

Case Report

The Reshaping of Neighboring Social Networks after Poverty Alleviation Relocation in Rural China: A Two-Year Observation

Wen Hu ¹, Yuquan Xie ^{1,2,*}, Shuting Yan ³, Xilin Zhou ²  and Chuancheng Li ²

¹ Department of Architecture and Building Science, Tohoku University, Sendai 980-8579, Japan; hu.wen.t4@dc.tohoku.ac.jp

² School of Civil Engineering and Architecture, Wuhan University of Technology, 122 Luoshi Road, Wuhan 430062, China; zhou.xilin@whut.edu.cn (X.Z.); licc@whut.edu.cn (C.L.)

³ School of Civil Engineering and Architecture, Wuhan Institute of Technology, 693 Xiongchu Road, Wuhan 430079, China; yan.shuting@wit.edu.cn

* Correspondence: xie.yuquan.p2@alumni.tohoku.ac.jp

Abstract: As one of China's key poverty-reduction initiatives, poverty alleviation relocation (PAR) unavoidably results in the reshaping of neighboring social networks. This study equally focused on the changes in the scope of social interaction and in the intergroup social support of the two primary stakeholders of PAR in a rural–rural relocation context: the migrant and local groups. In 2019 and 2021, two surveys were conducted in four different types of resettlements: centralized, adjacent, enclave, and infill. To provide decision makers with broad references for sustainable PAR planning, the social changes were compared by groups, types, and years. In general, the migrant group had more significant scope expansion or narrowing in social interaction than the local group, and they were more willing to seek intergroup social support. Specifically, the centralized type was the superior choice since it was well-expanded and group-balanced; the adjacent type was also a good choice in the long term because of its rapid improvement in the later phase; the enclave type should be a last resort because of its persistently negative impact; and the infill type was a good option in the short term, as it rarely improved in the later stage. Furthermore, the personal socioeconomic attributes associated with the above social changes, claims laid to the spaces, and economic benefits and limitations were explored for a more comprehensive understanding.

Keywords: neighboring social network; scope of social interaction; social support; poverty alleviation relocation; long-term observation; China



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1. Introduction

In order to fulfill a wide set of development and environmental objectives, governments and international organizations have used planned relocation as a common spatial strategy [1]. As one of China's most important poverty reduction initiatives and a component of the country's national rural development policy, poverty alleviation relocation (PAR) is a project that employs resettlement as a tool to assist the targeted poor in inhospitable and development-restricted environments, particularly those who are living in “spatial poverty traps” such as distant mountainous places or in desert and semiarid regions [2,3]. For sustainable rural development, those targeted poor households were relocated to new communities with improved transportation, medical care, education, living environment, etc. [4].

In terms of relocation destination, three different resettlement modes were identified in PAR, namely resettlement to nearby villages, resettlement to nearby townships, and resettlement to cities [5,6]. Rural–rural resettlement to a nearby village was examined in this study, which aimed to consolidate the scattered impoverished people into a neighboring administrative village with better infrastructure and growth potential, which may help preserve the original social capital of the survivors to a considerable extent [7]. Rural–rural

resettlements have been shown to develop place identity at a higher rate than rural–urban/town resettlements [8], considering the shorter relocation distance and smaller cultural and social gaps. As a result, people frequently take for granted social integration following a rural–rural relocation; however, the extent to which the PAR projects reshaped individuals' social network contexts in rural communities was usually overlooked.

To assess the performance of long-term social sustainability, drawing on the experience of resettled villagers and local villagers in the new community, this study explored how resettlement reshaped their social relations in terms of the changes in neighboring social-interaction scope and intergroup social support [9]. In terms of residential segregation, a previous study defined four resettlement types: the centralized, adjacent, enclave, and infill types [10]. We, therefore, developed four cases as that were representative of PAR projects, which were located in the administrative area of Shiyan City, Hubei Province. Having drawn on the data we collected from two field surveys and in-depth interviews that were carried out in 2019 and 2021, the study aimed to address four specific questions:

First, how are the scope of neighboring social interactions and intergroup social support in the four resettlement types and two groups manifested in the PAR projects? For a better understanding of the social impact under different resettlement types, a cross-type and cross-group comparison study can help us grasp it more thoroughly, offering planning suggestions when considering issues with adopting a given resettlement type as well.

Second, how did the scope of social interaction and social support change from 2019 to 2021? Through a 2-year observation, the change at different time stages can reveal the dynamic social impact in the longer term from a sustainable perspective.

Third, how do such effects vary by the socioeconomic attributes of the migrant residents versus local residents? Comprehending the complexities may reveal the critical social determinants that affect the establishment of social networks and highlight the specific attention and tailor-made efforts required for vulnerable groups.

Fourth, in what ways have residents employed the spaces of social interaction and economic activities to enhance their own wellbeing? The act of laying claims to space and economy activities provides decision makers with spatial and economic perspectives for future work, which planners can utilize to develop specific spatial and economic strategies to enhance social and economic integration.

2. Theoretical Background

2.1. Reshaping Neighboring Social Networks in Rural Communities

Residential settings have a substantial impact on residents' social interactions and perhaps on the eventual integration into the new living environment [11]. Changes in social relations are key features of such a transition, especially the existence of the fundamental distinction between rural and urban communities in their daily ways of living, economic activities, and production modes [12,13]. However, most of the research now focuses on the rural–urban transition; some pointed out the negative social outcomes, such as to health (both physical and psychological) and environmental exposure, as well as to the less tangible aspects, such as cultural barriers and social disintegration [14–17]. The reshaping of social networks within rural communities has rarely been attached importance, as people naturally assume that the previous social networks can be perfectly maintained. This research aimed to validate this hypothesis.

Rural communities involve more social relations based on kinship [18]. A rural social interaction model may require more interpersonal dependency because of geographical isolation, often resulting in exchanges among farmers for goods and personal services [19]. For this reason, a rural resident is regarded as having a stronger sense of social responsibility and enhanced interpersonal interaction. As kinship-based interactions have declined while neighbor relations increased dramatically, the reshaping of social networks caused by PAR in rural communities is more limited to the neighborhood level, which is also a fundamental dimension of rural social networks [20,21]. For marginalized social groups, neighborhood-level social engagement has always been an important means of acquiring

social networks [22] and attaining an improved sense of security and belonging [23]. Neighbors were defined as a major source of weak ties and are especially relevant to low-income groups [24]. Positive attributes of such weak ties include fostering the sense of belonging and creating bridges between different groups with strong ties [25]. Such neighboring weak ties often consider beneficial for integration as it leads to better employment opportunities due to better access to local knowledge and resources [26,27].

2.2. Bi-Directional Study on Both Groups

In social capital terms, there is the bridging side of local social interactions which are beneficial for both the individual as well as the host society [28,29]. However, the limited evidence so far often only captures the one-sided replies of migrants, as the Chicago school regarded the resettlement as a game of “survival of the fitness” [30], leaving out the viewpoints of local citizens who play an equally vital role [31]. Previous research revealed that many of the intergroup interactions were characterized by hostile attitudes, discrimination, and various forms of oppression and exploitation, resulting in social conflict for limited resources, as well as social isolation and alienation [32,33]. Therefore, some researchers advocate bidirectional discussions between multiple groups [34]. Our study, then, equally focuses on both groups, the local and migrant groups, who are the most relevant stakeholders of the relocation project.

2.3. Dynamic Observation in a Period of Time

With a change in the length of residency, social interaction is dynamic and may result in different scenarios after different periods of time. Martinovic et al. [35] demonstrate that social integration increases with the length of stay. A resettlement process spanning 10 years can be split into three stages: carnival, conflict, and renaissance [36]. In the carnival and renaissance stages, the evaluating of resettlement impact was positive, while it was negative in conflict stage [37]. However, while most studies on PAR were conducted at a specific point in time [38–40], few have been based on the periods of dynamic observation. This research attempted to fill this void by conducting two surveys on social interaction in 2019 and 2021, which aimed to observe and summarize social performance in both the short term and the longer term, which may provide planners with a sustainable and dynamic way to examine this issue.

3. Materials and Methods

3.1. Typology and Cases

Given the fact that geographical density, accessibility, and distance dynamics influence social interaction, in this study, we classified PAR resettlements in terms of residential segregation following Massey’s proposed dimensions [41]. Shiyan City, the most centralized, poverty-stricken city in central China, has successfully completed more than 40% of all PAR tasks in all of Hubei Province, according to official figures. The “Shiyan Model”, which adhered to the concept of “relocating with production and industrial development”, achieved extensive results, and was rated as a “promising collective for relocation work” by the National Development and Reform Commission in 2020. We then selected 37 resettlements in Zhuxi and Zhushan Counties, Shiyan City for typology. We defined the migrants as Group X and the locals as Group Y. Four dimensions were calculated for each: exposure, concentration, clustering, and centralization.

- (1) Exposure (migrant’s population proportion) was calculated by

$$PP_x = X/T \quad (1)$$

where X is the migrant population and T is the total population.

- (2) Concentration (migrant’s land-use-area ratio) was calculated by

$$LAR_x = A_x / A \quad (2)$$

where A_x is the land use area occupied by migrants and A is the total area.

(3) Clustering (average distance between residents) was calculated by

$$P_{tt} = \sum_{i=1}^n \sum_{j=1}^n t_i t_j d_{ij} / T^2 \quad (3)$$

where t_i and t_j represent the total population in clusters i and j . The term d_{ij} measures the distance between the centroids that represent cluster i and cluster j .

(4) Centralization (relative proximity to the village center) was calculated by

$$RCE = P_x / P_y - 1 \quad (4)$$

The term P_x is the migrant group's average proximity to the village center, which can be obtained by the following formula:

$$P_x = \sum_{i=1}^n x_i \exp(-d_{ij}) / X \quad (5)$$

Similarly, we can obtain P_y , the locals' average proximity to village center, from:

$$P_y = \sum_{i=1}^n y_i \exp(-d_{ij}) / Y \quad (6)$$

where x_i and y_i represent the populations of groups X and Y in cluster i .

Through a cluster analysis, we identified four resettlement types. In Figure 1a, the PAR cases in exposure and concentration demonstrate the relocation intensity, or the degree of PAR involvement. Figure 1b shows the PAR cases in clustering and centralization, which respectively represent the spatial layout and the relative location of the resettlement.

We then selected four representative cases for the four resettlement types. The four cases completed their PAR projects in 2016–2017, with time gaps of less than one year:

- Centralized type (Kongque Village, 2017): the migrants were balanced with locals (53.6%), and the resettlement was in a centralized and clustered layout.
- Adjacent type (Shenjiayin Village, 2017): the migrant group was a minority group (32.3%); they lived adjacent to locals and, thus, merged into a continuous aggregation layout.
- Enclave type (Xiling village, 2016): the migrant group was an extreme minority (11.4%), and they lived in a relatively distant enclave away from local clusters.
- Infill type (Qinjiahe village, 2017): the migrant group was a minority group (36.4%), living in smaller clusters in a scattered layout while embedding into the local clusters, filling the gaps.

3.2. Survey and Data

To understand the migrant and local groups' dynamic changes in the scope of social interaction and social support, we launched face-to-face surveys as well as in-depth interviews in the above four target villages twice.

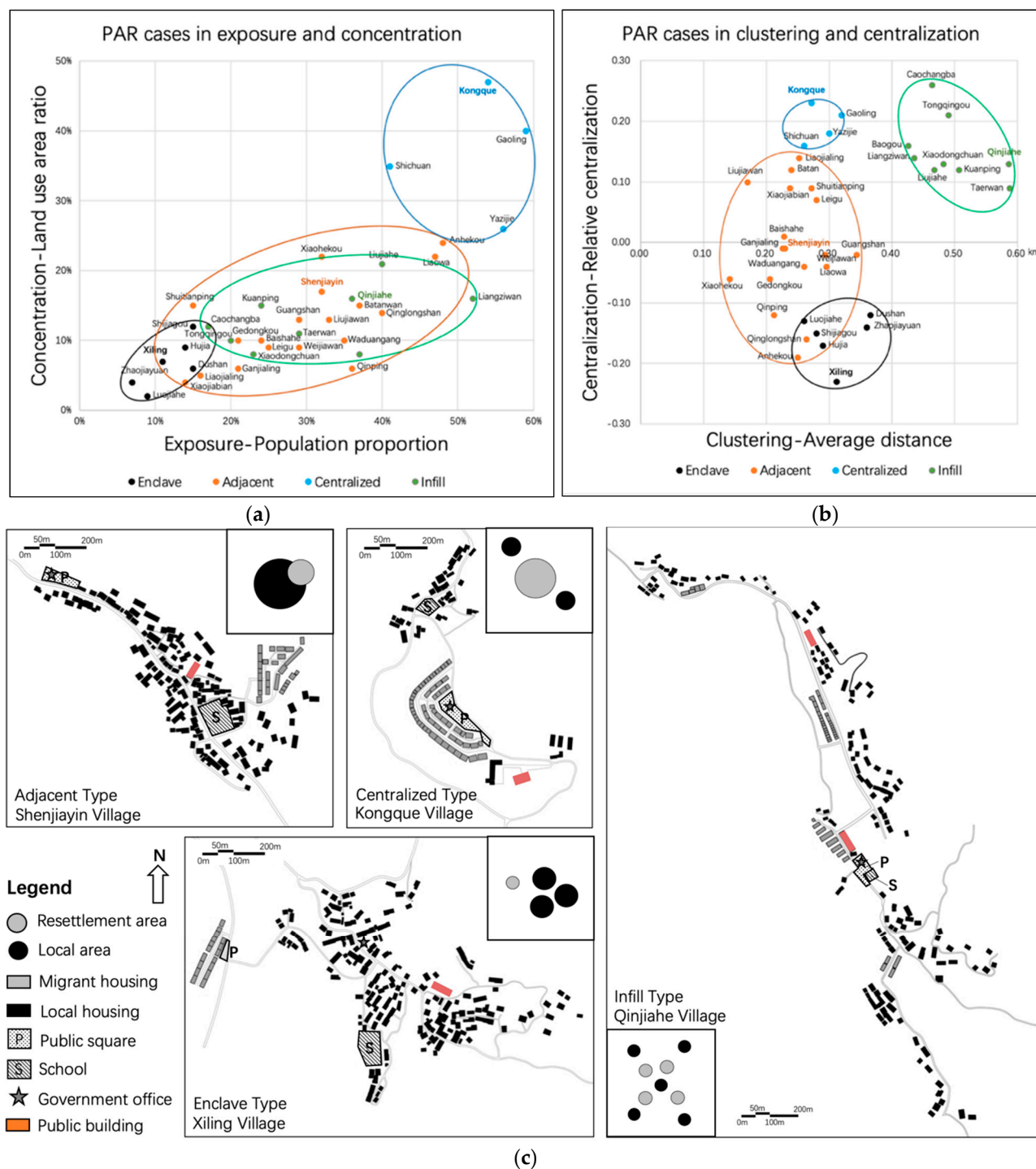


Figure 1. Resettlement typology through cluster analysis and the selected cases: (a) PAR cases in exposure and concentration; (b) PAR cases in exposure and concentration; (c) maps.

In the first survey in November 2019, the socioeconomic attributes were collected (Table 1), and we attached the housing codes to record their residential locations. The second survey was conducted in February 2021, which is the family gathering time during Chinese New Year. The time was scheduled for a higher possibility of matching the same respondents with the help of the attached codes. Overall, there were 454 valid answers collected with responses to both surveys, and validity rate was 78.2%. The respondents participated in the surveys on a voluntary basis with full notification. We collected data from the migrant and local groups, the respondents were largely consistent with the

population sizes, demographic distribution, and residential density (assessed by household numbers in 50 m × 50 m grids on the map), which is to guarantee the random sampling with respect to the real residential layout to the largest extent.

Table 1. Respondents' profile (N = 454, migrants = 181, locals = 273).

Variable		Percent (%)		Variable		Percent (%)	
		Migrant	Local			Migrant	Local
Resettlement type	Centralized: Kongque	53.6	51.5	Family size	single	19.9	9.2
	Adjacent: Shenjiayin	32.3	40.2		2–3 people	45.9	44.7
	Enclave: Xiling	11.4	32.7		4–5 people	32.0	34.4
	Infill: Qinjahe	36.4	37.5		Above 6	2.2	11.7
Gender	Male	50.8	43.2	Monthly household income	Under 1000	15.5	7.3
	Female	49.2	56.8		1000–3000	49.2	27.1
Age	Under 40	16.0	19.5		3000–5000	29.8	35.2
	40–60	51.9	55.6		5000–7000	5.5	20.5
	Above 60	32.1	24.9		Above 7000	0	9.9
Education	Under middle school	90.1	79.9	Workplace	At home	56.4	41.8
	High school	8.8	13.9		Close vicinity	3.9	7.0
	College and beyond	1.1	6.2		Cluster	8.3	12.1
Employment	Unemployed/retired farming	53.6	39.6		neighborhood	8.8	13.2
		35.4	33		Beyond the village	22.6	26.0
	Retail/service	3.9	6.2	Frequency of visiting the public spaces	Everyday	18.8	11.0
	Manufacture	1.7	4.0		Every week	12.2	11.4
	Professional/office	0.6	5.5		Every month	20.4	11.7
	Others	5.1	11.7		Rarely	48.6	65.9

The respondents were repeatedly asked to answer the following questions in the two surveys.

(1) Change in scope of social interaction. The question, “how do you feel about the change in scope of neighboring social interaction compared to the days before resettlement?”, was posed to those who answered the survey. The change in scope is measured in five levels—respondents were asked to choose an answer and the assigned value from “substantially increased (+2)”, “increased (+1)”, “same (0)”, “decreased (−1)”, and “substantially decreased (−2)”.

(2) Change in social support. Respondents were asked the question, “what do you think the increase in intergroup neighboring social support that you received?” Social support change was measured in four levels. The respondents' options were “very significant (+2)”, “significant (+1)”, “same (0)”, and “decreased (−1)”.

With the collected data, regarding the groups, resettlement types, and time, Section 4 summarizes the overall and specific impact on residents' social networks in terms of scope of social interaction and social support, provides the decision-makers with broad references for resettlement type adoptions in terms of their social performances. Subsequently, for a more comprehensive understanding, Section 5 discusses how personal socioeconomic attributes influenced the social interaction scope change, and lays claims to the spaces of social interaction, as well as economic benefit and limitations.

4. Impact on Residents' Social Networks

4.1. Overall Impact

Their choices were collected with the two surveys, as shown in Table 2.

Table 2. Changes in social interaction scope and social support in 2019 and 2021.

Variable		Value	2019		2021	
			Migrant	Local	Migrant	Local
Social interaction scope	Substantially increased	2	7.2	4.8	12.2	7.0
	Increased	1	21.6	19.4	27.1	23.1
	Same	0	30.3	75.8	26.0	69.9
	Decreased	−1	24.9	0	19.9	0
	Substantially decreased	−2	16.0	0	14.8	0
Social support change from the other group	Very significant	2	6.6	4.0	10.4	5.5
	Significant	1	17.7	9.9	27.5	14.7
	Same	0	75.7	86.1	62.4	79.8
	Decreased	−1	0	0	0	0

4.1.1. Social Interaction Scope Change

Table 2 shows that the migrant group witnessed much more significant changes in scope of interaction than the local group, both positively and negatively. On the positive side, it is delightful to see that there was a greater proportion of migrants who reported an increased scope: 28.8% in 2019 and 39.3% in 2021 experienced expanded social interactions as a result of PAR, compared to only 24.2% and 30.1% of the locals feeling the same. However, on the negative side, many migrants indicated that their scopes had narrowed due to the resettlement, with 40.9% in 2019 and 34.7% in 2021 reporting as such.

The local residents in the host villages with longer residence lengths, as the dominant members of the mainstream host society, had a more stable status as no decline in scope of social interaction occurred. About 70% of them had relatively stable social networks, which developed and had been maintained in advance of the resettlement process. In comparison to the migrant group, the local group experienced less urgency and had more options for expanding their scope of interaction within the community.

The above findings supported the idea that the resettled members were generally keener than the locals to reestablish their neighboring intergroup social networks [23]. After PAR, on one hand, they were more willing to embrace the increased likelihood of making new friends and forming new connections through a variety of occasions; on the other hand, the new living environment and lifestyle inevitably brought an end to some traditional forms of social interaction, which means that previous friends from the original villages may have become estranged as a result of gradually increased social distance and geographic separation.

4.1.2. Social Support Change

As for social support, it followed a similar pattern to the social-interaction scope change: the migrants were more willing to ask for intergroup social support, and subsequently, compared to the locals, the migrants experienced a more significant increase, which was continuously observed during 2019–2021. The migrant targeted poor were naturally recognized as the marginalized social group due to their lower income levels and development potential in the implementation of PAR projects; hence, they were usually found to be more reliant on local social networks due to the necessity of mutual support and their relatively constrained social mobility. Results also shows that social support always had lower values in all measured levels. This can be explained by the fact that social support necessitates a greater level of quality in social interactions.

What kind of supports were they willing to ask for from the intergroup members? Respondents were asked to choose from “yes” or “no” following Ven der Poel’s proposed three kinds of support: social companionship (mutual visit, hanging out); instrumental support (housework, caring, borrowing items, borrowing money, filling forms); and emotional support (marital problems, critical advice, comfort) [42]. We summarized the percentage distribution among 10 categories when seeking social support from outgroup members in Figure 2.

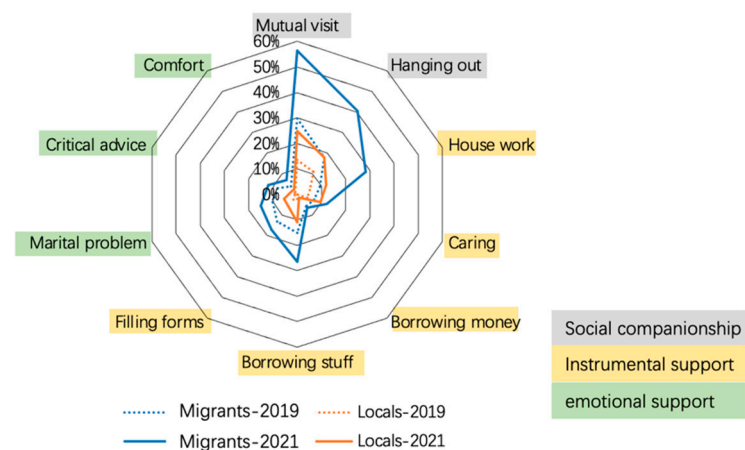


Figure 2. Percentage distribution of intergroup social support seeker.

Generally, the migrant group was found to have a higher desire for social support than the local group, and this was true across all categories of support provided. With respect to the support types, as illustrated by Figure 2, social companionship had a relatively low threshold, as in 2021, 56% and 40% of migrants were willing to visit and spend time with their new neighboring friends, compared to the local group's 25% and 18%, respectively. Social companionship was also significantly enhanced over time, as the percentages approximately doubled from 2019 to 2021. It is understandable that as a result of the deepened interactions, social companionship was naturally enhanced by mutual visiting and spending time together. Emotional support was constrained amongst the same group members, as less than 10% of either group were willing to seek emotional comfort, which is often reserved for intimate links because it is often associated with personal privacy and unpleasant psychological states. Interestingly, in the instrumental support criterion, regarding the borrowing money category, the reports from neither group changed over time. Furthermore, there was very little evidence of any local group requesting financial assistance from the migrants, which was likely due to the fact that migrants, as the targeted poor hoping to alleviate poverty by relocation, are often sensitive and disadvantaged financially.

4.2. Specific Impact over Resettlement Types

Based on the assigned values of the variables in Table 2, Figure 3 summarizes the specific impact over resettlement types by calculating the weighted values of their social-interaction scope change (Figure 3a) and social support change (Figure 3b). It demonstrates the evolution tendency under various resettlement types and physical environments, as well as their tendency through time. This study divided the time period into two stages: an earlier stage (PAR year-2019) and a later stage (2019–2021).

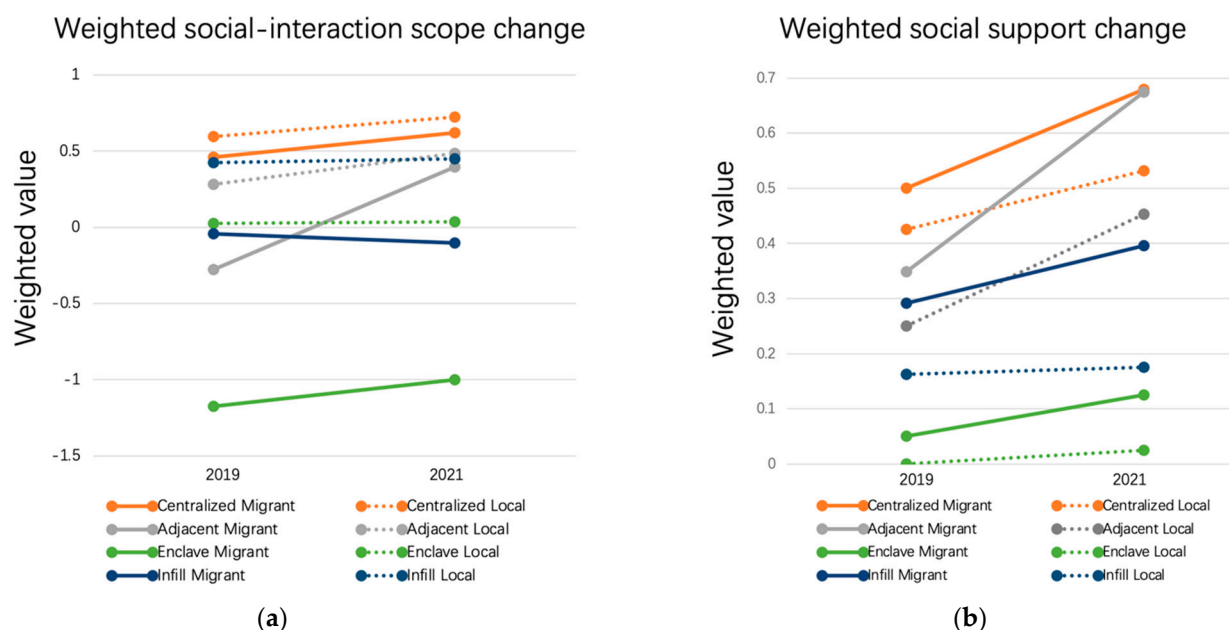


Figure 3. The weighted value of the changes in the four resettlement types, 2019–2021: (a) social interaction scope change; (b) intergroup social support change.

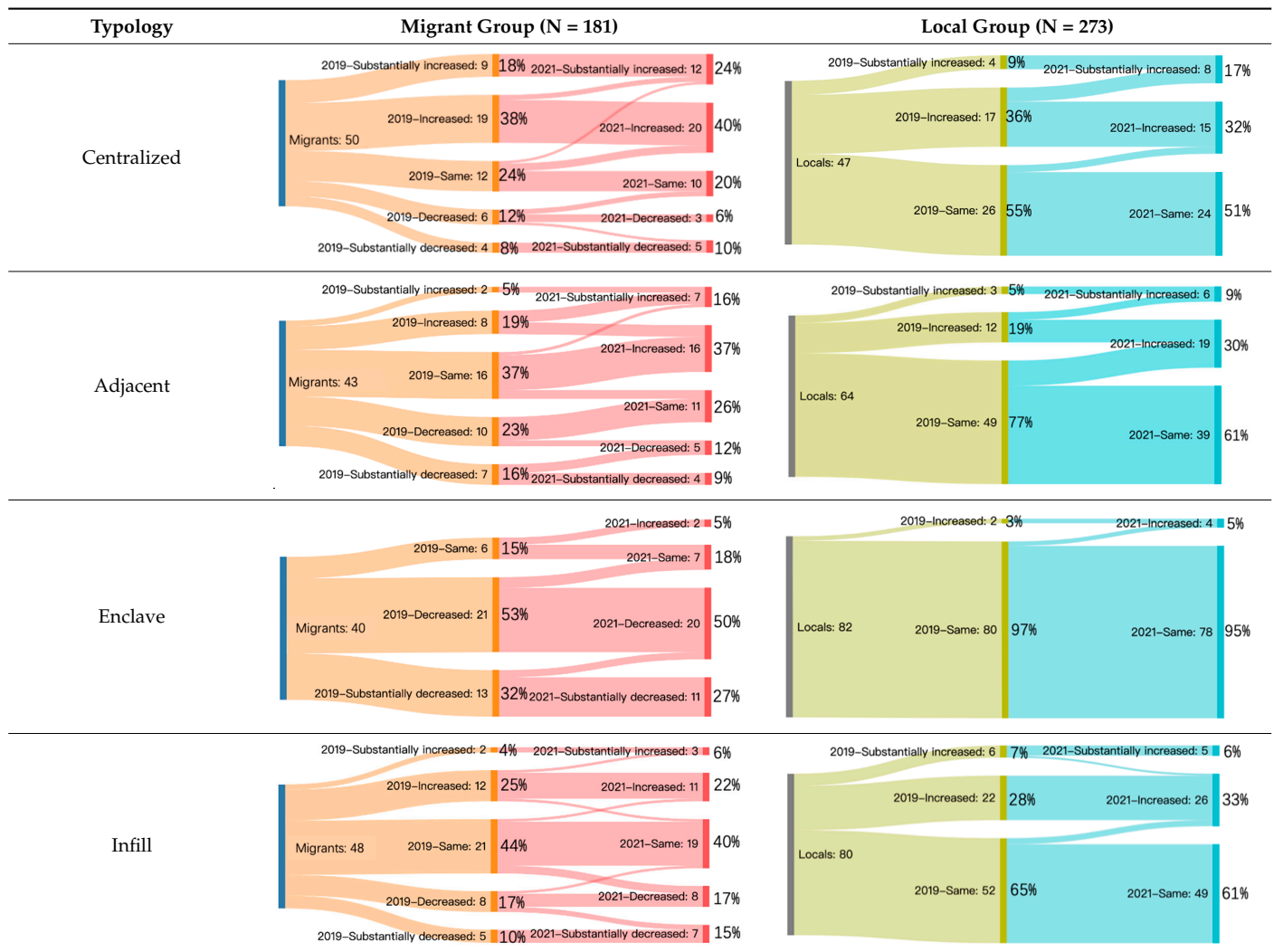
As a whole, we discovered that the locals experienced greater expansion in social interaction than the migrants in all four types of resettlements (Figure 3a), indicating that the PAR project had a negative impact, overweighting the positive impact on the migrant group, considering the possibility of disconnection from previous social ties. Figure 3b, on the other hand, depicts an inverse scenario, in which the migrant groups outperformed the local groups in terms of social support, which may be explained by the fact that vulnerable groups with lower incomes have a greater desire for social support.

4.2.1. Social Interaction Scope Change

Table 3 explores the dynamic changes of the two stages regarding the four different resettlement types.

According to the first survey conducted in 2019, in the earlier stage, the centralized type had the best performance in promoting intergroup interaction. The responses showed that 56% of the migrants and 45% of the locals in the centralized type successfully made new friends after resettlement. The enclave type was underperformed, as we found that the majority of migrants, approximately 85%, were confronted with difficulties in their attempts to expand and instead narrowed the scope. In contrast, the adjacent type and infill type had similar mid-level performances.

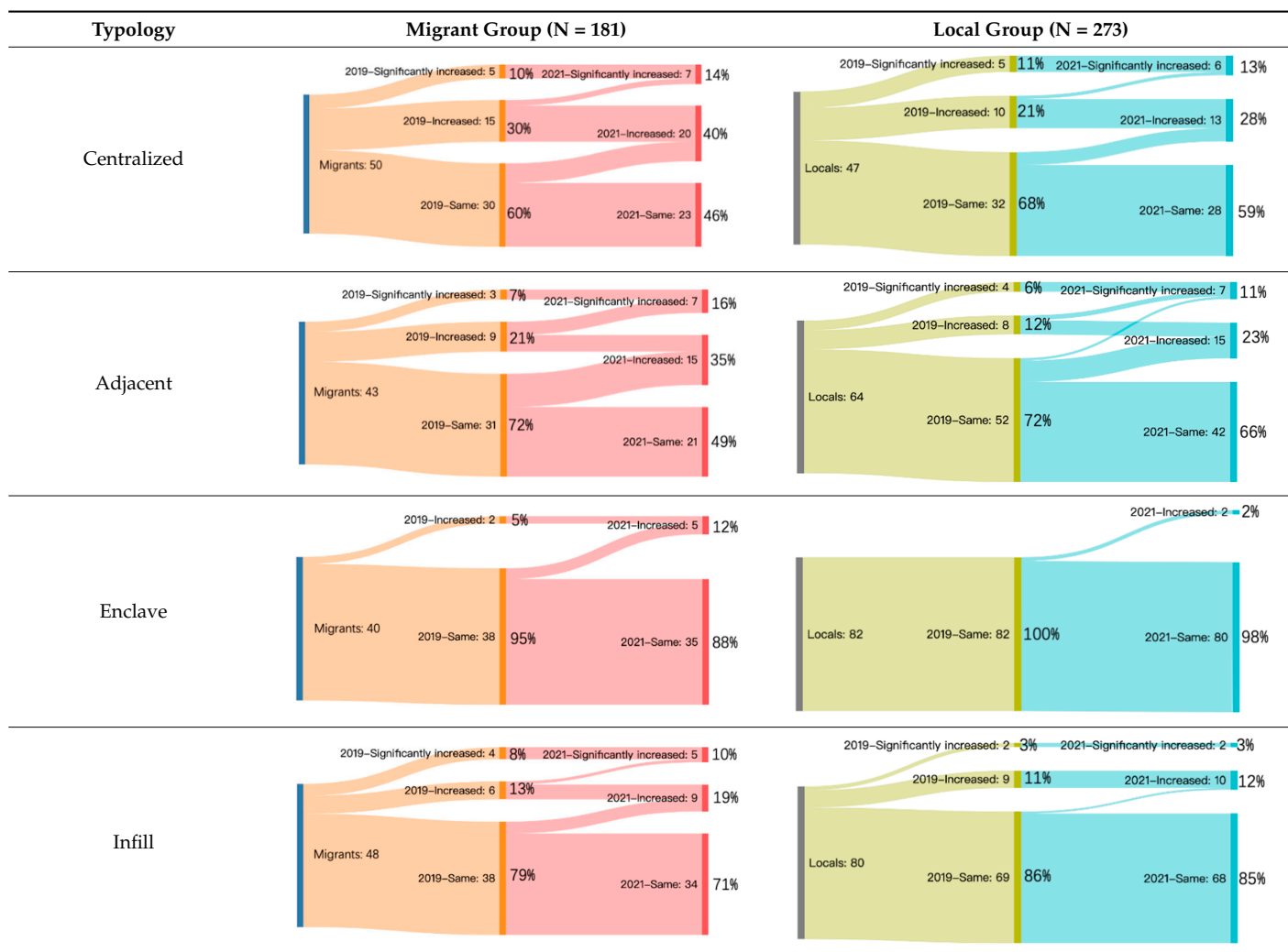
It is demonstrated in the flow charts that, in the later stage (2019–2021), more upwards and downwards curves were found in the migrant group, indicating that the re-settlers were more positively and negatively impacted over time than the locals. Specifically, the data showed that from 2019 to 2021, 37 out of 181 (20.4%) resettled individuals reported a further enlarged scope, whereas just 24 out of 273 (8.8%) local residents reported a similar circumstance.

Table 3. The dynamic change of social interaction scope regarding the resettlement types.

Specifically, it can be estimated that approximately 16%, 58%, 5%, and 5% of the migrants in the centralized, adjacent, enclave, and infill types, respectively, underwent further expansion during the 2-year period. Among them, the adjacent type experienced the most dramatic change, while the infill type was found to show an opposite trend, as some residents experienced a process of increases and decreases.

4.2.2. Social Support Change

Similarly, Table 4 summarized the specific impact on social support change over resettlement types. We concluded that the centralized type was the most outstanding type for promoting social support throughout the whole periods; then follows the adjacent type, in which great progress was made in the later stage (2019–2021). Mutual social supports underperformed in the enclave and infill types, presumably due to the distance barrier and scattered layout.

Table 4. The dynamic change in intergroup social support regarding the resettlement types.

4.3. Understanding the Complexity

What is the most succinct way to summarize the performances of the four resettlement types? Their social performance and spatial reasons were explained and suggestions for planners were provided when considering the appropriate resettlement type.

Centralized type: Well performed and group balanced. Both groups performed well in the two stages in promoting neighboring interaction and support, forming a balanced status. Their performances also improved steadily over time. It is assumed that the resettlement occupied the public infrastructures of the centralized location collectively, thereby turning it into a “social hub” that facilitated the gathering and social contact of both groups. Therefore, we regard the centralized type as the superior choice.

Adjacent type: Rapid improvement in the later stage. This case performed at a middle level, but over time, we witnessed the largest growth slope, which allowed it to reach and even surpass the performance of the centralized type in the later stage. The main factor was that the average physical and social distances were among the smallest, thus enhancing the likelihood of an unforeseen contact, particularly in the border area. It is considered a wise choice in a longer term.

Enclave type: Consistently negative. The enclave type consistently underperformed in terms of generating social interaction and social support, while the local group remained stable and appeared to be irrelevant. It is possible that the enclave layout, due to the distance barrier, physically reduced the likelihood of intergroup meetings, hence potentially increasing residential segregation and hindering social integration. In this case, we

recommend that the enclave type be considered as a last resort, unless there are other inevitable risks that are weighted more heavily than this point, such as land use restriction and protection of cultivated land.

Infill type: Rare improvement in the later stage. In the early stage, both groups thrived but failed to continue promoting intergroup social interaction. Between 2019 and 2021, the locals experienced no change, while the migrants showed a further narrowing of the scope of social interaction. Its smaller-sized clusters in the scattered layout may have been the reason for this phenomenon in which their connections with former friends were being alienated faster than the building of new local social connections. We assumed that after settling down, people would normally tend to interact within the cluster for a longer term. However, we observed an increase in migrants preferring the social support as progressively deepening social relationships. This type is considered to fit fragmented and hilly terrain conditions, where enhanced transport links between scattered clusters are required to maximize internal and external accessibility.

5. Discussion

5.1. Relation with Personal Socioeconomic Attributes

People's social networks are heavily influenced by the composition of their households as well as their socioeconomic statuses [43]. In particular, marginalized groups such as low income, elderly, and single residence are particularly more reliant on neighboring relationships due to a lack of alternative possibilities. Therefore, we developed a list of potential socioeconomic variables, including gender, age, education, employment, family size, workplace, monthly household income, and frequency of using the public squares. Two multiple linear regression models were built, one for the migrant group and one for the local group, in order to determine the connections between social-interaction scope change and socioeconomic attributes for the two groups (Table 5).

Table 5. Regression on change in social interaction scope.

Variable		Re-Settler (N = 181)			Local (N = 273)		
		Coefficient	Std. Error	p	Coefficient	Std. Error	p
Gender(Reference = male)	Female	0.011	0.018		0.039	0.015	
Age(Reference = Under 40)	40–60	0.194	0.063	*	0.243	0.035	*
	Above 60	−0.055	0.046		0.033	0.052	
Education (Reference = Under middle school)	High school	−0.069	0.034		0.080	0.023	
	College and beyond	−0.043	0.083		0.051	0.035	
Employment(Reference = Unemployed/retired)	farming	0.045	0.037		0.097	0.047	
	Retail/service	−0.079	0.058		0.085	0.057	
	Manufacture	0.015	0.080		0.011	0.052	
	Professional/office	−0.019	0.125		0.036	0.050	
	Others	0.011	0.084		0.087	0.047	
Family size(Reference = single)	2–3 people	0.419	0.032	***	0.399	0.031	**
	4–5 people	0.413	0.039	***	0.363	0.036	**
	Above 6	0.101	0.070		0.249	0.043	*
Workplace(Reference = home)	Close vicinity	0.053	0.047		−0.031	0.031	
	Cluster	0.053	0.035		0.035	0.026	
	neighborhood	−0.034	0.033		−0.082	0.024	
	Beyond the village	−0.161	0.049	*	−0.148	0.027	
Monthly household income (Reference = under 1000).	1000–3000	0.356	0.035	**	0.043	0.025	
	3000–5000	0.485	0.040	***	0.242	0.035	*
	5000–7000	0.389	0.046	**	0.151	0.045	
	Above 7000	0.338	0.055	**	−0.015	0.059	
Frequency of visiting the public spaces (Reference = Rarely)	Every month	0.141	0.029	**	0.215	0.023	***
	Every week	0.324	0.024	***	0.328	0.024	***
	Everyday	0.536	0.027	***	0.358	0.025	***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

With statistically significant effects, the results implied that age, family size, income, and frequency of using public spaces were regarded as important predictors for both groups in predicting changes in social interaction. Residents who were middle aged (40–60), had middle-sized families, with middle-level incomes, and those who utilized the public spaces more frequently were more likely to expand their scope of social interaction.

The distinctions between the two groups are: (1) The migrants are also influenced by the workplace while the locals are not. Presumably, this is because migrant workers away from the community may not have the time, opportunity, nor energy to socially structure their new communities by acquiring new local acquaintances; consequently, they will definitely experience a decreasing social scope in their local communities. (2) Monthly income had a more significant impact on the migrant group than the local group. Given the fact that the migrants targeted were poor, their economic disadvantage makes them financially sensitive in many aspects, including social participation in activities and interactions.

Monthly income was the most critical variable affecting the migrant group. Those who earned CNY 3000–7000 per month, as their financial situation improved, symbolically represented themselves as having shed the “poor” label and successfully approached the mainstream level, leading to the expansion of social networks. However, for those who earned less than CNY 1000 per month, there was a very high chance that they would be marginalized and would fail to integrate.

Another related socioeconomic factor was the frequency of visits to public spaces. Two facts may explain this finding. The first is the personality aspect: persons who were more inclined to visit public spaces were found to have more outgoing personalities, which indicated that they were more interested in forming new ties. The second is the public space aspect: public spaces serve as physical carriers for large-scale gatherings and public social activity, as well as being venues for meeting new people and expanding social interactions.

What are the possible reasons preventing the residents from visiting public spaces? We randomly asked 20 residents who rarely visited the facilities for a better understanding. As shown in Figure 4, 75% of them expressed dissatisfaction with the equipment and maintenance work on the public facilities, naming it as the primary reason preventing them from visiting. In addition, 65% thought that the public social activities held there were not that attractive. Many of them mentioned square dancing, which is regularly held in Chinese communities, and was described by a number of respondents as having the greatest engagement among middle-aged residents, but it failed to encourage the younger and older generations to become involved. Moreover, about half of them had no interest in using the public spaces, as some were busy with work or domestic chores, while others had physical disabilities. Furthermore, 25% found them difficult to access due to distance concerns, which was particularly the case for the infill type, as the clusters were in scattered layouts, making the residents less inclined to pay a visit. The relevance of multifunctional planning based on demand assessment for diverse socioeconomic groups, as well as the selection of accessible locations for public spaces, are consequently emphasized.

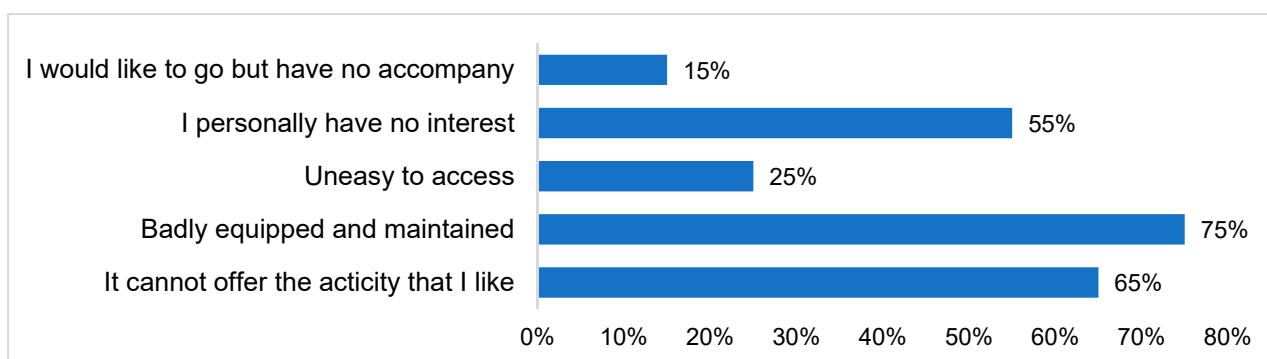


Figure 4. Reasons preventing the residents from visiting public spaces (N = 20).

5.2. Laying Claims to Space

Our research looked into the spatial anchoring of social interactions in accordance with Schnell's proposed socio-spatial isolation indices [44]. We categorized the three kinds of social activities on a social basis: namely, working, meeting neighbors and friends, and telecommunication. Next, we identified four territories on a spatial basis that was defined by four concentric circles, with increasing distances from the homesites: namely, close vicinity, cluster, neighborhood, and beyond the village. Close vicinity, with the closest proximity to home, was mainly exclusively occupied by a single group in the collective PAR projects, rendering it the space that carried the most social interactions and social support.

Such socio-spatial dynamics have a tendency to differ depending on the age cohort. As shown as Figure 5, younger residents (aged under 40) appeared to have the broadest activity territory, as the main workforce, with longer hours in the workplace outside of the village area. Their addiction to the internet was highlighted, resulting in a greater level of involvement in telecommunications in the cyber world. Thus, the time and effort afforded to neighboring social interactions in the real world were significantly limited. Middle-aged residents (aged 40–60), on the other hand, were more adaptable to changing work schedules while still maintaining high mobility, owing to their relatively more mature life experiences and social capital, which made them the foundation of a kinship-based social network in the rural community. They were more active in narrowing territories than the younger residents. Longer hours were spent in the neighborhood, thereby increasing the amount of social interaction among neighbors and enabling them to achieve the best results in terms of broadening their scope of social interaction. Finally, the older residents (aged above 60) were found to be restricted to the smallest territories, given the fact that the older generation generally has a lower level of working participation and physical mobility, but a higher incidence of single residence, and greater difficulty utilizing current communications technologies. They may have spent a long time with proximate neighbors who were mainly from the same group, thereby making a limited contribution to the expansion of social interactions.

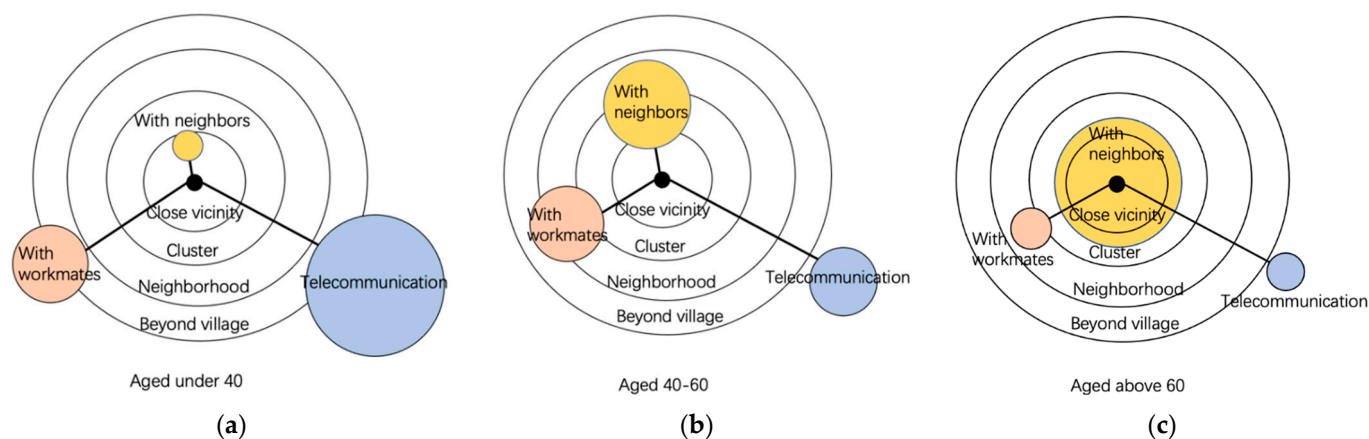


Figure 5. Socio-spatial dynamics vary by age cohort: (a) aged under 40; (b) aged 40–60; (c) aged above 60.

5.3. Economic Benefits and Limitations

On the one hand, the majority of migrants reported increased income and household assets as a result of the project, demonstrating that poverty alleviation through relocation projects successfully enhanced the living standards and economic conditions of the targeted population. The narrowed social capital gaps between locals and migrants contributes to the social equality and integration.

On the other hand, we discovered that migrants still lack social and economic parity with the locals in the local employment market. Many locals in Xiling village, for exam-

ple, worked in the turquoise mining and processing factories, whereas vast numbers of migrants remained unemployed or were engaged in low-wage agriculture-related jobs. Because of its short production cycle, low output threshold, and intense space utilization, mushroom production and processing has become the dominant business for migrant poor households to make full use of the local plentiful mountain resources (Figure 6). However, we discovered that mushroom production was primarily conducted in a family workshop, which was not only inefficient, but also unable to ensure quality. This extremely exclusive production mode can easily lead to a lack of economic integration with local industries and other production units, thus limiting social capital and interpersonal integration in a longer term.



Figure 6. Mushroom production industry in the Xiling village: (a) outside the greenhouse; (b) inside the greenhouse (photographed by the author).

Economic integration strategies should be proposed at all levels, which is an important step before developing emotional attachments and achieving true social integration. Such as the introduction of cooperative organizations, the provision of related production guidance and education, the diversification of industries and production methods, the expansion of production scale, and the promotion of centralized production, etc. They are favorable to boosting economic equality and enhancing local industry integration in order to accomplish true poverty alleviation and long-term growth.

6. Conclusions

Targeting the migrant group and the local group from the poverty alleviation relocation project in rural communities, this study researched the reshaping of neighboring social networks through a longer-term observation from 2019 to 2021.

Following the typology of resettlement in terms of residential segregation, four types of resettlements were investigated: namely, the centralized, adjacent, enclave, and infill types. The migrant group and the local group were each asked to express their personal experiences on changes in neighboring social-interaction scope and in intergroup social support. The results were compared and analyzed by groups and resettlement types.

By groups, the migrant group witnessed much more significant changes than the local group in terms of the interaction scope, both positively and negatively. Some successfully made new local ties, while some lost connections with previous social ties. The locals, such as the dominant group in the mainstream host society, had a more stable status as no decrease in the scope of social interaction occurred. Regarding the social support, a similar trend was observed: the migrants were more willing to ask for intergroup social support and subsequently, compared to the locals, the more significant increase was maintained in

the later stage between 2019–2021. Intergroup social support of the social companionship kind was relatively common.

By resettlement types, we offered some advice for planners when deciding which type to adopt for promoting social integration:

The centralized type is the superior choice, as it showed a good and balanced performance in all stages. Both groups in the representative case performed well in promoting neighboring interaction and support, contributing to a balanced status. Their performances also steadily improved with time.

The adjacent type was a good choice in the longer term, considering its rapid improvement in the later stage. The case showed middle-level performance in the early stage (before 2019), but it improved rapidly over time, as we saw a larger growth slope between 2019 and 2021, causing it to outperform the centralized type.

The enclave type should be reserved as the last option because of its consistently negative impact. The enclave type continuously underperformed in promoting social interaction and social support, as migrants mainly suffered quite obvious negative impacts brought by PAR, while the local group remained unchanged and showed irrelevance.

The infill type could be a considerable choice for the short term, as it rarely showed improvement in the later stage. In the early stage, both groups thrived but failed to continue promoting intergroup social interaction. Between 2019 and 2021, the locals rarely experienced changes, while the migrants narrowed their scope of social interaction but increased in social support.

The associated personal socioeconomic factors for fostering the scope expansion of social interaction were also explored, with particular emphasis on the perspectives of locals and migrants. In both groups, the most important predictors were found to be age, family size, income, and the frequency of visiting public spaces. The socio-spatial dynamics of the age cohorts also differed. As people's ages increased, their activity territories shrank from territories beyond the village, to the neighborhood, and to close vicinity. As a result, consideration should be given to customized spatial planning depending on the characteristics of the users. Moreover, we discovered that migrants still lack social and economic parity with the locals in the local employment market, strategies were proposed at all levels, to boost economic equality and enhance local industry integration.

Through a 2-year observation, this study provides insight for the reshaping of neighboring social networks, and the comparisons of resettlement types, groups, and years provide the planners with preferred options for the resettlement type and deciding the relocation destination in a longer term. We consider it helpful and an important aspect for promoting social sustainability in the rural community after collective relocation.

However, the study has some limitations. First, the 2-year period of observation maybe still insufficient to reflect a complete pattern of social change. Longer observations are expected in order to achieve true long-term sustainability. Second, the existing measurement dimensions are still vague and simplistic, and more variables may be added in the future: for example, frequency, items, subjectivity, and quality of social interactions, as well as economic and cultural dimensions, etc. Third, we only examined the cases in Hubei Province, central China, and we suspect that the results would be different in other regions with distinct geographical and socioeconomic backgrounds, comparative studies are necessary for gaining a broader perspective on a greater scale. In our future study, we expect to establish a thorough assessment system to examine the effectiveness of various types of PAR projects in different regions under the present policies and to provide predictions and suggestions on future development trends.

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