

# The Call of Social Capital in Pinduoduo Withdrawal Activities from The Perspective of Social Network Theory

Qiuyue Yang, Shuang Zhao\*, Juncheng Li, Chaofan Lan, Shilin Liu, Wenqing Huang

Dalian Maritime University, Dalian 116000, China

**Abstract:** Online sharing activities represented by Pinduoduo withdrawal activities require users to call their own social networks to achieve the goal of the activity. Through the investigation of social network calls in withdrawal activities, the authors found that: (1) the more people at the top of the network and the greater the difference in social networks, the greater the possibility of successful withdrawal; (2) the success of the withdrawal does not depend on the size of the entire social network, but on the invocation of affective and mixed relationships; (3) Activity participants have cognitive biases about the reuse relationship.

**Keywords:** Social network, Social capital, Pinduoduo.

## 1. Introduction

"Pinduoduo withdrawal activity" refers to the activity of Pinduoduo adopting the model of social e-commerce, encouraging users to fully mobilize their social networks on social platforms, inviting multiple friends to help complete the task and achieve the purpose of withdrawal. In recent years, the e-commerce industry has developed rapidly, and the marketing efforts of e-commerce platforms have been continuously increased, and a series of high-cost cash withdrawal activities have been launched, attracting a large number of people, including college students. This research aims to apply social network theory to analyze the participation of college students in Pinduoduo withdrawal activities, and explore their use of social networks in the process of activities and the factors affecting the success of withdrawals.

## 2. Main Points About Social Networks

Social network refers to the network structure composed of nodes and connection lines that connect nodes and represent the connections between nodes, which is a common economic exchange and social exchange mechanism in human society, which provides us with a set of research blueprints from action to relationship to social network structure to complex network structure and field force. Social networks are constantly changing due to the communication of entities within the network, and the dynamic evolution of social networks both supports and influences individual behavior, both bringing resources to individuals and constraining their behavior. Through social networks, individuals can do things that a loose combination of individuals without a connected relationship cannot do, and can produce "emergence" in which the whole is greater than the sum of its parts. At the same time, the social network itself becomes a resource pool, through which individuals can obtain the social resources they need. That is, the "social capital" proposed by the French sociologist Pierre Bourdieu: the capital property owned by the individual in the form of social structural resources, which is composed of the elements that make up the social structure, mainly in social groups and social networks, and can only be

rewarded through membership and network connections. [1] However, social networks can also influence the perceptions, beliefs, and actions of entities through the mechanisms of relationships between them. [2] Moreover, not everyone is in the best position in the network and benefits from it. Granovet believes that the structure and form of social networks, the way social resources are embedded in the network, the degree of embedding of the relationship of the subject and the location of the embedding not only affect the quality and efficiency of the resources transmitted through the network, but also determine the differences in the access of social subjects in the network. [3] Once the network is established, our position in the network depends not entirely on what we do, but also on the choices of others around us. [4]

Chinese scholars have made many studies on individual-centered social networks with Chinese social behavior patterns and relationships as the starting point, believing that the relationship model of Chinese society is a "differential pattern" of overlapping self-centered networks of actors.[5] In this mode, the actors establish a self-centered affinity network through repeated emotional and instrumental communication, thus changing the degree of particularity of the relationship. Huang divides personal relationships into affective relationships, mixed relationships, and instrumental relationships. The term relationship has rich behavioral connotations, and Chinese scholars pay more attention to the unique subjective value judgment of human feelings and face in social network relations. Individuals use Chinese people's "long-term thinking", "fairness law" and reputation system in their social networks to turn "potential social capital" into "mobilized social capital".[6]

The foreign theoretical modes of social network theory mainly include: network structure view, strong relationship power theory, weak relationship power theory and embeddings theory, social resources theory, structure hole theory, etc. To some extent, the concept of network structure subverts the concept of power resource determinism and focuses on the relationship mode and action attributes of social subjects. On the strength of the relations in the social network, the scholar Granovet put forward the theory of weak and strong relations, believing that the strong and weak

relationship plays a fundamentally different role between people, organization and organization, individual and social system. Strong relations maintain the relationship between groups and organizations, and weak relations establish a link between groups and organizations. The four dimensions of "knowing" the length of time ", " the frequency of interaction ", " intimacy "and" the content of the reciprocal service " are used. Bourdieu proposed that the stable social relationship network, the stable social relationship network, and the sum of potential resources is social capital. Coleman pointed out that social capital originates from closely linked social networks and is a positive social condition for human capital to create, transmit and obtain, but both believe that social capital is a social network structure. Structural hole theory presents a new sociological explanation of competitive behavior, believing that competitive advantage is not only a resource advantage, but also a relationship advantage.[7] In addition, from the perspective of the research on the individual social network level abroad, Scott believes that the individual network can be regarded as a part of the overall social network, which examines the network that is extended by the researcher. Through the study of connection relationship and contagion, Nicholas summarizes the five connection rules of social networks.[8]

### 3. Analytic Framework for Social Networks

Social networks study the relationship between individuals and groups, and the connection relationship determines the form of networks. Networks can constantly changing through interactions within entities such as individuals, groups or organizations. Personal behaviors and ideas are inevitably influenced by the social networks. At the same time, individuals form different social capital in the social networks due to their different positions, from which social resources can be obtained when necessary. Groups formed by interconnected people in social networks can display complex common behaviors without explicit coordination or in groups that are not intentional.

Social networks involve the concepts of network scale, network top, and network difference. Each person has a certain amount of power, status, wealth, and prestige in the network he has, which is arranged in order according to any standard to form a tower-shaped structure. People in the network are engaged in different occupations, in different positions, different resources, influence and complementary. In the network, the relationship, information and human bridge increases with the expansion of the network scale; the higher the network top, the greater the power, the higher the status, the more wealth, the more prominent the prestige. Social networks with large scale, high top level and large differences are more likely to generate social capital. Based to [9], we propose:

Hypothesis 1: The more people who are at the top of the network, the more likely they are to withdraw money successfully.

Hypothesis 2: The greater the social network difference, the greater the possibility of successful withdrawal.

As for the division of personal social networks, Huang Mingguo believes that emotional relationships are usually a long-term and stable social relationship, following the "law of demand". Between instrumental relationships and emotional relationships, the main purpose is to obtain certain material

goals that he wants, and to follow the "law of fairness". Mixed sexual relationship follows the "law of human feelings", which is the category of interpersonal relationship that affects others with human feelings and face. Its continuation must be maintained by the continuous relationship between people. Improper handling of such relationship will fall into a "human dilemma". Thus, we propose that:

Hypothesis 3: Successful withdrawal does not depend on the call to the entire social network.

Relationship is a kind of interpersonal interaction behavior of human exchange, but in the Pinduoduo withdrawal activity, the link initiator and receiver deviate from the meaning and function of the reuse relationship, and the link initiator obtains tool support in the intimate relationship of this application to obtain emotional support. In the game of risk-return, [10] recipients choose to refuse or ignore Pinduoduo links, resulting in the breaking of the equilibrium state of resource exchange, wasting social capital, and damaging the social network network. Thus, we propose that:

Hypothesis 4: Activity participants have a cognitive bias about the reuse relationship.

This study explores the participation of college students in the "Pinduoduo Withdrawal Activity", and discusses the current call of college students to social networks, in order to deepen college students' understanding of withdrawal activities and trigger their thinking about their own social networks. In addition to applying the perspective of sociological research, many researchers have also discussed it from the fields of communication and human behavior. For example, some scholars conduct research from the perspective of multi-person interpersonal communication in Pinduoduo, believing that the hierarchical diffusion propagation of Pinduoduo's fission state has an impact on the call of social networks.

## 4. Empirical Analysis and Proof

The data used in this study came from the questionnaire results of social network calls made by university undergraduates in Pinduoduo withdrawal activity. The study adopted the snowball method of sampling. Affected by the epidemic, the questionnaire was distributed online, and 230 questionnaires were collected. We took the questionnaire as the answer, the time of the questionnaire and the answer, screened the questionnaire and obtained 197 valid questionnaires. Among them, only 3 were collected by the initiator link questionnaire, 138 were collected by the link receiver questionnaire, and 56 were collected from both the initiator and the receiver.

We will analyze and summarize the data from two aspects: first, the form of the social network (network location, network difference, network size); second, the influence of the network form on the withdrawal results; and third, the analysis of the influence of the behavior.

### 4.1. Measurement and analysis of the network morphology

We measure social network morphology from three perspectives: network size, network location, and network difference.

We asked about the number of wechat friends in the questionnaire to outline the social network scale of the respondents in the Pinduoduo cash withdrawal activity. As

can be seen from Table 1, the average value of wechat friends is 1.7259, the standard deviation is 0.82437, the minimum is 1.00, and the maximum is 6.00. The data distribution pattern is positively skewed. The results showed that the number of WeChat friends of college students was concentrated at 200-400.

Network differences are expressed by the number of participating organizations or organizations. The mean value of the number of societies or organizations was 1.9289, with

a standard deviation of 0.55790, showing a normal distribution.

We represent network locations using the number of group owners in non-homogeneous groups, the roles played in colleges and societies, and the degree of closeness to guides or teachers. Among them, the average number of group owners in the non-homogeneous group was 1.8376 with a standard deviation of 0.91138, showing a positive skewed distribution.

**Table 1.** Description statistics of network morphology (N=197)

	minimum	maximum	Mean	standard deviation	skewness	Standard error of skewness	kurtosis	Keruposis standard error
Number of societies	1.00	4.00	1.9289	0.55790	0.329	0.173	1.694	0.345
The number of group masters	1.00	4.00	1.8376	0.91138	1.063	0.173	0.458	0.345
The number of WeChat friends	1.00	6.00	1.7259	0.82437	1.928	0.173	6.985	0.345

From Table 2 data, Pearson's correlation test between grade and number of friends, N=197, degree of freedom of 1, p

=0.003, p <0.01, rejected the null hypothesis, and considered a significant correlation between grade and number of friends. The social network of college students changes with the grade.

**Table 2.** Correlation of WeChat friends (N=197)

		grade	The number of WeChat friends
grade	Pearson correlation	1	0.211**
	Sig. (Twin tails)		0.003
The number of WeChat friends	Pearson correlation	0.211**	1
	Sig. (Twin tails)	0.003	

Statistical significance of the two-tailed test: \*\*\* p <0.001, \*\* P <0.01, and \* p <0.05

#### 4.2. Impact of network form on cash withdrawal results

The form of the social network (network size, network location, network differences) was taken as the independent

variable, and the withdrawal result was taken as the dependent variable.

Pearson's chi-square test of the number of initiator success and the number of initiator friends, N=59, degree of freedom is 1, p value is: p=0.803, p> 0.01, and there was no significant correlation between the number of friends and withdrawal results. The cash withdrawal success does not depend on the size of the social network.

**Table 3.** initiator success \* Correlation of number of initiator friends (N=59)

		The number of initiator successes	The number of initiator friends
The number of initiator successes	Pearson correlation	1	-0.033***
	Sig. (Twin tails)		0.803
The number of initiator friends	Pearson correlation	-0.033***	1
	Sig. (Twin tails)	0.803	

Note: \*\*\* p <0.001, \*\* P <0.01, \* p <0.05

Regression analysis was performed with status as the independent variable and cash withdrawal results as the dependent variable. As shown from Table 4, the R<sup>2</sup>=0.068 The regression model was well fitted, and the status had a statistically significant influence on the withdrawal results (B

=1.352, p <0.05). The regression equation is: y=0.255x+1.352. The tower structure formed by the social network arrangement, the more people at the top of the network, the more likely to withdraw successfully. Verify hypothesis 1: The more people at the top of the network, the more likely to withdraw money successfully.

**Table 4. Regression analysis of status \* withdrawal results**

variable	Non-normalized coefficients		Normalization coefficients
	B	SE	
constant	1.352	0.153	
status	0.255	0.120	0.261
R <sup>2</sup>		0.068	

Regression analysis was performed with circles as the independent variable and withdrawal results as the dependent variable. The regression model fits quite well (R<sup>2</sup>=0.108), the influence of the circles on the withdrawal results was statistically significant (B=2.134, p<0.01), and the regression equation was:  $y=-0.132x+2.134$ . The greater the

heterogeneity of the wechat friend majors, associations and groups of college students, the greater the network difference, and the negative correlation between the network difference and the withdrawal results, falsifying hypothesis 2: the greater the social network difference, the greater the possibility of successful withdrawal.

**Table 5. Regression analysis of the circle on the withdrawal results**

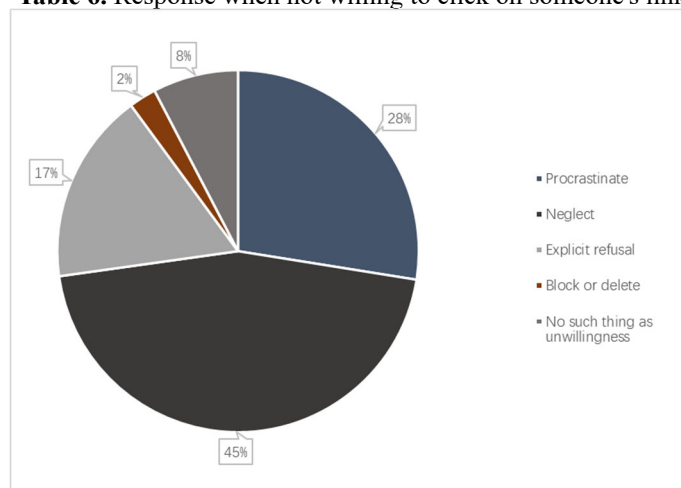
variable	Non-normalized coefficients		Normalization coefficients
	B	SE	
constant	2.134	0.187	
circle	-0.132	0.049	-0.329
R <sup>2</sup>		0.108	

### 4.3. Analysis of the behavioral effects

The link was not clicked, and relatively less refusal (31.4%), but the other party remained silent (62.79%) and

verbal consent (46.51%). For the link recipients, such as in Table 6, 88.74% of the people will actually refuse to click on the link when they are not willing to click on the link.

**Table 6. Response when not willing to click on someone's link**



## 5. Conclusion

Through empirical analysis, we can conclude that, first of all, the success of cash withdrawal does not depend on the size of the entire social network, and there is no significant correlation between the number of friends and the results of cash withdrawal. The success of cash withdrawal does not depend on the size of the social network. People with large social networks may not necessarily use all their social networks to withdraw cash, while people with small social networks can also successfully withdraw cash by fully using their social networks. The success of cash withdrawal mainly depends on the ability of individuals to explore and utilize their own social networks.

We find that the scale of college students' social networks is related to their grades. The scale of their social networks is gradually accumulated and expanded with the growth of their grades. The personal social networks are accumulated with the time they enter the university. The number of nodes in the network is increasing and the boundaries are constantly

expanding. However, the changes in the scale of its social network focus on the instrumental relationship and the mixed relationship, while the changes in the emotional relationship are relatively stable. The key to the success of cash withdrawal lies in the personal mining and utilization of emotional relations and mixed relations, among which the utilization of mixed relations is particularly important.

Secondly, people who are at the top of the network and have greater network differences with others have higher centrality, greater ability to control behavior and transmit information, and have greater quality of social capital. Because of their different positions in the social network, the social subjects in the network have different access to social resources. The people who are at the top of the network and have greater social network differences have stronger ability to use the social network, and the social network has stronger feedback and effectiveness.

Third, there is a cognitive bias in the relationship when calling social networks. The understanding of the relationship between the link initiator and the receiver is inconsistent, and

the link receiver rejects or ignores the request for help from the link initiator.

Through the call of college students' social networks in cash withdrawal activities, we found that the underlying reason for the difficulty in making more cash withdrawal is the contradiction between the trend of individualization and atomization of social development and the widespread use of social networks in making more cash withdrawal activities at the same time. It enlightens us to deepen the cognition of our own interpersonal relationship and social capital, and establish a more reasonable and perfect interpersonal communication model.

## Acknowledgment

Fund: 2021 Liaoning Province College Students Practical Innovation Training Project "Call of Social Network in Pinduoduo Withdrawal Activity from the Perspective of Social Network Theory" (01542201113)

About Corresponding author: ZHAO Shuang(1982-), female, Han nationality, native of Tieling, Liaoning, Ph.D., lecturer, research interests: social organization and social services, social work for children and adolescents, judicial social work

About author: Yang Qiuyue (2001-), female, Miao, from Enshi, Hubei Province, undergraduate student at Dalian Maritime University, research direction: social work

## References

- [1] HE Zhengqiang. Research on the effectiveness evaluation of public space in transformed communities from the perspective of social network[D]. South China University of Technology, 2014
- [2] Knoke, D. Yang Song. Social network analysis[M]. Li Lan, trans. Shanghai: Shanghai Renmin University Press, 2012: 9
- [3] Dai Jian. Theoretical analysis of network embedding[J]. Productivity Research, 2009, No. 3: 20-21, 45
- [4] (US) Jon Kleinberg. Networks, Groups and Markets[M]. Li Xiaoming, trans. Beijing: Tsinghua University Press, October 2011: 7
- [5] Luo Jiade. Relationship and circle——Circle phenomenon in Chinese workplace[J]. Chinese Journal of Management, 2012, 9(2):165-171,178
- [6] Huang Guangguo. Human feelings and face[J]. Comparison of Economic and Social Systems, 1985(03):55-62
- [7] He Zhengqiang. Research on the effectiveness evaluation of public space in transformed communities from the perspective of social network[D]. South China University of Technology, 2014
- [8] (US)Christakis, (US)Fuller. Large connection [M]. Jian Xue, trans. Beijing: Renmin University of China Press, January 2012: 26-27
- [9] Bian Yanjie. The Source and Role of Urban Residents' Social Capital: Network Views and Survey Findings[J]. Social Sciences in China, 2004(03):136-146+208
- [10] Bian Yanjie, Miao Xiaolei. How to explain the upward trend of the role of "relationship"[J]. Sociological Review, 2020, 8(01).