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Volunteer Service in Promoting Community Resilience Governance: Practical Reflections and Pathways for Optimization

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Abstract: The key to community resilience governance lies in activating endogenous forces and fostering sustainable local participation. Taking the physical renovation of an old residential compound as a practical context, and drawing on a comprehensive questionnaire survey alongside an in-depth compound case study, this paper systematically analyzes the critical bottlenecks in post-renovation governance. These challenges include property-operation losses, blocked communication channels for residents' demands, significant shortages of age-friendly services, and generally weak self-governance capacities among community members. To address these multifaceted issues, this study proposes an innovative "volunteering + property management" co-governance framework. This framework is structured on five-actor collaboration and is intricately linked by the full-cycle embedding of volunteer service throughout the community lifecycle. Furthermore, the research distills actionable implementation paths to ensure the framework's long-term success, specifically focusing on Party-building leadership, curriculum support for volunteers, project-based operational models, and incentive compatibility mechanisms. By integrating these strategic elements, the proposed approach provides a robust theoretical and practical reference for similar residential compounds. Ultimately, this study offers a viable roadmap for communities to successfully transition from merely being "renovated well" to being sustainably "managed well," thereby enhancing overall urban resilience, improving living standards, and strengthening social cohesion and overall well-being in modern cities.

Keywords: volunteer service; community resilience; urban governance; co-governance; community management

1. Introduction

1.1. Policy Background

In May 2025, official guidance on advancing urban renewal emphasized a collaborative governance approach involving institutional coordination, market mechanisms, and resident engagement, encouraging sub-districts and communities to strengthen their organizational capacity and foster active participation. Complementary policy documents highlighted the importance of volunteer service in cultivating inclusive, shared-governance communities where responsibilities and benefits are equitably distributed. Urban renewal has accordingly evolved from a focus on physical infrastructure improvement toward systemic governance enhancement, with community resilience emerging as a key indicator of renovation effectiveness. Older residential compounds present distinctive challenges in governance implementation, often revealing structural limitations in operational sustainability. This paper examines volunteer service roles within compound renovation through questionnaire data and field cases, identifying functional scope and institutional coordination needs [1]. It proposes a scalable governance model grounded in multi-stakeholder collaboration and sustained resident

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involvement, addressing the persistent challenge of effective long-term management following physical renovation.

1.2. Constructing the "Volunteering + Property Management" Multi-Actor Co-Governance System

Existing studies typically follow a single governance path-government support, market-based property management, or resident-led self-governance. Research on collaborative governance emphasizes that the sustainability of joint arrangements hinges on the quality and structure of inter-actor connections. This paper proposes a framework anchored in the coordinated roles of five key actors: government, sub-district and community authorities, social organizations, property service enterprises, and homeowners' committees. Within this framework, volunteer service is integrated as an adaptive, cross-cutting element across the entire governance chain, establishing a durable 'volunteering + property management' model wherein multiple actors constitute the foundational structure, volunteers address emerging or underserved needs, and professional property management ensures operational implementation (As shown in Figure 1).

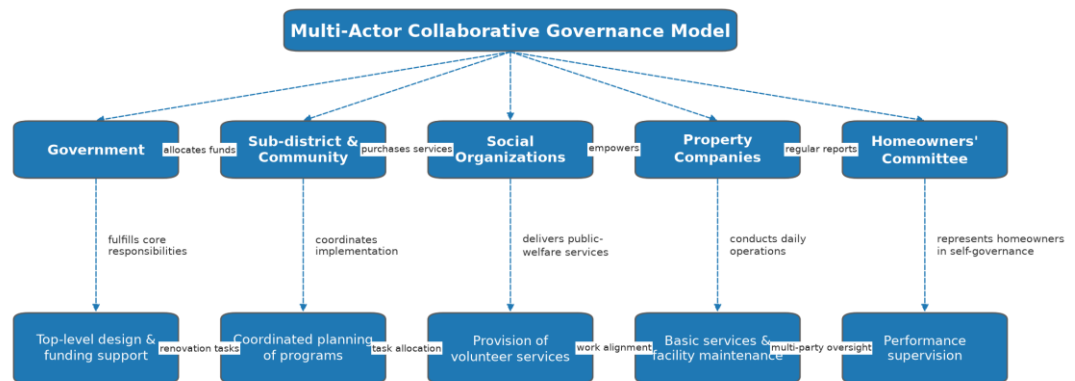


Figure 1. Schematic Diagram of Multi-Actor Collaborative Governance

As shown in Table 1, the homeowners' committee mobilizes residents to form volunteer teams; social organizations support team operations and role design; the community provides physical spaces and platforms for deliberation; property service enterprises open frontline service scenarios for volunteer engagement; and the government supplies policy guidance and financial incentives. This arrangement establishes a functional division where property management focuses on technical operation and maintenance tasks, while volunteers contribute to relational coordination and community-level facilitation [2].

Table 1. Collaboration between the Five Major Actors and Volunteers

Actor	Role	Responsibilities
Government	Rule maker; resource provider	Introduces supportive policies for the governance of old residential compounds, coordinates renovation funds, regulates market entry standards for property services, and provides subsidies for volunteer service, taking charge of top-level design and backstop guarantees
Sub-district and community	Overall planner; organizer and coordinator	Builds consultative deliberation platforms, guides the establishment of homeowners' committees, introduces compliant property companies, incubates local volunteer teams, coordinates conflicts

		among the parties, and links up the governance chain from top to bottom
Social organizations	Professional supporter; service provider	Undertake assignments delegated by the community, cultivate community volunteer teams, organize training in resident deliberation, design volunteer posts, and build points-based incentive mechanisms, providing soft governance services beyond the scope of property management
Property companies	Professional service provider; daily executor	Undertake standardized professional property services such as hardware operation and maintenance, security, cleaning, and facility repair, focusing on the upkeep of the hard environment
Homeowners' committee	Residents' representative; whole-process supervisor	Represents the demands of all residents, supervises the performance of property contracts, reviews community income and expenditure, collects residents' renovation and maintenance needs, and recruits enthusiastic owners into volunteer teams, opening a channel for resident participation in governance
Volunteers	Professional service provider; emotional guardian; governance collaborator	Carry out environmental beautification, safety patrols, and civic-mindedness campaigns, assist in mediating neighborhood disputes, and support the work of the other actors

1.3. The Significance of Implementing Multi-Actor Governance

In contrast with the macro-level framework of state, market, and society, this paper regards volunteer service as the mediator that links administrative governance with resident self-governance. From the perspective of resilience, its significance can be understood in three respects [1].

First, it downscales the governance unit. Volunteer service turns residents from service recipients into governance subjects, achieving low-cost, flexible governance on the basis of acquaintance trust. Second, it reshapes governance relations. Social capital fosters collaborative engagement and transforms diverse interests into collective action for community well-being. Third, it consolidates governance mechanisms [1]. Institutionalized devices such as post development and points-based incentives shift volunteer service from sentiment-driven to institution-driven operation, advancing grassroots governance from reactive support to proactive cultivation.

2. The Development of Old Residential Compound Renovation

The renewal of old residential compounds in a northeastern Chinese city has evolved through three distinct phases: initially, isolated repairs were carried out on individual housing units without integrating subsequent management arrangements; subsequently, citywide assessments were conducted and large-scale comprehensive renovation was implemented, though long-term property management systems and collaborative governance involving multiple stakeholders remained underdeveloped; since 2024, emphasis has shifted toward sustainable maintenance, with pilot initiatives testing integrated models combining low-fee property management and community-based volunteer service. Although investment levels have continued to rise, the durability of renovation outcomes hinges critically on sustained upkeep and active resident engagement-areas where volunteer service plays a pivotal supporting role. This phased evolution forms the practical foundation for the present study [1] (As shown in Figure 2).



Figure 2. Development Stages of Old Residential Compound Renewal in Dalian

3. The Necessity of Embedding Volunteer Service in the Long-Term Governance of Old Residential Compounds

The data were derived from the “Community Service Questionnaire” administered by the research team in 2025 to residents and volunteers of old residential compounds in Dalian via combined online and offline channels, yielding a set of valid responses [2].

3.1. Resolving Property Operation Losses and Reducing Governance Costs

The average collection rate of property fees in old residential compounds is only 31%, making it difficult for market-based property firms to cover the costs of cleaning, security, and patrols solely through fee income—this constitutes a primary barrier to their participation. Survey results further indicate that facility aging (reported by 40.85% of respondents in compounds aged 5–10 years) and parking difficulties (39.19%) are the two most prevalent issues, which conventional fee-based property management struggles to address independently [3]. Volunteers assist with non-professional duties including stairwell patrols, parking guidance, fee promotion, environmental cleanups, and neighbor mediation, thereby substantially lowering operational expenditures and enabling the sustainable delivery of affordable basic property services—a model reflecting community-driven service provision. Evidence suggests that institutionalizing volunteer involvement can enhance the financial viability and operational resilience of property services (As shown in Table 2).

Table 2. Survey of Problems in Old Residential Compounds

Residence duration	Parking difficulty	Elevator installation	Property fee disputes	Facility aging	Safety loopholes	Neighbor hood conflicts	Few activities for the elderly and children
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≤ 1 year	9.46%	13.16%	9.86%	9.43%	11.11%	9.62%	5.71%
1–5 years	21.62%	22.37%	22.54%	22.64%	18.52%	19.23%	31.43%
5–10 years	39.19%	35.53%	40.85%	33.96%	37.04%	34.62%	31.43%
≥10 years	29.73%	28.95%	26.76%	33.96%	33.33%	36.54%	31.43%

Note: The data are drawn from a report prepared by the research group on the basis of the community survey questionnaire for old residential compounds.

3.2. Dissolving Residents' Antagonism and Opening up Channels for Communication

Door-to-door communication by external property management staff often elicits negative reactions from residents [4]. Its effectiveness depends more on emotional resonance than on formal rule explanation. Resident-led volunteer teams within the same residential compound benefit from established interpersonal trust grounded in shared community experience—this localized social cohesion supports coordinated community engagement. Such teams demonstrate higher efficiency than property staff in gathering resident feedback, clarifying fee policies, and facilitating constructive dialogue, thereby enhancing willingness to comply with fee obligations and addressing concerns proactively.

3.3. Matching the Characteristics of an Aging Population and Filling the Gaps in Age-Friendly Services

In the sample, 99.05% of households include members aged over 60. The needs of older adults living alone—for assistance with shopping, medical accompaniment, urgent support, and accessible navigation—are pronounced [2]. This reflects both the advanced aging profile of work-unit residential compounds and the declining availability of familial care due to smaller household sizes. Market-oriented property management services typically do not provide such low-margin support functions. Age-friendly environments emphasize housing quality, outdoor accessibility, and opportunities for social engagement. Mobilizing active, healthy older adults into peer volunteer teams and coordinating them with university student volunteers offers a cost-effective approach to bridging service gaps.

3.4. Cultivating Residents' Awareness of Self-Governance and Breaking Dependence on the Work-Unit System

Long-term work-unit coverage has fostered a path dependence of "turning to the government or the former employer whenever problems arise," which hinders the establishment of homeowners' committees and reduces willingness to participate [1]. Volunteer service offers the lowest entry threshold; by substituting accessible, low-barrier activities for resource-intensive deliberative engagement, it enables residents to cultivate a sense of community through sustained involvement, gradually progressing toward participation in homeowners' committee elections and decision-making on public affairs—thereby facilitating the shift from "passively managed" to "actively co-building." Effective community capacity building requires participation that is organized, continuous, and institutionally supported, rather than occasional or isolated.

3.5. Prospects for the Integrated Model of "Comprehensive Renovation + Volunteer Service"

Policy guidance clearly supports integrating volunteer service into community-level urban renewal initiatives; practical implementation in Dalian has confirmed the model's feasibility. It entails minimal and non-recurring fiscal investment, exhibits high scalability, and aligns well with the prevalent work-unit compound housing typology across northern China—making broader application advisable [5]. More fundamentally, the model shifts part of governance expenditure from public finance to social participation, thereby enabling sustainable governance capacity during the stock-based renewal phase.

4. A Practical Case of Old Residential Compound Renovation

4.1. Case Background

The Bilangyuan compound is located in the Hutan New Area of Laohutan Sub-district, Zhongshan District, Dalian. Developed in three phases, with Phase I completed in 1999, it comprises more than fifty buildings and over two thousand households—a typical old residential area built along a hillside [6]. Before renovation, the exterior wall finishes had aged and the roofs exhibited thermal bridging and water infiltration; the compound roads were full of potholes, and some sections were so steep that elderly residents found mobility challenging; parking spaces were significantly insufficient, and vehicles occasionally encroached upon designated emergency access routes; the water supply and drainage networks had deteriorated, and public lighting was inadequate; and the property fee had long remained at the low level of 0.3 yuan per square meter per month, insufficient to support facility renewal and routine maintenance. In 2023, the compound—along with the Bitao North Garden compound—was included in Zhongshan District's program for renovating old residential compounds, which implemented building energy-saving retrofits and infrastructure upgrades. This paper reconstructs the compound's pre-renovation condition based on community archives and on-site verification. With its high degree of physical aging and concentrated service demands, the compound serves as a representative case for examining post-renovation governance (As shown in Figure 3).



Figure 3. Before-and-after Comparison of an Old Residential Compound Renovated in Dalian

4.2. Case Analysis and Solutions

4.2.1. Case Analysis

The renovation revealed three key shortcomings. First, priority was given to visible improvements—such as building facades and landscaping—while critical underlying infrastructure, including internal utility systems and safety systems, received insufficient attention. Second, implementation emphasized physical construction over institutional arrangements: formalized parking management and routine inspection mechanisms were absent, leading to recurring disorder in vehicle placement. Third, focus centered on new construction rather than long-term operational sustainability: supporting facilities lacked established maintenance protocols, undermining durability of outcomes. Collectively, these issues reflect a fundamental imbalance—the renovation followed an engineering-oriented approach without integrating complementary governance design, limiting its capacity to foster enduring, self-regulating community order [2].

4.2.2. Proposed Solutions

Four countermeasures are proposed: enhancing infrastructure inspection, electrical system maintenance, and the updating of emergency response equipment to address latent safety risks; implementing standardized parking regulations and a daily patrol mechanism aligned with the optimized road and parking layout to prevent recurrence of lane encroachment; assigning the property management company primary responsibility for public facility maintenance, supported by scheduled inspections and standardized repair reporting procedures that integrate construction and operational oversight; and mobilizing university-based volunteer resources to foster a collaborative service model involving social workers, volunteers, and community organizations—leveraging eldercare, childcare, and civic engagement initiatives to strengthen service delivery where property management capacity is limited [7]. These measures systematically target deficiencies in

safety, order, maintenance, and service, forming a phased framework of 'engineering completion → institutional sustainability → social reinforcement.' Concurrently, a demand inventory and a service supply catalog are developed to ensure precise resource–need alignment and eliminate mismatches.

4.2.3. Implementation of the Solutions

(1) Inspection and rectification of hidden safety hazards. Working with the property company, the community conducted building-by-building inspections of stairwell electrical wiring, water supply and drainage systems, and fire protection infrastructure; aged and damaged components were registered and systematically repaired in batches, thereby addressing safety issues originating from concealed construction works [8].

(2) Standardized management of internal community traffic. The property company assigned dedicated personnel to conduct routine patrols of roads and parking areas, implemented standardized parking through clear pavement markings, and actively discouraged lane encroachment and irregular vehicle placement, thus reinforcing the outcomes of traffic optimization initiatives [9].

(3) Routine maintenance of public facilities. A dual-tier maintenance mechanism–combining daily cleaning with periodic inspection and repair–was established to ensure consistent upkeep of the fitness square, pavilions, leisure seating, and painted recreational surfaces; minor damages were addressed promptly upon identification.

(4) Institutional framework and operational mechanisms for university volunteer engagement. Sustainable integration of university volunteer service relies on robust institutional models and procedural mechanisms rather than episodic interventions; its implementation experience can be characterized as a coordinated approach integrating organizational leadership, academic integration, multi-stakeholder collaboration, and project-based execution.

Regarding implementation entities, the School's Party General Branch and Youth League Committee proactively established cooperative partnerships with community-level Party organizations and residents' committees; faculty members led service teams while the student union coordinated volunteer groups, establishing a stable two-way interface between the institution and the community and avoiding transient, ad hoc engagement patterns. Regarding delivery channels, discipline-specific practice sessions served as the primary linkage: courses such as landscape architecture were relocated directly into community settings, ensuring professional relevance and continuity of service through experiential learning approaches. Regarding collaborative structure, activities were jointly delivered by sub-district and community offices, the property company, and building-level resident representatives: the community articulated needs and provided venues, the property company supplied physical infrastructure support, and residents contributed to co-design and ongoing maintenance–forming an integrated cycle of demand articulation, resource alignment, and participatory feedback. Volunteer service thus evolved from external resource injection into an embedded component of community governance infrastructure.

In one initiative, student volunteers collaborated with Yuhua Community to create a thematic cultural mural wall: field surveys, dimensional measurements, and preliminary sketch design were completed jointly with community stakeholders; on-site execution–led by the Youth League Committee secretary with clearly defined roles–resulted in murals illustrating waste classification principles [10]. Residents described the mural as 'a distinctive emblem of the community,' and community leaders noted measurable improvements in environmental quality and social cohesion. The full workflow–survey, design, collaborative implementation, feedback collection, and long-term maintenance–transformed a discrete activity into a scalable model of institutional–community partnership.

Service recipients have expanded to include preschool children: volunteers regularly visited Xiaoqinghua Kindergarten in Jinzhou District to facilitate shared picture-book reading sessions, fostering early literacy habits through storytelling, role-playing, and

interactive dialogue. These activities are now institutionalized within the Youth League Committee's annual programming and operate under a structured project model featuring fixed thematic focus, designated personnel, and consistent scheduling frequency.

University volunteers also provide timely support during time-bound and high-demand service periods. During public health response efforts, they assisted with information registration for nucleic acid testing, crowd guidance, and distribution of essential supplies; during national standardized examinations, they supported perimeter order management and traffic coordination near test centers. Leveraging the pre-established institutional-community cooperation framework, volunteer teams can be rapidly mobilized and deployed in coordinated fashion, underscoring the adaptive capacity of organized civic engagement.

The 'Returning to Hometown' initiative has enabled university students to deliver personalized daily assistance to elderly residents, including household cleaning, grocery procurement, and basic health monitoring. In terms of participant development, emotional resonance, behavioral expectations, skill development, and self-directed involvement are mutually reinforcing: curriculum-integrated projects foster professional identity, community recognition strengthens affective commitment, and structured scheduling combined with incentive-based participation frameworks support the transition from initial compliance to sustained, proactive contribution [11].

4.3. Expected Outcomes and Long-Term Mechanisms

4.3.1. Expected Outcomes of the Practice

An overall improvement in safety standards. Inspection and rectification of hidden hazards addressed previously overlooked internal risks, enhancing both physical appearance and safety performance.

Improved traffic order. Standardized parking management ensured orderly road circulation and rational use of parking spaces, thereby sustaining the outcomes of the renovation.

Enhanced longevity of public facilities. Routine maintenance mitigated facility aging and landscape degradation, supporting sustained functionality of newly installed infrastructure.

Strengthened school-community collaboration and institutionalized volunteer engagement. University volunteers help address community staffing needs and maintain ongoing coordination with the residents' committee, delivering regular age-inclusive services-including digital literacy support and health screening guidance-while implementing dynamic oversight through a closed-loop process of discovery, reporting, resolution, and verification. To address three key challenges identified in the survey-loose organizational structure (73.33%), insufficient incentive mechanisms (69.52%), and inadequate training (62.86%)-the initiative introduced pre-service orientation, a points-based recognition system with tiered star ratings, and progressive skill development modules. Community youth and local business representatives have been integrated as active participants; complementary strategies emphasizing relational trust, shared norms, capacity building, and self-directed participation are applied to foster sustained volunteer commitment.

4.3.2. Lessons Drawn from the Practice

(1) Renovation must address both exterior and interior aspects [12, 13]. Enhancing building facades and upgrading road infrastructure provide essential improvements, but concealed systems-including utility pipelines and safety infrastructure-are fundamental to housing quality; only integrated enhancement of both visible and hidden components constitutes a genuine upgrade.

(2) Infrastructure development must be accompanied by institutional frameworks. The sustainability of traffic and environmental improvements cannot rely solely on engineering interventions; concurrent establishment of daily management protocols and

routine inspection mechanisms ensures coordinated advancement of construction and governance.

(3) Facility deployment must be aligned with long-term maintenance planning. Each newly installed facility requires an assigned custodial entity, a defined maintenance schedule, and standardized repair procedures, underpinned by a robust operational and maintenance system to ensure enduring functionality.

(4) Community volunteer engagement must evolve into a structured, sustainable practice. Constructive collaboration between residents and volunteers fosters a complementary governance model in which physical upgrades reinforce social capacity, and strengthened community participation, in turn, supports the ongoing stewardship of infrastructure.

5. Optimization Scheme for Multi-Actor Collaborative Governance

5.1. The Government: Policy Guidance and Funding Guarantees

Local governments should issue supporting administrative documents for renovation and apply classified support: infrastructure projects such as water, electricity, and gas networks, fire safety systems, and basic security facilities are fully funded from public finance; upgrading projects such as elevator installation and smart facility deployment receive proportional subsidies, with special supervised accounts established for fund management.

5.2. Property Management: Smart Security Construction and Construction Coordination

(1) Renovation should be accompanied by the installation of intelligent access control systems, monitoring systems for preventing objects from being dropped from heights, and safety alert systems for fire vehicle access routes to enhance community safety capabilities; the property management company assigns dedicated personnel to coordinate with construction teams throughout the project, ensuring seamless integration between on-site construction management and routine security patrols.

(2) Construction scheduling is adapted to seasonal conditions: during the rainy season, indoor renovation activities-such as stairwell refurbishment and pipeline system upgrades-are prioritized; during winter construction pauses, resident engagement is intensified through door-to-door communication and regular progress updates. A dedicated service hotline is established; noise-related concerns are addressed promptly via on-site coordination with affected households, and unresolved matters are escalated to the neighborhood-level mediation mechanism.

5.3. Volunteers and Residents: Convenient Services and Quality Supervision

(1) Volunteers assist elderly households with carrying daily supplies and conduct routine safety inspections at construction sites; resident representatives participate in the on-site acceptance of building materials and perform quality spot checks, with any issues identified reported to the deliberation group for resolution [14, 15].

(2) To address temporary service adjustments such as water or power interruptions and road space utilization by construction materials, advance notifications are issued, and temporary water access and mobile charging stations are provided; materials are removed on the same day wherever feasible, and where immediate removal is not possible, standardized enclosures and nighttime safety lighting are installed, with volunteer patrols conducted on a rotating basis and supported by appropriate incentives to ensure minimal impact on residents' daily life [16].

6. Conclusion

The renovation of old residential compounds is not a one-off project but a long-term governance agenda that spans daily management and livelihood services. This paper has traced the evolution of such renovation in Dalian, diagnosed persistent governance challenges following renovation through a questionnaire survey and a representative case study, and constructed a "volunteering + property management" collaborative framework

involving government agencies, sub-district and community authorities, social organizations, property companies, and resident volunteers. It further proposes pathways through which volunteer service can strengthen resilience governance across four dimensions: Party-building leadership, curriculum-based support, project-oriented management, and incentive alignment. The analysis indicates that only by institutionalizing volunteer service-shifting from campaign-style participation to embedded, routine practice-can rigid operational maintenance and flexible coordination mutually reinforce one another, thereby consolidating renovation outcomes and fostering cumulative community resilience. Leveraging both cost efficiency and relational strength, volunteer service constitutes an indispensable element of grassroots governance.

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