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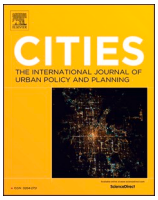

From acceptance to continuance: Understanding the influence of initial participation experience on residents' intentions to continue participation in neighborhood rehabilitation

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ABSTRACT

In the context of increasing focus on social sustainability, neighborhood rehabilitation has emerged as a crucial component of global urban renewal initiatives. Distinct from most renewal paradigms that are usually one-offs, neighborhood rehabilitation is a long-term endeavor that requires ongoing resident participation to effectively address diverse needs, investment shortages, and governance challenges. Extant research predominantly focuses on residents' initial engagement, leaving the dynamics of continued participation and its influencing factors largely unexamined. Employing the Expectation-Confirmation Model (ECM), this study explores how residents' initial participation experiences influence their intentions to continue participation. Analyzing questionnaire responses from 367 experienced residents in Wuhan, China, the study finds that a mere 38.2 % of residents exhibit re-engage intention. Path analysis shows that initial participation experience influences residents' re-engage intention indirectly through participation satisfaction and perceived usefulness. Residents' re-engage intention is most influenced by level of influence residents hold in decision-making, followed by type of activities they engage in, and stage of their initial involvement. As an exploratory study into the realm of continued participation, this research uncovers several potential pathways and policy recommendations, aiming to ease residents' transition from initial acceptance to sustained engagement in future neighborhood development efforts.

1. Introduction

Sustainable development is a goal that all cities strive for. Having witnessed the displacement and gentrification brought about by brutal demolition and reconstruction, rehabilitation has become a preferred paradigm for recent urban renewal efforts (Itard & Klunder, 2007; Steinberg, 1996). For rehabilitation, the residential neighborhood is considered the most appropriate geographical scale (Pérez et al., 2018). Distinct from the knock-down-and-rebuild strategy adopted in redevelopment, neighborhood rehabilitation[1] is a restoration and enhancement of existing neighborhood buildings, communal environment, facilities and systems to "good condition, operation, or capacity" (Zheng et al., 2014). Notably, with a growing emphasis on social sustainability and reconstruction of civil society, neighborhood rehabilitation is progressing from a top-down economic stimulus to a bottom-up social movement, thereby advocating resident participation (Arnstein, 1969; Mathers et al., 2008; Nienhuis et al., 2011).

For neighborhood rehabilitation, resident participation (RP) refers to *any process that involves neighborhood residents in problem-identifying and decision-making to enable public input to be manifested in rehabilitation decisions and outcomes* (IAP2). Involving residents in neighborhood rehabilitation not only yields qualified designs, minimizes costs and unnecessary delays, but also aids in mitigating conflicts, boosting trust, fostering neighborhood interaction and ultimate cohesion (Liu et al.,

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[1] Similar concepts, such as neighborhood revitalization, community renovation, and community (micro-)renewal, are often used interchangeably. The selection among these depends on the depth and theme of enhancement, as well as the national context. In this paper, neighborhood rehabilitation is employed as the umbrella term to encompass these initiatives. Development strategies primarily centered on demolition and rebuilding are outside the ambit of this concept.

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2017; Nienhuis et al., 2011; Uittenbroek et al., 2019). Given these benefits, countries and regions are incorporating participation initiatives into renewal policies, such as the Housing and Community Development Act in the U.S., New Deals for Communities in the U.K., Big Cities Policy in the Netherlands, and Co-Creation for Better Environment and Well-being in recent China (SC, 2020). These updated policies aim to promote not only economically viable, environmentally sound, but also socially inclusive urban development.

Nevertheless, unlike most renewal paradigms that are typically one-offs, neighborhood rehabilitation represents a continuous endeavor (Ginsburg, 1999; Shen et al., 2021). A shift from passive, one-time involvement to proactive, continuous RP is therefore necessary (Hindhede, 2016; Zheng et al., 2023). This shift is especially relevant in contemporary China. In China, governmental bodies are the principal financiers of neighborhood rehabilitation, as limited profit margins and delayed returns dissuade private sector investment (Zheng et al., 2023). Considering the vast number of aging neighborhoods and the prolonged nature of rehabilitation efforts, relying solely on government funding is neither practical nor economically feasible. Despite this, government-led rehabilitation projects also face governance challenges. The disengagement of residents from decision-making often leads to a disparity between their expectations and the actual decisions made. This misalignment results in residents' disinterest and absence in neighborhood maintenance, causing the rehabilitated area to deteriorate once again (Liu et al., 2015; Yau, 2010). Consequently, continuous RP is imperative to address residents' diverse needs, investment shortages and governance dilemmas. Recent changes in government administration and grassroots governance further indicate the crucial role of Chinese residents in neighborhood affairs. Aligning with the 'People-oriented' (*Yiren Weiben*) and 'People-centered' (*Yirenmin Weizhongxin*) development philosophies, the Chinese government is transitioning from a management-centric to a service-centric approach. This shift is mirrored at the grassroots level, where governance evolves from management-based to collaborative governance.[2] The COVID-19 pandemic and subsequent lockdowns have further underscored residents' emergent role and growing capabilities in grassroots governance (Liu, Lin, et al., 2021). Prompted by these changes, the Chinese government views recent neighborhood rehabilitation programs as an opportunity to foster habitual participation among residents, ensuring their sustained engagement in neighborhood development (SC, 2020).

Being part of the collective and society, residents and their participation are shaped by the surrounding political and economic milieu, prevailing social values, and cultural customs (Dekker & Van Kempen, 2008; Hu et al., 2013; Wu, 2023). The characteristics of the construction project (e.g., scale, location, political and social sensibility) can also affect their participation decisions (Liu, Hu, et al., 2018; Sun et al., 2016). The shortcoming of this macro-meso perspective is evident: by treating residents as a homogeneous entity, behavioral variations between individuals are overlooked. As a result, recent studies examine individual participation from sociological and psychological perspectives. Factors such as self-interests (Mathers et al., 2008), social capital and networks (Hindhede, 2016), and lifestyle (Brown et al., 2016), are all found to influence RP decisions. Compared to Western and other developed regions, RP in China is characterized by low awareness, limited power, few participation channels, and general disorganization (Li et al., 2019; Li, Krishnamurthy, et al., 2020). This is partly due to the influence of Confucianism, collectivism, the remnants of a planned economy, and the Work Unit system (Hu et al., 2013). Moreover, the top-down approach of government-led rehabilitation initiatives often constrains the decision-making power of residents, thereby reducing their willingness to engage (Hu et al., 2013; Liu, Wang, et al., 2018). Targeting individual behavior, various socio-psychological factors have been examined to influence RP decisions, such as community attachment (Wu, 2012), neighborhood interaction (Liu et al., 2017), and self-efficacy (Tang et al., 2022). Scholars have also developed participation frameworks that are apt for the Chinese context, focusing on the extent of empowerment in decision-making (Mo, 2014), the models and approaches of participation (Hu et al., 2013; Li, Zhang, et al., 2020), and the timing for RP in projects (Sun et al., 2016). These efforts aim to achieve a more equitable balance between bottom-up and top-down dynamics in RP.

While these studies contribute invaluable insights, most have been limited to examining first-time participation, leaving continued participation largely unexplored. Nevertheless, some scholars notice that residents' intention to re-engage may be influenced by their earlier experience, resulting in a virtuous or vicious cycle of participation. Moreover, most of their observations fall into the latter, whereby previous participation prevents residents from re-engagement (Li, Feng, et al., 2020; Webler et al., 2001) or causes a constant loss of participants in the rehabilitation process (Brown et al., 2016; Uittenbroek et al., 2019). Although infrequently explored in urban studies, the formation of repeated behavior has received intensive discussion in consumer behavior research, primarily through the lens of the Expectation-Confirmation Model (ECM). Rooted in social psychology, the ECM posits that consumers' intention to continue using a product or service is determined by their previous use experience and perceptions derived from that experience (Bhattacherjee, 2001; Oliver, 1980). In general, neighborhood rehabilitation is a public good and a social service in which the inhabitants are investors and users, i.e., consumers. The long-term nature of rehabilitation also dictates the necessity of "repeat consumption" by the residents. In this sense, the ECM has the potential to disentangle the link between residents' initial participation experience and intention to repeat participation, thereby filling the research gap of insufficient attention to continued participation.

Based on the ECM, this paper aims to understand how residents' initial participation experience influences their intention for continued participation in neighborhood rehabilitation. A questionnaire survey was conducted among 367 experienced residents in Wuhan, China. Insights into re-engage intention are expected to break the acceptance-discontinuance anomaly in participation practices, facilitating a transition in RP from initial acceptance to sustained engagement.

2. Literature review

2.1. Expectation-confirmation model (ECM)

Rooted in social psychology, the ECM was first introduced in consumer behavior research. Scholars use ECM to explain and predict consumer's repurchase intention and its determinants. Its predictive power has been confirmed by a large number of laboratory experiments as well as empirical research, in fields ranging from information systems (Susanto et al., 2016), transportation (Fu et al., 2018), and e-participation in social governance (Zolotov et al., 2018). Nevertheless, the application of ECM in the realms of urban renewal and RP remains limited, with Tang et al. (2022) as an exception. Using Shanghai, China, as a case study, Tang et al. (2022) investigate the relationship between residential satisfaction and residents' intention to initial participation.

The ECM consists of four constructs (Fig. 2.1): continuance intention, satisfaction, perceived usefulness, and confirmation (Bhattacherjee, 2001). Continuance intention refers to one's self-instructions to continue using a product or service (Sheeran & Webb, 2016). Satisfaction evaluates the emotions generated by the previous experience (Hunt, 1977; Oliver, 1981). The smaller the gap between the expected and the experience, the higher the satisfaction (Bhattacherjee, 2001). Retrieved from the Technology Acceptance Model (TAM), perceived usefulness is defined as "…the degree to which a person believes that using a

[2] This approach is termed as 'Co-Creation' (*Gotong Dizao*) in policy frameworks, whereby residents collaborate with public and private entities to plan, construct, manage and evaluate rehabilitation activities and subsequent neighborhood affairs, and share the benefits brought by the improvements.

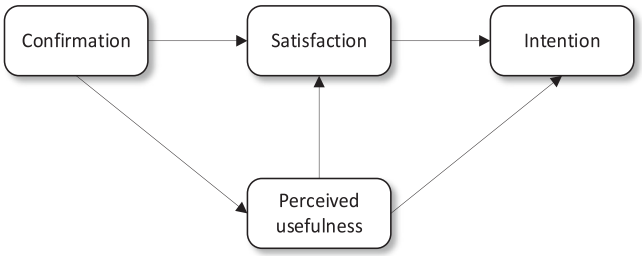

Fig. 2.1. The expectation confirmation model (ECM) (Source: Bhattacherjee (2001)).

particular system would enhance his or her job performance" (Davis, 1989). Confirmation is the degree to which the users' perceived experience matches the expectation (Oliver, 1980). It occurs if the experience of the products meets or exceeds users' expectations. According to ECM, continuance intention is determined by users' satisfaction and perceived usefulness developed from their initial usage. Satisfaction and perceived usefulness, in turn, are shaped by users' confirmation of their initial usage of the service or product.

As for neighborhood rehabilitation, scholars argue that residents participate in safeguarding and pursuing personal interests or out of a sense of social responsibility. (Li, Krishnamurthy, et al., 2020; Li, Zhang, et al., 2020; Mathers et al., 2008), and there is a lack of anticipation of their participation (Gu, 2019). Moreover, the impact of their individual behavior on a collective project is hardly summarized by a simple cause-and-effect. In this sense, it is impractical for residents to evaluate whether their initial participation experience confirms prior expectations about participation. To enhance the operational and practical relevance of the study, this study adjusts confirmation to the construct *Acceptance Participation Experience*. *Acceptance Participation Experience* refers to residents' objective and subjective retrospection of their initial participation in neighborhood rehabilitation. In addition, the rest of the constructs are renamed *Re-engage Intention, Participation Satisfaction*, and *Perceived Usefulness of Participation.*

Besides the psychological factors, external factors such as project-related and participants' personal traits may also impact RP. For instance, Li et al. (2024) identify that funding is the most critical factor for effective RP in the Chinese context. An additional investment brings deliberate and innovative process design, a deeper participation level, and efficient implementation (Dekker & Van Kempen, 2008; Uittenbroek et al., 2019; Li et al., 2024). While a number of studies pinpoint the correlation between investment level and RP performance (Fang et al., 2022; Li, Zhang, et al., 2020; Luo et al., 2020), there is a paucity of quantitative studies revealing the causal relationship between these two. This research aims to fill the gap. The impact of personal traits on continued participation remains understudied either. Nevertheless, their impacts on acceptance participation have been extensively studied (Li et al., 2019; Li, Gu, & Zhu, 2020; Liu et al., 2017). These studies identified seven participant-related factors: age, gender, income, education, length of residence, and type of residence. Consequently, an important question arises: What exactly do people refer to when discussing 'participation experience'?

2.2. Perspectives on describing resident participation experience

While there is a consensus that participation experience is challenging to describe and measure, established research attempts to describe it from three perspectives: models of participation (Fung, 2006; Reed et al., 2018; Rowe & Frewer, 2005), degrees of participation (Aitken, 2017; Arnstein, 1969), and duration of participation (Li et al., 2019; Uittenbroek et al., 2019).

Models of participation are *Type of Activities* that residents participate in during rehabilitation. Ways of information exchange are the most common way of its classification. Informed by the direction of information exchange, Rowe and Frewer (2005) categorize RP into three primary types: receiving, providing, and both. Fung (2006) extends this classification by introducing the intensity of information exchange, segmenting two-way communication into comparison, bargaining, and negotiation. Reed et al. (2018) further refine their frameworks by classifying participation activities based on information sources, distinguishing between top-down and bottom-up models. Top-down participation involves information flow from decision-makers to the affected, while bottom-up participation denotes the opposite direction. Accordingly, we identify five distinct types of RP activities: 1) Silent Observance, 2) Opinion Awakening, 3) Tendency Shaping, 4) Internal Consensus, and 5) External Unity. In Silent Observance, residents passively receive information without providing feedback. Opinion Awakening entails residents offering their needs and insights. Tendency Shaping marks the start of bidirectional exchange. Residents are educated and assisted in prioritizing their rehabilitation needs. Internal Consensus is centered on information exchange among residents to establish a unified perspective. External Unity expands upon this, involving non-resident stakeholders, aiming to harmonize various concerns and expectations for an inclusive decision.

However, it is argued that information exchange is necessary but insufficient for RP. There may be the case where residents maintain adequate and intensive information exchange with other stakeholders, but have little impact on the decisions. Therefore, scholars, represented by Arnstein (1969) and Aitken (2017), prefer to use the level of power citizens are delegated in decision-making as a proxy for their participation. This research adopts the International Association for Public Participation (IAP2)'s classification and considers a total of 5 *Levels of Influence*: 1) Inform, 2) Consult, 3) Involve, 4) Collaborate, and 5) Empower.[3]

While these studies offer a variety of perspectives on describing participation experience, few address the crucial issue of *When* — the timing at which residents first engage in the rehabilitation process (abbreviated as *Initial Stage* in the succeeding text). *Initial Stage* should not be overlooked in describing RP as it implies the process transparency (Hall & Hickman, 2011), residents' opportunity and degree of influence on decision-making (Uittenbroek et al., 2019), and even their trust with other stakeholders (Liu, Hu, et al., 2018). As a mutual learning process, it also reflects residents' familiarity with neighborhood rehabilitation and participation.

Building upon the above studies, we have developed a framework for describing and evaluating residents' participation experience. This framework comprises five key aspects: 1) *Number of Activities*, 2) *Type of Activities*, 3) *Number of Stages*, 4) *Initial Stage*, and 5) *Level of Influence*. Integrating this with the ECM, we introduce the analytical framework for this research — the Acceptance-Continuance Model (ACM) for Resident Participation, as depicted in Fig. 2.2.

3. Background: neighborhood rehabilitation and resident participation in China

Differences in neighborhood rehabilitation and resident participation across countries and regions open the ACM to varying interpretations. In this paper, we give an initial validation in the context of China and lay the foundation for subsequent exploration of the link between initial participation and re-engagement.

In China, a 'neighborhood' (*Juzhuqu*) is a geographically defined area where the primary purpose of land use is housing. Those constructed before 2000 are referred to as old neighborhoods (SC, 2020). Due to poor construction standards and lack of daily maintenance, old neighborhoods generally suffer from "hardware" problems of aging buildings, dysfunctional facilities, and outdated infrastructure, as well

[3] Detailed descriptions of the classification can be found in IAP2.

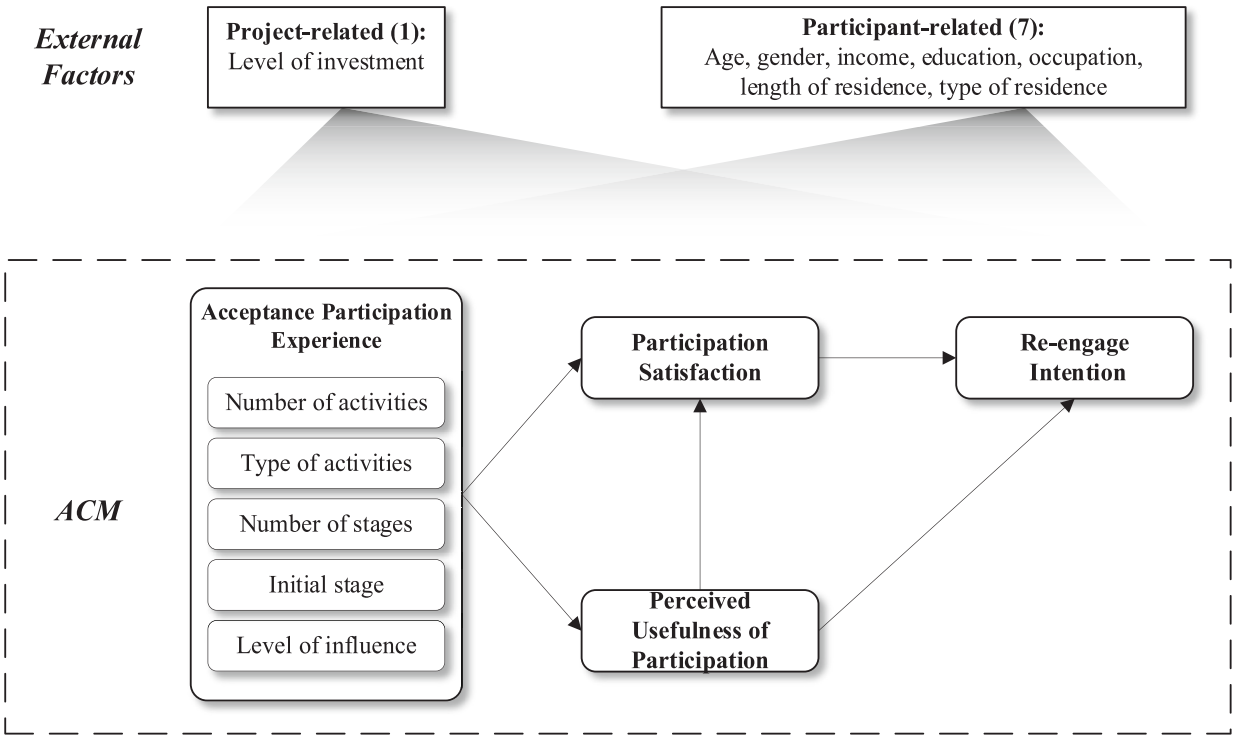

Fig. 2.2. The acceptance-continuance model (ACM) for resident participation. (Source: authors).

as "software" problems of safety hazards, social alienation, and estrangement (Liu, Zhang, & Xie, 2021). There are about 170,000 old neighborhoods in China, compromising the quality of life of over 100 million people. In response, since 2015, the government has spearheaded the top-down rehabilitation of these areas. District from projects focusing on economic growth and environmental improvement, such as urban village redevelopment and shantytown transformation, neighborhood rehabilitation prioritizes long-term social benefits. It aims to improve residential satisfaction, foster place attachment and social cohesion, raise residents' responsibility and capacity towards neighborhood issues, and thereby encourage their continued participation in neighborhood rehabilitation and future governance (SC, 2020).

A pivotal development occurred in 2017 when the Ministry of Housing and Urban-Rural Development (MOHURD) hosted the symposium in Xiamen to pilot the 'Co-Creation' rehabilitation model in 15 cities. This initiative is underpinned by legal frameworks, including *Urban and Rural Planning Act* and *Civil Code of the People's Republic of China*, aiming to protect residents' legal rights in urban planning. Local governments have developed policies outlining the objectives, mechanisms, and methods of RP, as well as defining the roles and responsibilities of involved stakeholders. These policies aim to facilitate the seamless integration of RP into rehabilitation initiatives. Fig. 3.1 overviews the policies relevant to neighborhood rehabilitation and RP in China.

As noted in these policies, decision-making is the crux of RP in China's neighborhood rehabilitation. Residents participate to determine: 1) the necessity of rehabilitation; 2) areas that can be rehabilitated; 3) the scope and content of the rehabilitation; 4) design plans; and 5) construction schedule and management mechanism. Correspondingly, these five milestones subdivide the rehabilitation process into five sequential stages: 1) Intention and Setup; 2) Mapping and Diagnosis; 3) Assessment and Planning; 4) Design and Details; and 5) Implementation and Acceptance.[4]

Intention and Setup: Rehabilitation policies and practices are first disseminated to society and the residents of old neighborhoods. A survey is then conducted to gauge residents' interest in rehabilitating their neighborhoods. A neighborhood is only incorporated into the regional plan if the survey achieves certain participation and agreement thresholds. Thereafter, a working group, consisting of the sub-district administrative office and the implementation unit, is formed. RP Platforms and community-based organizations are established to facilitate the upcoming rehabilitation efforts.

Mapping and Diagnostic: A public survey is conducted to pinpoint issues within the neighborhood and gather residents' expectations for rehabilitation. The results are compiled into a problem list, forming the foundation for subsequent decision-making processes.

Assessment and Planning: A detailed rehabilitation plan is formulated using the problem list and resident preferences gathered earlier. This plan, outlining the scope, tasks, and breadth of rehabilitation, is then publicized for a set period, allowing for multiple rounds of inquiries and modifications to align with residents' needs and expectations.

Design and Details: This stage focuses on the planning and design of the rehabilitation tasks, encompassing style choices, product and material selection. Public notifications are issued, followed by inquiries and revisions until residents' objections are fully addressed.

Implementation and Acceptance: Residents participate in prioritizing rehabilitation tasks, aiding in removing unauthorized building works (UBWs), overseeing construction processes, and ultimately providing their approval upon completion of the rehabilitation work.

[4] Operation and Maintenance is considered as the starting point for next round of rehabilitation or neighborhood governance, thus are excluded from the neighborhood rehabilitation process.

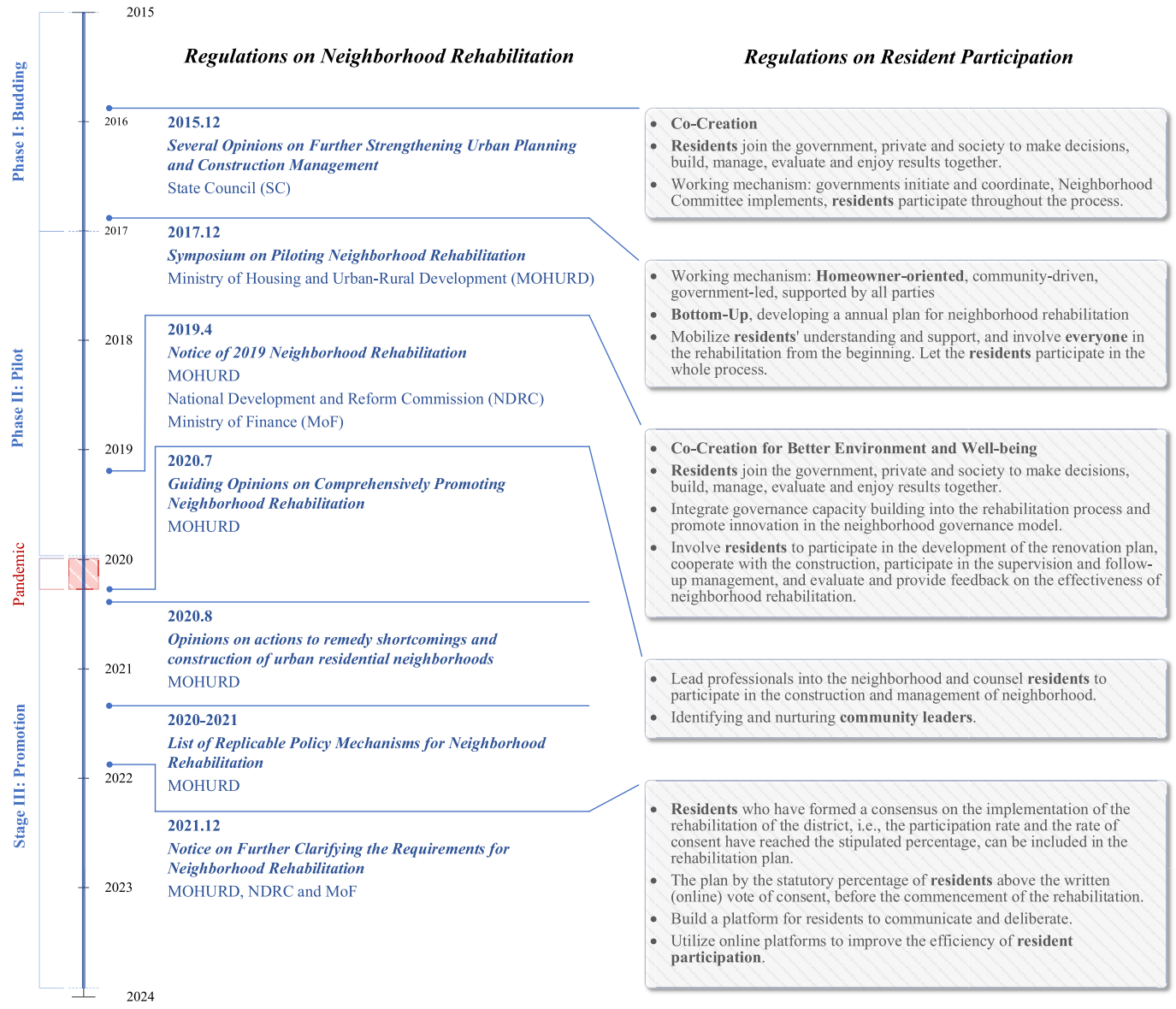

Fig. 3.1. Neighborhood rehabilitation and resident participation policies in China.

4. Methodology

4.1. Case study area

Wuhan, as a representative second-tier and developing city in China, was selected as the study area (Fig. 4.1). The abundance of rehabilitation projects and the rich diversity in RP practices render Wuhan an intriguing study case. By 2023, Wuhan has successfully rehabilitated 1318 old neighborhoods, providing a wealth of cases for detailed examination. The city's journey in RP commenced in 2008 with public polling for the renovation plan of Hongshan Square. In 2019, RP became an integral and institutionalized aspect of Wuhan's rehabilitation policies. Mandatory RP measures include propaganda, questionnaire surveys, and public notices. Collaborative workshops, participatory planning and community planner schemes are complemented as bottom-up RP strategies. Meanwhile, like many other Chinese cities, policies in Wuhan do not delineate the form or degree of RP or the extent of residents' influence on decisions. This affords the governments and practitioners considerable operational freedom. This also led to a diverse range of RP behaviors in practice (Fig. 4.1). Therefore, Wuhan provides an interesting case for exploring the relationship between residents' participation behaviors and their re-engage intentions in neighborhood rehabilitation.

4.2. Data collection

4.2.1. Semi-structured interview

Semi-structured interviews were conducted to develop a complete list of RP activities commonly used in China's neighborhood rehabilitation projects. Additionally, the interviewees were asked open-ended questions to elicit their understanding of the ACM variables and the relationships between them (Fig. 2.2). Interviewees were included in the analysis if they had experience in neighborhood rehabilitation and directly interacted with residents during the rehabilitation. Consequently, 22 respondents were recruited using snowball sampling, including 3 government officials, 4 community workers, 2 designers, 3 contractors, 2 consultants, and 9 residents. The appendix details the interviewee profiles. One of the authors conducted the interviews individually in a face-to-face manner. Each interview lasted between 30 and 60 min and was recorded, noted, and transcribed with the interviewees' consent.

A total of 23 RP activities were identified during the interview. As

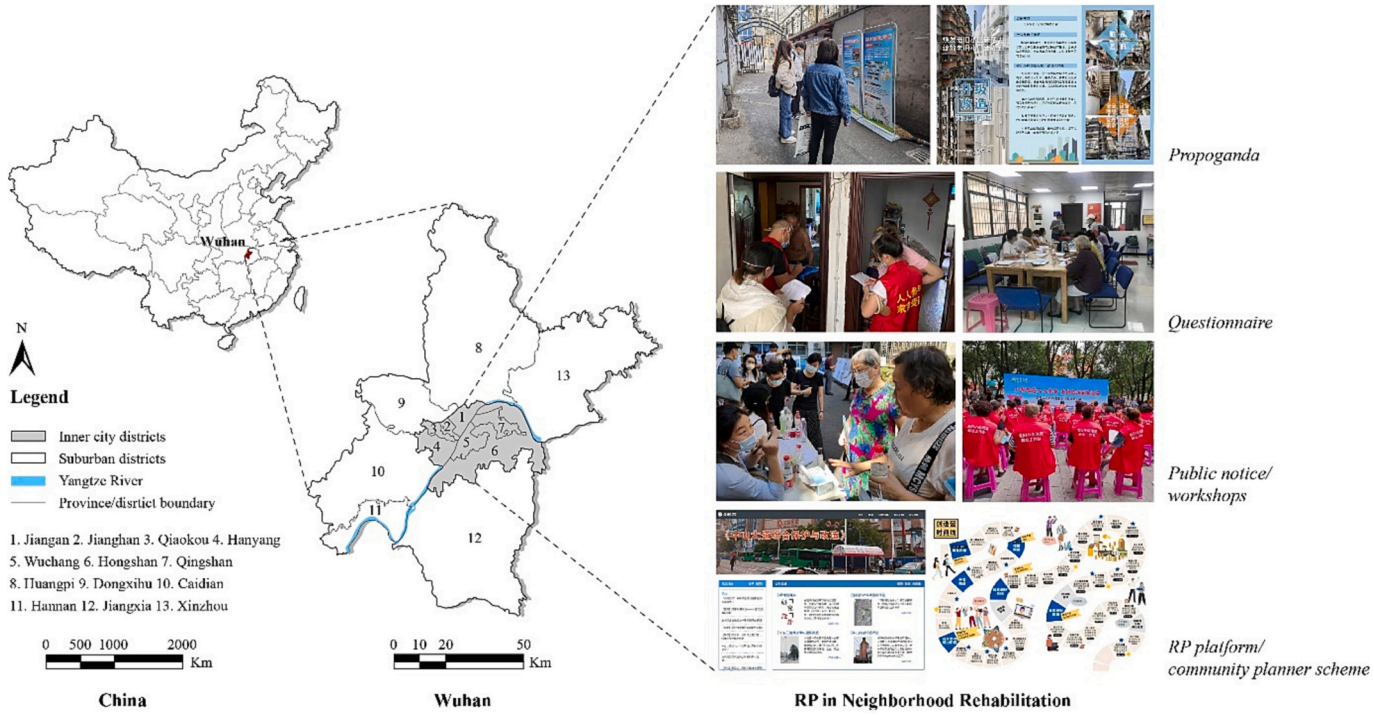

Fig. 4.1. Location and RP activities in Wuhan.
(Source: authors and interviewees).

shown in Fig. 4.2, these activities were further linked to five *Type of Activities*, and specific stages of neighborhood rehabilitation with the help of the interviewees. Moreover, government interviewees provided input on the categorization criteria for the variable *Level of Investment*. In Wuhan's neighborhood rehabilitation, the average investment per household typically falls into three tiers: low (< 10,000 RMB), middle (10,000–30,000 RMB), and high (> 30,000 RMB).

4.2.2. Questionnaire survey

Based on the proposed ACM for Resident Participation (Fig. 2.2) and interview results, we developed a questionnaire survey with three sections. **Section I** gathered background information from the respondents. This included the name of their neighborhood (to determine the Level of Investment) and their personal details. **Section II** captured residents' *acceptance participation experience*, including *Number of Activities*, *Type of Activities*, *Number of Stages*, *Initial Stage*, and *Level of Influence*. **Section III** focused on residents' subjective perceptions of their *acceptance participation experience*, including their *Participation Satisfaction*, *Perceived Usefulness of Participation*, and *Intention to Re-engage*. Items and scales used in the questionnaire are detailed in Table 4.1.

The questionnaires were sent in print and digital versions in Wuhan. The street intercept method was used to recruit survey prospects for print questionnaires. It enabled us to exclude unsuitable respondents and conduct necessary confirmation or follow-up interviews. One of the authors handed out the questionnaires near COVID-19 testing sites in rehabilitated neighborhoods, targeting peak hours: weekdays from 5 pm to 9 pm, and weekends from 9 am to 9 pm. The testing sites proved ideal for questionnaire distribution, as they were frequently visited by a large and varied group of nearby residents, ensuring a broad reach within a limited timeframe. Concurrently, to enhance the response rate, a digital version of the questionnaire was circulated in neighborhood WeChat groups with the assistance of community workers.

Residents were considered suitable for the survey if: 1) their neighborhood had completed the rehabilitation work; 2) they had participated in at least one rehabilitation-relevant activity; and 3) they had already lived in the old neighborhood before the rehabilitation. Between 23rd May and 20th July 2022, 144 paper-based and 293 digital questionnaires were returned. 70 copies were discarded due to a short filling time (<5 min[5]) or answering the trap questions incorrectly. This resulted in 367 valid questionnaires used in this study (validity rate 84 %). The final sample consists of 280 homeowners and 87 tenants.

4.3. Data analysis

Path analysis was used to explore the link between acceptance experience and continuance intention, as well as the impact of external factors on these constructs. This method is particularly suited for our study for several reasons: Firstly, it effectively handles complex causal models with multiple variable groups, and allows variables to be both dependent and independent (Streiner, 2005). Secondly, it disentangles the direct and indirect relationships between variables, visualizing the chain of influence (Lleras, 2005). Lastly, it enables the estimation of the paths in one action, minimizing errors that could arise from multiple data-handling steps. These advantages render path analysis a preferred and widely employed method in behavioral research (Bhattacherjee & Premkumar, 2004; Jiang et al., 2017; Liu et al., 2017).

This study employed six items to measure *Participation Satisfaction* to minimize measurement errors. The Confirmatory Factor Analysis (CFA) was conducted to evaluate the effectiveness of these six items in measuring *Participation Satisfaction* and to determine if they could be averaged (Streiner, 2006). Composite Reliability (CR) and Average Variance Extracted (AVE) typically measure these two aspects. Table 4.2 shows that six items' factor loadings (FL) are significant and exceed 0.7, CR $\geq$ 0.7, and AVE $\geq$ 0.50.[6] This indicates that the six items can be merged into an overall score for *Participation Satisfaction*. Finally, the path model was analyzed through AMOS 25 in SPSS. The maximum likelihood (ML) method was used to estimate the path coefficients.

[5] The online questionnaire website records the time respondent spend on the questionnaire.

[6] For the selection of reasonable thresholds please check Hair (2009).

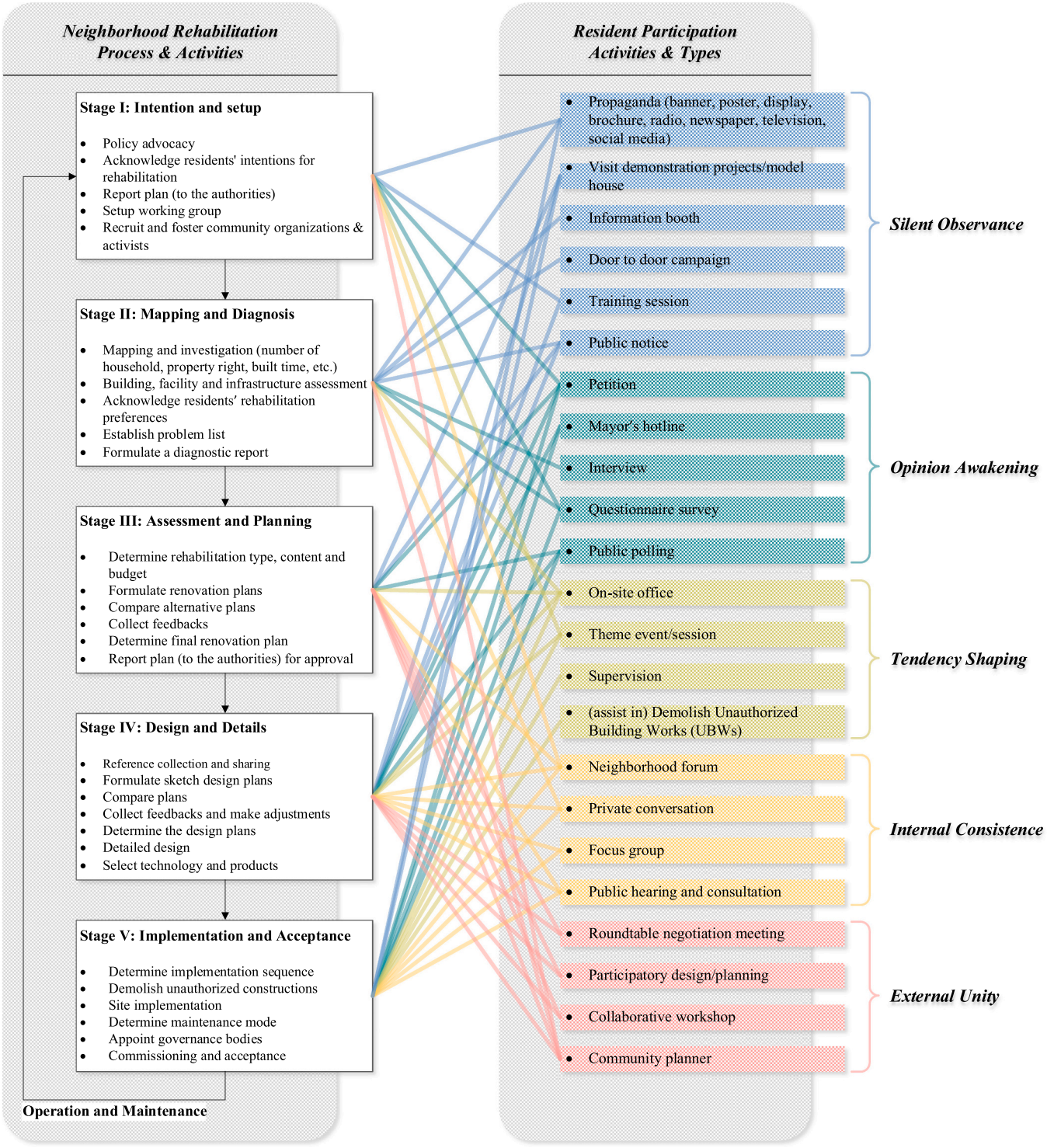

Fig. 4.2. Neighborhood rehabilitation and resident participation in China.

5. Results

5.1. Descriptive analysis

5.1.1. Demographic profile

Table 5.1 shows the demographic characteristics of the respondents. In general, the sample was generally old, with 29.4 % of the respondents above 60 years old. 59.4 % of the respondents are female, and 37.1 % had retired before the survey. The sample received a limited income, with 83.1 % earning <5000 RMB and 8.2 % <2000 RMB. The length of education was short, with only 19.9 % possessing a bachelor's degree and above. While their length of residence was relatively long. 37.3 % of respondents have lived in the neighborhood for over 20 years. Considering the unique characteristics of residents in old neighborhoods, the findings of similar studies are preferred to the census data for checking the sample's representativeness. Overall, the demographic characteristics presented in this sample, such as older, lower income, more retirees, and a longer length of residence, are consistent with the findings of

Table 4.1
Survey questions and scales used.

Questions	Variables	Scales		References
Section I: Background information				
What neighborhood do you live in?	*Level of Investment*	1-	Low (<10,000 RMB)	Government interviewees
		2-	Medium (10,000–30,000 RMB)	
		3-	High (>30,000 RMB)	
Section II: Acceptance Participation Experience				
Which of the following **ACTIVITIES** (Fig. 4.2) have you been involved in during the rehabilitation process? Please select all the options that apply to you.	*Number of Activities*[a]	1-	1	Interviewees
		2-	2	
		3-	3–5	
		4-	6–8	
		5-	≥ 9	
	Type of Activities	1-	Silent Observance	(Fung, 2006; Reed et al., 2018; Rowe & Frewer, 2005)
		2-	Opinion Awakening	
		3-	Tendency Shaping	
		4-	Internal Consensus	
		5-	External Unity	
Which **STAGES** have you been involved in during the rehabilitation process? Please select all the options that apply to you.	*Number of Stages*[b]	1-	1	Interviewees
		2-	2	
		3-	3	
		4-	4	
		5-	5	
	Initial Stage	1-	Intention and Setup	Interviewees
		2-	Mapping and Diagnosis	
		3-	Assessment and Planning	
		4-	Design and Details	
		5-	Implementation and Acceptance	
In your opinion, to what extent did you **INFLUENCE** neighborhood rehabilitation?	*Level of Influence*	1-	Inform, I know little except the neighborhood was going to be rehabilitated.	(IAP2; Arnstein, 1969)
		2-	Consult, I was asked to provide my expectations and suggestions on rehabilitation.	
		3-	Involve, the working group adjusted the decisions according to my suggestions/feedback.	
		4-	Collaborate, through negotiation, the working group and I made the decision together.	
		5-	Empower, I made the final decisions. The working group can provide recommendations, but it is up to me to decide whether to adopt them.	
Section III: *Re*-engage Intention				
Having participated in various rehabilitation-relevant activities, in your opinion, to what extent can resident participation **IMPROVE** the performance of neighborhood rehabilitation?	*Perceive Usefulness of Participation*	1-	Useless, RP is a pure waste of effort and time.	Bhattacherjee (2001)
		2-	It is not a good idea, RP has limited contribution to neighborhood rehabilitation.	
		3-	It is hard to say, RP can have both positive and negative impacts on rehabilitation.	
		4-	Useful, RP benefits residents, the neighborhood and the rehabilitation project.	
		5-	Very useful, RP has tremendous positive benefits in any way.	
How **SATISFIED** are you with the following items from your previous participation in neighborhood rehabilitation?	*Participation Satisfaction*	1-	Extremely dissatisfied	(Li et al., 2021; Liu, Wang, et al., 2018)
		2-	Dissatisfied	
		3-	Neither satisfied nor dissatisfied	
		4-	Satisfied	
1) Overall satisfaction		5-	Extremely satisfied	
2) Method for participation				
3) Used technology				
4) Timing to participate				
5) Staffing				
6) Venues and equipment				
To what extent do you agree with the following statement: I will **CONTINUE** participating in community affairs rather than discontinue participation.	*Re-engage Intention*	1-	Completely disagree	Mathieson (1991)
		2-	Disagree	
		3-	Neutral	
		4-	Agree	
		5-	Completely agree	

[a] Scoring is based on the total number of activities in which residents participate.
[b] Scoring is based on the total number of stages in which residents participate.

Table 4.2
Results of the Confirmatory factor analysis (CFA)

Construct	Item	Factor loading	S.E.	SMC	CR	AVE
Participation Satisfaction	Overall	0.943***		0.889	0.954	0.808
	Method	0.939***	0.028	0.882		
	Technology	0.906***	0.031	0.821		
	Timing	0.922***	0.030	0.850		
	Human resource	0.783***	0.039	0.613		
	Venues and equipment	0.914***	0.032	0.835		

Note: Significance levels: *** $p < 0.001$, **$p < 0.01$, *$p < 0.05$.

Table 5.1
Demographic characteristics of the respondents.

	Percentage		
	Total (N = 367)	Homeowner (N = 280)	Tenant (N = 87)
Age			
≤ 30	11.2 %	7.9 %	21.8 %
31–40	15.0 %	13.6 %	19.5 %
41–50	25.1 %	21.8 %	35.6 %
51–60	19.1 %	20.7 %	13.8 %
> 60	29.7 %	36.1 %	9.2 %
Gender			
Female	59.4 %	55.7 %	71.3 %
Male	40.6 %	44.3 %	28.7 %
Monthly income per capita (RMB)			
≤ 2000	8.2 %	8.9 %	5.7 %
2001–3000	18.3 %	14.6 %	29.9 %
3001–4000	33.8 %	35.0 %	29.9 %
4001–5000	22.9 %	23.2 %	21.8 %
5001–10,000	13.9 %	15.0 %	10.3 %
> 10,001	3.0 %	3.2 %	2.3 %
Education level			
Middle school & below	23.4 %	23.6 %	23.0 %
High school	32.7 %	33.9 %	28.7 %
Junior college	24.0 %	22.1 %	29.9 %
Bachelor's degree & above	19.9 %	20.4 %	18.4 %
Occupation			
Public sector	12.8 %	15.0 %	5.7 %
Private institute/enterprise/organization	10.4 %	9.3 %	13.8 %
Retired	37.1 %	44.3 %	13.8 %
Others (unemployed/self-employed/ freelancer)	39.8 %	31.4 %	66.7 %
Length of residence (years)			
2–5	22.6 %	12.9 %	54.0 %
6–10	17.4 %	15.0 %	25.3 %
11–20	22.6 %	25.4 %	13.8 %
≥ 20	37.3 %	46.8 %	6.9 %

similar Chinese studies (Jiang et al., 2017; Li et al., 2019; Li, Gu, & Zhu, 2020). In this sense, the research sample is considered representative of the residents in old neighborhoods of urban China.

5.1.2. Acceptance participation experience and continuance

Table 5.2 summarizes the respondents' *acceptance participation experience*, *Perceived Usefulness*, *Satisfaction* regarding this experience, and *Re-engage Intention*. Homeowners and tenants displayed similar patterns in acceptance participation. In general, most of the respondents (90.4 %) were involved in the rehabilitation process from the first two stages. They participated in between 2 and 5 RP activities during rehabilitation. Their participation spanned 2 to 3 stages, with an Inform to Consult degrees of participation, indicating a limited influence on the rehabilitation. Nevertheless, homeowners had a more significant impact on rehabilitation than tenants. Of the homeowners, 17.1 % reported a Cooperate level and 2.5 % an Empower level of influence in neighborhood rehabilitation, compared to 11.5 % of tenants with Cooperate influence and none with Empower influence.

Meanwhile, the sample shows a positive perception of acceptance participation. 76.5 % of respondents either perceived acceptance participation as useful or very useful. Besides, there is little difference in the perceived usefulness between homeowners and tenants (4.07 vs. 3.93). As for *Participation Satisfaction*, only 13.2 % of the sample expressed dissatisfaction with their acceptance participation. Tenants were more likely to be satisfied than homeowners (3.84 vs. 3.60). A mere 2 % of tenants were dissatisfied. This percentage is 16.4 % among homeowners. 38.2 % of the respondents would like to continue participation. Although homeowners are more likely to participate again than the tenants (50.7 % vs. 40.9 %), the difference is slight (3.54 vs. 3.37).

5.2. Path analysis

In reference to similar studies (Jiang et al., 2017; Liu et al., 2017), three indices were used to measure the path model's goodness-of-fit, namely chi-square to df ratio (CMIN/DF), root mean square error of approximation (RMSEA), and comparative fit index (CFI). The CMIN/DF, RMSEA, and CFI were 2.584, 0.066, and 0.996 for the model. All the indices exceeded the recommended thresholds (CMIN/DF < 3, RMSEA<0.08, and CFI > 0.95),[7] indicating a good model fit.

5.2.1. The influence of acceptance on continuance

Fig. 5.1 and Table 5.3 illustrate the statistical relationship between the variables in the ACM for Resident Participation. Residents' *acceptance participation experience* directly influences their *Perceived Usefulness of Participation* and *Participation Satisfaction*, and indirectly influences *Re-engage Intention*. Among the five aspects of participation experience, *Type of Activities* has a negative direct impact on *Perceived Usefulness of Participation,* and a negative indirect impact on *Participation Satisfaction* and *Re-engage Intention*. *Initial Stage* directly but negatively influences *Participation Satisfaction* and indirectly influences *Re-engage Intention*. *Level of Influence* has a positive direct impact on both *Perceived Usefulness of Participation* and *Participation Satisfaction*. *Number of Activities* and *Number of Stages* do not significantly impact other endogenous variables.

5.2.2. External factors' influence on acceptance and continuance

Table 5.4 shows that, in terms of total effects, Level of Investment significantly positively affects *Number of Stages, Participation Satisfaction,* and *Re-engage Intention*, and negatively influences *Initial Stage*. That is, the higher investment allows residents to participate in more stages and get involved earlier. Second, Age negatively impacts residents' *Level of Influence*. In contrast, its impact on *Perceived Usefulness of Participation* is positive. These correlations indicate that although older residents are less influential in decision-making, they perceive participation as more useful, satisfactory, and more likely to re-engage than the younger generations. Gender negatively impacts *Re-engage Intention*. Women are more active in neighborhood activities than men. Income affects *Perceived Usefulness of Participation* positively and significantly. Residents in more flexible jobs tend to be more active and prefer communication-intensive activities. Length of Residence appears to affect *Level of Influence* positively and significantly. Finally, although Type of Residence does not significantly impact residents' acceptance participation, it affects *Participation Satisfaction* negatively, and *Re-engage Intention* positively. This indicates that although homeowners are harder to please, they are more likely to participate again.

6. Discussions

6.1. Influence of acceptance on continuance

6.1.1. Level of influence - consulting and involving are satisfying

Consistent with numerous urban renewal studies in China (Li et al., 2019; Li, Krishnamurthy, et al., 2020; Xian & Gu, 2020; Zhuang et al., 2019), RP in Wuhan's neighborhood rehabilitation operates at the degrees of Inform and Consult, indicating a minimal influence on decisions. The prevailing top-down model ensures the government retains decision-making authority, with the power even to alter decisions initially made by residents: *"…we were satisfied with the gate design. However, government leaders felt that it did not reflect the cultural*

[7] For thresholds selection, please check Hu and Bentler (1999).

Table 5.2
Summary of residents' acceptance participation experience and re-engage intention.

Variables	Percentage			Mean		
	Total	Owners	Tenants	Total	Owners	Tenants
Number of Activities				2.89	2.92	2.79
1	14.7 %	13.9 %	17.2 %			
2	16.6 %	16.8 %	16.1 %			
3–5	42.0 %	41.8 %	42.5 %			
6–8	18.3 %	18.2 %	18.4 %			
≥ 9	8.4 %	9.3 %	5.7 %			
Type of Activities				3.76	3.86	3.42
Silent observance	10.6 %	8.9 %	16.1 %			
Opinion awakening	9.5 %	9.3 %	10.3 %			
Tendency shaping	9.3 %	7.9 %	13.8 %			
Internal consensus	35.1 %	35.0 %	35.6 %			
External unity	35.4 %	38.9 %	24.2 %			
Number of Stages				2.47	2.51	2.34
1	24.0 %	23.2 %	26.4 %			
2	30.0 %	29.6 %	31.0 %			
3	27.2 %	26.4 %	29.9 %			
4	12.5 %	14.3 %	6.9 %			
5	6.3 %	6.4 %	5.7 %			
Initial Stage				1.48	1.50	1.40
Intention and setup	71.9 %	71.8 %	72.4 %			
Mapping and diagnosis	18.5 %	17.9 %	20.7 %			
Assessment and planning	3.3 %	3.2 %	3.4 %			
Design and details	2.2 %	2.5 %	1.1 %			
Implementation and acceptance	4.1 %	4.6 %	2.3 %			
Level of Influence				2.12	2.19	1.90
Inform	35.7 %	33.9 %	41.4 %			
Consult	36.5 %	35.7 %	39.1 %			
Involve	10.1 %	10.7 %	8.0 %			
Collaborate	15.8 %	17.1 %	11.5 %			
Empower	1.9 %	2.5 %	0.0 %			
Perceive Usefulness of Participation				4.04	4.07	3.93
Useless	3.3 %	3.2 %	3.4 %			
Not a good idea	7.4 %	7.5 %	6.9 %			
Hard to say	12.8 %	11.1 %	18.4 %			
Useful	35.4 %	35.4 %	35.6 %			
Very useful	41.1 %	42.9 %	35.6 %			
Participation Satisfaction				3.66	3.60	3.84
Extremely dissatisfied	6.1 %	7.9 %	0.0 %			
Dissatisfied	7.1 %	8.5 %	2.2 %			
Neither satisfied nor dissatisfied	37.7 %	35.0 %	45.9 %			
Satisfied	30.1 %	30.0 %	29.8 %			
Extremely satisfied	19.3 %	18.6 %	21.8 %			
Re-engage Intention				3.50	3.54	3.37
Completely disagree	4.4 %	5.0 %	2.3 %			
Disagree	8.7 %	7.1 %	13.8 %			
Neutral	38.7 %	37.1 %	43.7 %			
Agree	28.9 %	30.0 %	25.3 %			
Completely agree	19.3 %	20.7 %	14.9 %			

background of our neighborhood. The designers took their feedback and redesigned" (RS4).

Despite this, an encouraging trend towards genuine participation was identified. 1.9 % of the questionnaire respondents indicated an Empower level of influence in rehabilitation decisions. As RS2 noted: "*…there was a designer who put up a plan to place a slide in the community square. But when we voted, everyone was against the plan. We suggested he design a community canteen instead*". Nevertheless, this trend towards more significant resident influence seems exclusive to homeowners; no tenant reported having significant control over the final decisions.

Yet, does increased influence necessarily lead to more desirable RP? Our study indicates that residents with greater influence perceive their participation as more useful, satisfying, and desirable. However, descriptive analysis shows that beyond a certain level of influence, the positive impact on participation satisfaction becomes less marked. Instead, the effort required to achieve significant impact increases exponentially. Regarding the law of diminishing returns, beyond a certain threshold of inputs, residents might experience diminished satisfaction (Shephard & Färe, 1974), as depicted in Fig. 6.1. Interestingly, our study also finds that residents with Inform and Consult influence levels report comparable satisfaction levels. Interview data imply that the observed diminishing returns in satisfaction could be attributed to the therapeutic and pacifying effect of participation (Arnstein, 1969) — residents primarily engage in expressing their concerns and safeguarding their personal interests. As interviewee CD2 noted, "*…residents simply need a platform to express their feelings. They find it acceptable if their feedback receives some response, regardless of whether the design plan is altered as per their suggestions*".

Therefore, aligning with Zhuang et al. (2019)'s advocacy, intensifying the empowerment of residents does not invariably yield positive outcomes. We specifically propose that, Consult and Involve may be appropriate levels of empowerment for residents in neighborhood rehabilitation, in context with emerging participation cultures and awareness, such as in China.

6.1.2. Initial stage - early participation brings loyal participants

Early participation is increasingly recognized as a crucial aspect of effective RP, offering residents greater opportunities and influence in decision-making and thereby enhancing their support for RP and rehabilitation decisions (Aitken, 2017; Uittenbroek et al., 2019). Compared

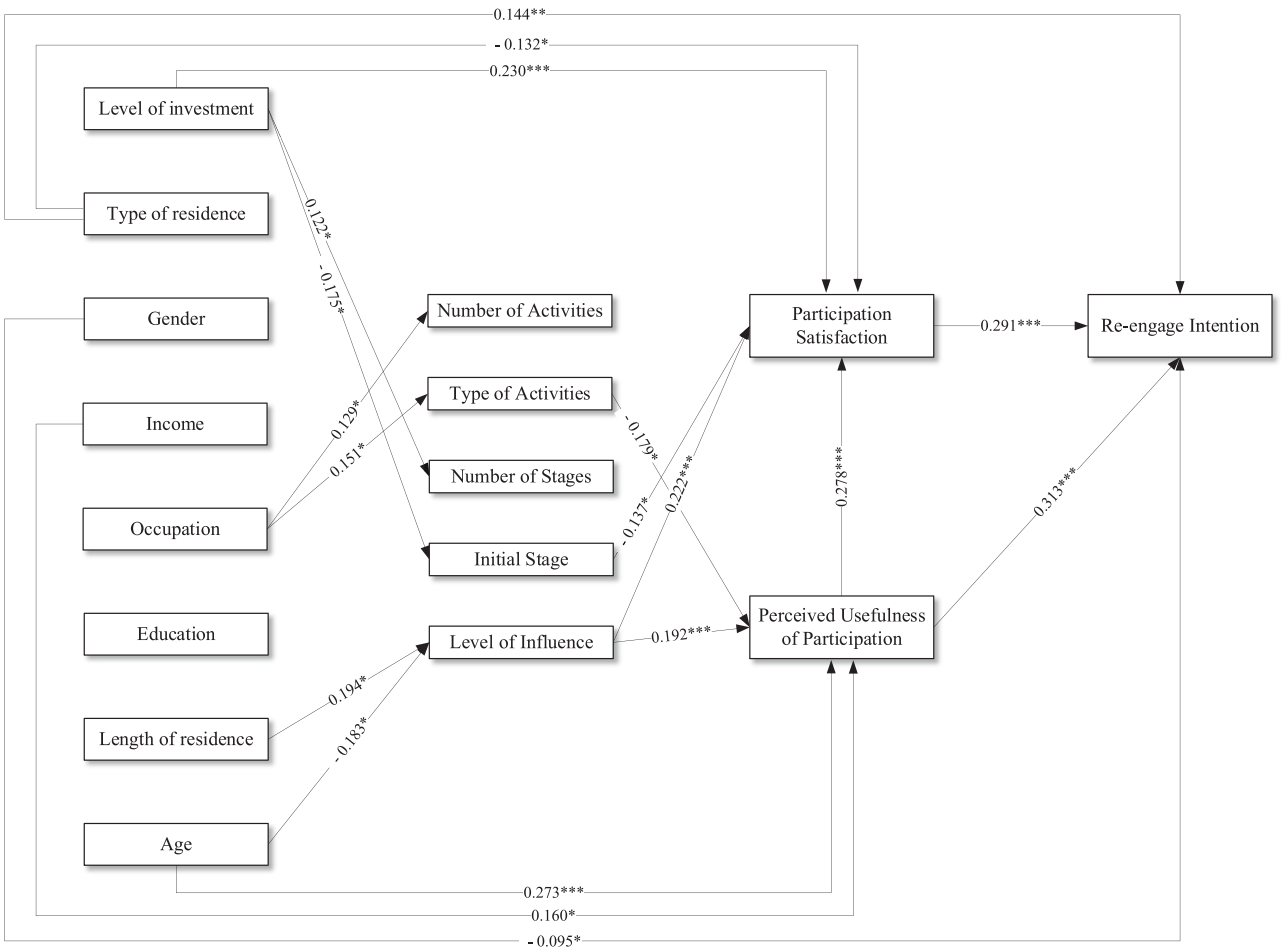

Fig. 5.1. Path analysis results (Source: authors).
Notes: 1. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$; 2. Insignificant relationships were omitted to maintain clarity in the figure; 3. All coefficients were standardized.

Table 5.3
Influence of acceptance participation on continuance participation.

Variables (J)	Effect (I → J)	Variables (I)				
		Acceptance participation experience			Perceived usefulness of participation	Participation satisfaction
		Type of activities	Initial stage	Level of influence		
Perceived Usefulness of Participation	Direct	−0.179*		0.192***		
	Indirect					
	Total	−0.179*		0.192***		
Participation Satisfaction	Direct		−0.137*	0.222***	0.278***	
	Indirect	−0.050*		0.053***		
	Total	−0.050*	−0.137*	0.275***	0.278***	
Re-engage Intention	Direct				0.313***	0.291***
	Indirect	−0.070*	−0.040*	0.141***	0.081***	
	Total	−0.070*	−0.040*	0.141***	0.394***	0.291***

Note: 1. *Number of Activities* and *Number of Stages* are not presented here, as they are found to have no significant interactions with other endogenous variables. 2. *p < 0.05, **p < 0.01, ***p < 0.001; 3. A blank box indicates an insignificant effect.

to the Western contexts, where residents participate from the inception of projects, in China, resident involvement typically occurs after key decisions have already been made (Li, Krishnamurthy, et al., 2020; Sun et al., 2016; Zhou, 2014). Nevertheless, our study of Wuhan reveals a promising trend following the institutionalization of RP in rehabilitation policies: a substantial majority of residents (90.4 %) are now participating from the initial two stages of the rehabilitation process. Path analysis results further suggest that earlier involvement correlates with heightened participate satisfaction, thereby promoting their re-engagement.

For residents, participation activities in the initial stages, such as propaganda, questionnaire surveys and visiting demonstration projects, are more manageable and less demanding, allowing them more significant control over the decisions. Fig. 4.2 illustrates this dynamic: during the Intention and Setup stage, the government initiates information campaigns to educate residents about the rehabilitation's scope, benefits, and potential inconveniences. In the Mapping and Diagnosis stage, the (dis)advantages of various rehabilitation strategies are thoroughly explained and compared. Rehabilitation is an iterative process, with insights and consensus from early stages as the foundation for later

Table 5.4
Standardized effects of the external factors on acceptance participation and continuance participation.

Resident participation (J)	Effect (I → J)	External factors (I)						
		Age	Gender (Female = 0)	Income	Occupation	Length of Residence	Type of Residence (Tenant = 0)	Level of Investment
Number of Activities	Direct				0.129*			
	Indirect							
	Total				0.129*			
Type of Activities	Direct				0.151*			
	Indirect							
	Total				0.151*			
Number of Stages	Direct							0.122*
	Indirect							
	Total							0.122*
Initial Stage	Direct							−0.175*
	Indirect							
	Total							−0.175*
Level of Influence	Direct	−0.183*				0.194*		
	Indirect							
	Total	−0.183*				0.194*		
Perceived Usefulness of Participation	Direct	0.273***		0.160*				
	Indirect	−0.035*			−0.027*	0.037*		
	Total	0.238***		0.160*	−0.027*	0.037*		
Participation Satisfaction	Direct						−0.132*	0.230***
	Indirect	0.026***		0.045*	−0.008*	0.050*		0.024*
	Total	0.026***		0.045*	−0.008*	0.050*	−0.132*	0.254***
Re-engage Intention	Direct		−0.095*				0.144**	
	Indirect	0.059***		0.063*	−0.011*	0.027*	−0.038*	0.074***
	Total	0.059***	−0.095*	0.063*	−0.011*	0.027*	0.106**	0.074***

Note: 1. Education is removed as it has insignificant effects on other variables; 2. p* < 0.05, p** < 0.01, p*** < 0.001; 3. A blank box indicates an insignificant effect.

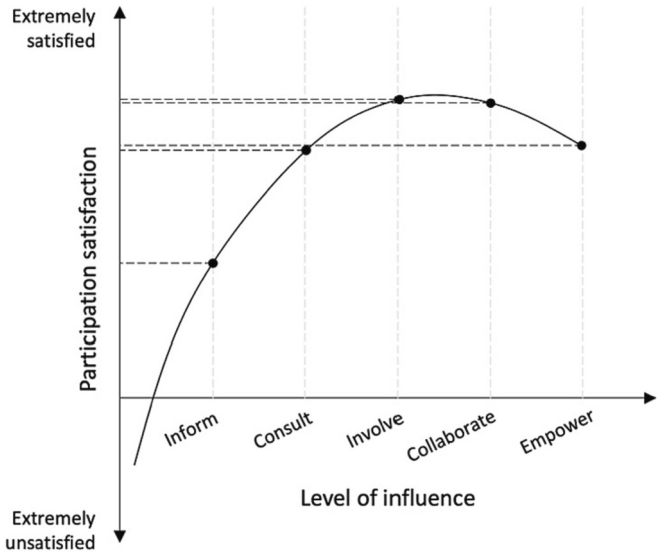

Fig. 6.1. The correlation between *Level of Influence* and *Participation Satisfaction* based on the law of diminishing returns.
(Source: authors).

decision-making. Those joining at later stages face the challenge of quickly assimilating all the information previously gathered. As a result, residents may hesitate to participate as they perceive the process as overly complex and challenging to control (Coenen, 2009; Tang et al., 2022). In our case, CO3 observed: *"...some residents who did not participate later showed interest. However, they lacked the necessary background knowledge, which led to frustration for both them and early participants. Often, these latecomers attended once and then ceased participating"*.

6.1.3. Type of activities – comprehensive but not arduous

As civic awareness and capacity grow in China, RP is evolving from informative to communicative and collaborative models, emphasizing inclusiveness and fostering deeper stakeholder interactions (Hu et al., 2013; Li, Zhang, et al., 2020; Zhou, 2014). Notable examples from cities like Beijing, Guangzhou, and Wuhan highlight the effectiveness of inclusive dialogue in diminishing skepticism and negative perceptions (Liu et al., 2015), fostering mutual understanding and trust (Sun et al., 2016), and promoting sustained involvement in neighborhood governance (Luo et al., 2020). However, our study uncovers a potential downside of this interaction-intensive approach: when RP activities become demanding and dependent on resident initiative, participants may find their involvement less useful and satisfying, diminishing their likelihood of ongoing engagement.

Brandt and Svendsen (2013) address this negative correlation by arguing that the costs of achieving consensus can easily outweigh the benefits as interaction increases. This hypothesis finds support in our case study in China. Here, the government initiates and manages less interactive RP activities like propaganda, surveys, and door-to-door campaigns. Although communication in these cases is one-directional and infrequent, it demands minimal effort from residents. Furthermore, the influence of RP on rehabilitation decisions is tangible and effectively communicated in the rehabilitation and design plans. However, as RP evolves towards more sophisticated models, such as Internal Consensus and External Unity,[8] residents face an influx of information from diverse sources, requiring additional effort to sift through and evaluate data. These advanced RP models also necessitate complex interactions, calling for skills in articulation and negotiation, which many Chinese residents may lack (Sun, 2015). Moreover, transitioning from government-led to resident-initiated participation increases organizational responsibilities for residents, including gathering resources and coordinating attendance, all without a clear personal benefit. This disproportionate investment with uncertain outcomes takes the charm out of RP.

[8] For specific activities, please see Fig. 4.2.

6.1.4. The influence of external factors: higher level of investment is the silver bullet

The case of Wuhan suggests that higher investment leads to better practices—residents participate earlier, longer, satisfier, and are more likely to participate again. This aligns with Li, Krishnamurthy, et al. (2020)'s observations in 11 cases across China and many other urban studies (Fang et al., 2022; Li, Zhang, et al., 2020; Luo et al., 2020; Li et al., 2024), where additional investment led to more innovative rehabilitation processes. In Wuhan, it also brings about richer administrative resources and stricter oversight. Consequently, RP in higher investment projects often faces less resistance and requires fewer compromises, leading to performance that surpasses the average. Besides, for neighborhood rehabilitation in China in general, higher investments are translated into the extensive coverage of neighborhood issues, and the adoption of advanced technologies and public services (SC, 2020). For the residents, it is reflected in a dramatic improvement in neighborhood appearance, and greater living comfort and convenience (Liu, Hu, et al., 2018). A greater return for a similar effort makes residents in high-investment programs more likely to be satisfied than those in low ones.

Our case further contributes by revealing the differences in the mechanisms by which Level of Investment impacts residents' acceptance participation and their continued involvement. In terms of acceptance participation, our results are consistent with Tang et al. (2022)'s findings in Shanghai and other international studies (Dekker & Van Kempen, 2008; Hall & Hickman, 2011; Uittenbroek et al., 2019), which indicate that higher investment levels, by providing abundant resources and opportunities, bolster residents' perceived control over their actions and motivate their initial participation. Regarding continued participation, increased investment levels improve the performance of acceptance participation and enhance residents' satisfaction with it. These two factors, in turn, significantly strengthen residents' intention to re-engage.

6.2. From acceptance to continuance: policy implications

Drawing from the significant findings of this research, we propose policy recommendations to foster sustained resident participation in neighborhood rehabilitation of urban China. One key strategy involves aligning participation objectives with both the macro-environment and micro-preferences of residents. In Wuhan, influenced by the lingering effects of Confucianism, government paternalism, and autocratic leadership styles, residents participate with the goals of Consultation and Placation. In this context, a baseline of Consult and an endpoint of Involve is viable to satisfy most residents. Questionnaires and door-to-door campaigns should be mandatory to ensure that residents have official channels to express their concerns. In addition, neighborhood forums, workshops, and participatory design[9] should be conducted in a way that residents know whether their requests are included in the decision and the underlying considerations. To attain higher degrees of participation, conducting a pre-participation study could prove instrumental. This would entail a mapping phase to discern residents' diverse attitudes and expectations, followed by careful evaluation and segmentation. Aligning the participation degree closely to residents' preferences can help circumvent the drawbacks of overzealous and hasty implementations.

Shifting the focus from quantity to quality is imperative. Although institutionalization has mitigated issues of delayed and insufficient RP in neighborhood rehabilitation, the case shows that the quality of RP remains largely uncertain. Establishing technical standards and an evaluation framework is crucial to enhance this aspect. The frameworks should focus on the process's transparency, equality, and fairness rather than the participation rate. For example, the accuracy of information, the timeliness of feedback, and the coverage of vulnerable and marginalized groups. Moreover, performance metrics could be incorporated into the assessment criteria for rehabilitation projects and official performance appraisals. Last, third parties, such as scholars and NGOs with a focus on social affairs, can be involved to provide real-time monitoring, evaluation and modification of RP policies in a bottom-up manner.

Since intensive RP may diminish residents' intentions to re-engage, a streamlined participation process is advised. For example, decomposing the overall design into manageable tasks, such as determining the theme of the neighborhood fence, to specify goals, thus a greater sense of control felt by residents. To alleviate residents' perceived difficulty initiating participation, reference can be made to the community planner system recently explored in Guangzhou and Xiamen (Hui et al., 2021; Li, Zhang, et al., 2020). However, our study suggests a slight modification: recruiting recently retired female homeowners could be beneficial. These individuals often possess a higher sense of responsibility and neighborhood attachment, coupled with substantial relational capital and trust within the community. Their involvement can ensure that RP efforts are both efficient and effective.

The final recommendation emphasizes the need to increase investment intensity and precision. Our interviews reveal that a lack of funding and unclear usage guidelines have diminished motivation and capability to undertake RP initiatives. Furthermore, the 'reward instead of subsidizing (*Yijiang Daibu*)' incentive mechanism may inadvertently polarize participation practices. Neighborhoods that initially show poor participation results may find it increasingly challenging to secure the necessary funds and resources to rectify ineffectiveness. Regarding this, governments could mandate RP as a condition for eligibility to apply for extra funding (Uittenbroek et al., 2019). Additionally, investments in Information and Communication Technology (ICT) and related platforms are recommended (Li, Feng, et al., 2020). Such measures could alleviate the financial and staffing limitations, thus ensuring the thorough and effective implementation of RP initiatives.

7. Conclusion

It is increasingly evident that the long-term viability and ultimate sustainability of neighborhood rehabilitation hinge on residents' continued participation. Extant research has focused on residents' first-time participation, leaving their continued participation largely unexplored. Using the ECM, this study provides an initial exploration of resident's continued participation. By analyzing questionnaire data obtained from 367 experienced residents in Wuhan, China, the study shows that only 38.2 % of respondents intended to continue participation in future rehabilitation endeavors. Overall, residents' *Re-engage Intention* is influenced by the *Acceptance Participation Experience* indirectly and directly through *Participation Satisfaction* and *Perceived Usefulness of Participation* developed from this experience. Specifically, the *Re-engage Intention* is most influenced by *Level of Influence* (positively), followed by *Initial Stage* (negatively), and *Type of Activities* (negatively). Among the external factors, Type of Residence was the most influential factor. Additionally, in rehabilitation projects with higher investment, residents tend to participate in more RP activities and earlier, enhancing residents' *Participation Satisfaction* and ultimate *Re-engage Intention.*

Nevertheless, this research also presents several limitations worth exploring in the future. Firstly, the study's exploratory nature should be noted. Utilizing the case of Wuhan serves as a preliminary validation of the ACM for Resident Participation and does not aim to draw broad generalizations. Future research could extend this work by applying the ACM in regions with varied socio-political backgrounds, enhancing the model's validation and offering comparative insights. Secondly, the relatively small sample size ($n = 87$) restricted us from performing a separate pathway analysis to investigate tenants' cognitive processes behind their re-engage intentions. Subsequent studies might explore

[9] There are many other RP activities that enable residents to exert a Consult or Involve level of influence. The examples provided here are just a few of them.

tenants' re-engage intentions using the ACM, comparing and contrasting these findings with those of homeowners. Thirdly, this study is informed by the 'acceptance-discontinuance anomaly'. It hypothesizes that past participation experiences shape residents' re-engage intentions. However, residents' willingness to participate is also closely related to their subjective perceptions, such as beliefs, moral obligations, neighborhood attachment, and trust in the community and government (Chang et al., 2022; Russ & Takahashi, 2013; Wu, 2012; Li et al., 2024). Future research could integrate these variables and other theories with the ACM to comprehensively understand residents' re-engage intention. Alternatively, the ACM constructs can be compared with these variables to yield additional insights. Lastly, this study concentrates on re-engage *Intention* instead of actual re-engage *Behavior*. Despite intentions often being strong predictors of behavior, the gap between intention and action is well-documented (Sheeran & Webb, 2016). Longitudinal and follow-up studies are thus recommended.

CRediT authorship contribution statement

Yu Li: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Resources, Software, Validation, Visualization, Writing – original draft. **Taozhi Zhuang:** Conceptualization, Writing – review & editing. **Queena K. Qian:** Writing – review & editing. **Erwin Mlecnik:** Writing – review & editing. **Henk J. Visscher:** Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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Appendix A. Profile of the Interviewees

Group	Cd.	Position	Affiliation
Local government	LG1	Officer	Government department at Wuhan Municipality
	LG2	Section director	Government department at the district level
	LG3	Officer	Sub-district Administrative Office
Community-based organization	CO1	Director	Neighborhood committee A
	CO2	Director	Neighborhood committee B
	CO3	Director	Neighborhood committee C
	CO4	Director	Homeowner committee A
Planning and design professional	PD1	Chief planner	Design and Planning Institute A
	PD2	Architect	Design Company A
Implementation and construction unit	DC1	Manager	Local District Development Group A
	DC2	Senior manager	Construction company A
Pressure group	PG1	Professor	Local university
	PG2	Social worker	NGO for community building
Neighborhood resident	RS1	Homeowner	Female, 51 years old, 12 years of residence, high school, income around city median
	RS2	Homeowner	Male, 83 years old, 30 years of residence, bachelor's degree, has regular income above the city median.
	RS3	Homeowner	Female, 40 years old, 10 years of residence, middle school, has regular income below the city median.
	RS4	Homeowner	Male, 56 years old, 12 years of residence, master's degree, has regular income above city median, just experienced a lift addition.
	RS5	Tenant	Female, 51 years old, 10 years of residence, illiterate, has no income.
	RS6	Tenant	Female, 32 years old, 5 years of residence, bachelor's degree, has regular income around city median.
	RS7	Tenant	Male, 25 years old, 3 years of residence, bachelor's degree, has regular income above the city median.
	RS8	Shopkeeper	Female, 48 years old, 20 years of residence, middle school, has regular income above the city median.
	RS9	Shopkeeper	Female, 35 years old, 5 years of residence, primary school, has regular income below the city median.

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