ingegneria sismica
International Journal of Earthquake Engineering
Anno XLIII - Num. 1 - 2026

The Patterns, Behavioral Logic, and Solutions of Internet Clustering Behavior of Generational College Students

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SUMMARY: *Under the background of rapid development in the new media era, college students' network clustering behaviors are becoming more and more significant, which has brought impacts on the healthy development of college students. Based on the analysis of the typical characteristics and emotional bias of college students' network clustering behavior, the article establishes the basic framework of the evolution mechanism of college students' network clustering behavior. With the support of structural equation modeling, an evolution model of college students' network clustering behavior is designed to explore the factors affecting the formation of college students' network clustering behavior. Using the "network stratification" event as a sample, we analyzed the evolution of university students' network clustering behavior and proposed an optimization path. It is found that the model explains 73.45% of the college students' network clustering behavior, and the network information elements have a greater influence on the college students' network clustering behavior, among which the value identity has the most obvious influence (0.479). Therefore, it is necessary to start from the dimensions of controlling the initiative of network field, strengthening the education of network mentality guidance and improving the risk management mechanism of public opinion as a way to better regulate college students' network clustering behavior.*

KEYWORDS: *structural equation modeling; evolutionary modeling; college students' online cluster behavior; optimization paths*

1 Introduction

The 45th Statistical Report on Internet Development in China released by China Internet Network Information Center shows that as of March 2020, the number of Internet users reached 904 million, of which 897 million were cell phone users, 896 million were instant messaging users, and 731 million were cell phone network news users. Influenced by the epidemic of new coronary pneumonia, the national network has entered a stage of rapid development, and the Internet has become an important carrier for people to project and express their thoughts, feelings and attitudes in addition to the physical space, and the ensuing "network clusters" have also become a kind of inevitable human aggregation form [1-3].

Network clustering behavior refers to a certain number of unorganized network groups, around a specific real theme, under the stimulation of certain triggering factors, with the characteristics of strengthening and convergence, with the real influence of the gathering of Internet users. Young college students, as a large, stable and faithful "net generation" in the current network virtual space, play an important role in influencing the occurrence and direction of Internet public opinion [4, 5]. They study, live and play on the Internet, and the Internet

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https://doi.org/10.65102/is2026057 Published: 30 April, 2026

provides favorable conditions for them to take in information, exchange opinions and voice their demands, and the symbiosis and integration of “subject dependence and carrier tolerance” makes the network cluster behavior of college students nowadays have distinctive characteristics of the times [6-9]. At the same time, the drawbacks behind the characteristics from the actors, information environment and institutional safeguards also bring certain risks to the college students' network cluster behavior, such as cyberbullying, deterioration of the behavior of the rice circle, hot behavioral discussions and collective voice of the incitement of negative public opinion and negative thought implantation, etc. [10-14]. In the face of the risk of college students' online cluster behavior, if we only treat the symptoms but not the root cause, and we are tired of dealing with the recurring group events without controlling the source and development law, we will fall into the misunderstanding of “treating the head when there is a headache, and treating the foot when there is a footache” [15-17]. Therefore, an in-depth study of the pattern presentation, behavioral logic and relief of the network cluster behavior of Generation Z college students is of great significance to both the promotion of network social governance and the educational work of colleges and universities.

The article analyzes college students' network clustering behavior in terms of both the influence path and the evolution law, i.e., using structural equations to explore the degree of influence, and also analyzes the differences in college students' network clustering behavior at different stages through examples. This study provides specific guidance for regulating college students' network clustering behaviors to better ensure the healthy growth of young college students.

2 Basic analysis of college students' online cluster behavior

At present, the network has become the “first environment” for teachers and students to study and live in colleges and universities, and it is the “biggest variable” for ideological and political education in colleges and universities, and it can be said that whoever wins the Internet will win the youth and the future. The Internet, because of its own virtual, anonymous, interactive, symbolic and other characteristics, easily triggered loose network groups, a short period of time to quickly gather a common voice of the network cluster behavior. Then how to cultivate and practice socialist core values and serve the needs of young students' healthy growth is the opportunity and challenge facing the ideological and political work of colleges and universities at present.

2.1 Typical Characteristics of College Students' Online Cluster Behavior

Cluster generally refers to a group of people who gather in certain places temporarily because of their common concern for a contingent event and their ambiguous understanding of the event's context. The overall behavioral process of “concern-empathy-action” of this kind of group to the incidental events is collectively called “cluster behavior” or “aggregation behavior”, and the online cluster behavior of college students is the replication, extension and even innovation of the traditional cluster behavior in the online field. College students' network cluster behavior is the copy, extension and even innovation of traditional cluster behavior in the network field. College students' network cluster behavior not only has the commonality of traditional cluster behavior, but also has its own characteristics due to the “empowerment” of the network and college students.

(1) Spatio-temporal extension. Due to the virtual, symbolic and inter-temporal characteristics of the network, the network cluster behavior is accomplished in the state of “spatio-temporal extension”, which is specifically manifested in spatio-temporal separation and

spatio-temporal extension. In the network field, college students gather in the virtual space, and do not need to be like the traditional cluster behavior in the fixed time and space by the members of the behavior, language, action and other "mutual stimulation" to trigger the cluster behavior.

(2) The purpose of "non-reality". When a certain conflict event is manifested in the network field, when the inner cause and effect of the event and the specific details are not yet clear, college student netizens will use all kinds of platforms to actively express their views and emotions, so as to make up for or vent the frustration arising from the relative deprivation of the right to speak in real life. In this process, they do not have very clear or direct interests, but only out of concern for social public affairs and the release of tension.

(3) Reinforced de-personalization. The main body of the network cluster event or related people to quickly cause "network spectators" and the reality of the reaction, often using sad narrative, text modification, visualization and other ways to render the group mood.

(4) Anti-"spiral of silence". In the online arena, virtualization and symbolization mask the reality of identity information, and college students can effectively get rid of the psychological burden of isolation, which will greatly release their right to speak and enhance their self-confidence.

2.2 Emotional bias of college students' online clustering behavior

The emotional bias of college student groups begins with the emotional expression of individual views, which drives the dissemination and flow of information, and ultimately transforms individual views and opinions into group and social emotional resonance and meaning resonance. In the current era of network informatization, college students' network clustering behavior occurs more frequently, which is an important phenomenon of network public opinion, and also belongs to a kind of group psychological behavior, which is a network interactive behavior that occurs under the stimulation of certain triggering factors in a relatively unorganized, unpredictable and unstable situation in the network. In this behavior college students around public issues, in the virtual space spontaneous agglomeration and the formation of a communication phenomenon. In network clustering behavior, college students tend to be more conservative or more aggressive than in personal decision-making, and are prone to go to one extreme, thus deviating from the best choice. Therefore, colleges and universities need to guide the emotional bias of college students so that they can maintain rational thinking under the network media and promote the harmony and stability of colleges and universities.

(1) Positive emotional bias. Positive emotional bias can usually help college students form a positive mental attitude and promote the formation of rational thinking, thus contributing to the growth of college students.

(2) Neutral emotional bias. Neutral emotional bias can usually awaken college students' desire for society, guide them to enter society, feel the power of the times, and take the initiative to participate in social activities, so as to accumulate strength for future career development. However, it may also lead college students to produce irrational thinking, which will have a negative impact on their emotional direction.

(3) Negative emotional bias. Negative emotional bias will make college students easily weaken their self-awareness, and their emotions and opinions are easily infected with each other, leading to the rapid spread of irrational expressions, and even generating cyber violence.

2.3 The Evolutionary Mechanism of College Students' Online Cluster Behavior

Based on the analysis of the typical characteristics and emotional bias of college students' network clustering behavior, this paper establishes a theoretical analysis framework for the

evolution mechanism of college students' network clustering behavior, as shown in Figure 1, by combining the theory of cumulative value and the actual situation of “Internet + big data”. From the figure, it can be seen that the generation of college students' network clustering behavior is influenced by both network factors and real factors.

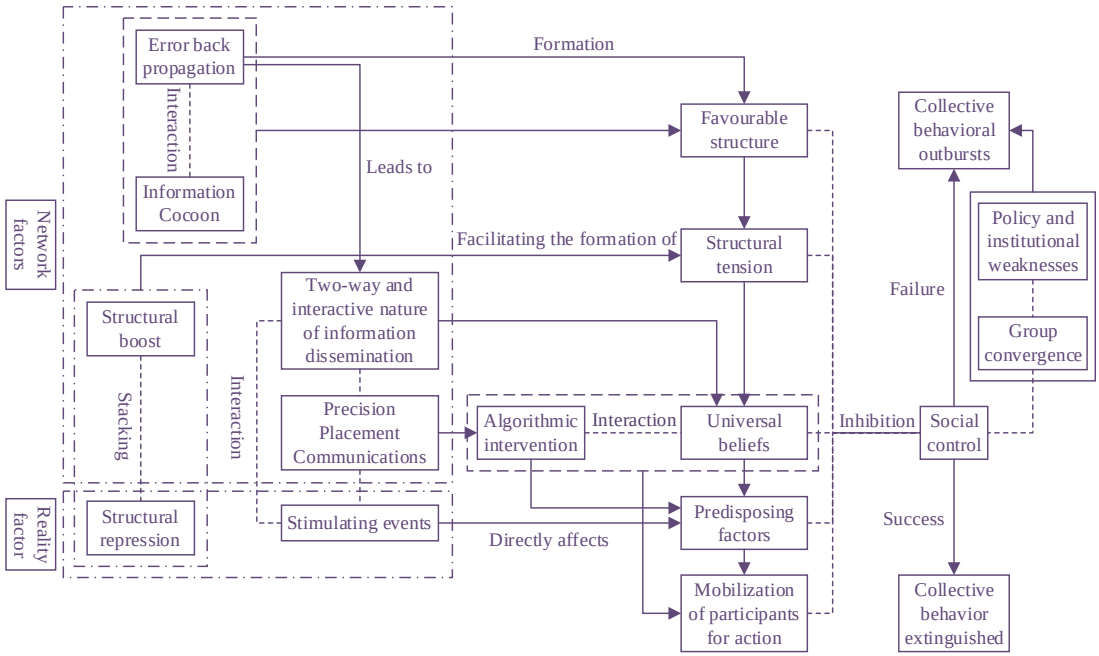

Figure 1: The evolution mechanism of college students' network cluster behavior

Under the influence and effect of the big data algorithmic technology of the algorithmic recommendation service provider, on the one hand, the characteristics of the Internet itself (e.g., anonymity) form a favorable structure that facilitates clustering behavior. On the other hand, the information cocoon formed by big data algorithms interacts with the characteristics of the Internet to become a holistic and favorable structure as well. And the structural factors of virtual space such as the openness, immediacy and inter-temporality of the Internet and the various structural repressions in the real society are superimposed on each other, together contributing to the structural tensions, which provide a possibility for the generation of college students' online cluster behavior. At the same time, the information intermediary function of the Internet gives it the characteristics of two-way information flow and interaction between members, and these characteristics, while directly promoting the generation of universal beliefs of netizens, are also interconnected and mutually influenced with contingent stimulus events in the real society under the added support of big data algorithmic technology for precise information placement of individuals, so that big data algorithmic interventions and stimulus events in the real world together become the triggering factors that contribute to the occurrence of college students' online clustering behavior.

3 Evolutionary Model of College Students' Network Cluster Behavior

With the development of the information network, in the current era of “self-media”, as the main body of today's college students more and more like to choose to obtain information through the network, interactive exchanges, comments, express their demands, seek solidarity and even initiated action, the path of their interests show increasingly diversified and networked.

In recent years, the cluster behavior of college students on the Internet has shown a rising trend, which will not only have a greater impact on the normal order of teaching in colleges and universities, but also evolve into serious social problems, and bring a greater negative impact on the stability of college campuses and social stability, which deserves great attention from all sides.

3.1 Structural equation modeling

Structural Equation Modeling (SEM) is categorized under the category of advanced statistics and is a multivariate statistical method for structural analysis of covariance. It consists of two statistical methods, factor analysis and path analysis, both of which are essentially a statistical process of substituting data into latent variables, and can be used for path analysis while satisfying the prerequisites of factor analysis.

Structural equation modeling consists mainly of measurement modeling and structural modeling. Measurement modeling is the process of factor analysis, which contains latent variables and observed variables, and observed variables refer to the available data that can be investigated through questionnaires. The latent variables are data that cannot be obtained directly and need to be abstracted through the questionnaire, and the measurement model usually verifies whether the data under the conceptualization meet the criteria of the latent variable measure.

The measurement model is used to explain the relationship between the observed variables (including external and internal derivatives) and the latent variables, which is expressed by mathematical equations as follows:

(1) The measurement equation for the exogenous variable can be expressed as:

$$X = \Lambda x\xi + \delta \tag{1}$$

(2) The measurement equation for the internal diffeomorphism can be expressed as:

$$Y = \Lambda Y\eta + \varepsilon \tag{2}$$

where represents the externally and internally derived observed variables, ξ, η represents the externally and internally derived latent variables, σ, ε represents the error term, Λx represents the relationship between X and ξ, and Λ_Y represents the relationship between Y and η.

Structural modeling is the process of path hypothesis testing, path analysis of the hypotheses put forward by the potential conceptualization, through the multi-indicator fit test to reflect whether the path hypothesis is valid or not, usually for the path P-value to determine the hypothesis significance and χ^2 / df, RMSEA and other indicators to determine the overall model fit. Here it is required that the hypothesis determination under the premise of reasonable model fit is meaningful. The structure of the equation is as follows:

$$\eta = \Gamma\xi + \beta\eta + \zeta \tag{3}$$

where β represents the relationship between the endogenous latent variables; ζ represents its residual term.

The construction of structural equation modeling requires the use of AMOS software to operate, usually on the basis of existing theory to determine the assumptions to build the model. Determine the potential variables involved in the model, the observed variables in the software

to build the measurement model, structural model, build a good model needs to be fitted by the relevant indicators, to meet the appropriate standards before the hypothesis test. The specific steps are as follows:

Step1 Model Setting. Before the empirical analysis, the structural relationship between the variables should be constructed according to the specific problems of the actual research, i.e., the framework of the measurement model and the structural model should be roughly determined.

Step2 Model Identification. Connect the collected empirical data with the pre-set structural model, and operate through the software to verify whether the model results obtained from the empirical data are consistent with the pre-set structural model.

Step3 Model Estimation. In model estimation, the estimation methods usually used are maximum likelihood estimation and least squares estimation, through which each parameter needed in the model is calculated.

Step4 Model evaluation and correction. After the model has been estimated, the model fitting effect should be evaluated to verify whether the model can better reflect the actual problem to be analyzed. If, after the assessment, it is found that the fitting degree does not meet the requirements, the next step of model correction is needed. When correcting, the model can be corrected by adding and deleting paths and drawing on the correction index, in an effort to make the corrected model meet the fitting standard and effectively verify the actual situation.

3.2 Research hypothesis design

Based on the framework construction of the evolution mechanism of college students' network clustering behavior, we have clarified the specific influence of network information on college students, and under the homogeneity of information, it will further link the values of college students, so that they will resonate with each other and form a sense of value identity. The influence of community based on cluster behavior can help college students better find like-minded partners, which to a certain extent promotes the generation of college students' network cluster behavior. In addition, the algorithm of the network platform will integrate the information of different categories and push the information that meets the interests of college students, thus forming a cluster of network groups, which provides support for the generation of college students' network clustering behavior. Based on this, this paper proposes the following hypotheses:

H1: Interest has a positive influence on the formation of college students' network clustering behavior.

H2: Value identity has a positive influence on the formation of college students' network clustering behavior.

H3: Information usefulness positively affects college students' interest.

H4: Information homogeneity positively affects college students' value identity.

H5: Information homogeneity positively affects the formation of college students' online clustering behavior.

H6: Community influence positively affects the formation of college students' online clustering behavior.

H7: Personalized pushing has a positive effect on college students' interests.

H8: Personalized pushing has a positive effect on the formation of college students' online clustering behavior.

3.3 Research Modeling

The research model established in this paper is shown in Figure 2, in which college students' online clustering behavior is influenced by five factors: information homogeneity, value identity,

interest, community influence and personalized push. Among them, interest and value identity are both antecedent variables and also modulate the influence relationship between other antecedent variables and college students' online clustering behavior.

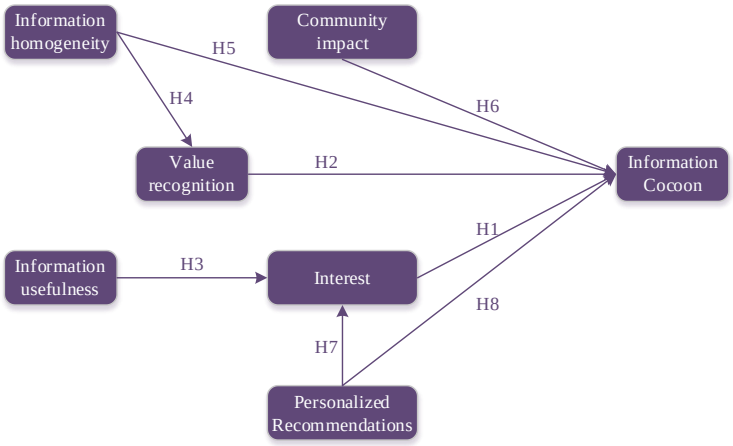

Figure 2: Study model of network cluster behavior of college students

3.4 Research data acquisition

In order to quantitatively analyze the proposed problem and model, this study collected data information through a questionnaire. The questionnaire was in the form of a five-point Likert scale, where each question item consists of a declarative sentence, and the respondent makes a unique choice among five options: strongly disagree, disagree, generally, agree, and strongly agree, and the five options correspond to scores of 1, 2, 3, 4, and 5, respectively. The questionnaire consists of two parts, the first part is the basic information about the individual and the second part asks about the variables. The model includes seven latent variables, and the questionnaire designs four questions for each latent variable, setting a total of 28 question items. Before formally distributing the questionnaire, a small-sample pre-survey was conducted to correct the problems according to the results of the questionnaire analysis, and then a large-scale distribution was carried out.

The questionnaire of this study was distributed in the form of network distribution, and the target of distribution was mainly college students who use WeChat, Zhihu, topic-based forums (such as Douban, Hupu, and Clove Garden) and other online communities, because students in colleges and universities are more capable of accepting new technologies, and they have become the main force of contemporary netizens, which is an important and major group of people who use online communities for information sharing. A total of 648 questionnaires were distributed in this survey, and 541 valid questionnaires were actually recovered after excluding those with incomplete or highly repetitive answers, with an effective recovery rate of 83.49%.

4 Evolutionary Analysis of College Students' Online Cluster Behavior

College students have a high degree of adhesion to the Internet due to their age structure, living habits, cognitive thinking, behavioral preferences and other common characteristics of the group. This “super match” makes young college students become the largest users and leaders of the current network media, and their subjective position plays an important role in the occurrence and direction of Internet public opinion. How to effectively guide and regulate the

network cluster behavior of college students is an important focus and breakthrough point of network ideological education in colleges and universities.

4.1 Influence Path of College Students' Online Cluster Behavior

4.1.1 Results of data reliability tests

Reliability reflects the internal stability and reliability of the observed scale, which is generally verified by Cronbach's α coefficient. Table 1 shows the reliability test results of the questionnaire data, in which Delete indicates the Cronbach's α coefficient after the deletion of the measurement item, Load and CRCR are the factor loadings and cumulative variance contribution rate, respectively, and CR indicates the combined reliability.

From the measurement results in the table, it can be seen that the Cronbach's α coefficients of the questionnaire variables are all greater than the standard requirement of 0.75, and the CR values of the combined reliability are all higher than 0.8, which indicates that the latent variables have good reliability and can meet the needs of the study. The study firstly did factor analysis on the test items of each group of latent variables mentioned above to test their consistency attribution with their respective latent variables, the results of which showed that the KMO value of the variables was 0.917, and the significance of the Bartlett's test was 0.001. This indicated that the data were suitable for factor analysis, and the values of the factor loadings after the rotation by the method of the maximum of variance were all greater than 0.8, and the cumulative variance of the seven variables after rotation contribution amounted to 86.806%, and the results coincided with the results of the scale to categorize these test items.

Table 1: Reliability test results

Variable	Cronbach's α	Item	Delete	Load	CVCR	CR	AVE
Interest	0.889	INT1	0.815	0.883	25.173%	0.892	0.761
		INT2	0.847	0.804			
		INT3	0.828	0.858			
		INT4	0.823	0.810			
Value Agree	0.873	VAL1	0.849	0.812	43.831%	0.873	0.717
		VAL2	0.895	0.865			
		VAL3	0.821	0.864			
		VAL4	0.880	0.844			
Information Usefulness	0.905	USE1	0.818	0.854	58.207%	0.845	0.792
		USE2	0.875	0.896			
		USE3	0.834	0.819			
		USE4	0.876	0.849			
Information homogeneity	0.892	INF1	0.814	0.840	69.452%	0.871	0.749
		INF2	0.857	0.827			
		INF3	0.827	0.839			
		INF4	0.859	0.844			
Community Influence	0.914	COM1	0.872	0.878	78.446%	0.886	0.786
		COM2	0.864	0.836			
		COM3	0.853	0.821			
		COM4	0.899	0.806			
Personalized push	0.928	PER1	0.898	0.895	84.177%	0.842	0.734
		PER2	0.861	0.852			
		PER3	0.886	0.846			
		PER4	0.863	0.879			
Network cluster behavior	0.878	NCB1	0.868	0.895	86.806%	0.837	0.753
		NCB2	0.856	0.806			
		NCB3	0.828	0.899			
		NCB4	0.807	0.842			

4.1.2 Results of data validity tests

The validity test of the questionnaire reflects the suitability of the observation objectives to the actual situation, mainly including content validity calibration and structural validity test. As far as content validity is concerned, the questionnaire used in this study was adapted from existing research results and combined with users' actual information behaviors, and the results of exploratory factor analysis are still good. Therefore, the content validity is reliable. Structural validity generally includes convergent validity and discriminant validity, which can be tested by validated factor analysis. Observables for convergent validity include factor loadings, combined reliability, and average extracted variance values (AVE). Combined with the analysis results in Table 1, it can be seen that the factor loading value of each question item is higher than the theoretical value, the combined reliability value is higher than 0.8, and the average extracted variance (AVE) is greater than 0.7. It can be seen that the observational indexes of the convergent validity are in line with the requirements, which indicates that the convergent validity of the questionnaire passes the test.

The discriminant validity can reflect the significant difference between the potential traits of the model constructs and the potential traits of other constructs, and it is generally considered that the square root of the AVE value of any observed variable is greater than the correlation coefficient with other variables. Table 2 shows the discriminant validity of the measurement scales.

The specific data on the discriminant validity of the measurement scale show that the correlation coefficient of any two observed variables in the questionnaire is less than 0.65, while the square root of the AVE value of any one observed variable is significantly greater than the correlation coefficient with other observed variables. The above observations meet the basic requirements of the model test, indicating that the questionnaire has good discriminant validity.

Table 2: Measure the discriminant validity of the scale

	INT	VAL	USE	INF	COM	PER	NCB
INT	0.872	-	-	-	-	-	-
VAL	0.614	0.847	-	-	-	-	-
USE	0.538	0.328	0.890	-	-	-	-
INF	0.316	0.436	0.446	0.865	-	-	-
COM	0.427	0.416	0.385	0.476	0.887	-	-
PER	0.176	0.258	0.337	0.443	0.512	0.857	-
NCB	0.256	0.237	0.316	0.368	0.368	0.374	0.868

4.1.3 Results of fitting the structural equations

In the field of humanities and social sciences, the causal relationship of the variables in the model is generally verified through the method of path analysis, and the degree of fit between the model and the data is tested by calculating the fit index of the test model. In this study, the chi-square value, degrees of freedom, CFI, TLI and other indexes are selected to test the degree of model fit, and the values of the model fit indexes are shown in Table 3, and Figure 3 shows the fitting results of the structural equation model.

Based on the fitting results, it can be seen that the fitting indices selected in this study have reached the standard or critical value of model fit. It can be seen that the model is well fitted and the model has a good fit with the data. This study analyzed the formation mechanism of college students' online clustering behavior through the research logic of proposing hypotheses, building models, and verifying models. Combined with Figure 3, it can be seen that the model contains a total of eight research hypotheses, of which six research hypotheses are supported

by the validation, i.e., all hypotheses are supported except for H1 and 5 which are not supported. The degree of explanation of college students' online clustering behavior is 73.45%, and the degree of explanation of the endogenous variables included in the model are all higher than 40%, which are 41.73% and 48.95%, respectively. It can be seen that the research model of college students' network clustering behavior constructed based on structural equation model has a good degree of explanation and can well explain the formation mechanism of college students' network clustering behavior.

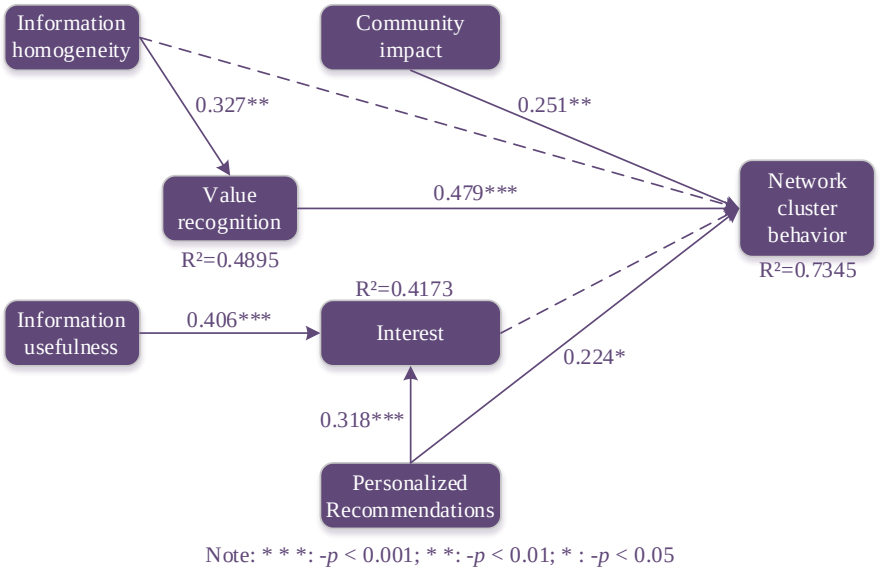

Figure 3: The fitting result of the SEM

Table 3: Model fitting index values

Statistical test quantity	Standard value	Model data	Suitability
Chi-square value/χ^2	---	375.216	---
Degree of freedom/*df*	---	263	---
χ^2/df	<3	1.427	Suitable
RMSEA	<0.08	0.041	Suitable
NFI	>0.9	0.938	Suitable
CFI	>0.9	0.915	Suitable
TLI	>0.9	0.964	Suitable
IFI	>0.9	0.972	Suitable

In summary, network information elements have a greater influence on college students' network clustering behavior, with the most obvious influence of value identity (0.479). Meanwhile, the hypothesis of the relationship between interest factors and college students' network clustering behavior is not verified. Combined with the analysis of the actual information behavior of college students, the possible reason is that college students' reading interest will be greatly satisfied when they browse the information they like, but this satisfaction may only exist in the emotional satisfaction, and will not cause college students to form network clustering behavior.

Only when the values of college students are deeply influenced or even changed in the process of reading, college students may develop network clustering behavior. This finding also confirms that college students' cognition is the endogenous cause of generating network clustering behavior, and further points out that college students' value cognition, rather than emotional cognition represented by interest, is the key factor in the formation of college

students' network clustering behavior. College students' self-selection is the root cause of generating network clustering behavior, and this study confirms this assertion while further pointing out that it is the value cognition that is the important factor causing college students' network clustering behavior. Thus, in the online world, it is feasible to personalize information according to the interests of college students, but in the process of pushing, we should strive for multiple perspectives, and integrate and push information with similar themes but different values, so as to avoid the change of value perception caused by college students' over-acceptance of homogeneous information. In addition, college students need to improve their information literacy and awareness of the value of information. While choosing information according to their interests and preferences, they should take the initiative to browse some valuable information with different values and communicate with groups with different values, so as to improve their information literacy in the process of communication and integration.

4.2 The Evolutionary Laws of College Students' Online Cluster Behavior

4.2.1 Survey on the Evolution of College Students' Online Cluster Behavior

According to the current analysis on network cluster behavior, it can be found that network mass events and network cluster behavior have very distinctive dynamics, and network cluster behavior has different manifestations and characteristics at different time periods when network mass events occur. And the large sector of the research is mostly from a certain point in time to study network cluster behavior, and the dynamic aspects of the research are also mostly qualitative analysis. Therefore, this paper will start from the empirical point of view and do something to supplement the research on network cluster behavior. Research on the evolution of college students' network cluster behavior that is, to analyze the behavior of behavioral network cluster behavior in different time stages, and compare the differences and similarities of the behavior in different stages, so as to derive the evolution of the law of behavior. In terms of specific operation, this article will analyze the manifestations of college students' online cluster behavior in the three stages of online mass incidents, and then compare the differences in the manifestations of college students' online cluster behavior between the "early stage" and the "middle stage", as well as between the "middle stage" and the "later stage" respectively, so as to draw the pattern of the differences in the manifestations of college students' online cluster behavior in the time dimension.

For this study, “network stratification” is chosen as the background material, which mainly refers to the closed and independent network circles formed by college students based on common interests and backgrounds on WeChat, QQ, Weibo and other platforms, where the information cocoon effect is more obvious, and they are susceptible to the influences of extremist remarks and inaccurate information, and the formation of values is more diversified and easily swayed by fragmented information. The formation of values is more diversified and easily swayed by fragmented information. The material designer divided the development period of network stratification into three periods: before, during and after, set up different materials and invited the subjects to read them, and measured the implementation of specific behaviors by the subjects, so as to obtain the evolution law of network clustering behavior.

In order to better define college students' network clustering behaviors, seven types of network clustering behaviors (NCB1~NCB7), including network rumors, network public opinion, network violence, network trial, human flesh search, network spoofing, and network pursuit, are chosen as the classification criteria. For the survey quantification method, this paper mainly adopts a five-level Likert scale, with 1~5, i.e., very non-compliant, non-compliant, uncertain, compliant and very compliant. In this study, students of University T were selected as the research object, and the random number table method was used to sample 500 people to

distribute the questionnaire, and 480 copies were effectively recovered, with an effective recovery rate of 96%. The questionnaire designed in this paper meets the requirements of data standards after the reliability and validity test, and real data can be obtained to reflect the evolution of college students' online clustering behavior.

4.2.2 Evolutionary Laws of College Students' Online Cluster Behavior

The descriptive statistics of college students' online cluster behaviors at different stages are shown in Table 4. In the early stage of online mass incidents, the top three in descending order of mean values are online public opinion, human flesh search and online violence, with mean values of 4.08, 3.24 and 2.95 respectively, indicating that in the gestation stage of online mass incidents, college students have their own attitudes and opinions about the triggering incidents, and college students also follow the process of the incidents through the Internet to track down the truth of the incidents. In the middle stage of online mass incidents, in descending order, the top three mean values are still online public opinion, human flesh search and online violence, with mean values of 3.88, 3.06 and 2.81 respectively, indicating that in the formation and development stage of online mass incidents, the implementation of various types of online clustering behaviors by college students is basically the same as that in the gestation stage, but with a slight difference in the size of the mean values. In the late stage of the online mass incidents, the top three mean values in descending order are still online public opinion, online violence and human flesh search behaviors, but compared with the middle stage, the intensity of the implementation of online violence exceeds that of human flesh search. In the final stage of online mass incidents, college students will not only have their own attitudes and opinions about the incident, but will also agree with the general opinions about the triggering incident in the network, and follow the course of the incident through the network to track down the truth of the incident.

Table 4: Descriptive statistical results at different stages

Behavior	Early stage		Medium stage		Later stage	
	Means	STD	Means	STD	Means	STD
NCB1	2.24	1.33	2.15	1.29	2.53	1.39
NCB2	4.08	1.08	3.88	1.08	3.75	1.13
NCB3	2.95	1.13	2.81	1.16	3.09	1.16
NCB4	2.31	1.24	2.23	1.37	2.03	1.25
NCB5	3.24	1.37	3.06	1.38	2.98	1.42
NCB6	1.96	1.25	1.97	1.31	2.06	1.31
NCB7	2.18	1.31	2.10	1.23	2.35	1.37

In order to study the evolution pattern of college students' online clustering behavior, this paper first studies the pre and mid stages of online clustering events compared to the mid stages of online clustering events, and then compares the mid stages of online clustering events with the late stages, as a way to understand whether the online clustering behavior has changed significantly. Tables 5 and 6 show the results of the two paired samples t-tests for the pre and mid periods, and the mid and late periods, respectively.

According to the test results in Table 5, observing the two-tailed test probability P-value, with a significance level of 0.05 at the confidence level of 95%, the two-tailed probability P-value of all groups is greater than 0.05, and the difference is not statistically significant. It can be assumed that the difference between college students' online clustering behaviors in the gestation stage of online mass events is not significant compared with the mid-development stage.

From Table 6, there is an extremely significant difference between the two periods (P<0.01)

for cyber rumor and cyber public opinion in the middle to late development of cyber mass events, and a significant difference (P<0.05) for cyber trial and cyber pursuit, while cyber public opinion, mansplaining and cyber spoofing do not have a difference in the paired test in the middle and late stages (P>0.05).

In the gestation stage of online mass events, college students will have their own attitudes and opinions about the induced events, and college students will also follow the process of the events and trace the truth of the events through the Internet. The attitude of college students is uncertain as to whether they agree with the general view of the network about the induced event. With the development of the incident, when the online mass incident enters the formation and development stage, college students' performance is basically the same as that of the incubation stage. But when the cyber mass incident enters the final stage, college students' cyber rumor, cyber public opinion, and cyber hunting behavior will strengthen, and cyber judgmental behavior will weaken. In the final stage, the government realizes the seriousness of the cyber mass incident, so it takes a series of measures to rectify the order of cyberspace and releases true information to quell the rumors. At this time, college students have access to more credible information, so they tend to increase the dissemination of information activities about the triggering event and its content through blogs, forums, emails and cell phones.

Table 5: The t test results of two paired samples

Pair	Behavior	Error	*t*	Sig.(2-tailed)
Pair1	Early stage NCB1	0.123	0.452	0.657
	Medium stage NCB1	0.115		
Pair2	Early stage NCB2	0.118	1.736	0.081
	Medium stage NCB2	0.127		
Pair3	Early stage NCB3	0.096	1.268	0.215
	Medium stage NCB3	0.089		
Pair4	Early stage NCB4	0.103	0.593	0.565
	Medium stage NCB4	0.105		
Pair5	Early stage NCB5	0.109	1.498	0.165
	Medium stage NCB5	0.109		
Pair6	Early stage NCB6	0.112	-0.253	0.761
	Medium stage NCB6	0.123		
Pair7	Early stage NCB7	0.125	0.739	0.452
	Medium stage NCB7	0.128		

Table 6: The t test results of two paired samples

Pair	Behavior	Error	*t*	Sig.(2-tailed)
Pair1	Medium stage NCB1	0.115	5.693	0.000
	Later stage NCB1	0.123		
Pair2	Medium stage NCB2	0.093	1.342	0.176
	Later stage NCB2	0.099		
Pair3	Medium stage NCB3	0.105	-3.765	0.002
	Later stage NCB3	0.101		
Pair4	Medium stage NCB4	0.123	2.314	0.036
	Later stage NCB4	0.116		
Pair5	Medium stage NCB5	0.128	0.716	0.484
	Later stage NCB5	0.131		
Pair6	Medium stage NCB6	0.116	-1.314	0.215
	Later stage NCB6	0.118		
Pair7	Medium stage NCB7	0.116	-2.176	0.016
	Later stage NCB7	0.123		

4.3 Solutions to University Students' Internet Clustering Behavior

4.3.1 Taking the initiative in the cyber arena

To do a good job of risk control and management of college students' network cluster behavior, we must first break through the barriers of technology. Therefore, to promote the construction of network position carrier and network discourse, we must learn to leverage new technologies.

First of all, we should try to use 5G communication, wireless positioning, sharing module, cloud service platform and other methods and means to innovate the carrier construction of network virtual community. First, we must learn to use the current situation, keep up with the trend of the times, can make students like and accept the ways and means to carry out the network carrier supervision, using some advanced technology to do the monitoring work, “but not too much interference in the scope of control”, to create a form of rich and colorful, mainstream healthy and upward network culture environment. Secondly, to improve their own side of the network position, seize the “online education” dividend, explore new ideas, new methods, make full use of the Eban, campus official media platforms, etc., to make it live and do real.

Secondly, we should make use of big data, algorithmic pushing and other technologies to implement precise measures and achieve effective risk prevention and education guidance in the creation of online content. We should learn to use big data and other technologies to efficiently, scientifically and accurately grasp the current hotspots, topics of discussion, and focus on the confusion of students, and do a good job of early warning and effective avoidance of network content risks through digital scientific means. At the same time, it is necessary to use data monitoring and analysis tools and other technologies to find college students' hotspots on the Internet, and further classify and analyze different cases, provide targeted education and guidance, and reconstruct the topics that college students pay attention to and participate in the discussion through the scientific setting of recommendation columns, selected lists, and other Internet technological methods, so as to ensure that the breadth and depth of the information received by the students.

4.3.2 Strengthening education on cyber mentality guidance

The network platform is an effective carrier for scientific cultivation of psychoeducation, and it is necessary to give better play to the function and role of the network platform by optimizing the external environment of the platform, enriching the educational content of the platform and other measures.

First, optimize the external environment of the psychological education network platform to create a healthy atmosphere for network education. On the one hand, we should take the socialist core values as the lead, use the mainstream ideology to concentrate the soul and shape a good cultural atmosphere of the network platform. At the same time, it is necessary to open the network platform interface, docking mainstream authoritative media, from which educational materials are selected to actively guide young people to form correct values. On the other hand, educators should change the top-down education mode, and have equal dialogues and exchanges with young people, take the initiative to guide young people to correctly face the undesirable network phenomenon, and give full play to the function of communication and diversion. At the same time, they should strengthen their own media literacy, take the initiative to learn new knowledge and skills related to network platforms, better adapt to the development of the times, and serve the growth of youth.

Secondly, enrich the content of the psychological education network platform and diversify the modules of the innovative network education platform. On the one hand, make full use of modern information technology to integrate the essence of mainstream media resources and

enhance value leadership. Tap into the educational elements of various movie and television works to improve the attractiveness of the content. Extract educational materials from life to strengthen the relevance of the content. On the other hand, build a perfect hardware and software infrastructure to ensure that the online education platform keeps pace with the times. Strengthen the construction of modules, add articles and other relevant columns on the platform, and actively carry out activities such as poetry recitation contests and thematic debates, so as to ensure that high-frequency interactions are maintained in the operation of the platform, and to enhance the stickiness of users with high-frequency interactions to improve the influence of the network platform.

4.3.3 Sound public opinion risk management mechanism

(1) Establishment of public opinion monitoring and early warning mechanisms. The mass media should have a high degree of sensitivity in the industry in order to turn passivity into initiative, and emphasize the preparation of scientific and reasonable emergency response plans for monitoring public opinion on the Internet. Especially, if the mass media want to achieve effective guidance of public opinion on emergencies, they must pay constant attention to public opinion trends, and monitor and analyze them in depth. They should grasp the attitudes, demands and focuses of all parties in the cluster, take the initiative to intervene at the right time, analyze objectively, reason with “temperature”, pay attention to ways and means, and do a good job in guiding the direction of public opinion.

(2) Cultivate a diversified body of public opinion guidance. The mass media is the main force of public opinion guidance, and has a strong say in the screening of information content. However, with the emergence of new media such as blogs, microblogs, and WeChat, every netizen may become a source of information, and the mechanism of public opinion generation is also very different from that of traditional media, especially some social elites and network Vs, who have a great influence on the generation and trend of public opinion, and become “opinion leaders” in the public opinion arena. Therefore, the mass media should follow the trend of the times, establish a diversified information delivery platform, and cultivate a group of “opinion leaders” who can influence the direction of public opinion, and who are able to understand the general situation, take the overall situation into account, and have feelings, so as to realize the diversification of the main body of public opinion guidance.

(3) Promote the integration and positive interaction between the mainstream media and the public opinion field. Whether it is the positive effect, neutral effect or negative effect of the cluster behavior, it is the public's emotional catharsis and expression of opinions. Nan Zhenzhong suggests that there are currently two opinion forums in China, one is the mainstream media opinion forum, such as party newspapers and TV stations, and the other is the civil opinion forum, such as microblogs, WeChat, QQ space and other self media. The former is characterized by authority and credibility, and the latter is characterized by advantages in topics and effectiveness. To open up the two opinion forums and realize the positive interaction between the civil society and the government is an important means to promote the formation and development of the mobile network opinion forum. In this way, we can better respect the public's right to know, the right to speak, etc., to solve the “last kilometer” problem, guide the public to rationally express their demands, release the public opinion “weir”, and nip in the bud the potential factors that may lead to negative effects of clustering behavior.

5 Conclusion

Based on the influencing factors of college students' network clustering behavior, the article analyzes the influencing path of college students' network clustering behavior with the SEM

model, explores its evolution law, and gives a solution to college students' network clustering behavior. It is found that network information elements have a greater influence on college students' network clustering behavior, among which the influence of value identity is the most obvious. Therefore, in order to promote the standardized development of university students' online clustering behavior, it is necessary to further control the initiative of the online field, actively guide university students to carry out psychological education, and optimize and improve the risk management mechanism of public opinion.

While the article has achieved the research results, there are some limitations. For example, only one online group event was used for the evolution of college students' online clustering behavior, and the results may not be generalizable. Therefore, in the subsequent research, we will further expand the scope of the research sample to provide reliable and universal research results for regulating college students' online clustering behavior.

Funding

This work was supported by:

1. Henan Province Soft Science in 2025: Research on the Impact and Optimization Path of Changes in School Age Population on the High Quality Development of Private Higher Education in Henan Province (Project Number: 252400410490);

2. Doctoral Research Fund Project of Zhengzhou University of Economics and Business in 2025: Research on the formation mechanism and public sentiment guidance mechanism of College Students' network cluster behavior.

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