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Performance Landscape: The Relationship between Technology and Society under the Influence of Social Media

-- A Social Network Analysis of the "Weak Localization" of Empty Nest Youth

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Abstract

In the era of big data, the massive public opinion data on social media has challenged the traditional top-down framework analysis methods. In 2022, Fudan University published the core teaching material of network and new media communication, Computational Public Opinion in the Era of Big Data: Theories, Methods and Cases. In addition to analyzing the challenges faced by the traditional framework theory, the authors Zhou Baohua and Liang Hai also introduce how to use network analysis methods to cope with the transformation of social relations increased by technological progress. The data of CNNIC's 52nd report revealed that China has driven the whole people to go online, and social media is an important carrier for empty-nest youth to fight against weak localization. Therefore, how empty-nest youth use social media to become citizens, localization and family has become a landscape worthy of attention. By using the data of "Investigation on the use of social media by empty Nest Youth" from 2021 to 2023, this paper focuses on the degree of weak localization resistance of social networks and finds that the short video content produced is not only determined by technology or social factors, but a new communication scene jointly constructed by technology and society. In view of the "aphasia" characteristic of the vulnerable groups using social media in the previous research on rural communication, this paper puts forward corresponding countermeasures and suggestions from three perspectives: ideological and political education, intergenerational support and digital inclusion.

Keywords

Empty-nest Youth; Technology and Society; Social Network Analysis; Social Media.

1. Introduction

According to the 7th National census data, the number of one-person households in the country reached 12,549,0007, accounting for 25.40% of the total number of households. Compared with the results of the fifth national census in 2000 (8.30%) and the sixth national census in 2010 (13.98%), the number of people living alone in China has shown a significant upward trend, and the proportion of people living alone in China has continued to increase in the past 20 years. The seventh national census data sends a strong signal that the "single society" and the "empty-nest youth tide" have arrived. In 2021, the number of "empty-nest youth" in China has reached 95 million, and by 2022 it has exceeded 100 million. If they continue to live alone and never marry, it will mean that more than 100 million families in China have no offspring. According to the 52nd CNNIC report, by June 2023, the number of Chinese netizens will reach 1.079 billion, and the Internet penetration rate will reach 76.4%. Among them, the gap between urban and rural Internet access continued to narrow, and online retail sales in rural areas reached 1.12

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trillion yuan, an increase of 12.5%. [1]At present, China has entered the era of national Internet. The influence of the popularity of the Internet on the empty-nest youth group has exposed more problems worth exploring: Words such as "empty nest youth" and "migrant workers" frequently cause hot discussions on the Internet, and the life form, psychological state and social support state of empty nest youth are placed in the spotlight of the media. Hundreds of millions of empty nest youth make their families helpless, which has become an important issue for academic and social circles to discuss to avoid the recurrence of such crises.

In the fourth chapter of Computational Public Opinion in the Era of Big Data: Theories, Methods and Cases, the authors Zhou Baohua and Liang Hai use network analysis methods to deal with the massive public opinion data on social media, and investigate the application and results of large data in online public opinion. In today's society, there are two types of "empty-nest youth" who have become the main force of social media: one is the newly graduated college students; The other is the young people who work in cities, or the new generation of migrant workers. They leave their previous living and growing up environment, move to unfamiliar cities, enter the workforce, and have not yet formed families due to age or socioeconomic status constraints. In addition, according to the data released by the People's Think Tank, the vast majority of "empty nest youth" actively choose to live alone (92.3%), of which 47.5% choose to live alone "want to have their own privacy space". [2] Even if they live in the same city as their parents, due to differences in life concepts, living habits and behaviors, as well as the desire for independent and free space, if conditions permit, the proportion of young people living alone from their parents is further increasing. According to the data of the China Statistical Yearbook (2022), there are about 239 million single people over the age of 15 in China, which already exceeds the combined population of the United Kingdom, France and Germany, and the number of single people is getting larger and larger. At the same time, single young people also choose to live alone more often, becoming a member of the "empty nest youth" who are single and live alone. In 2018, the number of "empty-nest youth" in China has exceeded 77 million, of which one-fifth are widely distributed in four cities: Shenzhen, Beijing, Guangzhou and Shanghai, and it is expected to reach 92 million in 2021. The question of why the number of single young people is increasing is still an open question. [3] Therefore, urban empty-nest youth are an important group worthy of in-depth study. Some scholars pointed out that the migrant workers are almost the epitome of China's young generation of migrant population, for the purpose of personal struggle, bid farewell to relatives, hometown and 'acquaintance society', poured into big cities such as Beijing, Shanghai, Guangzhou and Shenzhen, no relatives, become a member of the 'stranger society', and open a new process of socialization of new urban people." [4] Existing literature pays more attention to the social mentality and social integration of such young people, but there is no in-depth analysis of the key factor affecting social integration - social network. Therefore, aiming at the empty-nest youth group in transition from weak localization to strong localization, this paper will apply the social network analysis method in this work to deal with the problem of "weak localization" transformation of empty-nest youth, and on this basis, put forward corresponding countermeasures and suggestions for the growth and development of empty-nest youth.

2. Literature Review

At present, China Youth Daily defines "empty-nest youth" with diversified characteristics, including age, living status, education level, migration status and emotional status. Hugh Heath and Emma Calvert, in The 'New Age of Solo Living' of British Youth, define a group of 25-34 year olds living independently in southern England as empty-nesters. [5] Zhang Yue and other scholars define empty-nest youth as those living alone between 20 and 49 years old. [6] Some scholars also believe that the narrow sense of "empty-nest youth" refers to the age of 20-35

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years old, leave their hometown to the big city "alone", far away from their relatives, live alone. [7] Due to the overlap between empty nest youth, single youth, empty nest youth and other groups, some scholars analyzed the social integration status of empty nest youth in Guangzhou from the four aspects of urban integration, economic integration, cultural integration and community integration, and found that they showed differentiation of group development, differentiation of social integration and stratification of social integration dimensions. [8] There are few literatures on the social network of empty-nest youth in China. As a microcosm of China's young floating population, this paper will first review the literatures on the social network and social capital of the floating population, in order to provide reference for the subsequent analysis of the social network of empty-nest youth. Foreign studies on immigration focus on transnational immigrants. Some scholars point out that "the sum of the interpersonal relationships established by immigrants with the residents of the destination and the residents of the destination through their relatives, fellow townspeople or friends is the migrant network." [9] Some scholars believe that the migration process, such as migration decision, migration location and how to adapt to local life after migration, is closely related to the social network or social capital of immigrants. "Social capital is the ability of individual migrants to mobilize scarce resources through their membership in social networks and broader social structures, which migrants can use to access a variety of resources such as jobs, cheap labor, and low-interest loans." [10] The quantity and quality of disposable social capital possessed by immigrants play a significant role in the possibility of their immigration process. [11] Social capital can effectively reduce economic and psychological costs in the immigration process, reduce various risks, and contribute to the employment, occupational class, income, social adaptation and integration of immigrants in the destination. [12]

Domestic research on immigration mainly focuses on the floating population, especially migrant workers. Qu Jingdong believes that the social network and social capital of migrant workers are composed of homogenous relationships such as blood, geography and business ties, which have an impact on the process of constructing the life world of migrant workers. [13] Li Hanlin pointed out that the social network of migrant workers shows the characteristics of "strong relationship", and the homogenous group members are the basis of strong relationship bond. [14] Wang Yijie found that the social networks of migrant workers are "small in scale, high in closeness, strong in convergence, and low in heterogeneity", which play a restrictive role in the social integration of migrant workers. [15]Liu Chuanjiang pointed out that the social network capital of migrant workers is much lower than that of urban workers, the heterogeneity of the network is poor, and the primary relationship with blood and geographical relationship as the core is still the foundation of their social relationship structure. The "involution" of social identity makes their contacts mainly limited to "fellow countrymen" and "acquaintances", which affects the quantity, quality and structure of their social capital and limits the expansion of their social networks. [16]

According to the network characteristics of domestic immigrants, many scholars have divided the types of social capital. For example, in order to achieve social integration in local cities, migrant workers need to break the shackles of "primitive social capital" and establish "new social capital". Both human capital and social capital play an important role in the economic status of migrant workers, but the role of social capital is more obvious, and even human capital may need to rely on social capital to fully play its role. [17] Cao Ziwei divided the relationship network of migrant workers into primary relationship network based on geography and secondary relationship network based on business relationship. The larger the social network, the more material resources migrant workers can obtain in the city, and the more material resources in the network will flow to migrant workers themselves. [18]Ren Yuan et al. divided the social capital of floating population into primary social capital and localized social capital. The primary social capital is composed of blood, kinship and township relations, while localized

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social capital is the relationship formed between local residents, social groups, social organizations and local governments in the inflow place. [19] The social integration of the floating population depends more on the construction and accumulation of secondary/new social capital rather than primary/primitive social capital. The social capital of the floating population is broken due to migration and needs to be reinvested or accumulated in the place of migration. Cross-regional mobility directly reduces the involvement of the original social resources, especially the original family's social capital, while the potential social capital embedded in the local residents will show obvious advantages. According to the choice theory of social interaction rationality, immigrants are "able to compare the approximate net benefits of different relationships and to shift their commitment to those relationships that are substantially more 'profitable.'" [20]

To sum up, for the floating population, the primary social capital determines the information acquisition, immigration process and employment of the floating population; Localized social capital is a new type of social capital formed after entering the local society, which is a more critical factor affecting the social integration of the floating population and the urban integration. There are some similarities between empty nest youth and floating population, so what characteristics will the local social network of empty nest youth in megacities show? What factors influence localized social networks for megacities youth? This paper will analyze and discuss the above two problems, in order to summarize and analyze the structure and characteristics of local social networks of empty-nest youth in big cities.

3. Data, Variables and Research Methods

3.1. Data Source and Description

The data used in this paper are from the "Living conditions Survey of residents in Megacities" completed by Shanghai Social Science Survey Center of Shanghai University in Beijing, Shanghai and Guangzhou from November 2014 to October 2015. The survey adopts a two-stage Sampling method, the first stage is the conventional random sampling by map method, and the second stage is the Adaptive Cluster Sampling for the middle class. The two-stage survey finally successfully interviewed 6010 residents. Only young people aged between 16 and 40 years old were retained in this paper, and only 1323 samples were analyzed due to the influence of some missing values.

The research object of this paper is the empty-nest youth in megacities. Based on the existing studies on the definition of empty-nest youth, this paper mainly defines the empty-nest youth from two aspects: residence pattern and age. It should be noted that large-scale survey data of empty-nest youth are relatively rare at present. This paper selects the survey data of "Living conditions Survey of Megacities" according to the distribution characteristics and group characteristics of empty-nest youth. From the regional distribution of empty-nest youth, the current empty-nest youth mainly concentrated in Beijing, Shanghai, Guangzhou and other megacities; From the perspective of group characteristics, the empty-nest youth are close to the characteristics of the middle class in income, education level and occupation. In addition, the data also included variables related to residence patterns, making it possible to identify empty-nest youth.

3.2. Measurement of Variables

3.2.1. Dependent Variable

In this paper, we measure social networks from five dimensions: people we often contact, friends, people who help us, people who talk to each other and people who play with us in our spare time. Furthermore, we analyze the localization degree of social networks of young people in megacities from the dimension of local household registration. The proportion of local

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household registration includes five options: "all have", "most have", "half have", "few have" and "none", with a value of 5 to 1.

3.2.2. Independent Variables

Living pattern. The "living mode" is operationalized into the current living type of the respondent. In this paper, "living alone" is named "living alone"; "Couples living together (nuclear family)" and "couples living together with unmarried children (nuclear family)" are classified as "nuclear families"; "Parents living with married children (immediate family)", "married siblings living with married children and married siblings (joint family)", "parents living with married children and married siblings (immediate joint family)", "grandparents living with grandchildren (including grandchildren)", "family living with non-relatives" and "other types" are classified as "other families". In the model analysis, the most common "nuclear family" is taken as the reference group.

3.2.3. Control Variables

In this paper, city, gender, age, household registration type, Party membership, education level, occupation category, housing property rights, marital status, children's status, and personal annual income are included in the model as control variables, as shown in Table 1.

Table 1. Descriptive statistics of variables (N=1323)

variable	percent	variable	percent
Residence pattern		Educational level	
Live alone	13.76	Junior high school and below	9.45
Nuclear family	59.32	Technical school/technical secondary school/vocational high school/high school	17.99
Other families	26.38	Junior college	25.4
city		Bachelor degree or above	47.17
Peking	34.77	Occupational category	
Guangzhou	29.33	Business services personnel	31.52
Shanghai	35.9	Production worker	7.63
Sex		Clerical staff	21.62
Female	47.09	Professional technical personnel	26.61
Male	52.91	Heads of government agencies, enterprises and institutions	4.23
Household registration type		Unemployed people	8.39
Local non-agricultural household registration	61.6	Housing property right	
Local agricultural household registration	4.99	non-self-purchase	40.97
Non-agricultural household registration	15.5	self-purchase	59.03
Non-local agricultureHousehold registration	17.91	Marital status	
Party membership		unmarried	35.3
Non-party member	88.21	Be married	64.7
Party member	11.79	Children's situation	
		nothing	58.88
		have	41.12
Continuous variable	Mean value	Standard deviation	Minimum value	Maximum value
Age	30.03	6.06	16	40
Personal annual income	139283.9	354821.6	0	9900000

(1) Research methods

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Multiple ordered Logistic regression model was used for the ordered dependent variables with multiple options. The basic form of the model is as follows:

$$Ln(\frac{p(y \le j \mid x)}{1-p(y \le j \mid x)}) = \mu_j - (\alpha + i = \sum_{i=1}^{k} \beta_i x_i) \quad (1)$$

(y ≤ j | x) represents the cumulative probability of class j and the following classes:

$$p\ (\mathrm{y} \le j \mid x) = \frac{e^{\mu_i - (\alpha + \sum_{i=1}^{k} \beta_i x_i)}}{1 + e^{\mu_i - (\alpha + \sum_{i=1}^{k} \beta_i x_i)}} \quad (2)$$

In formula (1) and (2), xi represents the i th factor affecting social integration; i= 1,2..... k. αIs the intercept term; βiIs the partial regression coefficient.$\mu 1,\ \mu 2,\ \cdots\cdots,\ \mu j$ Is the cut-off point.

4. Data Analysis and Results

This part will describe the social network structure of empty-nest youth in megacities, and will model and analyze the localized social network of youth groups in megacities, focusing on the differences between empty-nest youth and young people in nuclear families and other families. The social network structure consists of five sub-networks, namely the social network of frequent contact, the friend network, the help network, the heart-to-heart network and the playmate network. These five social network dependent variables are regarded as ordering variables, and the higher the proportion of local household registration, the higher the proportion of local household registration in the social network. The analysis results are as follows.

First, the social network that empty-nest youth in megacities often come into contact with is more likely to be composed of non-resident population. On the whole, the proportion of "most" and "all" with local household registration (58.12%) is higher than that of "none" and "few" with local household registration (22.58%) among the people who are in regular contact with young people in megacities. The proportion of "none" and "few" with local household registration (43.57%) is higher than that of "most" and "all" with local household registration (31.85%). In other words, the proportion of people that empty-nest youth often come into contact with is lower. According to the analysis results in Table 2, compared with young people from nuclear families in megacities, the social network frequently contacted by empty-nest young people in megacities is more likely to be composed of non-registered groups, and there is no significant difference between them and young people from other families.Age, type of household registration, occupation category, housing ownership, and children are all factors that influence the proportion of local household registration in the social networks with which young people in megacities are frequently exposed. The older the megalopolis youth group, the more likely they are to have social networks that are locally registered. The social network frequently contacted by the "non-farm" and "agricultural" registered youth groups in megacities is less likely to be composed of the local registered population, that is to say, the

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people frequently contacted by the migrant youth groups in megacities are more likely to be the same migrant registered groups. Compared with business service workers, the social networks frequently contacted by young people in megacities who work as "office workers" are more likely to be those of the local registered population.Young people who own their own homes are more likely to have social networks made up of the local registered population than those who do not own their own homes. Young people with children are more likely to have social networks with which they interact.

Second, the friend network of empty-nest youth in megacities has a lower proportion of local household registration than that of other family youth groups, but when other control variables are added, there is no significant difference. Compared with all youth groups, the proportion of local household registration in the friend network of empty-nest youth in megacities is significantly lower. Among all young people, 40.79% said that "most" of their friends had local household registration and 14.01% said that "all" of their friends had local household registration. However, among empty-nest young people, the proportion of friends who "mostly have" and "all have" local household registration is only 22.60% and 6.21%, respectively. It can be seen that compared with other family youth groups, the friend network of empty-nest youth in megacities is more likely to be composed of non-resident population. According to the analysis results in Table 2, the proportion of local household registration of empty-nest young people and young people from other families in megacities is not significantly different from that of young people from nuclear families. In addition, gender, age, household registration type, occupation category and housing property rights are important influencing factors. Compared with women, young men are 23.40% less likely to have one or more local household registration levels (=1-0.766). With each increase in age of one year, the probability that the proportion of local residents in the megalopolis youth network will increase by one or more grades increases by 3.50%(=1.035-1). Compared with local non-farm household registration youth, the probability of increasing the proportion of local household registration by one or more grades is 85.10% lower (=1-0.149) and 89.60% lower (=1-0.104), respectively. Compared with those engaged in business services, the probability of the proportion of local household registration in the network of young people engaged in administrative work was 71.60% higher (=1.716-1), and the probability of the proportion of local household registration in the network of young people engaged in professional and technical work was 33.60% higher (=1.336-1). The probability of increasing the proportion of local household registration by one or more grades was 115.50% higher (=2.155-1). In terms of housing property rights, the proportion of local household registration of young people who own their own homes is 32.00% higher than that of young people who do not own their own homes (=1.320-1).

Third, the empty-nest youth in megacities showed a tendency of "no need" for the help network, and the localization degree of the help network was low, but when the control variables were added, there was no significant difference. The Help network is based on the questionnaire "Have you helped yourself in the past year?" The statistical results show that the proportion of empty-nest young people in megacities who "have" (71.82%) and "have not" (16.82%) helped themselves in the past year is slightly lower than that of all young people (74.82% and 18.31%, respectively). However, the proportion of those who "do not need" to help themselves (12.15%) is 5.08% higher than that of all youth (7.07%). In other words, megacities empty nest youth are more likely to not need someone to help themselves.

In terms of the proportion of local household registration, compared with all the young people in megacities, the proportion of "most of them" (19.38%) and "all of them" (10.08%) were lower, while the proportion of "none" (17.83%) and "few of them" (31.01%) were higher. It is 23.68% higher than the total youth in megacities. It can be seen that compared with other family youth, the help network of empty-nest youth in megacities is more likely to be composed of non-resident population. According to the analysis results in Table 2, compared with the

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youth in nuclear families in megaciously urban areas, the proportion of local household registration in the help network of youth in other families is more likely to increase by one or more levels, and it is more likely to be composed of local household registration population, but there is no significant difference between the empty-nest youth and the youth in nuclear families. In other words, the help network of empty-nest youth in megacities is more likely to be composed of non-resident population. In addition, age, household registration type, occupation category and children status are all factors that affect the proportion of local household registration in megacities. With each additional year of age, the probability that the proportion of local household registration in the megacities Youth help network will increase by one or more grades increases by 2.70%(=1.027-1), which is only significant at the 10% level. Compared with the local non-farm household registration youth, the probability of increasing the proportion of local household registration in the help network of non-farm household registration and rural household registration youth is lower, which is about 90% lower. In terms of occupational categories, compared with those working in the business services sector, the probability that the proportion of local household registration in the help network of young people working in office jobs increased by 1 or more grades was increased by 72.10%(=1.721-1). Youth support networks in megacities with children are more likely to be composed of out-of-town residents than those without children.

Fourth, the empty-nest youth in megacities show a certain rejection of chat net, and the localization degree of chat net is significantly lower than that of the nuclear family youth. According to the questionnaire "whether people have talked in the past year", the statistical results show that compared with the whole youth group in megacity (79.82%), the proportion of empty nest youth "have" (74.59%) talk in the heart, but the proportion of "do not" and "do not need" talk in the heart is higher. The proportion of empty-nest youth without heart-chatting network is 19.34%, which is 3.33% higher than that of all young people. The proportion of people who did not need heart-to-heart networking was 6.08%, 1.91% higher than that of all young people. It can be seen that the empty-nest youth in megacities show a certain rejection of chat net.

In terms of the proportion of local household registration, compared with all young people in megacities, the proportion of "none" (17.91%) and "few have" (31.34%) local household registration is higher among empty-nest young people, and the proportion of "half have" (20.90%) local household registration is slightly higher than that of all young people. The proportion of "most of them" (20.90%) and "all of them" (8.96%) were more than 10 percentage points lower than that of all young people. In general, the chat network of empty-nest youth in megacities is mainly composed of non-resident population. According to the analysis results in Table 2, in terms of the proportion of local household registration in chat sites, compared with young people from nuclear families in megacities, the likelihood of the proportion of local household registration in chat sites of empty-nest young people increasing by one or more grades is reduced by 34.20%(=1-0.658), and is significant at the 5% level. In addition, city, age, household registration type, occupation category and housing property rights are all factors that affect the proportion of local household registration in megacities. Compared with the youth in Beijing, the probability that the proportion of local household registration in the youth in Guangzhou and Shanghai increased by one or more grades increased by 51.80%(=1.518-1) and 33.60%(=1.336-1), respectively. With each increase in age of one year, the probability that the proportion of local household registration of young people in megacities increased by one or more grades increased by 3.30%(=1.033-1). Compared with the local non-farm household registration youth, the proportion of local household registration of non-farm household registration and rural household registration youth in the chat network is less likely to increase by 1 or more grades. Compared with those working in the business service sector, the likelihood of having one or more local household registration levels

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increased by 49.70%(=1.497-1). Compared with those who do not own their own homes, the probability that the proportion of local household registration increased by one or more grades increased by 33.40%(=1.334-1).

Fifth, there is no significant difference between the playmate networks of empty-nest youth in megacities and those of other families, but the localization degree of playmate networks is significantly lower than that of nuclear family youth. The Playmate network measured the number of people who had leisure time to play with in the past year through a questionnaire. The proportion of empty-nest young people in megacities was roughly the same as that of all young people with a playmate network (93.92% vs 94.54%), without a playmate network (4.97% vs 4.10%) and without a playmate network (1.10% vs 1.37%).

In terms of the proportion of local household registration, the proportions of "none" (17.16%), "few" (34.32%) and "half" (21.30%) of empty-nest youth in megacities were higher than that of all youth samples, 9.57%, 16.16% and 1.61% higher, respectively. The proportion of "mostly have" local household registration in the playmate network of empty-nest youth in megacities is 19.53%, which is much lower than that of all youth samples (36.64%). The proportion of "all have" local household registration in the playmate network of empty-nest youth is 17.92%, which is also lower than that of the whole youth sample (7.69%). It can be seen that compared with young people from other families in megacities, the playmate network of empty-nest young people is more likely to be composed of non-resident population. According to the analysis results in Table 2, compared with young people in megacities, the playmate network of empty-nest young people is more likely to be composed of non-resident population.Compared with young people from nuclear families in megaciously urban areas, the probability that the proportion of local household registration in the playmate network of young people from empty-nest families increased by 1 or more grades was reduced by 39.60%(=1-0.604), and the probability that the proportion of local household registration in the playmate network of young people from other families increased by 27.20%(=1.272-1).

Table 2. Local Social Network regression analysis of youth groups in megacities (Ordinal Logistic)

	Frequent contact	Friendnet	Help net	Chat site	Playmate
variable	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
	[S.E.]	[S.E.]	[S.E.]	[S.E.]	[S.E.]
Living Mode a					
Live alone	0.690**	0.741	0.719	0.658**	0.604***
	[0.129]	[0.141]	[0.158]	[0.139]	[0.115]
Other families	1.175	1.153	1.469***	1.08	1.272*
	[0.145]	[0.146]	[0.212]	[0.149]	[0.163]
City b					
Guangzhou	0.968	1.280*	1.242	1.518***	1.275*
	[0.134]	[0.182]	[0.199]	[0.239]	[0.182]
Shanghai	1.171	1.172	1.224	1.336*	1.275*
	[0.158]	[0.159]	[0.189]	[0.200]	[0.174]
Gender c	0.902	0.766**	0.879	0.9	0.942
	[0.096]	[0.083]	[0.107]	[0.106]	[0.102]
Age	1.029**	1.035***	1.027*	1.033**	1.030**
	[0.013]	[0.013]	[0.015]	[0.014]	[0.013]
Household registration type d					
Native agriculture	1.155	0.955	0.815	0.718	0.746
	[0.284]	[0.245]	[0.223]	[0.186]	[0.188]

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non-agricultural	0.166***	0.149***	0.095***	0.105***	0.130***
	[0.028]	[0.026]	[0.020]	[0.021]	[0.023]
Non-local agriculture	0.123***	0.104***	0.077***	0.092***	0.095***
	[0.022]	[0.019]	[0.016]	[0.018]	[0.017]
Party membership e	1.054	0.886	0.921	0.789	0.802
	[0.172]	[0.148]	[0.172]	[0.143]	[0.134]
Education level f					
Technical school/technical secondary school/vocational high school/high school	1.134	1.374	0.969	1.141	1.014
	[0.251]	[0.317]	[0.259]	[0.293]	[0.240]
Junior college	1.248	1.597**	0.962	1.193	1.091
	[0.278]	[0.374]	[0.258]	[0.308]	[0.257]
Bachelor degree or above	1.312	1.387	0.849	1.144	1.092
	[0.294]	[0.325]	[0.229]	[0.295]	[0.259]
Occupation Category g					
Production worker	1.126	1.271	1.269	1.049	1.115
	[0.237]	[0.273]	[0.308]	[0.258]	[0.240]
Clerical staff	1.452**	1.716***	1.721***	1.497**	1.763***
	[0.225]	[0.272]	[0.315]	[0.256]	[0.280]
Professional technical personnel	0.862	1.336*	1.293	1.121	1.152
	[0.130]	[0.207]	[0.225]	[0.187]	[0.180]
Heads of government agencies, enterprises and institutions	0.89	1.104	1.564	1.04	0.994
	[0.247]	[0.313]	[0.474]	[0.296]	[0.273]
Unemployed people	1.228	2.155***	1.291	0.812	0.985
	[0.351]	[0.636]	[0.403]	[0.250]	[0.283]
Logarithm of income	0.97	0.992	0.966	0.99	0.984
	[0.021]	[0.022]	[0.023]	[0.023]	[0.022]
Housing property rights h	1.635***	1.320**	1.021	1.334**	1.265*
	[0.209]	[0.171]	[0.151]	[0.188]	[0.164]
Marital status i	0.957	1.066	1.002	0.833	0.955
	[0.149]	[0.169]	[0.183]	[0.146]	[0.152]
Children's situation j	0.720**	0.84	0.740*	0.837	0.763*
	[0.102]	[0.120]	[0.120]	[0.133]	[0.110]
Intercept 1	0.040***	0.065***	0.035***	0.076***	0.058***
	[0.020]	[0.034]	[0.021]	[0.043]	[0.030]
Intercept 2	0.277**	0.649	0.207***	0.441	0.361**
	[0.139]	[0.337]	[0.122]	[0.247]	[0.186]
Intercept 3	0.966	2.298	0.845	1.475	1.23
	[0.483]	[1.191]	[0.493]	[0.820]	[0.628]
Intercept 4	9.393***	25.327***	5.403***	9.748***	9.660***
	[4.731]	[13.289]	[3.164]	[5.459]	[4.964]
Pseudo R2	0.1211	0.1294	0.126	0.1216	0.1243
-2 Log likelihood	3343.6208	3226.3138	2597.521	2795.716	3257.8194
N	1311	1292	978	1045	1239

Statistical significance of two-tail test: *p<0.1,**p<0.05,***p<0.01. a Residential pattern, based on the nuclear family. b city, with Beijing as reference. c Gender, with female as reference. d Household registration type, local non-agricultural household registration as reference. e Political status, with non-party members as reference. f Education level, with reference to junior high school and below. g Occupations, with reference to business services. h Housing property rights, with no own housing as reference. i Marital status, unmarried as reference. j In the case of children, refer to the absence of children.

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In addition, city, age, household registration type, occupation category, housing property ownership and children are all factors that affect the proportion of local household registration in megacities. Compared with the Beijing youth, the probability that the proportion of local household registration in the playmates network of Guangzhou youth and Shanghai youth increased by 27.50%(=1.275-1). With each increase in age of one year, the probability of increasing the proportion of local household registration in the megalopolis youth's network by one or more grades also increased by 3.00%(=1.030-1). Compared with the local non-farm household registration youth, the probability that the proportion of local household registration in the playmates network of non-farm household registration and non-farm agricultural youth increased by 1 or more grades decreased by 87.00%(=1-0.130) and 90.50%(=1-0.095), respectively. Compared with young people working in business services, the probability that the proportion of local household registration in the network of young people working in office work increased by 1 or more grades increased by 76.30%(=1.763-1). Compared with the youth who do not own their own homes, the proportion of local household registration in the youth who own their own homes is higher. Young people with children have a lower proportion of local household registration in their playmate networks than those without children.

5. Conclusion and Discussion

Through the method of network social analysis, this paper deeply analyzes the social network structure and characteristics of the weak localization transformation of empty-nest youth under the use of social media, focusing on the five dimensions of frequent contacts, friends, people who help them, people who talk to each other and people who play with them in leisure time. From the analysis results of the five dimensions of social networks, the following conclusions can be drawn:

According to the data analysis results of this paper, more than 60% of the empty-nest youth are currently facing the social environment of the migrant population, and the structure of the social network of the empty-nest youth is similar to that of the floating population. The results of model analysis in this paper also point out that the social networks of the "migrant agricultural" and "migrant non-agricultural" youth groups in megacities are more likely to be composed of migrant registered population. The migrant youth group came to the megacities alone, initially relying on the primary social network, mainly blood and relatives; After obtaining a certain social and economic status, they will gradually build and accumulate their localized social networks. Considering that the construction and accumulation of localized social networks require a certain cycle, there may be a great causal correlation with age and local residence time, and young people are more likely to be in the early stage of the establishment of localized social networks. Therefore, the social networks of empty-nest young people in megacities show relatively prominent characteristics of weak localization. Weakly localized social networks will become the main obstacle to social integration of empty-nest youth in megacities. Based on the above analysis results, this paper puts forward the following countermeasures and suggestions.

First of all, through the "rural revitalization + ideological and political education" model to promote the rational social behavior of empty-nest youth. Empty nest young people struggle alone in megacities, whether from migrant workers or local indigenous people, the choice of living alone lifestyle, in physical space, psychological space and social space show the alienation from their immediate family members. The research results of this paper show that empty-nest young people are more resistant to help network and chat network. So whether empty-nest young people really need network help and social support, whether empty-nest young people need marriage and love, or feel lonely, these questions are worthy of deep consideration and

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further exploration. From the perspective of social interaction structure, research and ideological and political education should be carried out on empty-nest youth groups through multiple channels, and the new voice of empty-nest youth should be opened in the form of "online + offline" combination, so as to promote the integration of such young people into the city and the scale of the mechanism of urban and rural collaborative evolution, and guide them to establish positive and enterprising social network behaviors.

Secondly, the educational level of empty-nest youth in megacities is generally higher. According to the data in this paper, 70.88% of empty-nest youth in megacities have an education level of "college or above". Therefore, colleges and universities have become the primary fields for the formation of social networks of empty-nest youth in most megacities, and for young people who graduate from local colleges and universities, colleges and universities are also important environments for building localized social networks. For young people who are about to enter the workplace, on the one hand, alumni can provide information and help for them to find jobs; On the other hand, the networks of friends and playmates that relieve emotions and alleviate loneliness are also likely to be established during college life. Therefore, social workers in colleges and universities should play a guiding and promoting role in the construction of social networks for young students, and create conditions for the establishment of high-quality social networks for young students through various college activities.

Thirdly, the social network of empty-nest youth in megacities shows a significant "weak localization" feature, and community is one of the important sources for residents to develop localized social networks. Therefore, the role of social organizations and social workers should be further given play to fully mobilize the resources of all social parties. For example, social media mobilize this group to participate in collective birthdays offline, urban and rural communities to jointly learn regional dialects, live broadcast according to local characteristics to drive local economy, and at the same time promote people-to-people exchanges, thus establishing various platforms and opportunities for empty-nest youth to interact with others, and truly building a bridge between community residents and empty-nest youth. While enriching community life, it reduces loneliness and enhances community belonging and urban integration.

Finally, from the perspective of digital inclusion and social inclusion, living alone is a necessary stage in the lives of most young people, and empty-nest youth should not be viewed as a "marginal group". In addition, the research results of this paper show that the impact of technology and society is bidirectional, and it is the integration of technology and society. The problem of household registration in society is still an important factor affecting the localization of social networks of young people. The structural exclusion of the household registration system not only requires relevant departments to further break down the barriers of the household registration system and protect the rights and interests of young people with household registration in other places, but also requires network social media to build fairness and justice, so as to enhance the enthusiasm of empty-nest young people to participate in social public affairs and integrate into society.

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