. The analysis was structured into two phases. The SIM was first converted into a codebook with six defined themes: 1) stage of influence, 2) specific RP activity, 3) involved stakeholders, 4) target of influence (who influences whom), 5) type of influence (direct, indirect), and 6) impact on RP (facilitate, inhibit). These themes and their subcategories are elaborated in the codebook presented in Table 3.2.

Research data were then reviewed and coded using ATLAS.ti software to align with these predefined themes and categories. For example, local government interviewee LG5 stated during the interview, "*We require the applicant (implementation units) to submit supporting documents along with the design plan. The documents are to prove that, for this project, they have conducted public surveys, the design plan has been publicized in a conspicuous place, and most residents agree to the plan. If they do not submit these (supporting documents), we will not approve their application. In turn, they will not have a permit to construct.*" According to the codebook, this statement indicates local government's direct and indirect influence on implementation unit, facilitating RP. Fig. 3.3 illustrates how this statement was coded in ATLAS.ti.

We enhanced finding validity through method and investigator triangulation. Two of the authors independently coded the data, and compared the results. Discrepancies in coding were resolved through discussion. If agreement was not reached, a third researcher would arbitrate the decision.

4. Results

4.1. Stakeholder influence on resident participation

4.1.1. Phase I. Intention and setup

In Phase I, local government indirectly promoted RP (Fig. 4.1), setting the stage for neighborhood committee, consulting party, and residents to employ a mix of direct and indirect influence strategies. Local government provided the committee with financial resources and administrative authority (**Assets**, **Position**), which enabled it to collaborate with local media (**Coalition building**). This partnership focused on extensively publicizing relevant policies and real-life examples, fostering residents' understanding of and positive attitudes toward rehabilitation initiatives (**Resource building**). Additionally, some committees, leveraging their grassroots knowledge and reputation within the governmental system (**Knowledge**, **Traits**), advocated from the bottom up and led to significant improvements in the efficiency and effectiveness of RP:

> "*From the start of this project, I emphasized that if they wanted our help, we first needed to get on the same page (**Conflict escalation**) —figuring out how to address resident concerns. We completed 80 % of the public survey within just four days. The government called it a miracle. After that, they adopted our approach for future surveys.*" (Neighborhood committee interviewee, NC1)

Another objective of RP activities in this phase is to ensure that organizers and participants acquire the necessary knowledge to implement subsequent phases (**Knowledge**) effectively. To facilitate this, local government contracted NGOs (**Coalition building**), drawing on their professional expertise and experience (**Knowledge**). Through targeted education and training, NGOs enhanced the participants' ability to plan, design, organize and engage (**Resource building**), thereby indirectly promoting RP.

4.1.2. Phase II. Diagnosis and assessment

In Phase II, the demand for RP came from implementation units and designers, exerting direct influences (Fig. 4.2). Implementation units engaged residents to comply with administrative and auditing requirements mandated by local government. While designers focused on understanding residents' preferences to ensure their design solutions were well-suited to local needs. Specifically, implementation units

Table 3.1

Profile of the interviewees[61]

Group	Cd.	Position	Profile
Local government	LG1	Section head	Government department A at the municipal level; Specialized in propaganda and grassroots work; 5 years of experience in devising resident participation
	LG2	Vice director	Government department B at the municipal level; Urban planning and development specialist; Over 20 years of renewal experience
	LG3	Section head	District Bureau of Housing Management Housing; Specialized in housing renovation and management; 20 years of experience in urban renewal, 5 years in rehabilitation
	LG4	Section head	District Bureau of Finance; 3 years of experience in grassroots work, 10 years of experience in finance and 5 years of experience in urban rehabilitation
	LG5	Section head	District Branch of Natural Resources and Planning Bureau; 10 years of experience in urban renewal and 5 years of experience in neighborhood rehabilitation
	LG6	Section head	District Bureau of Administration and Approval; Specialized in construction project appraisal; 5 years of experience in neighborhood rehabilitation
	LG7	Section head	Subdistrict Administrative Office A; Specialized in public policy and administration, 18 years of experience in grassroots work; Implemented over 35 neighborhood rehabilitation projects
	LG8	Section head	Subdistrict Administrative Office B; Specialized in urban development, 10 years of experience in urban renewal. Implemented over 20 neighborhood rehabilitation projects
	LG9	Section head	Subdistrict Branch of Urban Management and Law Enforcement; 15 years of experience in assessing and removing unauthorized building works (UBWs)
Neighborhood committee	NC1	Director	Neighborhood Committee A; Over 20 years of experience in grassroots work; Implemented over 10 neighborhood rehabilitation projects
	NC2	Section head	Neighborhood Committee B; 10 years of experience in grassroots work; Implemented over 10 neighborhood rehabilitation projects
	NC3	Director	Neighborhood Committee C; 15 years of experience in grassroots work; Implemented 6 neighborhood rehabilitation projects

Table 3.1 (*continued*)

Group	Cd.	Position	Profile
	NC4	Director	Neighborhood Committee D; Over 20 years of experience in neighborhood governance and grassroots work; Implemented 20 neighborhood rehabilitation projects
	NC5	Section head	Neighborhood Committee E; 13 years of experience in neighborhood governance and grassroots work
	NC6	Director	Neighborhood Committee F; 10 years of experience in neighborhood governance; Initiated 2 rehabilitation projects
	NC7	Director	Neighborhood Committee G; 5 years of experience in neighborhood rehabilitation; Implemented 8 neighborhood rehabilitation projects
Planning and design professional	PD1	Chief planner	Planning and Design Institute A; Specialist in urban planning; Planned over 10 neighborhood rehabilitation projects spanning 4 districts
	PD2	Chief architect	Architectural firm A; 20 years of experience in architectural design; Planned over 10 rehabilitation projects spanning 3 districts
	PD3	Senior designer	Architectural firm B; 10 years of experience in landscape design; Designed over 5 rehabilitation projects spanning 2 districts
	PD4	Designer	Planning and Design Institute B; 15 years of experience in architectural design; Designed over 25 rehabilitation projects spanning 5 districts
	PD5	Designer	Planning and Design Institute C; 10 years of experience in architectural design; Designed over 10 rehabilitation projects spanning 3 districts
	PD6	Designer	Planning and Design Institute D; 3 years of experience in architectural design; Designed over 5 rehabilitation projects spanning 2 districts
	PD7	Surveyor	Local Development and Construction Company A; 10 years of experience in project management; Surveyed over 20 old neighborhoods
Implementation and construction unit	DC1	Manager	Local Development and Construction Company A; 20 years of experience in real estate development; Implemented 10 rehabilitation projects
	DC2	Manager	Local Development and Construction Company B; 10 years of experience in construction management; Implemented 13 neighborhood rehabilitation projects
	DC3	Senior manager	Construction company A; 20 years of experience in construction; Constructed over 20 rehabilitation projects spanning 4 districts
	DC4	Senior manager	Construction company B; 15 years of experience in construction;

Table 3.1 (*continued*)

Group	Cd.	Position	Profile
	DC5	Manager	Constructed 8 rehabilitation projects spanning 2 districts Construction company C; 5 years of experience in construction; Constructed 5 rehabilitation projects spanning 2 districts
Consulting party	CP1	Professor	Local university A; 20 years of experience in urban planning, 10 years in public participation. Planned 15 rehabilitation projects spanning 3 districts
	CP2	Researcher	Local university A; 5 years of experience in neighborhood rehabilitation; Designed 8 rehabilitation projects spanning 3 districts
	CP3	Professor	Local university B; 15 years of experience in urban renewal and 3 years in public participation; Currently in charge of three participatory rehabilitation projects
	CP4	Lecturer	Local university C; 5 years of experience in neighborhood rehabilitation; Currently in charge of a participatory planning project
	CP5	Head	NGO A for neighborhood planning and design; Specialized in neighborhood development and public participation; Involved in over 30 rehabilitation projects spanning 4 cities
	CP6	Member	NGO B for community building; Specialized in grassroots work, mediation of disputes, and formation of community-based organizations; Involved in over 10 neighborhoods spanning 3 districts
	CP7	Section head	Local newspaper; 8 years of experience in reporting urban renewal, and 3 years in neighborhood rehabilitation; Coverage of almost all rehabilitation projects in Wuhan
Resident	NR1	Homeowner	Male, 79 years old, 30 years of residence in rehabilitated Neighborhood A, bachelor's degree, has regular income above city median
	NR2	Tenant	Female, 32 years old, 8 years of residence in rehabilitated Neighborhood A, bachelor's degree, has regular below city median
	NR3	Homeowner	Female, 84 years old, 40 years of residence in rehabilitated Neighborhood B, associate degree, has regular income around city median
	NR4	Homeowner	Female, 48 years old, 15 years of residence in rehabilitated Neighborhood C, master's degree, has regular income around city median
	NR5	Tenant	Female, 58 years old, 10 years of residence in rehabilitated Neighborhood C, illiterate, living with children and no income

Table 3.1 (*continued*)

Group	Cd.	Position	Profile
	NR6	Tenant	Male, 25 years old, 3 years of residence in Neighborhood D, bachelor's degree, has regular income around the city median
	NR7	Tenant	Male, 38 years old, 6 years of residence in Neighborhood E, Ph. D., has regular income above city median, just experienced an elevator addition
	NR8	Homeowner	Male, 49 years old, 20 years of residence in Neighborhood F, Ph. D., has regular income above the city median, just initiated a neighborhood rehabilitation
	NR9	Homeowner	Male, 60 years old, 12 years of residence in Neighborhood G, bachelor's degree, has regular income above the city median

provided essential resources such as hardcopy questionnaires, display boards, and gifts (**Assets**). Neighborhood committee facilitated RP by preparing the necessary venues and equipment (**Assets**). While designers could conduct interviews and distribute questionnaires independently (**Traits**, **Knowledge**), they often relied on the committee to engage residents and recruit participants (**Coalition building**):

"……*even though we have professional knowledge and skills, we don't have the authority to carry out activities in neighborhoods or the ability to rally resident support (lack of **Assets** and **Position**). Therefore, we rely on the committee's assistance for most cases.*" (Design professional interviewee, PD2)

Residents formed collaborative groups to encourage more residents to actively express their needs. It also excluded those whose interests conflicted with the established coalitions:

"*My friend underwent the roof renovation (Pinggaipo) during their rehabilitation. I shared this with Ms. S, who, like me, lives on the top floor and has been dealing with constant leaks and overheating (**Resource building**). After that, we gathered a few more top-floor residents to complete questionnaires, pushing for Pinggaipo in our neighborhood (**Coalition escalation**).*" (Resident interviewee, NR2)

"*At the meeting, the residents agreed to demolish the unauthorized building works (UBWs), assuring us that they represented the violators and had communicated the situation to them. However, it turned out that they only informed those who supported the demolition about our meeting (**Direct usage/withhold**, **Coalition building**, **Resource building**) and deliberately withheld information from the actual violators to prevent them from attending the meeting or contacting us.*" (PD1)

4.1.3. Phase III. Planning and design

Designers and the implementation units continued to act as primary and direct promoters of RP in Phase III (Fig. 4.3). By specifying the budget usage and restricting the approval criteria, local government left implementation unit no alternatives but to carry out RP:

"*We require them to submit supporting documents along with design plans (**Direct usage**). These documents must show that public surveys have been conducted, the design plan has been publicly displayed, and that most residents agree. Without these documents, we won't approve their application, and they won't be allowed to start construction. (**Direct withhold**).*" (LG5)

Designer initiated RP, while the organization and execution of RP largely depended on the material resources provided by implementation unit and the convening power of neighborhood committee (**Traits**, **Position**):
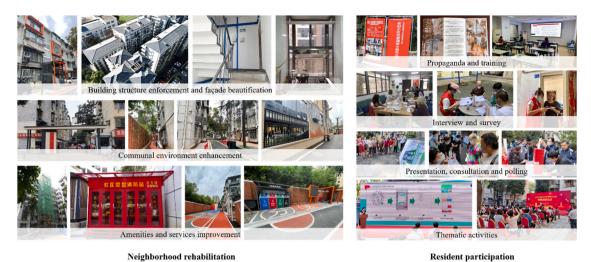
Fig. 3.2. Neighborhood rehabilitation and resident participation in Wuhan (Source: authors and interviewees).

Table 3.2
Coding framework: phases, stakeholders, direction and types of influence.

Interview question		Theme	Categories
In the X (I to V) phase of the rehabilitation, - What rehabilitation activities did you undertake? - Were residents involved? - How were the residents involved?	1	Phase of neighborhood rehabilitation	- Phase I - Intention and Setup; - Phase II - Mapping and Assessment; - Phase III - Planning and Design; - Phase IV - Construction and Acceptance; - Phase V - Operation and Maintenance
	2	RP activity	Specific name of the activity[a]
Did you meet any other stakeholders during the activity? Did this stakeholder have an impact on RP?	3	Relevant stakeholders	- Local government; - Neighborhood committee; - Design professional; - Implementation and construction unit; - Consulting group; - Resident
For this stakeholder, - Did this stakeholder have an impact on your behavior toward RP? - Or did you influence their behavior? - How did you influence each other?	4	Target of influence	- Influencer; - The influenced
	5	Type of influence	- Direct: 1) Assets; 2) Knowledge; 3) Traits; and 4) Position - Indirect: 1) Direct withhold/usage; 2) Indirect withhold/usage; 3) Resource building; 4) Coalition building; 5) Conflict escalation; 6) Communication and credibility building; 7) Direct action - Others
What was the impact of your actions on RP?	6	Impact on RP	- Facilitate; - Inhibit

[a] For specific names of common RP activities for neighborhood rehabilitation in China, see Li et al. (2024).

"I must admit, for neighborhood project, it has already become our default to contact the committee first. We always present the plans to the committee and ask them to explain to residents and handle their inquiries. They are much better at this as we often use technical terms that residents

don't understand or have the patience for. Plus, we are quite busy and not solely dedicated to serving them." (PD6)

Neighborhood committee built trust and credibility among residents through daily interactions and, more significantly, by demonstrating positive attitudes, strategies, and satisfactory outcomes during emergencies, such as the COVID-19 pandemic. This enhanced public image (**Knowledge**, **Traits**, **Position**) enabled the committee to reach and mobilize the residents easily:

*"After I experienced the pandemic, I realized that our committee truly serves the residents selflessly (**Communication and credibility building**). That is why I never hesitate to help when they ask for assistance with resident issues." (NR3)*

Experienced committees introduced residents to participation activities in batches. Enthusiastic, understanding, and reputable residents are typically involved first (**Traits**, **Knowledge**), expecting them to act as catalysts for broader participation (**Resource building**). RP process was deliberately complicated for those not engaging through designated channels and schedules (**Indirect usage/withhold**), aiming to ensure orderly and structured RP:

"Some residents refuse to replace the burglar bars. However, after seeing other people's new burglar bars, they want to replace them. I told them that they had to obtain approval from various levels of government first. Actually, it does not need to be so complicated because I can do it for him. But they need to know that acting outside the program comes with a price." (NC2)

4.1.4. Phase IV. Construction and acceptance

In Phase IV, implementation units remained the primary advocator for RP (Fig. 4.4). Due to the illegal nature of UBWs, local government did not provide any monetary or in-kind compensation to violators. Nor is it permissible to use the rehabilitation budget to remove UBWs (lack of **Assets**). To start work early, construction companies (**Knowledge**) tended to privately incentivize violators with consolation money or promise to restore their UBWs after rehabilitation by oral contracts (**Assets**, **Resource building**). The committee also played a crucial role in the demolition of UBW. It persuaded residents to use non-material resources, such as referencing laws, asking for favors, or appealing to their sense of humanity (**Traits**). Still, the committee primarily relied on fellow residents (**Position**) to persuade violators (**Communication and credibility building**):

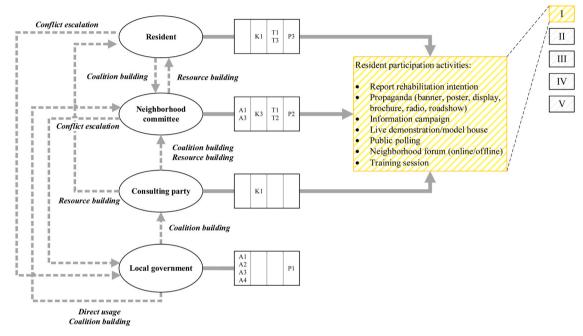**Fig. 3.3.** An example of data coding using software ATLAS.ti.

Fig. 4.1. Stakeholder influence on resident participation at Phase I.

"Relying on us or the government to do persuasive work, violators will feel that you are using administrative mandatory orders to suppress them. But if the residents are to do the work, there will be less resistance." (NC2)

Besides the trust and credibility built up in the communication and interactions between residents and constructors, progressive rehabilitation results also promoted RP:

"From their working attitude and the results achieved so far (Resource building), I realized that constructors really want to help us. Thus, in later construction works, I always support their decisions." (NR3)

4.1.5. Phase V: Operation and maintenance

Neighborhood committee acted as RP's organizer and initiator in Phase V (Fig. 4.5). The local government provided specialized funds directly to the committees and engaged consulting parties to educate them on relevant laws, regulations, and practical methods for electing property companies (**Resource building**). Nevertheless, the committee only partially relied on this procedural knowledge to manage specific issues. Instead, they frequently sought the support and influence of esteemed residents (**Coalition building**) who possessed substantial social connections and influence within the neighborhood (**Knowledge, Traits, Position**):

"Without Mr. L's help, I could not have brought in the property management company so smoothly. Mr. L has lived here for decades. He was

so dedicated to the collective good of the neighborhood. Thus, most residents trust him. That is why I grabbed him this time." (NC4)

The charisma, personality, trust and credibility built up in the daily work (**Traits, Communication and credibility building**) enabled the neighborhood committee to persuade resident leaders to be at their disposal. Spiritual awards were the committee's primary incentive. The committee also delegated trusted residents with management authority (**Assets**) and helped them form self-management organizations (**Position, Resource building**). These residents were then expected to replace the committee in monitoring and regulating other residents:

"…residents who cooperated with us to demolish UBWs formed a 'platform guard team.' The members go up (to the roof) every week to patrol and ensure that no new UBWs are created." (NC6)

4.2. Evolution of stakeholder influence and impact on resident participation

Synthesizing the research data shows that the SIM effectively captures all types of influence measures adopted by stakeholders, as well as their specific effects on RP, as detailed in Table 4.1. Furthermore, the case study facilitates a comprehensive analysis of the dynamics in stakeholder behaviors and relationships, as evidenced by the interview materials discussed in the previous section.

Besides residents, local government and neighborhood committee were involved throughout the entire lifecycle of rehabilitation. Local
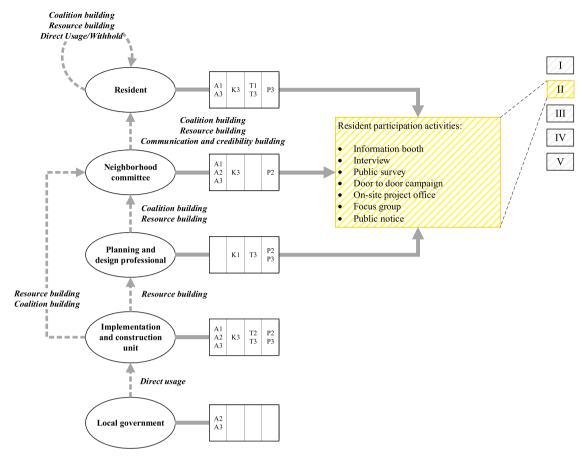
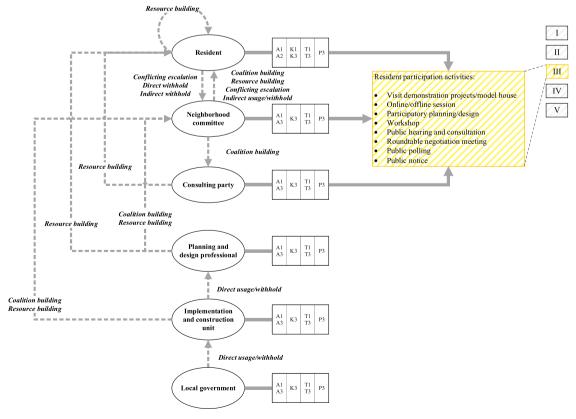**Fig. 4.2.** Stakeholder influence on resident participation at Phase II.

Fig. 4.3. Stakeholder influence on resident participation at Phase III.
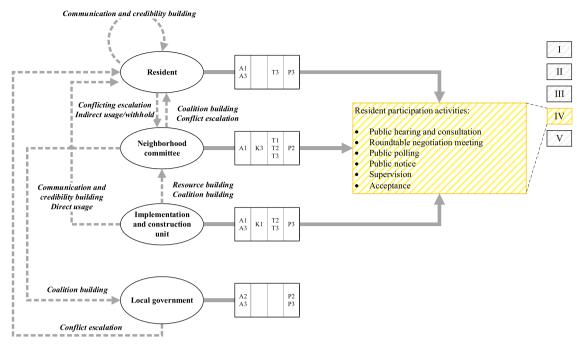
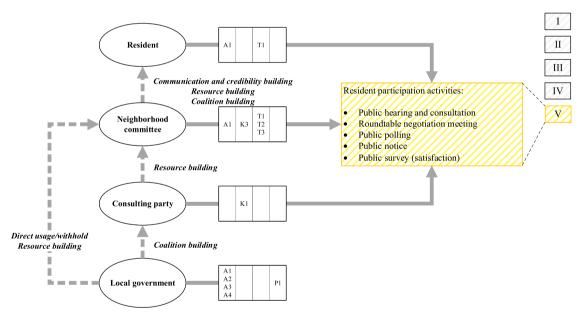**Fig. 4.4.** Stakeholder influence on resident participation at Phase IV.

Fig. 4.5. Stakeholder influence on resident participation at Phase V.

government primarily exerted an indirect influence on RP, whereas the committee often had a direct impact. Designers and constructors influenced RP directly but only in phases related to their job responsibilities. Consulting parties were engaged upon the request of other stakeholders and could influence RP either directly or indirectly.

Among the influence strategies, *Assets*—particularly *A1. Possession/control of (in)tangible resources*—was stakeholders' most preferred direct method of shaping RP, followed by *Knowledge*, *Traits*, and *Position*. *Resource building* emerged as the most used indirect strategy, adopted by all six stakeholder groups, while *Direct action* was the least utilized, employed only by residents.

Regarding the extent of strategy use, residents were the most exhaustive, employing all four direct and seven indirect strategies throughout the project lifecycle. Neighborhood committee was also adaptable, mastering all four direct and five indirect strategies, except for *Direct usage/withhold* and *Direct action*. Consultants had the most restricted impact, with only two direct influences—*Assets* and *Knowledge*—and a single indirect influence, *Resource building*.

Consistent with assumptions, the influencing strategies used by various stakeholders—whether direct or indirect—vary depending on project stage and target. In general, neighborhood committee and resident representatives are the primary targets. As the project progresses, the type and scale of influencing strategies evolve, particularly among neighborhood committees, implementing units, and residents. Initially, the committee primarily employed *Assets*, *Knowledge*, and *Position*, without significant use of *Traits*-type influence. However, *Traits* became the primary direct influence strategy as the project moved into later stages. Implementing units started with direct strategies (*Assets*)

Table 4.1
Stakeholder evolving influence on resident participation in neighborhood rehabilitation.

Stakeholders			Influence strategies											Impact on RP	
			Direct				Indirect								
Influencer	Phases	Target	Assets	Knowledge	Traits	Position	DireUW	IndireUW	ResouB	CoaliB	ConfliEx	CrediB	DirectA	Aspect of RP	Type of impact
Government	I	Committee	A1, A2, A3, A4			P1	√		√					Attitude, perception	↑
		Consultant	A1			P2				√				Knowledge, skills	↑
	II	Implementer	A2, A3				√							Channel, approach, technology	↑
	III	Implementer	A2, A3			P2	√							Approach, depth, width	↑
	IV	Implementer	A2, A3			P2	√							Level of influence	↑,↓
		Committee				P2, P3				√				Cooperate with demolition	↑,↓
	V	Consultant	A1							√				Working mechanism, approach, technology	↑
		Committee	A1, A2, A3, A4			P1	√		√					Channel, approach, technology	↑
Committee	I	**Resident**	A1, A3	K3		P2			√	√				Strategy, speed, breadth, innovative RP mechanism	↑
		Government			T1, T2					√	√			Mechanism, strategy	↑
	II	**Resident**	A1, A2, A3	K3		P2				√		√		Speed, comprehensiveness	↑,↓
	III	**Resident**	A1, A3	K2, K3	T1, T3			√	√	√	√			Order, mode of participation	↑,↓
		Consultant		K2						√				Legitimacy of decision-making	↑
	IV	**Resident**	A1	K3	T1, T2, T3				√	√	√	√		Mode of participation, continued RP.	↑
		Government			T1, T2, T3	P2				√				Fairness	↑
	V	**Resident**	A1	K3	T1, T2, T3				√	√		√		Willingness to participate, sense of responsibility, sense of belonging	↑
Designer	I														
	II	**Resident**		K1, K3	T3									Transparency, sufficient information and timely feedback, professional knowledge	-
		Committee		K1		P2 , P3			√	√				Transparency, sufficient information and timely feedback	↑
	III	**Resident**	A1, A3	K1	T3				√					Detailed explanation and feedback, mode, perception of participation	↑
		Committee	A1, A3	K1					√	√				Transparency, sufficient information and timely feedback	↑,↓
	IV														
	V														
Implementer	I														
	II	Designer	A1, A2, A3						√					Diversity of RP activities	↑
		Resident	A1		T2, T3	P2								Willingness to participate, perception of rehabilitation initiatives	↑,↓
		Committee	A1, A2			P3			√	√				willingness to participate	↑
	III	Designer	A1, A3				√							Variety of RP activities, depth, width, breadth, transparency, inclusiveness	↑
	IV	Committee	A1, A3	K1		P3				√		√			
		Resident	A1, A3		T2, T3		√				√	√		Mode of participation	↑
	V														
Consultant	I	**Resident**		K1					√					Refuse to participate	↑,↓
		Committee		K1					√					Capacity to participate, skills, knowledge	↑
	II														
	III	**Resident**	A1											Attractiveness and fun of participation	↑
		Committee		K1, K2, K3					√					Diversity and efficacy of participation	↑

Table 4.1 (*continued*)

Stakeholders		Influence strategies		Impact on RP
	Phase / Role	Direct	Indirect	
	IV			Fairness, comprehensive, transparency ↑
	V	K1		Chance to participate ↑
Resident	Committee	K1		Chance to participate ↑
	I — Government	K1	T3, P3	Level of influence, representative of the participants, transparency, inclusiveness ↑,↓
	Committee	K1	T1, T3	Influence on decision-making ↑
	II — Resident	A1, A3	T1, T3, P3	Chance to participate ↑,↓
	III — Implementer	A1, A2	T3	Influence on decision ↑
	Committee	K3	T1	Influence on decision ↑
	IV — Resident	K1	T3, P3	Influence on decision ↑
	Committee	A1, A3	T3	Willingness to participate, attitude toward communication ↑
	Implementer	A1, A3		Influence on decision ↑
	V — Resident		T3, P3	
	Government	A1	T3, P3	Influence on decision ↑
	Committee		T1	Change decision ↑
Frequency		26 / 20	17 / 11 / 3 / 17 / 17 / 10 / 8 / 4	

Note: 1. A blank indicates the stakeholder did not participate in this stage or exert this type of influence. 2. Impact on RP: "↑"-facilitate RP, "↓"-inhibit RP, and "-"-neutral impact.

and gradually shifted towards indirect strategies (**Communication and credibility building**) to manage increasing complexity and specific project challenges. Residents initially favored collaborative indirect measures such as **Communication**, **Resource building**, and **Coalition Building** to build consensus on collective interests. However, by Phase IV, they adopted more assertive measures, including **Conflict escalation** and **Direct action**, to advance their individual interests.

Notably, the strategies demonstrated significant stage-related variations in influencing various dimensions of RP, such as attitude, timing of participation, diversity of activities, and degree of participation (last column of Table 4.1). Early in the project, these strategies exhibited both facilitative and inhibitive effects. As the project advanced, the sources of stakeholder influence diversified and increased in scale, reducing the inhibitive effects of these strategies and enhancing their facilitative impact.

5. Discussion

5.1. Stakeholder influence on resident participation

5.1.1. Local government – primary but indirect facilitator of RP

The case of Wuhan highlights that, within the framework of neighborhood rehabilitation in China, local governments remain the primary initiators of RP, exerting substantial influence. This influence is bolstered by a diverse array of resources, including financial, administrative, labor, and material assets, as detailed in previous studies (Li et al., 2020; Yu and Leung, 2018), alongside intangible resources like control over social norms, public value, licensing, and information access, as evidenced by our case study. Further analysis of interview data suggests that the government's profound impact on RP extends beyond mere resource possession. It also involves the capacity to ensure the stable, timely, and secure provision of these crucial resources. This capability shapes the government's stance on RP, influencing the willingness and actions of other stakeholders and ultimately determining the occurrence of RP.

As a result, distinct from the direct oversight noted in previous literature (Sun et al., 2022; Yu and Leung, 2018), the Wuhan case illustrates that local government facilitated RP through indirect methods—**Direct usage/withhold**, **Coalition building**, and **Resource building**. A prominent example includes the government's specification of RP content and the requirement for RP documentation as a condition for project approval and permit issuance. This catalyzed diverse, extensive, in-depth, and sustained engagement from implementing units during Phases II and III of rehabilitation. This strategy aligns with the findings of Pinkse and Dommisse (2009) in residential market builders in the Netherlands and Wu (2023) in two public infrastructure megaprojects in Shanghai, where **Direct usage/withhold**—characterized by establishing stringent standards and fostering a participatory environment—is proved to be a viable and effective indirect method for local governments to promote RP.

Nevertheless, interview results show that local government's preference for indirect strategies has led to a substantial mismatch between policy intentions and practical needs, particularly in addressing UBWs. The government's indirect involvement has compromised its ability to differentiate between the needs of residents in rehabilitation versus redevelopment,[7] notably in its failure to provide necessary compensation for those affected. In demolishing UBWs, the government employed **Coalition Building** and **Resource Building**, transferring authority and responsibilities to neighborhood committees and implementation units, while overlooking the economic costs and public dissatisfaction these entities often face due to demolition activities. Although intended to

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[7] Unlike residents of urban villages who may construct UBWs for profit, residents of old neighborhoods very often build UBWs to improve their living conditions or for survival.

foster collaboration and empowerment, this redistribution of duties led to non-participation by violators and fostered resentment and resistance within neighborhood committee, jeopardizing the sustainability of RP initiatives. Feedback from implementing units reveals a growing hesitance to engage in future rehabilitation efforts. Therefore, while indirect measures contribute to RP occurrence, direct involvement of the government is necessary to ensure the long-term viability of these initiatives.

5.1.2. Neighborhood committee – a guarantee for effective RP, for initial and ongoing participation

While local government plays a leading role in initiating RP, the case indicates that neighborhood committee significantly influence its effectiveness, aligning both global (López-Rodríguez et al., 2020; Uittenbroek et al., 2019) and domestic studies (Hu, de Roo et al., 2013; Li et al., 2024). In the context of China, the COVID-19 pandemic and lockdown catalyzed the accumulation of power and clarified the roles of these committees in neighborhood affairs. In line with Liu, Lin et al. (2023)'s observations across six Chinese cities, during the pandemic, neighborhood committees excelled in information circulation, resource coordination, and conflict resolution, gaining substantial government recognition and public trust. In the case of Wuhan, these **Assets** and **Positions** emerged as proviral sources of influence for neighborhood committee in initiating, planning, organizing and managing RP. Additionally, the committee's influence extended throughout the lifecycle of neighborhood rehabilitation, albeit evolving in source. As the process progressed, the committee increasingly drew direct influence from **Knowledge**, gained through assisting in rehabilitation tasks, and **Traits** developed through daily interactions with residents. To foster initial RP, the committee employed **Resource building** and **Conflict escalation** indirect strategies, complemented by **Coalition building**, **Direct usage/withhold**, **Communication and credibility building** to ensure sustained involvement. Thus, beyond serving as RP's official and localized venues, as noted by Liu et al. (2023), and ensuring diverse, comprehensive and impactful RP, as argued by Li et al. (2024), this study highlights that neighborhood committee has become reliable and preferred channels for external stakeholders to engage with residents.

The empowerment from the government, coupled with other stakeholders' reliance, prompted neighborhood committee to emerge as the most influential stakeholder in the later phases of rehabilitation. This development marks a significant change from their noted powerlessness in urban renewal, as discussed by Hu et al. (2013) and Zhuang et al. (2019), with some committees adopting assertive roles that contrast sharply with their past passivity. To cement their newfound influence, some committees controlled the dissemination of retrofitting-related knowledge, managed access to participation opportunities, and solicited feedback from specific residents. This selective engagement marginalized dissenting voices and vulnerable populations in decision-making. The manipulation of values and viewpoints during the design phase led to a homogenization of ideas, perspectives, and strategies. Notably, this increasing reliance on neighborhood committee also prompted government officials and designers to minimize direct interactions with residents, choosing instead to depend on the committee's filtered perspectives. By the end of the process, few stakeholders could challenge the committee's authority over resident affairs or regulate their actions. Regrettably, inadequate accountability mechanisms, outdated policy frameworks, and resource constraints only further enabled neighborhood committee's arbitrariness.

5.1.3. Resident-initiated participation – a shared vision or a new dictatorship?

Scholars and governments suggest that RP's ultimate goal is to develop participation habits, i.e., residents' spontaneous involvement in neighborhood issues (Nienhuis et al., 2011; Tang et al., 2022). The Wuhan case exemplifies this gratifying trend. Throughout rehabilitation, residents evolved from passively accepting predetermined

decisions to holding final decision-making authority, proficiently utilizing all types of direct and indirect influence strategies. Specifically, in addition to obstructing construction (**Direct action**), residents sought attention from higher levels of government through *Mayor's Hotline* and petitions (**Conflict escalation**). Others turned to acquaintances with social influence (neighborhood committee director, deputy to People's Congress), or by lobbying (**Resource building**) and partnering with like-minded residents to become salience (**Coalition building**). Consistent with the framework outlined by Mitchell et al. (1997), all these actions aimed to increase the likelihood that their demands and concerns would be heeded and understood by the working group. Nevertheless, this dynamic raises a critical question: among those actively involved, are they the ones who should be involved?

Regarding the issue of Who, academics are broadly divided into two schools of thought: universal participation, and participation by elected representatives. China's current strategy is the latter. With many residents in a neighborhood, it is not feasible or practical to have them all participate in decision-making simultaneously and through the same channels (Liu et al., 2018). In practice, neighborhood committee recruits and selects participants, using the Independent Cascade Model. It first activates a group of residents, who then activate the whole neighborhood. Meanwhile, the government is actively implementing the home-owner committee scheme to confront the dictatorship of neighborhood committee over neighborhood affairs. Then, who are these initial participants and representatives of residents? Whose interests do they represent? For the first question, Li et al. (2020) and many Chinese studies show they are the most prestigious and persuasive people in the neighborhood. In our case, they are often some of the closest, well-connected residents to neighborhood committee. To the second question, our findings align with many previous studies (Aitken, 2017; Nienhuis et al., 2011), where resident representatives are motivated by individual interests. These interests range from meeting personal expectations and values to optimizing design plans for economic gain and convenience. In some instances, these representatives leverage their social stature and networks to package their pursuit of personal interests as a priority for the collective good. In more extreme scenarios, active residents utilize the system of batch participation to control information dissemination and hinder the involvement of residents with conflicting interests and opinions. Institutional innovations intended to empower residents have instead exacerbated process inequities and information opacity. Nevertheless, there is still no clear answer to how to balance power among residents and, in this context, reconcile power imbalances between residents and neighborhood committee.

5.2. Policy implications

Based on the critical findings presented above, suggestions are provided to regulate stakeholders' undesirable behaviors and curb unhealthy relationships, thus promoting meaningful RP and inclusive neighborhood rehabilitation. First, to cope with the lagging policies, local government is suggested to intervene directly in implementing RP. One viable but less-mentioned solution is to introduce a policy evaluation and feedback mechanism within the administrative system. The evaluation can be conducted after the initial policy advocacy phase of each project. At this juncture, experienced grassroots staff are invited to identify potential risks and recommend preventive measures, while higher government levels provide targeted interim adjustments and support based on these prejudgments. Meanwhile, upon completing each batch of rehabilitation programme, representatives from all government levels are advised to hold a joint meeting to assess the feasibility, rationality, and complexity of existing policies, and to forge a consensus on improvement strategies. This dual approach of ad hoc and systematic evaluations ensures that policies are finely tuned to meet the specific needs of each project and are adaptable to regional characteristics, boosting overall policy effectiveness.

As for the excessive power transfer to neighborhood committee,

aside from perfecting homeowner committee scheme, consulting agencies can be invited to be present permanently. As seen in areas with more experience in urban renewal, neighborhood micro-renewal will become a regular thematic neighborhood activity (Li et al., 2024; Tang et al., 2022), and neighborhood rehabilitation will shift from government-initiated to resident-initiated (Tang et al., 2022; Zheng et al., 2023). Transitioning the consulting service from a task-based model to a long-term contractual system would enhance the effectiveness and continuity of advisory services as well as the accountability of advisors, thereby fostering sustained social impacts in neighborhood rehabilitation projects.

Finally, to address issues of uneven resident representation in neighborhood rehabilitation, the jury system, widely practiced in the U. K. and U.S., merits consideration. Nevertheless, given the challenges of fragmented information, cognitive constraints, and rapid AI advancement, embedding AI into the jury system is both timely and necessary. Specifically, AI can enhance juror selection by analyzing publicly available data to exclude candidates with clear biases or conflicts of interest, and assembling representative juries based on occupation, housing experience, engagement history, and relevant neighborhood or issue contexts. This approach addresses the representational imbalances identified in this case of Wuhan and broader literature, thereby strengthening legitimacy and procedural fairness. Beyond selection, AI can support the full deliberative process—facilitating information collation (e.g., literature, policy, and precedent retrieval), evaluating evidence (for completeness, consistency, and credibility), and identifying bias across institutional, cultural, and individual levels. AI systems also enable structured decision archives, allowing consistent reviews, procedural audits, and targeted training for jurors. Despite its capabilities, AI must remain subordinate to human judgment. In neighborhood rehabilitation, judges oversee procedural legality, residents provide testimony, juries deliberate independently, and neighborhood committees implement outcomes. This structure redistributes decision-making power from resource-dominant activities to a broader resident base, while also disrupting the informational control traditionally held by neighborhood committees. Critically, jurors and judges have no direct stakes in project outcomes, ensuring deliberative independence and reinforcing trust and objectivity in participatory governance.

Despite its foundational role in Anglo-American judicial procedures, the jury system encounters significant barriers to direct adoption in China. Substantial differences exist in legal frameworks, institutional structures, socio-cultural norms, and public readiness. Although China's *Civil Code* clarifies property rights and encourages neighborhood-level participation, Confucianism, top-down policy directives, and remnants of the Work Unit (Danwei) system continue to constrain citizens' awareness and participatory skills (Li et al., 2012; Li et al., 2024). Overcoming these barriers requires refining existing legal frameworks, establishing specialized institutions, and implementing supportive incentives and protections. It is recommended to pilot system in neighborhoods with strong self-governance, high educational attainment, and robust civic engagement, yielding insights for broader application. Sustained educational and training initiatives would enhance public awareness and participation skills, helping adapt and optimize the jury system in China and ultimately fostering equitable, transparent, and professional decision-making in neighborhood affairs.

6. Conclusions

In response to the need for more attention to personal traits, indirect influences, and stakeholder dynamics in established research, this study proposes the Stakeholder Influence Model (SIM) to understand stakeholder influence. Meanwhile, given the longstanding neglect of RP research for organizers, we use this as a backdrop to validate the SIM and provide an initial exploration of stakeholder influence on RP. Data collected from 44 interviewees and four-month participant observation in Wuhan, China, provide empirical support for the SIM. The interview results show that different stakeholders exert distinct influence on RP. Besides residents, few stakeholder groups have all four types of direct influence that enable them to engage residents independently. Thus, they often use indirect strategies to influence RP through intermediary stakeholders. Neighborhood committee and its screened resident representatives are the preferred intermediaries. Notably, the source of stakeholders' direct influence, and their choice of indirect influence strategies evolve along the rehabilitation lifecycle.

This study also encounters several limitations that warrant further investigation. First, the stakeholder analysis herein is descriptive and instrumental rather than normative. This limitation stems from diverse participation criteria across various political, social, economic, and institutional contexts. Future research could test the validity of the SIM in different regions to enhance and contrast the findings of this study. Second, although utilizing a revelatory case study approach facilitates theory building and validation, its results can be challenging to generalize. Also, owing to space limitations, only the predominant results are presented and discussed. Consequently, future research could focus on a specific group to delve into their strategic influences and mechanisms in detail, thereby enabling more precise recommendations for enhancing practice. Finally, while hypothesizing stakeholders' aims for deeper resident involvement, the case study reveals tactics that discourage participation, and higher RP is not always beneficial. Further research is recommended to elucidate the relationship between RP objectives and stakeholder influence strategies.

CRediT authorship contribution statement

Yu LI: Conceptualization, Methodology, Software, Formal analysis, Writing – original draft. **Penglin Zhu:** Methodology, Data curation, Investigation, Writing – review & editing. **Erwin Mlecnik:** Writing – review & editing. **Henk J. Visscher:** Writing – review & editing, Supervision. **Queena K. Qian:** Writing – review & editing, Supervision

Research Ethics

We further confirm that any aspect of the work covered in this manuscript that has involved human participants has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript.

Intellectual Property

We confirm that we have given due consideration to the protection of intellectual property associated with this work and that there are no impediments to publication, including the timing of publication, with respect to intellectual property. In so doing we confirm that we have followed the regulations of our institutions concerning intellectual property.

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Data availability

Data will be made available on request.

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