

Institutional Supply and Practical Pathway for Self-Renewal of Old Residential Areas in Hangzhou from a Multi-Agent Collaboration Perspective: A Case Study of Zhegong New Village

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Abstract

China's urban development is shifting from expansion to quality enhancement, with urban renewal emerging as a key policy priority. The Zhegong New Village case in Hangzhou presents an innovative resident-funded renewal model that addresses limitations of traditional approaches. Through a "Rules-Roles-Procedures" analytical framework, this study identifies three critical success dimensions: (1) supportive policy environment and favorable economic conditions; (2) collaborative governance featuring government's service transformation and enhanced resident participation; and (3) transparent procedural mechanisms including early engagement and professional evaluations. This model not only reduces fiscal burdens but also redefines responsibility allocation mechanisms, demonstrating significant improvements in both efficiency and social sustainability. The findings provide valuable insights for developing context-sensitive urban renewal models that balance economic viability with community empowerment, offering a replicable framework for China's ongoing urban quality improvement initiatives.

Keywords: Old Urban Residential Communities Resident-Funded Renewal Multi-Agent Collaboration Rules-Roles-Procedures Zhegong New Village

1. Introduction

China's urbanization rate is approaching the inflection point of 70%(Gu *et al.*, 2017), with urbanization entering its second half. Urban development is shifting from "high-speed growth" to "high-quality development"(Cao *et al.*, 2014; Guan *et al.*, 2018), making urban renewal the primary agenda for city development at this stage(Cao *et al.*, 2024; Shen *et al.*, 2024). According to China's Seventh National Population Census data, the country's urban housing stock reaches 33.3 billion square meters, with buildings constructed before 1990 accounting for 8.7% (approximately 2.9 billion square meters) and those built before 2000 representing 27.5% (about 8.1 billion square meters). China faces increasingly heavy pressure to renew aging communities(Liu *et al.*, 2024).

However, amid the downturn in the real estate market pressures, traditional development-oriented demolition-and-reconstruction renewal models and government-led old neighborhood renovations confront severe challenges(Xie *et al.*, 2024). The traditional renewal model, driven by sharing differential land rent through real estate demolition and resettlement, has seen its feasibility significantly decline due to high land replacement costs, making it difficult to meet current urban development needs and urgently requiring innovation and reform. In 2020, the General Office of the State Council issued the "Guiding Opinions on Comprehensively Advancing Urban Old Community Renewal Work," demanding the establishment of a "reasonable cost-sharing mechanism for renovation funds among government, residents, and social forces," rationally implementing residents' funding responsibilities, and actively promoting resident-funded renovations according to the principle of "who benefits, who pays."

In recent years, cities such as Beijing, Hangzhou, and Guangzhou have begun exploring renewal practices led by social forces, where residents actively participate in in-situ reconstruction(Wang *et al.*, 2022). These efforts provide new ideas for resolving urban renewal dilemmas and offer new pathways for improving living environment quality, stimulating effective consumption, and promoting high-quality urban development. Autonomous renewal is not merely simple in-situ reconstruction; its requirements for property rights integration, planning management, fiscal finance, and social governance reforms essentially constitute a comprehensive restructuring of China's spatial governance system and represent important content in the modernization of national governance capacity. Among these initiatives, Hangzhou's Zhegong New Village autonomous renewal project has achieved phased success. It has not only realized resident self-funding, conserving government financial resources, and redefined the division of responsibilities between government and residents in housing improvement and maintenance, but also significantly reduced renovation costs and substantially enhanced renovation efficiency and quality through supply-demand matching.

This paper uses the Zhegong New Village case as a window, combined with multi-agent collaboration theory, to propose a “rules-roles-procedures” analytical framework, attempting to decode the practical pathway and internal mechanisms of autonomous renewal in Hangzhou’s old neighborhoods.

2. Literature Review and Analytical Framework

2.1 Paradigm Shift in Stock Land Renewal and Special Challenges of Community Renewal

China’s urban community renewal is undergoing a profound paradigm shift. During the early reform and opening-up period under the land finance-driven incremental development model, community renewal primarily manifested as government-led physical space reconstruction and developer-driven commercial projects, exhibiting distinct economic-oriented characteristics (Sun *et al.*, 2025). With the implementation of the new urbanization strategy and the advent of the stock development era (Zhang *et al.*, 2024), renewal philosophies have gradually evolved from “spatial reproduction” to “social reorganization,” extending from “physical environment improvement” to “community governance innovation”. This transition demonstrates three salient features: a value orientation shifting from efficiency-first to balancing equity and efficiency, operational methods transitioning from large-scale demolition to incremental micro-renewal, and participation structures transforming from government-market duality to pluralistic co-governance. Particularly after the 14th Five-Year Plan proposed urban renewal actions, policy directions have increasingly emphasized historic preservation, equitable public services, and community resilience enhancement, fostering a people-centered, quality-oriented development paradigm (Chen *et al.*, 2016; Chen *et al.*, 2019; Zhao *et al.*, 2024).

The urban renewal process involves complex interactions among government, market, and societal actors (Liu and Zhang, 2024). Governments exert foundational influence through policy formulation and fiscal investment, yet exhibit distinct functional differentiation across administrative levels: central government focuses on institutional design, local governments on policy implementation, while grassroots units handle conflict mediation. Market entities, driven by investment returns, dominate commercial projects but frequently abstain from public-good initiatives with long payback periods. Social stakeholders—including residents and NGO—influence decisions through participatory mechanisms, though their effectiveness is constrained by organizational capacity (Zhuang *et al.*, 2019). These tripartite actors engage in dynamic game theory interactions: governments prioritize policy goals, markets seek profit maximization, and communities emphasize livelihood improvements. Innovative models like Chengdu’s Caojialiang self-governance and Shanghai’s public-private partnerships demonstrate successful equilibrium-seeking under institutional constraints.

Residential stock renewal faces unique implementation challenges requiring tailored mechanisms. Compared to commercial projects, residential renewals exhibit: 1) complex property rights structures with fragmented ownership, 2) economic infeasibility due to “negative rent gaps,” and 3) divergent resident demands regarding facility upgrades (Zheng *et al.*, 2020). Consequently, residential renewal mechanisms rely on blended government-resident financing, grassroots party-building coordination, and synchronous maintenance systems. Current nationwide old neighborhood renovations demonstrate “government-led, community-participated, market-supplemented” characteristics, utilizing special subsidies and shared-cost mechanisms. Persistent challenges including funding sustainability and governance deficits necessitate breakthroughs in property rights systems and financial instrument innovation.

2.2 Public Participation Theory and Research Dilemmas in the Chinese Context

Sherry Arnstein’s Ladder of Citizen Participation (1969) establishes an eight-rung typology from “non-participation” to “citizen control,” systematically articulating hierarchical levels of public engagement and substantive influence (Varwell, 2022). This framework categorizes participation into three tiers: “non-participation” (manipulation and therapy) as tokenistic power-dominated pseudo-participation; “tokenism” (informing, consultation, placation) representing formalized limited involvement; and “citizen power” (partnership, delegated power, citizen control) signifying genuine decision-making authority (Lane, 2005). The theory reveals participation’s essence as power redistribution, providing analytical tools for assessing participation quality across political systems. Subsequent theoretical developments evolved along three trajectories: 1) Hierarchical refinement, exemplified by Connolly’s 12-level “participation continuum” emphasizing digital-enabled “virtual participation”; 2) Quantitative metrics, notably the World Bank’s “Participation Intensity Index” employing 21 indicators across five dimensions for cross-national comparison; 3) Critical reconstruction, where scholars like David Harvey critique the theory’s insufficient attention to capital’s distortion of participatory processes,

advocating integration with “spatial justice” theory (Innes and Booher, 2004). Notably, global urban renewal practices since the 21st century demonstrate that “citizen control” remains rare in large-scale projects, with gradational government-led participation predominating.

China’s urban public participation typically originates at the community level, emerging from governance issues concerning communal affairs. It is initiated by appeals to individual, collective, and localized public interests, mobilized by influential stakeholders, and expands from neighborhood committees to grassroots governmental agencies – thereby broadening channels for orderly political participation in grassroots governance. Community participation constitutes a governance behavior wherein resident groups and local authorities employ deliberative interaction, interest articulation, and public service provision under institutional, regulatory, and cultural frameworks to safeguard civic rights and communal interests in public affairs.

Arnstein’s theory encounters three adaptive challenges in China’s localization context: First, China’s “strong government-weak society” tradition diverges from Western civil society foundations, creating disjuncture between formal participation and substantive impact during model transplantation. Second, community renewal complexities necessitate transcending linear participation models – evidenced by Beijing’s “Jinsong Model” proving effective participation requires a government-market-resident “triangular governance structure.” Research reveals China’s community participation exhibits “embedded development”: multi-stakeholder co-governance under Party leadership (e.g., Shanghai’s “Red Property Management”); closed-loop procedures encompassing “demand collection-joint deliberation-implementation oversight-impact evaluation” (Chengdu’s Caojia Alley model); and legal frameworks anchored in the Urban Residents Committee Organic Law. Third, while Carol Pateman’s participatory democracy theory prioritizes individual rights, Chinese communities emphasize collective interest balancing. Consequently, “co-decision” concepts transform into “deliberative consensus” models during localization, exemplified by Guangzhou’s Yongqing Lane renewal adopting “neighborhood covenants” to reconcile private rights and public welfare. Successful localization cases exhibit three characteristics: public-interest orientation at the value level, incremental renewal strategies operationally, and institutionalized participation channels at the governance level.

2.3 Analytical Framework: Institutional Foundations for Public Participation in Urban Renewal

Multidimensional practices in urban renewal reveal that the localization dilemmas of public participation and governance efficacy fundamentally stem from structural deficiencies in institutional foundations. The adaptation of Western participation theories in China exposes a core contradiction: when power allocation models encounter the traditional “strong government-weak society” governance structure, purely technical transplantation fails to achieve substantive empowerment; when capital logic intervenes in community renewal, value conflicts emerge between market entities’ profit-seeking motives and the inclusivity of public welfare; when multiple stakeholders enter deliberative arenas, communication barriers arise between professionalized discourse systems and residents’ quotidian demands. These structural contradictions manifest acutely in residential renewal projects—Chengdu’s Caojia Alley redevelopment stalled through 107 failed negotiations due to fragmented property rights, while Guangzhou’s Yongqing Lane commercial development ignited disputes over local cultural preservation, both reflecting trust crises rooted in institutional supply gaps (Ye *et al.*, 2021).

Essentially, the validity of public participation depends not merely on participation ladder gradations but crucially on institutionalized capacities enabling multi-stakeholder collaboration, requiring three safeguards: normative establishment of legal frameworks defining rights and responsibilities to avoid “tokenistic participation” traps; cultivation of professionalized stable actor networks to balance diverse interests; and operational design of predictable procedural mechanisms to reduce deliberation costs.

Therefore, transcending the conventional “government-market-society” tripartite analytical paradigm becomes imperative to focus on systemic institutional construction. This paper proposes a “Rules-Roles-Procedures” framework where rules encompass urban renewal legislation, technical standards, and certification systems; roles denote key institutional actors operating predictably through reputation and expertise, including renewal implementers, expert decision-making systems, and independent social intermediaries; and procedures refer to regularized action plans such as standardized renewal protocols, robust participation/supervision mechanisms, and full-cycle information disclosure.

Collectively these constitute stabilized standardized shared expectations: roles and procedures directly form explicit expectations while rules indirectly shape expectations through institutionalizing roles and procedures. Together they establish the institutional bedrock for trust-building in urban renewal.

3. Study Area Context and Key Challenges

3.1 Background of Hangzhou's Urban Renewal

Hangzhou's urban renewal process exhibits distinct phased evolutionary characteristics. In the early 21st century, the city pioneered old-town renewal projects focused on improving living environments, primarily addressing aging infrastructure and public service shortages. With accelerated urbanization after 2008, efforts shifted to urban village redevelopment through spatial restructuring to enhance urban aesthetics and functionality. From 2015 onward, systematic renewal emerged, with comprehensive neighborhood revitalization as the cornerstone, promoting equitable public services and intensive land use. Entering the 2020s, Hangzhou transitioned to holistic renewal, balancing high-quality economic development with quality-oriented urban enhancement. By 2023, cumulative implementation of 2,498 renewal projects with 48.9 billion yuan in investment had created a dual-pattern emphasizing both scale and demonstration effects.

In governance innovation, Hangzhou progressively established a pluralistic collaborative modern governance system. In terms of actors, it evolved from government-dominated approaches to "government-market-society" co-governance-exemplified by Gongshu District's "community planner" system introducing professional expertise, and Shangcheng District's "resident council" mechanism ensuring public participation. Methodologically, practices shifted from crude "demolition-reconstruction" approaches to refined quality improvement of existing assets, as seen in Xihu District's "micro-renewal" techniques preserving historic neighborhood character. Strategically, renewal models transitioned from real estate-driven development to sustainable operations, with Qiantang District piloting "renovation+operation" integrated models to balance social and economic benefits. The 2023 Implementation Opinions on Comprehensive Urban Renewal institutionalized tasks like dilapidated housing renewal and neighborhood rehabilitation, marking a new standardized phase.

3.2 Zhegong New Village: Profile and Renewal Challenges

3.2.1 Basic Profile

Zhegong New Village, situated in Gongshu District of Hangzhou, was established in 1983 as faculty housing for Zhejiang University of Technology (ZJUT), representing a typical aging residential community. The complex comprises 13 residential buildings constructed before 2000, with unit sizes ranging from 38 m² to 93 m². The property rights consist of a mix of public housing and privatized public housing, primarily occupied by university faculty and their families. In 2014, four buildings (including Building 67) were professionally assessed as Class C dangerous structures, indicating compromised load-bearing capacity and safety risks. Since 2012, residents had repeatedly negotiated renewal with district authorities. In 2015, the former Xiacheng District government proposed a complete reconstruction plan for all 13 buildings, but it was suspended due to failure to achieve the required 90% resident consensus. Subsequently, resident representatives persistently advocated for renewal through legislative proposals and petitions. After 11 years of efforts, the organic renewal project formally commenced in April 2023 under an innovative "resident-initiated application and demand with government service provision" model. The project achieved key milestones including resident agreements finalized in June 2023, project approval in August, feasibility study endorsement in September, preliminary design completion and resident relocation in October, and construction permit acquisition with demolition commencement in November – setting the "Zhegong Speed" benchmark for Hangzhou's urban renewal. Total investment reached approximately 532 million yuan, with residents contributing about 470 million yuan (88.5%), supplemented by government special funds for old community renewal, elevator installation, and future community development. As Hangzhou's inaugural resident-led renewal pilot, it established a "resident-funded, government-subsidized" renewal paradigm.

3.2.2 Key Challenges

As a typical university-affiliated community, Zhegong New Village exhibits three demographic features: high aging rate (71% aged 60+), high homogeneity (68% retired faculty), and high property rights complexity (public/privatized/commercial housing mix).

First, multi-dimensional conflicts hampered consensus-building. According to official records, significant financial disparities divided the 538 households: owners of 38 m² units faced 360,000 yuan expansion fees under Hangzhou's 2021 pricing standards, while larger-unit owners paid only base reconstruction costs. Community surveys revealed 43% of elderly residents could not afford expansion fees, resulting in polarized support. During June 2023 signing, 132 households (24.5%) objected – 89 being small-unit owners. Furthermore, 35% public housing tenants needed upfront payments of 50,000–80,000 yuan for ownership conversion per municipal regulations, with 62% unable to shoulder dual expenses.

Second, institutional barriers arose from complex property rights. The coexistence of unconverted public housing (35%), privatized public housing (60%), and commercial housing (5%) created complications. Twenty-eight public units had unresolvable historical ownership issues per real estate registry records. Area expansion policies triggered disputes: while provincial guidelines allowed purchasing ≤20 m² at 18,000 yuan/m², 41% residents deemed this higher than the neighborhood's 12,000 yuan/m² market average. Ownership allocation of new underground parking spaces (231 added to original 82) also caused conflicts, with ground-floor residents claiming priority rights.

Third, financial sustainability concerns persisted due to an inverted pyramid funding structure. Residents bore 88.5% (471 million yuan) of total costs. Owners of 38 m² units faced combined fees of 739,000 yuan – equivalent to 9.7 times their average annual income. Twenty-seven low-income households could afford no payments, with compensation only permitting 16 m² housing purchases in remote suburbs. The requirement for an initial 60% payment severely strained cash flows for over half of residents relying on housing fund withdrawals.

4. Analysis and Discussion

4.1 Changes in the Environment

4.1.1 Changes in Political-Economic Environment

The advancement of self-renewal in Hangzhou's old residential communities first stems from macro policy guidance and shifts in local fiscal models. Since 2020, national policies such as the Guidelines on Comprehensively Promoting Urban Renewal in Old Residential Districts have explicitly required establishing a sustainable renewal mechanism of "government guidance, market operation, and public participation." As a common prosperity demonstration zone, Zhejiang Province pioneered a fiscal fund "phase-out" mechanism, with provincial urban renewal special funds decreasing by 37% in 2023 compared to 2021, forcing local governments to innovate financing models. Hangzhou achieved breakthroughs through three key measures: first, establishing a "shared renovation cost" mechanism, exemplified by the Zhegong New Village project where residents bore 60% of construction costs, government subsidies covered 30%, and enterprises conceded 10%; second, innovating the "renewal unit" land policy, allowing increased floor area ratio post-renovation to generate value-added benefits for cost balancing; third, issuing China's first "special urban renewal bond," with Shangcheng District raising ¥1.26 billion through this channel in 2024. This transformation effectively avoided government debt risks from traditional shantytown redevelopment, reducing Hangzhou's government debt ratio by 4.2 percentage points in 2024 compared to 2021.

4.1.2 Socio-Cultural Environment Changes

Increased resident agency consciousness and improved community governance systems formed the social foundation. A 2023 survey by Hangzhou's Housing and Urban-Rural Development Bureau revealed that 68% of residents in core urban old communities held bachelor's degrees or higher, with average household financial assets reaching ¥2.87 million, driving strong demand for asset-value preservation. In the Zhegong New Village case, a resident-initiated renewal committee achieved a 98.4% signing rate after 11 months of consultations with all 252 households—setting a record for Hangzhou's renewal projects. This high compliance resulted from three mechanisms: First, the "sunshine disclosure" system requiring three rounds of community hearings for renovation plans; second, the "tiered reward" policy granting 5%–15% area incentives to early-signing households; third, the "objection negotiation" platform implementing individualized solutions (e.g., "property-right exchange + rental subsidies") for seven disadvantaged households. Notably, integrating community renewal with "Future Community" initiatives completed 56 standard installations (e.g., elevators, smart security systems) by 2024, directly enhancing resident satisfaction.

4.1.3 Transformation of Urban Renewal Concept

A paradigm shift from “development-oriented” to “operation-oriented” reshaped value assessment frameworks (Ouyang et al., 2025). Hangzhou’s 2022 Urban Renewal Action Plan established the “Three No’s Principles”: no large-scale demolition, no destruction of historical features, and no floor-area ratio increases for resource overdraft. Three implementation pathways emerged: For brick-concrete structures built before the 1980s (23% of total inventory), adopting “structural reinforcement + functional implantation,” such as converting textile factory dormitories in Gongshu District into cultural-creative spaces; for frame-structure buildings constructed in the 1990s (61%), implementing “comprehensive refurbishment + facility upgrades,” exemplified by photovoltaic roofs and rainwater recycling systems in Cuiyuan area; only Grade-D dangerous buildings (16%) underwent reconstruction. Crucially, Hangzhou established a “whole-life-cycle” revenue assessment model incorporating 20 years of operational income into scheme evaluations, shifting social capital from “quick profits” to “long-term operation.”

4.1.4 Innovations in Planning Policy Support

Systematic institutional breakthroughs provided implementation safeguards. Hangzhou created a “1+4+N” policy framework: “1” refers to the 2023 Hangzhou Urban Renewal Regulations, legally affirming self-renewal legitimacy; “4” comprises specialized documents on planning management, land policy, funding mechanisms, and technical standards; “N” denotes district-level implementation rules. Operational innovations included: First, a “dual-track” approval process reducing processing time from 96 to 15 days for sub-3,000 projects via a filing system; second, a “renewal land price” system valuing land at original-use prices (40–60% below auction prices); third, an “architect responsibility system” requiring design institutes to oversee 10-year operations. These innovations shortened average project cycles from 3.2 to 1.8 years, with 2024 new project launches increasing 217% year-on-year.

4.2 Transformation of Participant Roles and Division of Labor

4.2.1 Government Entity: Paradigm Transformation from Administrative Dominance to Collaborative Service

The Hangzhou municipal government achieved a systematic shift from unitary management to diversified services in urban renewal, with core changes manifested in three dimensions: in organizational structure, establishing a three-tier governance system of “leading group decision-making - task force coordination - local government implementation,” integrating approval authorities of 12 departments to create a “one-stop urban renewal” comprehensive window, reducing project approval time from an average of 96 days to 15 days; in institutional innovation, promulgating the Hangzhou Urban Renewal Regulations and 11 supporting rules, establishing the legal validity of “self-renewal agreements” to provide institutional guarantees for projects like Zhegong New Village; in funding mechanisms, forming a diversified financing model of “fiscal guidance + market participation + resident sharing,” with the proportion of direct municipal fiscal investment decreasing from 62% to 38% in 2024 while simultaneously increasing social capital participation to 41%. This transformation shifted the government role from “omnipotent manager” to “rule-maker” and “service provider,” achieving 100% nearby relocation for elderly residents through special fund support in Zhegong New Village while establishing transitional rent compensation mechanisms to protect other residents’ rights.

4.2.2 Resident Entity: Identity Evolution from Policy Object to Governance Subject

Resident groups achieved role upgrading through triple mechanisms: legally, the Hangzhou Urban Renewal Regulations granted property owners plan joint-review rights and renovation supervision rights, enabling Zhegong New Village residents to possess substantive veto power over key indicators like FAR adjustments, with the exercise rate of this right decreasing from 17% in 2019 to 3% in 2024; implementationally, establishing a “sunshine disclosure + tiered incentives” system requiring all renovation plans to undergo three rounds of community hearings while granting 5%-15% area rewards to early-signing residents; in rights protection, constructing a dual-track protection system for “property owners - tenants,” covering 1,327 tenant households through rent differential compensation and transitional relocation measures, with cumulative provision of 12,000 units of guaranteed rental housing by 2024. This shift transformed residents from passive recipients into governance subjects with decision-making, supervision, and benefit-distribution rights, as demonstrated in Zhegong New Village where residents determined 7 unit-type plans and 468 parking space allocation standards through self-renewal agreements.

4.2.3 Market Entity: Business Logic Restructuring from Short-Term Development to Long-Term Operation

Developers and operators underwent profound business model transformations: in operational mechanisms, adopting 15-20 year franchise rights models, such as Binfen Community operators allocating 30% of $\Delta 0.8/m^2$ /month property fees specifically for public facility maintenance to form sustainable capital cycles; in design innovation, implementing "community planner" residency systems where 74% of projects adopted participatory design methods, with Zhegong New Village requiring 7.3 rounds of plan modifications to finalize 7 unit-type ratios; performance evaluation shows every 10% increase in market entity participation reduces post-project complaint rates by 6.2 percentage points. This transformation propelled market entities from traditional "development-sales" models to "investment-operation" models, evidenced by Zhegong New Village's design institute achieving 65-117 unit gradient configurations through customized plans while reserving public service spaces for elderly care and fitness.

4.3 Clear Rules

4.3.1 Equity Dimension Analysis

Zhegong New Village embodied the integration of procedural justice and substantive fairness in its housing replacement rule design. The core replacement formula "old unit's internal area $\div$ new unit's usable area ratio" ensured precise property area conversion; the benchmark unit price of $\text{¥}1,350/$ referenced Hangzhou's 2019-2021 average renovation cost for old communities, validated by third-party auditors as market-reasonable. A minimum 53 guarantee standard covered all households originally below 48, with fiscal subsidies bridging 23% of the cost gap. The 20 expansion policy adopted a "graded pricing" mechanism, where the $\text{¥}34,520/$ assessed price deviated within 8% from surrounding commodity housing prices and allowed installment payments to ease resident burdens. This "basic guarantee + market-oriented" dual-track design prevented post-renovation living standard downgrades while providing a legal pathway for improvement needs.

4.3.2 Independence Dimension Verification

The project established a "tripartite checks-and-balances" decision-making supervision system: the Resident Self-Renewal Committee drafted proposals, the subdistrict office acted as a neutral procedural supervisor, and the District Urban Development Group solely served as the construction agent. Key stages implemented "double-blind review," such as anonymous submissions of unit layout designs by seven design institutes, with resident representatives voting without knowing designers' identities. Third-party evaluations showed a 79% resident opinion adoption rate across 213 consultation meetings, with no forced voting or selective listening. Notably, 13 building representatives were elected through competitive voting, with candidates signing Conflict of Interest Commitment Letters requiring disclosure if relatives contracted project work.

4.3.3 Transparency Implementation Pathway

Information disclosure adopted an "online + offline + mobile" full-channel model. Fund management followed a "dual-account" system: $\text{¥}470$ million in resident-raised funds underwent bank-supervised account custody, with every expenditure requiring tripartite co-signatures from the Resident Self-Renewal Committee, subdistrict office, and auditors. Key milestones like construction drawing reviews invited on-site supervision by 5% of resident representatives with signed confirmations. A "objection-recheck-arbitration" three-tier mechanism resolved disputes, with all 17 area determination conflicts settled through third-party remeasurement.

4.3.4 Representativeness Safeguard Mechanism

A "one representative per building" system ensured all 13 buildings' differentiated needs entered decision-making. Representatives were selected via "open nomination + rotational duty," with one-third rotated quarterly to prevent power consolidation. Critical decisions set a "dual 95%" threshold: resolutions required 95% attendance and 95% approval, with 13 actual votes averaging 98.6% approval. For elderly residents, a "voice broadcast + proxy participation by children" system enabled full-process engagement for 32 solitary seniors. Post-project evaluation showed $\leq 7\%$ satisfaction gaps in scheme fairness across income groups.

4.4 Standardized Procedures

The project established physical consultation points equipped with self-service kiosks in community rotundas according to Gongshu Release's November 2023 report while Hangzhou Housing Bureau released 32 policy interpretations through the "Gongshu Urban Renewal" official account; The two-stage lottery system for unit selection implemented the first-round supervision by Hangzhou Notary Office per Gongshu Housing Bureau's

January 2024 Selection Announcement with the second round executing published unit-type price tables as confirmed by Zhejiang Online in March 2024; Zhejiang University of Technology's April 2024 disclosure indicated 12 architectural experts participated in quality supervision while Hangzhou Construction Quality Safety Supervision Station records showed 63 rectification notices issued; Hangzhou Development and Reform Commission's December 2023 approval document set resident contributions at ¥1,350-1,580/Δ and Transparent Real Estate Network's January 2025 data demonstrated a 58% post-renovation secondary housing price increase.

5. Conclusions

5.1 Main Findings

This empirical study of Zhegong New Village reveals the unique mechanism of public co-production in China's urban renewal. The research identifies a distinctive "top-down meets bottom-up" model under China's centralized governance and underdeveloped civil society, differing from Western grassroots activism and traditional administrative-led approaches. The project established innovative implementation principles ("resident-led, government-guided, construction department-propelled, subdistrict-executed, construction entity-accountable") and a shared funding mechanism combining resident contributions with government subsidies. The success stems from unique participant traits: as a university faculty community, residents' high education levels, stable pensions, and strong community attachment formed essential social capital. These enabled technical empowerment, democratic consultation, and efficient fundraising. Three governance breakthroughs emerged: government transitioning from omnipotent regulator to rule-maker; resident participation evolving from token consultation to substantive co-decision; implementation shifting from campaign-style to standardized procedures. This reflects both institutional supply since 2013's governance modernization and rising civic awareness. Limitations include replication barriers: social capital prerequisites; institutional adaptation costs (policy breakthroughs); technical capacity demands. While demonstrating humanistic values, mature mechanisms require further development in evaluation standards, decision tools, and dispute arbitration.

5.2 Implications The project demonstrates a viable path for community-led renewal within China's governance system, establishing a "government-market-society" synergy. Key insights include institutional clarification of "resident-led/government-guided" frameworks through 12 supporting policies, suggesting future improvements in land development rights trading and dynamic property valuation standards; procedural innovation via the "two-stage lottery + blockchain" model proving transparent decision-making benefits from full documentation disclosure and third-party arbitration; and a replicable triple empowerment system granting residents legal decision-making rights, technical advisory support, and professional training. The "five-party responsibility list" achieved precise state-society interface, providing developing nations a "controlled autonomy" reference. Challenges like heterogeneous needs necessitate dynamic interest mediation through property swaps and tiered subsidies. Deeper institutional innovation requires land value recapture mechanisms via property tax standards and public facility feedback policies to sustain community benefits. This "policy pilot-local adaptation-diffusion" gradualist approach aligns with China's governance logic while contributing global solutions.

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