

# Integrating TAM and UGT to Explore Motivations of using Social Media for News Reading among Chinese College Students

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## Abstract

This study investigates the motivations of Chinese college students to use social media to read news. By integrating the TAM and UGT frameworks, this study examines the impact of users' perceptions for media technologies and intrinsic needs on their usage intentions. The findings show that Chinese college students' perceived ease of use and usefulness of media technologies influences their intention to use social media for news reading. In addition, the cognitive, social, and affective satisfaction that participants derive from social media use are also motivational factors for Chinese college students to use social media for news reading. The research contributes to the understanding of individuals' perception, motivation, and intention in social media usage for news reading and sharing. The practical implications suggest that social media organizations can enhance content presentation through technological improvements and personalized features like intelligent recommendations, thereby enhancing users' news reading experience. This study creatively combines the TAM and UGT frameworks to develop a robust conceptual model for examining the motivational factors driving contemporary Chinese college students' use of social media for news reading.

**Keywords** Social Media, Digital Media, Use and Gratification Theory (UGT), Technology Acceptance Model (TAM), Motivation, News Reading, Intention

## Introduction

By the end of December 2021, China had a whopping 1.032 billion netizens and an internet penetration rate of 73.0%, an increase of 42.96 million compared with the end of 2020 (CNNIC, 2022). Nielsen's statistical report (2021) pointed out that 18-34 years old population is the most active social network user (Newman et al., 2021). Social media in communication and entertainment applications is gradually changing traditional lifestyle, increase people's well-being in many ways, especially the impact on young people (Sahharon et al., 2018; Collin et al., 2015).

Mobile devices are widely used and occupy a pervasive position in most households (Rainie et al., 2012; Yuan, 2011). The maturity of Internet and mobile technology provides better

conditions for the popularization and perfection of social media. As of July 2019, the ranking of the world's most popular social media based on the number of active users shows that : Facebook ranks first with 2.375 billion active users, followed by Youtube and WhatsApp in second and third place with 2 billion and 1.6 billion active users respectively (Statista, 2019). In today's society, social media are fully integrated into every aspect of people's daily lives, as they are used frequently by people all over the world (Statista, 2019).

The continuous development of network technology and the update and iteration of media equipment make the Internet an indispensable part of people's daily life and affect people's various behaviors (McMillan & Morrison, 2006), including human reading methods, and news reading is not limited to facing the traditional way of reading text. Compared with traditional media, Internet provides the audience with more options and control in the process of news selection (Tewksbury, 2003). Media institutions have regarded social networking application as a way to disseminate news information or contact audience, offering users with a series of share and recommend the mechanism of news content (Singer et al., 2011).

Readers may stumble upon news while engaging in something else on the Internet and recognize the unexpected news as an accidental news exposure. For many users, occasionally contacting and browsing online news has become an important way for them to learn about new events (Tewksbury, 2003). However, some scholars believe that online news reading is mostly a habitual behavior, and news consumers make unconscious decisions (Yadamsuren & Erdelez, 2011).

A survey of 4,654 Americans found that 62% get news and information through social networks. Receiving news on social media is very popular among groups of all ages, genders and incomes (Pew Center, 2016). More and more Americans follow social media to receive daily news. In contrast, ratings for cable news has fallen 8% in 2015, including Fox News, MSNBC, and CNN (Pew Center, 2016). In addition, print newspapers are declining in popularity, with weekly circulation dropping 19% over the past decade (Pew Center, 2016).

Social media like Facebook, WhatsApp, WeChat, Youtube, Line, Instagram have transformed user's communication methods by innovating and optimizing the functions and services. Along with the rapid development and popularization of various social applications, it is significant to understand the influential factors of social media usage intentions and explore users' needs.

### **Theory and Hypothesis**

Based on the key structures of TAM (Davis, 1989) and UGT (Katz, 1974), the researcher developed an appropriate research framework and formulated specific hypotheses.

#### *Technology Acceptance Model (TAM)*

TAM, created by Davis, was intended to anticipate and detect the acceptance and usage of a new technique by the user (Davis, 1989). Li et al.(2010) pointed out that TAM attempts to account for the reasons for user's decision on whether or not to adopt a technique. The perceived ease and usefulness for individuals are identified as the key variables that directly or indirectly affect their behavioral intentions (Rauniar et al., 2014; Marangunić & Granić, 2015). This model has been widely used in existing related studies, and the general applicability makes TAM the most commonly used model for studying media technology acceptance (Al-Qaysi et al., 2020; Al-Ghaith, 2015). For example, TAM has been used to

measure users' beliefs and attitudes towards social media technologies such as Facebook, Twitter, etc. and how users' perceptions of these technologies influence their behavior and intentions to adopt these mediums (Kwon et al., 2014; Lee et al., 2012; Liu & Yang, 2014; Phuong & Vinh, 2017; Teo, 2016). Many people use certain techniques in search of inner satisfaction, which can influence their intention to use technology (Camilleri, 2020). Nevertheless, domestic research on the acceptance of a certain social media technology is still scarce. Therefore, the research gap in this area will be filled by examining the influence of the perceived ease and usefulness of social media technology among contemporary Chinese college students on their intention of using social media for news reading.

Perceived ease of use is considered to be the extent to which an individual believes that a particular system or technology can be used easily and effortlessly. Perceived usefulness refers to the extent users regard a certain technology or system as effective in improving their performance (Davis, 1989). In other words, it's a factor that decides whether an individual find technology use is beneficial for what he or she wishes to do. In addition, as for the relationship between perceived ease of use and perceived usefulness, previous studies have confirmed a close positive relationship between these two factors (Munoz-Leiva et al., 2017; Nagy, 2018). If the technology is perceived to be easy to operate and use, users tend to find it equally useful. On the contrary, if the media technology is too complicated to operate, they tend to not aware of its usefulness (Tefertiller, 2020; Yang & Lee, 2018). Hence, The following hypothesis can be proposed

H1. Individuals' perceived ease of use social media technology will positively and significantly influence their perceived usefulness of social media.

The significant impact of perceived ease and usefulness on users' intention to use a certain media has been confirmed in many studies related to media technology (Venkatesh, 2000; Joo & Sang, 2013). Both ease of use and usefulness of streaming media technology are positively correlated with individuals' behavioral intentions when using streaming media devices (Yang & Lee, 2018). The positive correlation between these two factors and behavioral intention exists in the use of various media applications, such as purchase intention on social media (Rahaman et al., 2022), distance learning on media (Sefrika & Alawiah, 2020), online streaming services (Camilleri & Falzon, 2021), etc. Hence, the following hypotheses can be proposed

H2. Individuals' perception of the ease of use of social media technology will positively and significantly influence their intentions of using social media to read news.

H3. Individuals' perceived usefulness of social media technology will positively and significantly influence their intentions of using social media to read news.

#### *Uses and gratifications theory (UGT)*

Individuals' acceptance of technology is influenced by their extrinsic motivations, including perceptions of usefulness and ease mentioned above (Venkatesh & Davis, 2000; Joo et al., 2018). TAM, however, does not include a structure for measuring an individual's intrinsic motivation. As one of the most well-known theories related to media studies, UGT explains why and how users choose certain media to meet their specific social and psychological needs in the field of mass communication study (Katz, 1974).

UGT is regarded as a theory that focuses on user's needs and motivations (West & Turner, 2010). It can be seen from the existing research that many Chinese scholars have applied UGT

to the study of users' motivation, needs and satisfaction in using social media (Chen et al., 2017; Gan, 2016; Hou et al., 2018). For example, information needs, entertainment needs, social needs, etc. are all considered as the motivation or purpose for users to use social media (Chen et al., 2020; Dolan et al., 2016). It has been elucidated that gratifications obtained from using social media were the prominent factors driving Chinese undergraduate students to use social media (Pang, 2018).

In the existing research, UGT has been used in the research of different media in different backgrounds and applications. Users' social, psychological or spiritual needs can be met to varying degrees through the use of media technology (Dhir et al., 2016). For instance, seeking information or sharing it with relatives, friends and supporters (Dolan et al., 2016; Troise & Camilleri, 2020), purchasing products and services on media platforms (Talwar et al., 2020; Yang & Ha, 2021; Kaur et al., 2020), using social media to entertain and relax (Aydin, 2021; Kuoppamäki et al., 2017; Dolan et al., 2016). Alternatively, social interaction, maintaining social relationship or seeking emotional comfort through media technology (Malik et al., 2016; Chen et al., 2020).

Lee and Ma (2012) found that information seeking needs and social needs are related to users' intention to share news. Hashim et al (2015) studied the use of mobile learning by adult students based on UGT theory and found that satisfaction of cognitive, social and affective needs were their main reasons and motivations for using m-learning. In this study, these three variables were also used to verify whether they were motivational factors influencing students' use of social media for news reading.

Social media can provide users with information about transactions, news, shopping, activities, etc. that are closely related to their daily lives (Whiting & Williams, 2013). The degree of satisfaction of users' cognitive needs obtained through social media is positively correlated with their attitudes and intentions when using social media (Camilleri & Falzon, 2021; Chung & Austria, 2010). Thus, the following hypothesis can be proposed that:

H4. Individuals' cognitive needs will positively and significantly influence their intentions to use social media for news reading.

Individual needs including integration needs, social interaction needs and desire for social welfare (Hennig-Thurau et al., 2004), which has been considered the critical motivation for users to access the internet. Thus, the following hypothesis can be proposed that:

H5. Individuals' social needs will positively and significantly influence their intentions to use social media for news reading.

Users can seek emotional satisfaction (which has the same meaning with 'affective' satisfaction) through online streaming technology, get themselves in a good mood, relieve pressure and relax in their leisure time. Obviously, this also helps users better meet their entertainment needs (Camilleri & Falzon, 2021). Thus, the following hypothesis can be proposed that

H6. Individuals' affective needs will positively and significantly influence their intentions to use social media for news reading.

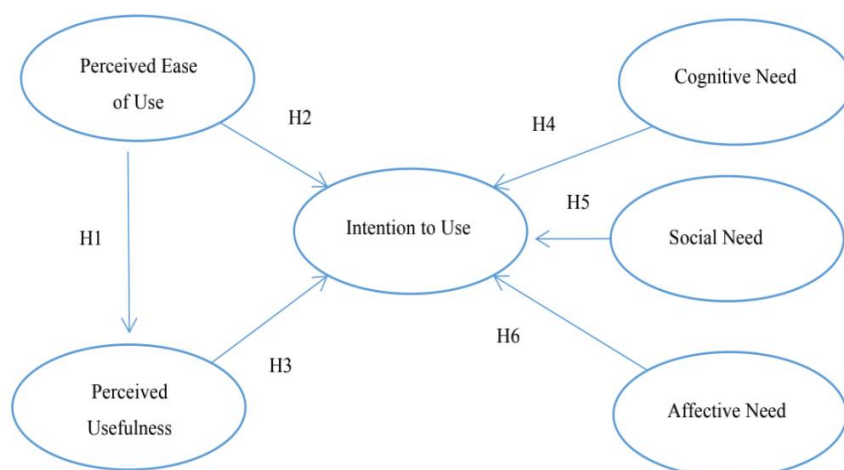


Figure 1: The conceptual model and hypotheses formulation

### Data Collection

Data collection includes sampling methods, selection of research samples, and research instrument and measuring items required for questionnaire surveys.

### Sampling Design

The survey object of this study is selected in Liangxiang University City, Fangshan District, Beijing. Beijing as the capital of China, is very rich in educational resources, especially the resources of top schools, which provide a good sampling environment. Liangxiang University Town is a relatively large-scale university gathering place in the southwestern part of Beijing, and it is also one of the two major higher education parks in Beijing. Currently, five universities have settled in: University of Social Sciences, Beijing Institute of Technology, Beijing University of Traditional Chinese Medicine, Capital Normal University, Beijing Technology and Business University (Baidu Baike). The college students here come from various provinces and cities in China, which is convenient for us to conduct questionnaire surveys.

We adopted a random sampling method and a data collection tool of a structured questionnaire to measure research variables such as motivation and intention of college students to use social media for news reading. We collected 378 questionnaires from the respondents. After data screening, 18 invalid questionnaires were eliminated, and the final 360 questionnaires were determined. In Structural Equation Modeling, a sample size of more than 200 is considered to provide adequate statistical strength to analyze the data (Hoelter, 1983; Hoe, 2008). It can be seen that the sample size of 360 in this study is sufficient to test the fitting model and research hypothesis.

### Research Instrument

To measure individuals' ease of use (PEoU) and perceived usefulness (PU) of social media, we have adopted scale from Davis' TAM (1989) and each of these two constructs has 3 items. The items used of the constructs 'Cognitive needs', 'Affective needs' and 'social needs' are from Hashim et al (2015) each of these constructs comprises 3 items which showed good reliability

for mobile applications and social media (Hashim et al.,2015). Items of ‘Intention to use’ come from UTAUT scale (Venkatesh et al., 2012) and Davis’ TAM scale (1989) .Each item of all variables in the study were measured on 5-point Likert’s scale (1 Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree).

Table 1

*The measuring items**Perceived Ease of Use*

- PEoU1 I would find social media flexible and easy to read news  
 PEoU2 It is easy for me to get news in the form of pictures, texts, videos on social media  
 PEoU3 I find it easy to do news reading on social media via phone, tablet, etc

*Perceived Usefulness*

- PU1 Social media allows me to get news faster than traditional media  
 PU2 Social media technology has enriched my news reading experience  
 With a good Wi-Fi or Internet connection, I can read news from social media  
 PU3 anywhere I like

*Cognitive Need*

- CN1 I use social media to help me understand many things  
 CN2 I use social media to search for new information  
 CN3 I use social media to search for useful information

*Social Need*

- SN1 Social media has provided me with a sense of human connection  
 Using social media to read the news allows me to get feedback and interaction  
 SN2 from others  
 SN3 Using social media has improved my ability to communicate with others

*Affective Need*

- AN1 I love talking to people about social media technology  
 AN2 News layout, illustrations and typography look great on social media  
 AN3 I enjoy using social media for news reading

*Intention to Use*

- ITU1 I plan to use social media to read news in the future  
 ITU2 I anticipate that I will use social media a lot to read the news  
 ITU3 I will always enjoy using social media to read the news  
 ITU4 I would recommend others to use social media to read the news

**Data Analysis Results**

The research data from the questionnaires were run in the SPSS 25.0 and AMOS 26.0 program. Data analysis for this study included general sample description, confirmatory factor analysis (CFA) and path analysis. The reliability and validity of the measurement model were tested by SPSS and AMOS, and the research hypotheses were verified by structural equation modeling.

*Descriptive Statistics*

Table 2 shows that the mean scores (M) of the study constructs ranged from 3.478 to 4.197, since all of the M values were higher than the mid-point of 3, it can be seen that the survey

items in the model were approved by respondents. The highest M values came from CN2 (4.197), ITU3 (4.197) and ITU2 ( 4.111). The scores of the SD ranged from 0.906 (for ITU3) to 1.185 (for SN1).

Nunnally and Bernstein (1994) recommend the Cronbach alpha coefficient should exceed 0.70. Under this standard , the reliability of the measurement scale was tested and it is obvious from Table 2 that Cronbach's alpha values of all variables are between 0.705 and 0.852, the constructs have coefficient of internal consistency under the rules of thumb that the value must be 0.70 or above to represent as acceptable (Dikko, 2016). Therefore, the measurement scale used in the study can be considered to meet the reliability criteria.

Table 2

*Reliability analysis results*

Construct	Items	Mean Scores	Standard Deviations	Cronbach $\alpha$
Perceived ease of use	PEoU1	3.486	1.147	0.792
	PEoU2	3.878	1.048	
	PEoU3	3.686	1.076	
Perceived usefulness	PU1	3.717	1.057	0.705
	PU2	4.100	0.942	
	PU3	3.917	0.984	
Cognitive need	CN1	3.842	1.037	0.748
	CN2	4.197	0.903	
	CN3	4.022	0.987	
Social need	SN1	3.478	1.185	0.852
	SN2	3.769	1.156	
	SN3	3.625	1.185	
Affective need	AN1	3.608	0.993	0.740
	AN2	3.986	0.925	
	AN3	3.806	0.994	
Intention to use	ITU1	3.933	1.029	0.791
	ITU2	4.111	0.955	
	ITU3	4.197	0.906	
	ITU4	4.022	0.961	

*Confirmatory Composite Analysis*

This research uses Structure Equation Model (SEM) to investigate the measuring quality (Ringle et al.,2014). AMOS will be used for confirmatory factor analysis.

Factor loadings, Average Variance Extracted (AVE) and Composite Reliability (CR) can be used to verify Convergent validity as proposed by (Hair et al., 2010). According to the guidelines recommended by Hair et. al (2006), factor loadings should be higher than 0.50 , the standardized loading values ranged from 0.660 to 0.831 in this research. Furthermore, CR in this research were between 0.707 and 0.852, AVE were from 0.446 to 0.658, which fits the recommendation of Fornell and Larcker (1981): the CR is greater than the cut-off point of 0.7 and AVE is higher than the cut-off point of 0.4 (Fornell&Larcker, 1981), and shows that the convergent validity is high (Table 3).

Table 3

*Confirmatory factor analysis*

Factor	Items	Standardized Loadings	CR	AVE
1 Perceived ease of use	PEoU1	0.772	0.794	0.563
	PEoU2	0.776		
	PEoU3	0.700		
2 Perceived usefulness	PU1	0.662	0.707	0.446
	PU2	0.680		
	PU3	0.661		
3 Cognitive need	CN1	0.703	0.750	0.501
	CN2	0.746		
	CN3	0.672		
4 Social need	SN1	0.786	0.852	0.658
	SN2	0.831		
	SN3	0.815		
5 Affective need	AN1	0.715	0.741	0.488
	AN2	0.700		
	AN3	0.681		
6 Intention to use	ITU1	0.680	0.791	0.487
	ITU2	0.699		
	ITU3	0.749		
	ITU4	0.660		

*Structural Model Evaluation and Hypotheses Testing*

The model fit indices of the structural model are as follows:  $\chi^2/df=1.21$ , RMSEA=0.024, GFI=0.954, NFI=0.93, CFI=0.987, AGFI=0.937, TLI=0.984 and IFI=0.987 (Table 4). The results showed that the fitting degree of the final model was satisfactory, and each fitting indicators was within the recommended range, which means that the structural model fit the data well (Hair et al., 2006).

Table 4

*Model Fit Indicator*

Common Indicator	$\chi^2$	df	p	$\chi^2/df$	RMSEA	GFI	AGFI	CFI	NFI	TLI	IFI
Judgement Criteria	-	-	>0.05	<3	<0.10	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9
Value	169.411	140	0.046	1.21	0.024	0.954	0.937	0.987	0.93	0.984	0.987

From the results of path analysis (Table 5), the verification of each hypothesis can be concluded as follows: When PEoU affects PU, the standardized path coefficient value (standardized estimate) is  $0.377 > 0$ , C.R.=5.081,  $p < 0.001$ , indicating that PEoU will positively and significantly influence PU, H1 is established. When PU affects ITU, the standardized estimate is  $0.250 > 0$ , C.R.=3.768,  $p < 0.001$ , indicating that PU will positively and significantly influence ITU, H2 is established. When PEoU affects ITU, the standardized estimate is  $0.233 > 0$ ,

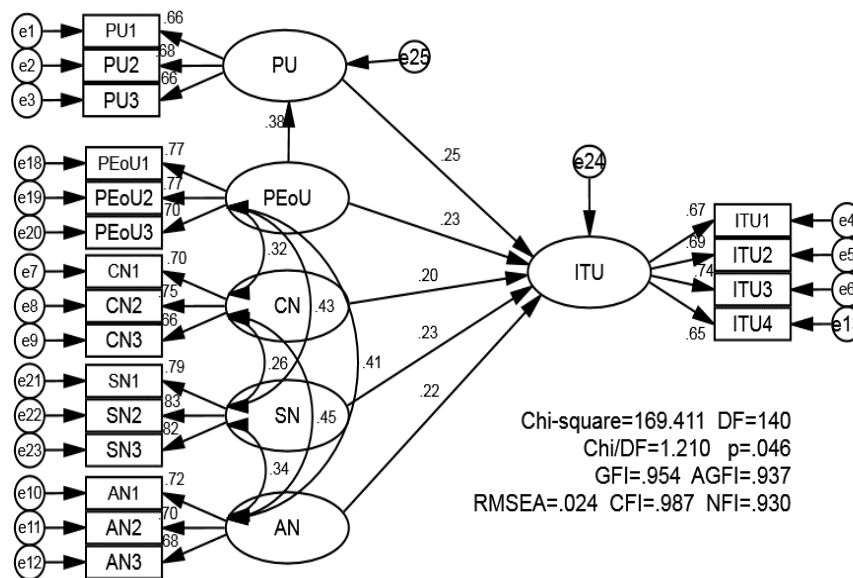


C.R.=3.200,  $p=0.001$ , indicating that PEOU will positively and significantly influence ITU, H3 is established. When CN affects ITU, the standardized estimate is  $0.200 > 0$ , C.R.=2.985,  $p=0.003 < 0.01$ , indicating that CN will positively and significantly influence ITU, H4 is established. When SN affects ITU, the standardized estimate is  $0.233 > 0$ , C.R.=3.791,  $p < 0.001$ , indicating that SN will positively and significantly influence ITU, H5 is established. When AN affects ITU, the standardized estimate is  $0.222 > 0$ , C.R.=3.073,  $p=0.002 < 0.01$ , indicating that AN will positively and significantly influence ITU, H6 is established. In summary, the results of running data show the positive influence of each factor on each endogenous variable. Figure 2 shows the structural equation modeling results.

Table 5  
Hypotheses testing results

Y	X	UnStd. Estimate	S.E.	C.R.	P	Std. Estimate	Decision	
PU	<---	PEoU	0.301	0.059	5.081	***	0.377	Supported
ITU	<---	PU	0.246	0.065	3.768	***	0.250	Supported
ITU	<---	PEoU	0.183	0.057	3.200	0.001	0.233	Supported
ITU	<---	CN	0.189	0.063	2.985	0.003	0.200	Supported
ITU	<---	SN	0.173	0.046	3.791	***	0.233	Supported
ITU	<---	AN	0.215	0.070	3.073	0.002	0.222	Supported

Figure 2 : structural equation modeling results



In addition, the hidden hypothesis about 'PU is a mediating variable between PEOU and ITU' can also be derived from the research framework. Bias-corrected bootstrap confidence interval, which was set at 95%, was used to determine if there was a statistical difference between the indirect effect and zero (Baron & Kenny, 1986). The results of Table 6 show that the 95% CI of the indirect effect is 0.033-0.141, indicating a mediating effect; the 95% CI of the direct effect is 0.064-0.315, indicating that the mediating variable PU plays a partial

mediating role between PEOU and ITU, and this result is in line with the standard recommended by Zhao et al. (2010) .

Table 6

*Bootstrap results of mediated effects*

Parameter	Estimate	Lower	Upper	P	Conclusion
<b>InDirect Effect</b>					
PEoU>>PU>>ITU	0.074	0.033	0.141	0.000	Partial Mediation
<b>Direct Effect</b>					
PEU>>ITU	0.183	0.064	0.315	0.004	

Remarks: The upper and lower limits of 95% CI are 'Lower' and 'Upper' in this table

**Conclusion**

In this study, a comprehensive framework of technology acceptance model (TAM) and use and satisfaction theory (UGT) was adopted to explore the motivation of Chinese college students to use social media to read news. The findings reveal that college students' perceptions of the ease of use and usefulness of media technology, as well as the cognitive, social and affective satisfaction they derive from social media use, are key drivers of their use of social media to read news.

In theoretical sense, through the innovative combination of TAM and UGT, this study provides a new theoretical perspective for the motivation factors that drive modern Chinese college students to use social media to read news, and promotes the application and development of these two theories in the study of social media use motivation.

In a practical sense, these findings provide powerful strategic suggestions for social media organizations, that is, improving content display through technological improvements and enhancing personalized functions (such as intelligent recommendation) can effectively enhance users' news reading experience, and thus increase their willingness to use social media to read news.

In general, the conclusions of this study not only enrich our understanding and application of TAM and UGT theories, but also provide practical strategic suggestions for social media platforms. On this basis, future research can further explore the various factors that affect the reading behavior of social media news, and provide more comprehensive and in-depth insights for theoretical research and practical application.

**Limitations And Future Research Directions**

In terms of media properties, this research did not specify whether the social media used by the respondents was free or paid. Therefore, future research could differentiate between different service providers of social media. Stratified sampling was not carried out considering factors such as gender and age in this study and simple random sampling was adopted. Limited by the small sample size and the form of random sampling, the representativeness of the sample is not completely convincing. Therefore, future research can be more refined in sampling methods and sample selection.

In addition, colleges in China are mainly divided into comprehensive universities and vocational colleges, Chinese college students mainly come from these two types of schools (Statistics, 2010). Although they are all colleges, students also have certain differences in their cognitive level and educational level. The samples in this study are all from

comprehensive universities, and students from vocational colleges are not included. Therefore, future research can control this factor as an extraneous variable, such as classifying the sample college into comprehensive university and vocational college. In conclusion, limitations still exist in this study, scholars can supplement and improve related research from new perspectives and methods in the future.

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