Economics Bulletin

Volume 45, Issue 3

Peer effects in electoral participation: Evidence from a heterogeneous social network in rural China

Hang Fang
Anhui Agricultural University

Ting Yu
Anhui Agricultural University

Qianheng Qian
China Agricultural University

Abstract

We investigate peer effects in electoral participation within Chinese village elections using a novel panel of data from a village in China. The results provide unique empirical evidence for the presence of a positive peer effect in electoral participation, that is, whether the household participates in voting is positively influenced by the choices made by other households from their social network. By distinguishing between strong and weak ties based on social distance, we reveal that weak ties are more important for promoting people going to the polls than strong ties, due to the information superiority of weak ties.

The authors thank Michael Delgado for detailed comments on an earlier version of this manuscript. This work was supported by the Anhui Provincial Department of Education [grant number 2022AH050858] and Anhui Agricultural University [grant number rc402104].
Citation: Hang Fang and Ting Yu and Qianheng Qian, (2025) "Peer effects in electoral participation: Evidence from a heterogeneous social network in rural China", *Economics Bulletin*, Volume 45, Issue 3, pages 1457-1466
Contact: Hang Fang - fanghangnj@163.com, Ting Yu - yuting20232023@163.com, Qianheng Qian - chenqcau@163.com.
Submitted: April 18, 2025. **Published:** September 30, 2025.

been established in rural China, and the Chinese government has gradually withdrawn its complete control over rural society. In 1980, a village in Guangxi Zhuang Autonomous Region spontaneously established China's first villagers' committee, and the directors were directly elected by the villagers. In 1982, the Chinese Constitution officially recognized the legal status of villagers' committees, providing legal protection for villagers' self-governance. Although the constitution stipulates that the directors of the villagers' committee are elected by the villagers, in reality, directors were still directly appointed by the town government. In this context, in 1988, the Organic Law on Villagers' Self-governance was promulgated and implemented, which made detailed provisions on the principles and procedures of village elections, as well as the term and recall of village committees. Various provinces have also successively passed local regulations that consider the actual situation in their respective regions, providing a more solid legal basis for village democratic elections. By 2021, more than 10 rounds of villagers' committee elections have been held in rural China, and over 98% of villagers' committees are directly elected by villagers.[1] The villagers' committee has the power to mediate civil disputes, the responsibility to provide public goods and services, and also take charge of the management and distribution of village land and other collectively owned assets. Therefore, they play an extremely important role in the normal operation of rural society.

Chinese village elections provide a meaningful opportunity for citizens to participate in self-governance and have a positive impact on improving the welfare of residents. Economists have found that the introduction of village elections greatly improves the accountability of Chinese community political elites, thereby increasing the supply of public goods, reducing income inequality within villages (Zhang et al., 2004; Luo et al., 2007; Shen and Yao, 2008), and enhancing the subjective well-being of rural residents (Chen et al., 2014). Although some literature points out the limited political significance of Chinese village elections (e.g. Tao et al., 2011; Fang and Hong, 2020), there is also evidence to suggest that there is widespread electoral competition in Chinese village elections, and both villagers and political elites treat elections as meaningful and critical community events (Tan and Xin, 2007; He, 2014).

3. Data

Our data comes from a long-term follow-up survey of Hong Village. Hong Village is located on the Loess Plateau of northwestern China, with households scattered across mountain ridges and valleys, forming six sub-villages. From 2007 to 2016, we interviewed all 206 households in Hong Village 8 rounds and constructed a balanced panel dataset.

Hong Village held an election for the director of the villagers' committee every three years. Villagers over 18 years old with a *hukou* registered in Hong Village are eligible to vote. Due to the fixed polling station and costly transportation in the Loess

[1] The data comes from *Moderate Prosperity in All Respects: Another Milestone Achieved in China's Human Rights* by The State Council Information Office of the People's Republic of China.

Plateau, typically, one family member usually represents the entire household in the voting process. So, it is convenient and reasonable to set the household as the unit for our empirical studies. During the survey period, we recorded the voting data of all households in the 2007, 2010, and 2013 elections. The voter turnout at the household level has exhibited fluctuations between high and low levels in those elections, surpassing 70% in 2007 and 2013, and falling below 50% in 2010.

We also collected information on social connections between any two households through a self-nomination method. We asked each household with which of the other 205 households they had a social relationship, the type of relationship, and the timing for establishing or dissolving the relationship. Social relationships can be categorized into 5 types: distant neighbors, close neighbors, distant relatives, friends, and close relatives. Based on this information, we constructed three different types of social networks.

The first is the complete social network, or the *guanxi* network called by Chinese people. Letting W be a 206×206 matrix representing the *guanxi* network, with the (i, j)th entry w_{ij} is a binary indicator that equals 1 if there are any of the five social relationships mentioned above between household i and j, and 0 otherwise. Also, diagonal elements are 0.

The other two are strong-ties and weak-ties networks. In the survey, we obtained written gift-giving records of 9 households from 2014 to 2016, which included 503 gift transactions with other households, allowing us to analyze the differences in social distance for different types of social relationships. In Hong Village, as in other parts of China, households typically maintain a ledger to record monetary gifts by family at weddings, funerals, and other occasions. Anthropologists found that the closer the relationship between the giver and the recipient, the higher the value of the gift (Yan, 1996). Our gift value survey shows that the average gift value to close relatives and friends is 2.38 times that of the other three types of social relationships, implying that compared to the other three types of social relationships, households have a much closer social distance with friends and close relatives. Therefore, based on social distance, we define close relatives and friends as strong ties, and distant neighbors, close neighbors, and distant relatives as weak ties. Then, we reassign w_{ij} to 1 if there is a strong tie between household i and j, otherwise to 0, and construct the strong-ties network. Similarly, we reassign w_{ij} to 1 if there is a weak tie between household i and j, otherwise to 0, and construct the weak-ties network.

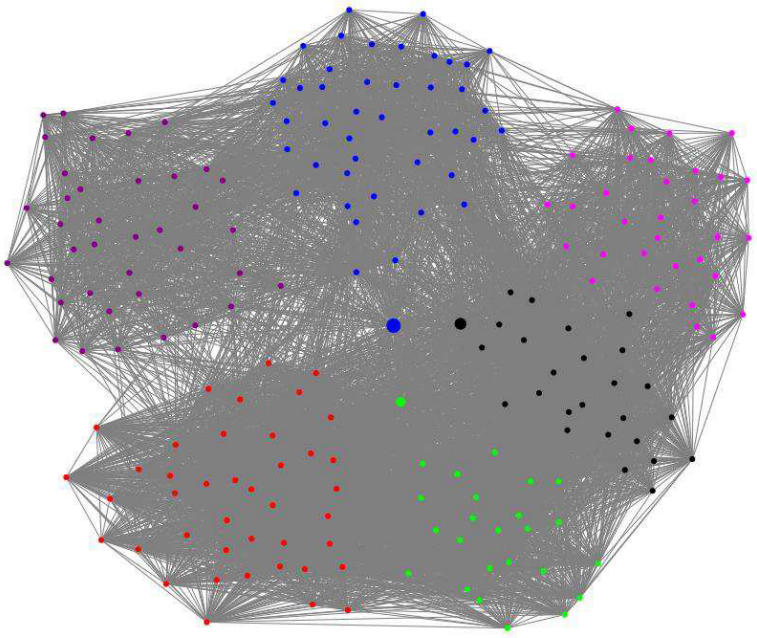
Table 1 presents the descriptive statistics of key network indicators, and Figure 1 visually displays the above networks in 2013. The average degree centrality of the weak-ties network is significantly greater than that of the strong-ties network, indicating that strong ties are significantly less than weak ties in Hong Village. Furthermore, both the Average Geodesic Distance and Maximum Geodesic Distance of the weak-ties network are smaller than those of the strong-ties network, which means that compared to the strong-ties network, the weak-ties network in Hong Village is more well-connected.[2]

[2] Geodesic Distance is one of the core and commonly used indicators in social network analysis, which refers to the shortest path required to connect any two nodes in a social network.

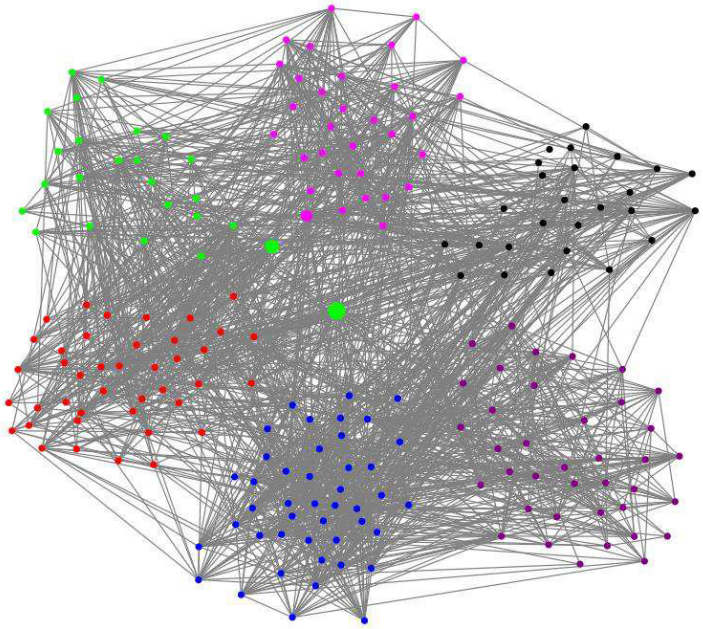
Table 1 Descriptive statistics of social networks

	2007	2010	2013
***Guanxi* Network**			
Average Degree Centrality	70.16	70.93	71.51
Average Geodesic Distance	1.66	1.66	1.66
Maximum Geodesic Distance	3	3	3
Strong-ties Network			
Average Degree Centrality	16.77	17.06	17.15
Average Geodesic Distance	2.42	2.40	2.39
Maximum Geodesic Distance	5	5	5
Weak-ties Network			
Average Degree Centrality	53.41	53.93	54.34
Average Geodesic Distance	1.78	1.78	1.78
Maximum Geodesic Distance	3	3	3

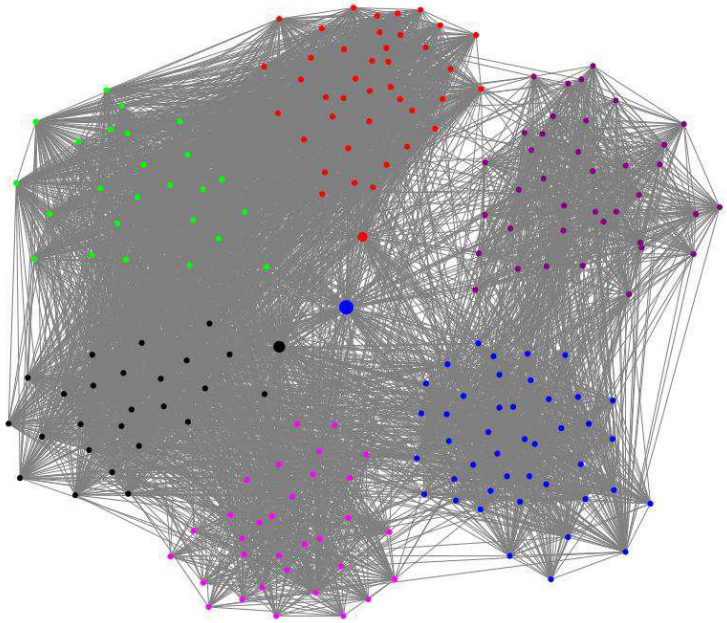
Note: Indicators are calculated by Node XL.



(a) *Guanxi* Network



(b) Strong-ties Network



(c) Weak-ties Network

Fig. 1 Visualized Social Networks

Note: The points represent each household, and the six different colors indicate the six sub-villages in which the households reside. The lines between the nodes represent social ties between any pair of households.

4. Model

Our peer effect Logit model is:

$$Prob(V_t = 1) = \Lambda\left(\rho\overline{V}_t + X_t\beta + \alpha_r + \alpha_t\right) \quad (1)$$

where $V_t = (v_{1,t}, v_{2,t}, \dots, v_{i,t})'$ is household electoral participation in time t, with $v_{i,t}$ equals 1 if household i participates in the vote, and 0 otherwise. $\overline{V}_t = W_t V_t$, represents the average turnout of other families who have a social connection with the household in different network settings. Since social relationships are mainly kinship determined by clan and neighbor relationships determined by geography, the network W is largely formed on exogenous attributes which can be regarded as exogenous.[3] $X_{i,t}$ is a $n \times k$ matrix consisting of household characteristics (gender, age, and education of the household head, number of migrants and patients, village cadre, CPC member, and income, Column 1 of Table 2 provides descriptive statistics). α_r and α_t are sub-village and time fixed effects, respectively, controlling for any unobservables at the sub-village level (e.g., distance from the polling station) and time level (e.g., candidate characteristics) that may lead to convergence in voting behavior among households and biased estimates of the peer effect. The coefficient ρ captures the peer effect (Manski, 1993), which is our parameter of interest.

Table 2 Summary statistics and regression results

	(1)	(2)	(3)	(4)
	Mean	*Guanxi*	Strong-ties	Weak-ties
	[Std Dev.]	Network	Network	Network
Peer Effect (Average Turnout)		0.720*	0.115	0.676**
		(0.432)	(0.144)	(0.309)
HH Gender (1 for male, 0 for female)	0.963	-0.052	-0.037	-0.054
	[0.189]	(0.126)	(0.123)	(0.126)
HH Age	46.047	0.007	0.007	0.009
	[7.736]	(0.021)	(0.021)	(0.021)
HH Age^2		-5.49e-06	-8.84e-06	0.00003
		(0.0002)	(0.0002)	(0.0002)
HH Education	5.367	0.024***	0.023***	0.024***
	[3.476]	(0.006)	(0.006)	(0.006)
Number of Patients	0.341	0.004	0.002	0.005
	[0.609]	(0.034)	(0.034)	(0.034)
Number of Migrants	0.811	-0.030	-0.031	-0.030
	[0.798]	(0.028)	(0.028)	(0.028)
Village Cadres (1 for yes, 0 for no)	0.015	0.266	0.276	0.277

[3] Among the 5 types of social relationships, some distant relatives coming from marriage and friends are self-selected. While, distant relatives and friends constitute only a small portion (6.17% and 3.85%, respectively) of total social connections in Hong Village. This implies that less than 10.02% of the social relationships are self-selected.

	[0.120]	(0.271)	(0.279)	(0.261)
CPC (1 for yes, 0 for no)	0.133	0.044	0.044	0.042
	[0.340]	(0.065)	(0.065)	(0.065)
Income	8.092	-0.0002	0.0005	-0.001
	[1.339]	(0.019)	(0.020)	(0.019)
Observations		618	618	618
Sub-village Fixed Effect		Yes	Yes	Yes
Time Fixed Effect		Yes	Yes	Yes

Notes: The coefficient is the marginal effect of the Logit model. Robust standard errors in parentheses; * $p<0.1$, ** $p<0.05$, *** $p<0.01$.

5. Results

Table 2 reports the regression results following Eq. (1) under the three social networks. We find that there is a significant and positive peer effect in electoral participation within the *guanxi* network, after controlling for family characteristics and unobserved factors. That is, whether the household participates in voting is positively influenced by the choices made by other households from their *guanxi* network. Further, there is a significant peer effect in the weak-ties network, while the strong-ties network doesn't show such effect, indicating that weak ties are more important for promoting households going to the polls. An explanation associated with Granovetter's theory for this is that weak ties- loose acquaintances- provide more access to information than close relatives and friends networks where members have similar redundant sources of information (Granovetter, 1973), thereby alleviating the lack of political information among rural Chinese people as mentioned above. We also note that the coefficient of peer effect is greater than that of private factors. This observation aligns with the theoretical expectations of Brock and Durlauf (2001), that multiple equilibria may emerge when the peer influence is relatively larger than the private incentive. This phenomenon was reflected in the fluctuating voter turnout in Hong Village across three consecutive elections (as introduced in Section 3).

It is worth to note that, in addition to the information mechanism discussed above, interest competition within social networks is also a potential mechanism explaining the differential peer effects across strong- and weak-ties networks. Households often have the same interests as those with strong ties (such as family members), while households with weak ties are more likely to have competitive relationships with each other. Consequently, observing voting by other people in the weak-ties network could strengthen an individual's incentive to participate in elections for their own benefit.

We also consider the possibility that similar unobservable factors at the household level, such as the enthusiasm for politics or public affairs, can also lead to convergence in electoral participation, resulting in biased estimates. Panel fixed effects models allow us to control for these household unobserved characteristics, and also help to account for correlated effects (Bramoullé et al., 2020). Therefore, we add household fixed effects (α_i) to the model to ensure the robustness of our results. The results, as shown

in the first three columns of Table 3, support the conclusions drawn from the base models.

Besides, we remain concerned about the possibility of reverse causality leading to an endogeneity problem. Inspired by Yang et al. (2023), we use the average fixed effects of other households in networks ($\bar{\alpha}_{-it}$) as the IV for the average turnout. The average fixed effects of other households are related to their electoral participation, and not to the error term of household i since eliminating common shocks to all households in Hong Village through time fixed effects. However, α_i is unknown, and consequently, $\bar{\alpha}_{-it}$ is also unknown. Following Yang et al. (2023), we use the alternating iteration algorithm (AIV), which combines the LSDV with IV estimation, to identify α_i and calculate $\bar{\alpha}_{-it}$ simultaneously.[4] As shown in Table 3, the results of IV estimation are consistent with the basic models.

Table 3 Robustness checks of peer effects

	Panel-FE Model			AIV Model		
	(1)	(2)	(3)	(4)	(5)	(6)
	Guanxi Network	Strong-ties Network	Weak-ties Network	*Guanxi* Network	Strong-ties Network	Weak-ties Network
Peer Effect	3.033*	0.252	3.809**	1.245***	0.030	1.419***
	(1.644)	(0.976)	(1.645)	(0.470)	(0.185)	(0.388)
Observations	618	618	618	618	618	618
Household Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Household Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Robust standard errors in parentheses; * $p<0.1$, ** $p<0.05$, *** $p<0.01$.

6. Conclusions

Using a complete and heterogeneous social network within a village in rural China, our analysis provides empirical evidence that there is a significant and positive peer effect in electoral participation in Chinese village elections, after controlling for family characteristics and unobserved factors. That is, our research reveals that the decision of a household whether to go to the polls is not independent, but rather is driven, in part, socially. Further, our findings indicate that this peer influence is heterogeneous across different social relationships. Weak-ties (neighbors and distant relatives) are more important for promoting people to vote than strong-ties (friends and close relatives). Properly designed policies can leverage peer effects in political participation to strengthen the fulfillment of civic duty. Besides, election organizers should also pay attention to the edge nodes in the village social network. Especially for low-income

[4] We first use LSDV estimation to obtain initial $\hat{\alpha}_i$, and calculate $\hat{\bar{\alpha}}_{-it}$; then use $\hat{\bar{\alpha}}_{-it}$ as the IV for the average turnout, and update the IV estimates for $\hat{\alpha}_i$ and $\hat{\bar{\alpha}}_{-it}$; finally, iterate the second step until convergence.

families, their weak-ties are limited, so the channels and timeliness of obtaining electoral information are significantly weaker than those individuals in the central position of the social network. Reflecting the demands of low-income groups through democratic elections is one of the important functions of villagers' self-governance. Therefore, additional information intervention is necessary for edge nodes in social networks.

References

Becker, G., and Murphy, K. (2000) *Social Economics: Market Behavior in a Social Environment*, Cambridge: Harvard University Press.

Bramoullé, Y., Djebbari, H., and Fortin, B. (2020) "Peer effects in networks: A survey" *Annual Review of Economics* **12**, 603-629.

Brock, W. A., and Durlauf, S. N. (2001) "Discrete choice with social interactions" *Review of Economic Studies* **68**, 235-260.

Chen, J., and Zhong, Y. (2002) "Why do people vote in semicompetitive elections in China?" *The Journal of Politics* **64**, 178-197.

Chen, Q., Lin, H., and Lv, Z. (2014) "Does village democracy increase happiness? Evidence from rural China" *China Economic Quarterly* **13**, 723-744. (in Chinese)

Fafchamps, M., and Vicente, P. C. (2013) "Political violence and social networks: Experimental evidence from a Nigerian election" *Journal of Development Economics* **101**, 27–48.

Fafchamps, M., Vaz, A., and Vicente, P. C. (2020) "Voting and peer effects: Experimental evidence from Mozambique" *Economic Development and Cultural Change* **68**, 566-605.

Fang, J., and Hong, J. Y. (2020) "Domestic migrants' responsiveness to electoral mobilization under authoritarianism: Evidence from China's grassroots elections" *Electoral Studies* **66**, 102170.

Giné, X., and Mansuri, G. (2018) "Together we will: Experimental evidence on female voting behavior in Pakistan" *American Economic Journal: Applied Economics* **10**, 207-35.

Granovetter, M. (1973) "The strength of weak ties" *American Journal of Sociology* **78**, 1360–80.

He, B. (2014) "From village election to village deliberation in rural China: Case study of a deliberative democracy experiment" *Journal of Chinese Political Science* **19**, 133-150.

Luo, R., Zhang L., Huang, J., and Rozelle, S. (2007) "Elections, fiscal reform and public goods provision in rural China" *Journal of Comparative Economics* **35**, 583-611.

Manski, C. F. (1993) "Identification of endogenous social effects - The reflection problem" *Review of Economics Studies* **60**, 531-542.

Shen, Y., and Yao, Y. (2008) "Does grassroots democracy reduce income inequality in China?" *Journal of Public Economics* **92**, 2182–2198.

Tan, Q., and Xin, Q. (2007) “Village election and governance: Do villagers care?” *Journal of Contemporary China* **16**, 581-599.

Tao, R., Su, F., Sun, X., and Lu, X. (2011) “Political trust as rational belief: Evidence from Chinese village elections” *Journal of Comparative Economics* **39**, 108–121.

Xu, Q., Perkins, D. D., and Chow, C. C. (2010) “Sense of community, neighboring, and social capital as predictors of local political participation in China” *American Journal of Community Psychology* **45**, 259-271.

Yao, Y. (2012) “Village elections and the rise of capitalist entrepreneurs” *Journal of Contemporary China* **21**, 317–332.

Yan, Y. (1996) *The Flow of Gifts: Reciprocity and Social Network in a Chinese Village*, Stanford: Stanford University Press.

Yang, J., Cao, Y., and Li, J. (2023) “Peer effects on consumption in rural China” *Applied Economics Letters* **30**, 1390-1394.

Zhang X., Fan, S., Zhang, L., and Huang, J. (2004) “Local governance and public goods provision in rural China” *Journal of Public Economics* **88**, 2857-2871.