

# Research on the Structure of College Students' Network Participation under the Background of Informationization

Zhao Hongxia<sup>1, a</sup>

<sup>1</sup>Students Work Department, Xingtai Medical College, Xingtai, Hebei, 054000, China

<sup>a</sup>4099964@qq.com

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**Abstract.** This thesis constructs the model of college students' network participation under the background of informationization, which is theoretically based on the participatory democracy theory and network society theory. After empirical analysis, the interaction between network political participation capacity and network political participation behavior (information search, interactive participation and behavior participation) is basically not significant. Again after empirical analysis, the interaction between individual factors and the relation of network political participation capacity (practical capacity of participation, participation efficacy and participation effect) is basically not significant. The scores of mean value and maximal value of participatory network political activities are the highest, which means junior college students are the most active ones in participatory network political activities. The score of network political information means junior college students are more active in getting network political information. The score of independent network political interaction is the lowest, which means that junior college students are the least active in independent network political interaction.

## Introduction

With the development of the Internet technology and the popularity of network application, it is more convenient for people to publish and obtain information. We can share information, conduct discussions and exchange views anywhere and any time, so that network participation becomes an indispensable part of citizen participation. When people collect information and express views of the topics which are concerned, the expressions of the views form one or even more forces that influence and promote the development of related social events and the government's management of public affairs <sup>[1, 2]</sup>. As the elites among students group, college students possess more rights consciousness and social responsibility with open minds, moreover, their consciousness of network participation is much more acute. Due to numerous problems of lacking network political participation social responsibility consciousness and disordering network political participation behavior, it is an essential task for current society and colleges to direct college students to set the right direction of network political participation, constantly improve the ways and methods of ordered network political participation, and guide them into participation in the life of network rationally, orderly and positively.

## The structure of college students' network participation under the background of informationization

Through taking college students as research object, and conducting literature review as well as empirical research, we learn the basic situation of college students' online participation behavior. Beginning with college students' personal characters, we analyze the differences of initiatives in college students' network participation and the relativity between the contact degrees of network, the satisfactions of E-Government network, the recognition degree of network political participation, the sense of achievement on network participation, political literacy, the positivity of campus activities and the initiatives in junior college students' network political participation.

## College students' network political participation

Based on the Internet theory, normalization theory and political psychology theory, and combined with the author's practical considerations, this thesis focuses on analyzing the explanatory power of the influences on initiative in college students' network political participation of individual characters, the contact degrees of network, the satisfactions of E-Government network, the recognition degree of network political participation, the sense of achievement on network participation, political literacy and the positivity of campus activities.

Figure 2 shows the structure of college students' participation under the background of informationization which is mentioned in this thesis.

Theoretically based on the participatory democracy theory and network society theory, and combined with the research of college students' network political participation behavior in this thesis, we come up with the following hypotheses:

- H1: Network political participation capacity influences network political participation behavior;
- H2: Network political participation tendency influences network political participation behavior;
- H3: Individual factor influences network political participation behavior.

## The research sample of the structure of college students' network participation

The total number of the empirical questionnaire is 300 and we receive 290, among which 285 are valid (the effective recovery rate is 95%). The basic data of the students counted by the questionnaire are as follow: according to the sex, males take up 49.8% (142), and females take up 50.2% (143). According to the origin, 20.4% students (58) come from urban areas, 29.5% students (84) come from villages and counties, and 50.2% students (143) come from rural areas. According to professional category, students of human and social science take up 36.8% (105), and students of social science take up 63.2% (180). According to political status, league members takes up 62.5% (178), communists (contain the probationary party members) take up 34.4% (98), Democratic Party members take up 0.4% (1), the masses take up 2.8% (8). According to whether holding student's cadres, students who have held student's cadres take up 65.3% (186), students who don't take up 34.7% (99).

## Analysis of research variables' reliability and validity

Analysis of reliability is an effective analytical method to measure whether the comprehensive evaluation system processes certain stability and reliability or not. The greater the reliability coefficient is, the better the reliability of questionnaire's result is, vice versa. The reliability coefficient,  $\alpha$ , is a value exists between 0 and 1. In this thesis, according to Cronbach's Alpha coefficient, generally speaking, if  $\alpha > 0.7$ , reliability is quite good; if  $\alpha > 0.8$ , the reliability is good; if  $\alpha > 0.9$ , it is still ok; while if  $\alpha < 0.7$ , it is considered that the design of the scale exists some problems, and needs to be revised. Validity means that the measurement tools can accurately measure the degrees of the variables, which is called the accuracy of the questionnaire as well.

## The relation between reliability and validity

The relation between reliability and validity of measurements is mutual connection and restriction.

This thesis constructs the following model of linear regression, and the regression equation is as follows:

$$ACR = \beta_0 + \beta_1 ICDI + \beta_2 SIZE + \beta_3 LEV + \beta_4 ROE + \beta_5 ID + \varepsilon \quad (1)$$

Where  $\beta_0$  is a constant term,  $\beta_i$  is the estimated coefficient of each variable ( $i=1, \dots, 6$ ), and  $\varepsilon$  represents random error.

The calculation of relational correlation degree  $S_r$  is similar to  $S_c$ . The relation contained in the intersection exists both in demand concept map and factual data concept map, and the similarity is 1;

however, the calculation of the similarity of residual relations is kind of different. Since relations are based on concepts, it is comparable only when the relations have direct connections with the same concepts (the calculation of pure relational similarity is an exception). The specific formula is as follows:

$$S_i = \sum_{i=1}^e w_i + (1 - \sum_{i=1}^e w_i) \frac{\sum_{j=1}^e Rsim(R_{\mu_1}, R_{\mu_2})}{q} \quad (2)$$

This thesis takes the dependency relation between concept similarity and relation similarity into consideration, which can reflect the similarity degree of the concept map more truly. The final similarity, s, is as follows:

$$S = S_c \times S_r \Rightarrow S = S_c \times (\alpha + b S_r) \quad (3)$$

$$\alpha = \frac{2nM_1}{2nM_1 + m_w(M_1) + m_w(M_1)} \quad (4)$$

To test the reliability of the questionnaire, we use the method of internal consistency. The Cronbach's Alpha coefficient of network political participation behavior (the behavior items form B1to B13) is 0.865; the Cronbach's Alpha coefficient of network political participation tendency (the tendency items form C1to C13) is 0.815; and the total coefficient of Cronbach's Alpha (the behavior items form B1to B13 and the tendency items form C1to C13) is 0.884. All the reliability values of the factors in this questionnaire are above 0.7, which indicates that the questionnaire possesses high internal consistency.

### Correlation analysis of college students' network political participation capacity and behavior

As shown in Table 1, the total score of capacity = 0.278 \* participation practical capacity factor + 0.241 \* participation efficacy factor + 0.173 \* participation effect factor.

Table1. The weight of network political participation capacity factor

	Participation Practical Capacity Factor	Participation Efficacy Factor	Participation Effect Factor
Know the State System	.907	.116	.083
Know the Government	.916	.123	-.037
Information Search Capacity	.504	-.211	.144
Political Cognition	-.076	.797	.017
Officials Care about the Students' Ideas	.009	.688	.152
Be Beneficial to Decision Sciences	.112	.023	.906
Consciousness of Political Rights	0.045	TH	.902

When the first participation practical capacity factor of network political participation capacity conducts partial correlation analysis with information search, interactive participation and behavior participation of network political participation behavior, we make observation under different statistical methods of control variables and no control variables. It turns out that there are differences of the values between Pearson correlation coefficient of zero order correlation and partial correlation analysis. In this statistical analysis, the control variables are participation efficacy, participation effect, information search tendency, interactive participation tendency and behavior participation tendency. The results are shown in Table 2:

Table2. The partial correlation analysis of participation practical capacity and network political participation behavior

	Information Research	Interactive Participation	Behavior Participation
Participation Practical Capacity	Pearson Correlation Coefficient	-.012	.210**
	Bilateral Test Significance	.839	.000
	Partial Correlation Coefficient	-.046	.185
	Bilateral Test Significance	.447	.002

### Analysis of the relation between participation practical capacity and information search

It is not significant when the value of bilateral test significance is 0.01. When correlation coefficient is -0.012 and close to zero, participation practical capacity is almost entirely unrelated to information search. After eliminating the effects that the controlled variables are participation efficacy, participation effect, information search tendency, interactive participation tendency and behavior participation tendency, the value of significance is 0.447 and the correlation coefficient is -0.046, from which we can conclude that the relation between them is indeed quite small.

When the second interactive participation tendency factor of network political participation tendency conducts partial correlation analysis with information search, interactive participation and behavior participation of network participation behavior, the control variables in this statistical analysis are participation practical capacity, participation efficacy, participation effect, information search tendency as well as behavior participation tendency. The results are shown in Table 3:

Table3. The partial correlation analysis of interactive participation tendency and network political participation behavior

		Information Research	Interactive Participation	Behavior Participation
Interactive Participation Tendency	Pearson Correlation Coefficient	.119*	.117*	.082
	Bilateral Test Significance	.045	.048	.169
	Partial Correlation Coefficient	.124	.088	.053
	Bilateral Test Significance	.039	.143	.379

### Analysis of the relation between interactive participation tendency and information search as well as interactive participation

The upper part of Table 3 shows the case without controlled variables. From this table, we can get the correlation coefficients between interactive participation tendency and information search and interactive participation are respectively 0.119, 0.117. However, the result of bilateral test significance is 0.01, which is not significant. So, there exists a certain correlation between interactive participation tendency and information search and interactive participation; under the case of simple correlation and controlled variable, the correlation coefficients of interactive participation tendency and interactive participation are respectively 0.082 and 0.053. However, the result of bilateral test significance is 0.01, which is not significant. Therefore, we can reckon that there exists no correlation between interactive participation tendency and interactive participation. The control variables in this statistical analysis are participation practical capacity, participation efficacy, participation effect, information search tendency as well as interactive participation tendency. The results are shown in Table 4:

Table4. The partial correlation analysis of behavior participation tendency and network political participation behavior

		Information Research	Interactive Participation	Behavior Participation
Behavior Participation Tendency	Pearson Correlation Coefficient	.061	.361**	-.052
	Bilateral Test Significance	.303	.000	.384
	Partial Correlation Coefficient	.046	.312	-.090
	Bilateral Test Significance	.442	.000	.113

### Analysis of the relation between behavior participation tendency and information search as well as behavior participation

The upper part of Table 3 shows the case without controlled variables. From this table, we can get the correlation coefficients between behavior participation tendency and information search and behavior participation are respectively 0.061, -0.052. However, the result of bilateral test

significance is 0.01, which is not significant. So, there exists a small correlation between behavior participation tendency and information search and behavior participation; under the case of simple correlation and controlled variable, the correlation coefficients of behavior participation tendency and interactive participation are respectively 0.361, 0.312. Moreover, the result of bilateral test significance is 0.01, which is significant. Therefore, we can reckon that there exists positive correlation between behavior participation tendency and interactive participation.

Among the individual factors variables, sex, professional category and other nominal variables do not belong to continuous variables, so they can not reflect the correlations among the variables very well. In this thesis, we just choose two variables named grade and annual household income to conduct a partial correlation analysis with information search, interactive participation and behavior participation of network political participation behavior. There are two variable factors in this statistical analysis, which are grade and annual household income. The results are shown in Table 5:

Table5. The partial correlation analysis of grade and network political participation behavior

		Information Research	Interactive Participation	Behavior Participation
Grade	Pearson Correlation Coefficient	-.212**	.110	.116*
	Bilateral Test Significance	.000	.063	.050
	Partial Correlation Coefficient	-.203	.113	.024
	Bilateral Test Significance	.001	.057	.037

The correlation coefficient is 0.116, which means that as the progressive increase of grades, there exists positive correlation of behavior participation. Through the analysis that controls the variable of annual household income, the lower part of the table shows the result. The significance value is 0.037, and the correlation coefficient is 0.124, so, we can reckon that there exists positive correlation between grade and behavior participation.

Table5. The partial correlation analysis of annual household income and network political participation behavior

		Information Research	Interactive Participation	Behavior Participation
Annual Household Income	Pearson Correlation Coefficient	.179**	.036	.091
	Bilateral Test Significance	.002	.546	.124
	Partial Correlation Coefficient	.168	.044	.101
	Bilateral Test Significance	.004	.457	.090

#### **Analysis of the relation between annual household income and information search behavior**

The correlation coefficient is 0.179, which means that as the progressive increase of annual household income, there exists positive correlation of information search behavior. Through the analysis that controls the variable of grade, the lower part of table 5 shows the result of partial correlation. The significance value is 0.004, and the correlation coefficient is -0.168, so, we can reckon that there exists positive correlation between annual household income and behavior participation.

#### **Analysis of the relation between annual household income and interactive participation and behavior participation**

Under the case without controlled variables, we can reckon that there exists no significance between annual household income and interactive participation and behavior participation in bilateral test, and the correlation is not obvious enough.

## Summary

It is a long-term project to promote college students to make full use of the Internet and increase the effectiveness of network participation. It needs governments, colleges and universities, network media and several other factors to work together, as well as the college students' active cooperation. Only in this way can we encourage college students' network political participation to develop in an ordered, effective and healthy way. H1: After the empirical analysis, we can conclude that the impact between network political participation capacity and network political participation behavior (information search, interactive participation and behavior participation) is not great. Therefore, the previous theoretical hypothesis H1 is not tenable. H2: After the empirical analysis, we can conclude that there exists a certain correlation between network political participation tendency and network political participation behavior (information search, interactive participation and behavior participation). Therefore, the previous theoretical hypothesis H2 is tenable. H3: After the empirical analysis, we can conclude that there exists a certain correlation between individual factors and network political participation behavior (information search, interactive participation and behavior participation); After the empirical analysis, we can conclude that there exists a certain correlation between individual factors and network political participation tendency (information search tendency, interactive participation tendency and behavior participation tendency); After the empirical analysis, we can also conclude that the impact between individual factors and network political participation capability (participation practical capability, participation efficacy and participation effect )Therefore, the previous theoretical hypothesis H3 is partial tenable.

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