The Research on the Enterprise-owned Community Update from the Perspective of Resilience: A Case Study of Qihua Community in Nanjing

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Abstract: At present, 'Stock Planning' has become a critical renewal model of urban development. There are some issues in the transition from the enterprise-owned community to the community system, such as the limitation of material renewal effect and the aggravation of social problems due to the synchronization of community environment and social governance. However, it is often not addressed in practice. In the process of resisting the impact of COVID-19 in China, the importance of community risk management capability has turned increasingly prominent. Taking Qihua community in Nanjing as a case study, this paper proposed applying the perspective of resilience as a medium between the objective environment and governance. Then, it introduces renewal strategies for the enterprise-owned community, such as obtaining adequate external support, improving spatial resilience, and building the resilience of residents.

1. Introduction

Most enterprise-owned communities in China have old and disrepair buildings, aging public facilities, and poor living accommodation, which pose significant safety hazards in terms of public health and security. In recent years, the Chinese government has vigorously promoted the construction of new-type urbanization. The urban development model is changing from incremental expansion to stock optimization, which has made the renovation and renewal of enterprise-owned communities a critical livelihood project. In 2016, the State Council issued a notice on the separation and transfer of the three supply and one industry in the dependants' areas of state-owned enterprises, which has ushered in new development opportunities for enterprise-based communities such as Qiuhua Community in Nanjing. In addition, China has implemented adequate and systematic management measures for the community as an essential urban unit to effectively stop the spread of the epidemic under the impact of the COVID-19 epidemic in 2020. Therefore, issues such as strengthening the level of risk prevention in the community have also received widespread attention.

In this context, the enterprise-owned community has adopted the traditional regeneration model of starting from the external and focusing on chaos management. Still, it gradually reveals the problems of weak resilience to risks and low internal decay and vitality. This paper will explore the difficulties faced by enterprise all community renewal, using the concept of 'community resilience', propose strategies from society, community and residents, and then establish an updated framework, propose resilience as a resilience renewal framework to promote enterprise all community resilience and promote the sustainable development of enterprise all community, linking the spatial change governance dilemma and these two variables. This framework will promote the sustainability of all corporate communities.

2. Literature Review

The enterprise-owned community was developed under the urbanization model of 'giving priority to the development of the heavy industry' and 'production first, life later' during the planned economy period of China. With the deepening of the housing reform in the 1990s, enterprise-owned residents moved, enterprise-owned social control power declined, and more and more enterprise-owned communities showed signs of the aging population, low income, and environmental decline [1].

The concept of enterprise-owned community is not equal to the old community. Although most of enterprise-owned community shows varying degrees of decline, the university enterprise-owned community or other 'strong unit' community often has better community environment and stronger vitality [2]. Compared with ordinary old communities, old enterprise-owned communities are more closed in space, scattered in land use and complicated in property rights, as well as more intractable social problems left by unit system [3].

2.1 Enterprise-owned Community Update

Researches usually look at enterprise-owned community updates' spatial and social components [4]. In terms of space, the most significant problem of the enterprise-owned community is that it is a closed, independent, and self-contained space entity, which has apparent spatial heterogeneity compared with the external urban space. In addition, the enterprise-owned community often has many problems such as the lack of facilities and unreasonable layout location, low environmental quality, etc.

In terms of society, the problems of the enterprise-owned community mainly focus on three aspects. The first is the organizational aspect. In the transition from enterprise governance to multi-governance, the former is rapidly withdrawing from an authority, and new subjects are not involved enough. As a result, 'governance vacancy' often occurs, accelerating the process of community filtering [5]. The second aspect is the composition of residents. The decline and relocation of enterprises have separated the social relations of residents from their original identity of these. With the relocation of enterprises, communities face the dual marginalization of material and community space [6]. Thirdly, after the disintegration of the enterprise-owned system at the individual level, most of the residents are elderly working families with poor economic conditions. These residents cannot solve problems through market operation [7], and the subjectivity and independent transformation ability.

In general, the enterprise-owned community has the problems of spatial decay, internal heterogeneity, and stratum differentiation [8]. If a solution is sought only in terms of the space, it cannot improve the quality of residents' lives. Referring to the management, due to the vacancy of the resident authority, it cannot effectively cope with the challenges and changes in the renewal. For the social relations, changes in neighborhood structure lead to internal class differentiation and the fragmentation of social relations [9], making residents unable to use high-quality space environments and facilities efficiently [10]. Additionally, the secondary market and the government selectively enter the space, manifesting in the pursuit of exchange value rather than use-value, resulting in economic constraints. Resulting the update of the enterprise-owned community can only play a short-term effect, which is not conducive to promoting the community's sustainable development.

2.2 The renewal dilemma faced by enterprise-owned communities

Many scholars have researched the renewal of the enterprise-owned community. In addition to the research on the space renewal of the enterprise-owned community based on urban repair, more attention is paid to the governance of the enterprise-owned community or the strategy of paying equal attention to space patching and governance. Some scholars put forward suggestions based on the perspective of community development, hoping to carry out system updates [3]. From the standpoint of collaborative governance, other scholars proposed that when the community's conditions are weak, it should mainly rely on external forces [11].

But the above viewpoints ignore the transition stage from the enterprise-owned to the community system. It is like the transformation process of residents from enterprise identity to social identity to community identity [12]. The author summarizes the characteristics of the evolution of enterprise-owned community governance structure as shown in Figure 1. The transition from the enterprise-

owned procedure to the community system is a long-term stage. It is the crucial stage for the successful transformation of the unit system community. There may have been a significant optimization in space at this stage, but in governance, there is a vacancy in the transformation from unit subject to multi-subject [5]. Therefore, there is asynchrony between material space changes and social issues, broadly expanded into three aspects;

(1)The degree of the spatial enclosure has decreased [13]. However, there are still some situations, such as cultural separation, low vitality of residents, and social marginalization of residents;

(2)The quality of the environment has improved, and event space has increased, but the community relationship is broken, and the autonomy of residents is weak;

(3)Public service facilities have increased, but residents have a weak sense of participation, and the concept of work unit remains.
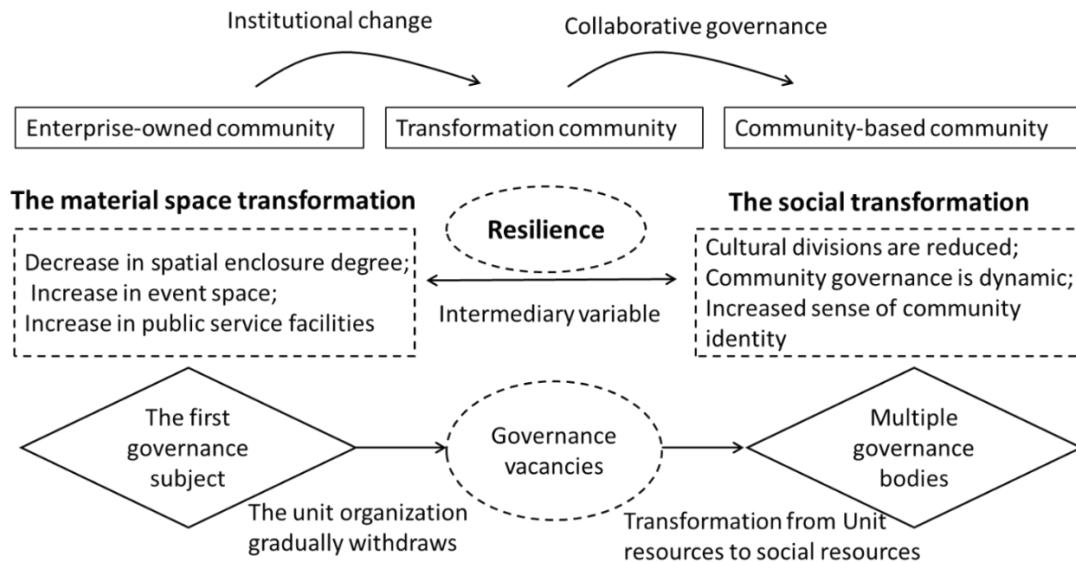

Figure 1. The evolution of enterprise-owned community governance structure.

Reflecting on the asynchrony between spatial changes and social issues arising from the renewal of the unit system community, it is due to institutional changes and the transition of governance subjects. In the transition stage from the enterprise-owned community to the community-based community, the external forces that can be relied on are limited. It is necessary to explore the 'endogenous' advantages of the community to resist risks and use it as an intermediary variable to solve the asynchrony of spatial changes and social issues.

3. Methodology

3.1 Related concepts and theoretical basis

Resilience refers to the ability to resist adversity, and it is a core concept to engineering, positive psychology, and social work. With the development of globalization and the rapid advancement of urbanization in China, the vulnerability of cities has gradually emerged. Scholars have extended the vision of resilience into the urban planning and governance system to cope with the unknown risks in the future [14]. Community resilience provides a safe and comfortable living environment for residents and has flexible and convenient recovery competence and management system when facing uncertain risks.

On the one hand, the resilience community should consider the frequency and intensity of various risks from community infrastructure design and planning to ensure the adaptability of essential community functions. On the other hand, it is required to establish a sound social system and mechanism to ensure the actual participation of stakeholders in the face of changes in social and economic life and to achieve social equality as far as possible.

3.2 Resilience community model

Researchers have conducted different explorations and studies on the framework of urban community planning, design, and management based on resilience [15]. Noris et al. proposed a resilience community model with resource endowment as the key, economic development, social capital, information and communication, community capacity as the evaluation dimensions of resilience, and disaster resistance as the target [16]. Wang Qiang et al. constructed a resilience assessment framework from the four resilience characteristics of community public space: redundancy, interoperability, diversity, and high quality, as well as three levels of goals, criteria, and elements, and analyzed and studied the Chinese community optimization strategies [17]. Many scholars have focused on the indigeneity and internal structure of community when building resilience assessment criteria and models, such as 'The Conjoint Community Resiliency Assessment Measure,' emphasizes the community's endogenous development and multi-party collaborative governance [15].

Throughout these existing models and frameworks of resilient communities, the evaluation subjects focus more on the planning renewal of ordinary urban communities. However, the enterprise-owned community's internal structure and physical space are more complex, and the evaluation objects and dimensions are more diverse. Therefore, the flat and straightforward resilience community model is difficult to be applied reasonably and solve the renewal problem of the enterprise-owned community. In addition, social, economic, and community space dimensions are most used as primary indicators in the scheme of resilient community models, although the sorts of communities targeted are different. Thus, in the process of establishing the resilience model for the enterprise-owned community, authors combined the standard evaluation dimensions of the resilience community model mentioned above with the 'Community Resilience Assessment Measure,' which focuses on the 'endogenous' and 'situational' characteristics as the theoretical foundation, where to focus efforts to fix important aspects. This resilience model of enterprise-owned community was formed from the three aspects of society, community and residents, as shown in Figure 2.
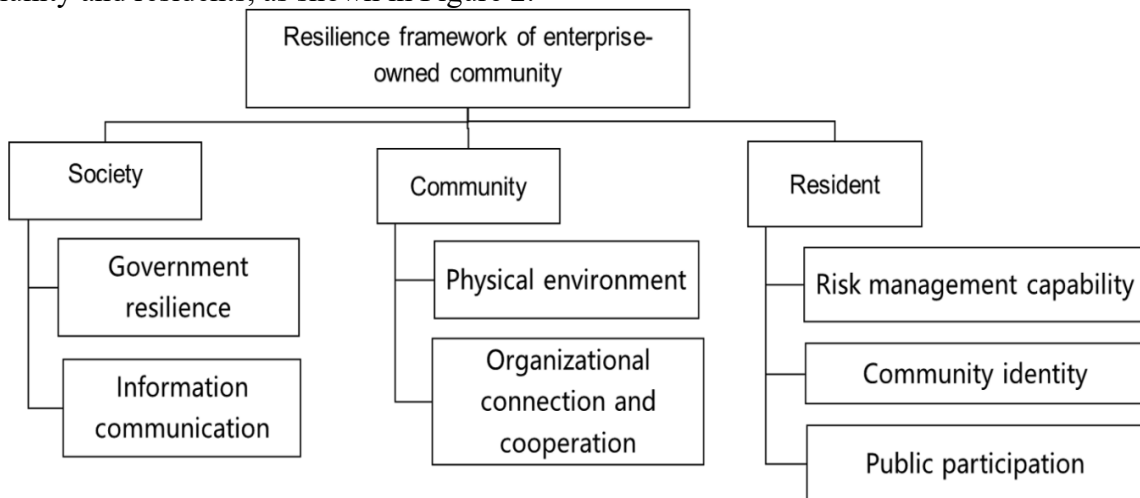

Figure 2. Resilience framework of enterprise-owned community.

At the social level, the support of external forces is a necessary and effective guarantee for improving the resilience of the enterprise-owned community. Although convenient social networks can improve community resilience, they cannot assume the role of local governments ultimately, which can respond quickly and provide resources. Thus, using the external 'government resilience' can receive a balance between enterprises, communities, and residents in the community. Secondly, relying on information exchange and communication will provide organizations with more internal resources and intervention fields for community construction. These information platforms provide superior perspectives and professional knowledge, which helps community organizations tap the exceptional resources within the community, connect the external forces of the society, and offer more services. Through increasing government and information resilience, community organizations will improve the situation, such as the decline of spatial enclosure and the low vitality of residents caused

by the separation of enterprise-owned community and urban space.

At the community level, the cooperation between the physical environment and organizations is the basis for the resilient system of the enterprise-owned community. The lack of community resilience is mainly reflected in the allocation and supply of material resources and the construction of natural and cultural environments. For instance, whether the shelter space in the community is sufficient, carry out community activities, whether community neighborhood committees can achieve interconnection and cooperation through adequate information, and establish a benign management structure. Moreover, communities mainly focus on solving the potential crisis caused by the gradual hybridization and differentiation within the community. Improving the environmental quality and strengthening the community relationship network can effectively address distinct issues, such as the asynchrony between the broken community relationship, the strong dependence of residents, the weak autonomy, etc.

At the resident level, the core orientation is individual risk coping ability, community identity, and public participation. It reflected the lack of resilience in enterprise decline, making it difficult for residents to define risks and take measures positively. Meanwhile, due to the lack of homogeneous awareness and community identity, residents are universally omission in community events and discussions. In addition, in previous studies on the renewal and governance of enterprise-owned communities, the uniqueness of enterprise-owned community residents is often generalized. Therefore, positioning residents as the main body of resilience assessment, and enhancing the residents' experience of using public service facilities and their sense of sharing, will alleviate the purpose of exclusion from the concept of residual enterprise to foreign residents.

4. Case study on Qihua community in Nanjing

Before the beginning time of reform and opening, there were many enterprise-owned communities in Nanjing. Qihua Community, located in Qixia District in Nanjing City, was the living area of the former Nanjing Jinling Petrochemical Company. Jinling Petrochemical Company was established in 1982, and it is mainly engaged in the processing, production, and sales of petroleum refining and petrochemical products. Later, Jinling Petrochemical Company built the Qihua and Nanlian communities in two employee family areas. Among them, the Qihua community covers an area of about 20 hectares and has 1,298 households with about 4,200 people.

4.1 Survey on Qihua community

Qihua Community has completed the transfer of management. It is located in the fringe area of the city zone and has a long history, and it is a typical old enterprise-owned community. Combined with the resilience framework above, we take this community as a specific case, according to field research and survey by questionnaire to analyze this community.

The questionnaires are composed of three parts: introductory information survey of residents, evaluation of community resilience, and demand for community renewal. There were 100 questionnaires distributed this time and received 93 questionnaires. According to the survey results, residents are mainly retired workers and migrant workers, of which 30% are migrant workers, and 70% are retired workers. The problems reflected in the survey mainly include disharmony between neighbors, fewer community organization activities, narrow community activity space, and lack of public service facilities, residents' demands not being resolved in time, and drainage problems on rainy days. Residents generally lack a sense of community identity, and their needs for renewal mainly include improving the living environment.

4.2 Current situation and resilience development issues

4.2.1 Society: Insufficient systematic construction of service facilities

The quality of the community is poor. The public service facilities in the community are diverse, but some are relatively old, which cannot meet the needs of residents at the present stage. There are problems such as idle cultural facilities and imperfect educational facilities. The size of the community

school is small, not enough to meet the educational resources needed by the community. Community green environment is small, lack of management. The community commercial facilities are relatively low-end, scattered layout. The construction of transportation facilities is not perfect. Most buildings lack elevators and have poor energy efficiency. The government has insufficient allocation of community emergency resources, lacks corresponding measures and does not establish a systematic information network platform.

4.2.2 Communities: weaknesses in resilience space construction

The material environment of the community has a big weakness. It is mainly reflected in that the public service facilities in the community cannot meet the current needs of residents. According to the summary of the survey results, there are three problems. Firstly, there are only 3 park green space in community, covering an area of 0.7 hectares, all of which are scattered and lack of management, and it is difficult to form emergency space when disaster comes. Secondly, lacks emergency shelters, fire and seismic facilities are not perfect, the number of parking Spaces is not up to standard, there is the problem of indiscriminate parking of vehicles, resulting in the unsmooth emergency channel and affecting the emergency function. Thirdly, community has insufficient sense of quality, the aging phenomenon of public facilities and buildings is serious, the environmental landscape in the community is poor and there is the environmental health problem of public space. All of these aspects reduce the community resilience of the community.

In addition, the organization of the community contacts and cooperation also have shortcomings. According to the research results, the community neighborhood committee, industry committee, property management and other grass-roots organizations cannot effectively communicate with the residents, to achieve interconnection and cooperation. The management mode of grass-roots organizations has not been updated and optimized, resulting in the lack of organizational governance ability and the ability to deal with unexpected and unknown risks.

In general, the material space resilience of the community is low, and the community public life is not rich, and there is a lack of organizational path connecting space and activities, making it difficult to cooperate and govern among residents.

4.2.3 Residents: Poor service level and low sense of identity

Through the questionnaire survey and field research, it is learned that Qihua Community was originally the family area of Jinling Petrochemical workers, and the overall construction and infrastructure are old, and the supporting facilities are imperfect. At the same time, residents have a low sense of identity for the community, and generally do not participate in the construction and renewal of the community.

Risk management capability: with the advent of unknown risk, accidents can lead to huge changes in individual social ecosystem, and risk perception of psychological and behavioral process will have a significant impact, so the resident's positively positive ability to deal with risk is one of the important parts of building community resilience. Residents have two abilities to perceive communities to face risks. One is the community cohesion within the community. Second, the perception of community governance performance is also one of the criteria to evaluate whether the community has to face the risk impact. The community governance performance of Qihua community is not high, and the residents' low awareness of community cohesion is not conducive to the achievement of the 'crisis consensus' in the community, and it is difficult to make the whole community united to work together to deal with risks.

Community identity: the family courtyard is not only a closed space collection, but also a social space full of 'sense of home'. Residents who abide by the community rules together and safeguard the public interests of the community are important manifestations of community identity. However, after the field investigation, it was found that some residents of Qihua community did not fully understand the rules of the community, which also produced a conflict of interest between the community and the residents.

Public participation: Public engagement is the best form of individual resilience. Unit and unit community members have a strong political participation. To some extent, the residents formed a

unified value identity and collectivization the value. Secondly, the process fore-organization' also brings the rental groups in the community into the volunteer service, which can not only reshape the public service system of the community, but also deepen the organization and social connection of the community. However, from the perspective of the situation of Qihua community, the residents fail to maintain the tradition of political participation of caring for and participating in public affairs, and do not internalize it into a way of life for the residents.

5. Resilient development strategies for enterprise-owned community

5.1 Social level in resilient system construction

In terms of government resilience, strengthen and standardize the system for the government to purchase services from social organizations, then enable social organizations to 'deeply cultivate' the community to become a strong assistant to the community to fight disaster in emergency situations. On the other hand of information communication, strengthen information technology response. Promote the deep fusion of 'Internet Plus' and community service, then create a platform for big data informatization, in order to make community governance more intelligent and efficient and improve residents' living experience. Secondly, make community public space and city public space effective linkage, speed up the construction of metro Line 6, and select important nodes conducive to non-motorized transportation and connectivity for network construction. Thirdly, accelerate the construction of community residents' life circle, and the joint construction of community commercial outlets, with the purpose of meeting the living needs of residents.

5.2 Community level in resilient space construction

In view of the shortcomings of the community's physical environment, update strategies can be formulated according to the three problems summarized from the survey results above.

(1) Increase the degree of greening in the community and optimized plant allocation to make the park and green space become a good ecological security barrier. Cedar, ginkgo and other trees with good fire resistance can be planted in the community to play a role in preventing wind and fire from spreading and expanding disasters. Meanwhile, community basic-level organization systematizes management of park green space to form emergency space when disaster comes.

(2) Enforce emergency channels control in communities and identify the planned emergency public space and the main path of emergency channels. Simultaneously, increase parking spaces by building parking buildings or developing underground spaces in communities in order to make the community parking space meet the required number. In the meantime, communities should formulate relevant rules and regulations to prohibit residents from blocking space such as parking and placing private facilities on the main path of emergency access.

(3) Improve the environmental quality of public space. In terms of the spatial environment, repair the decaying public facilities and building facades and add the shockproof design. In terms of the spatial health, through reasonable layout of garbage collection and transportation points, it can be integrated with the surrounding green landscape to form a semi-open space with elastic boundary, avoiding the reduction of space quality caused by its own particularity.

In view of the short board problem of community organization connectional and cooperation, neighborhood committee, property management and other basic-level organizations should actively strengthen the capacity of basic-level organization and improve administrative efficiency. As members of community basic-level organizations, they should also actively participate in the training of disaster prevention and reserve knowledge to improve their ability to deal with unexpected unknown risks. Meanwhile, strengthen the contact and cooperation between community basic-level organizations and residents, then realize effective communication between organizations and residents, so that organizations can understand residents' needs more effectively.

5.3 Residents level in resilience construction

Firstly, community residents should improve their risk management capability. Residents should

adopt strategies to deal with risks with a positive attitude, take the initiative to learn the knowledge and skills of community safety and emergency response, and establish the psychological and value system of resilience. Residents can play a positive role as a social grid in times of crisis to link necessary resources and support for community emergency management. Secondly, community organizations should also play a major role in cultivating residents' thinking of 'positive definition of risk' and strengthen residents' sense of community identity. Community residents are appealed to participate actively, connect with each other, work together, share risks, abide by community norms, and safeguard the common interests of the community. Communities should also organize more public participation activities, so that residents can spontaneously have the right to know, participate in, express, analyze, make decisions, manage and supervise. The core of resilient community construction lies in the bottom-up, spontaneous civic participation system, diversified and complicated residents' composition, and the cultivation of residents' participation consciousness and interest.

However, when building resilience of residents, it is necessary to make update strategies to local conditions. For example, in the case of serious population aging in the enterprise-owned community, political learning and collective discussion can be focused on the elderly group. By establishing community resilience system with the relevance between the groups of residents, residents of community update and management can be more proactive and high-efficiency, so that to better improve the resident's participation in community affairs and integrate the community into a good circulation system, which making communities to respond quickly and flexibly to crises, and to recover from them and build resilience. In this way, urban-rural public security and sustainable development can be realized.

6. Conclusion

Through the study of the enterprise-owned community renewal, the renewal of the enterprise-owned community cannot avoid the collapse of the system, the organization's withdrawal, and the transformation of the people. This shows that at the same time as the material environment is updated, due to the lack of endogenous strength of the enterprise-owned community, community update always accompanied by problems such as marginalization, space closure, cultural separation, and poor risk response. Therefore, community renewal should pay more attention to solving the problem of vacancies in governance and poor conversion of resident status. To put it simply, the asynchronous of community physical environment and community governance is due to the lack of connection between space and governance. This paper use "resilience" as the mediating variable of communication to establish an elastic updating framework, which can improve the community governance ability and improve the efficiency and quality of community renewal. Studying the intermediate stage of transition as an important stage provides new direction to solve the problem of enterprise-owned community renewal. The resilience strategy of community renewal could complement the existing community renewal methods. In the future, community resilience research can become the third force to coordinate the community spatial environment and community governance.

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