

# Actively Imagine: Exploration of Cognitive Emotion Regulation Strategy of College Students Under "Loss Avoidance" Network Fraud

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## Abstract

Through the research of the susceptibility of college students and the tracking research of the network fraud, using the questionnaire survey and semi-structured interview, the influence of the cognitive emotion regulation strategy and the level of irrational belief on their susceptibility to network fraud is discussed. Results: College students were positively associated with tolerance, meditation, disaster, blame for others, irrational beliefs, low self-efficacy, absolute desire for the self, and absolute desire for the environment. Usually, due to the use of open network and the lack of awareness of fraud prevention, college students are exposed to fraud, and are vulnerable to negative emotions in the process of being cheated. The scores of the students in the cheated group are significantly higher than the students in the group not cheated, and the students in the cheated group improve their positive assumption ability after being cheated.

## Keywords

College students; avoidance online fraud; positive thinking; irrational belief; rooted theory.

## 1. Introduction

In recent years, due to the sharp increase in the Internet penetration rate, the number of Internet users has surged, and telecom network fraud occurs frequently. Due to the lack of social experience, college students have become one of the main targets of telecom and network fraud. At present, the technique of telecom fraud is divided into: avoid loss type, profit type, social type three categories. In the telecom fraud methods published by the Ministry of Public Security in 2016, there were 22 kinds of damage avoidance fraud methods, accounting for 45.83%. This study will focus on the damage avoidance fraud, which is a serious threat of the people of one of the main fraud methods.

Network fraud refers to the use of network communication technology means, through deception to obtain a large amount of money economic crimes. The loss avoidance fraud is the type of fraud that the swindler makes up or creates the loss scene of the victim, and then uses the victim's desire to avoid the loss and recover the loss to guide the victim to provide personal information or property. Typical damage avoidance fraud includes fake public security law, campus loan fraud, etc. According to the different triggers, harm avoidance fraud methods can be divided into three categories: threat fraud, emergency fraud and avoid abnormal loss fraud. At the same time, some experiments found that negative emotions with high motivation intensity, such as fear, anxiety, and disgust, would narrow individual cognitive processing and drive individuals to avoid frightening things or situations.

The susceptibility to network fraud is the tendency of individuals to make irrational and influence their own interests due to the difficulty to resist various temptations and the lack of accurate perception and identification of the information with fraud intention in the network

risk situation. However, the existing studies mainly focus on the general group and the elderly, and there are few research tools for the vulnerability of college students, and there is a lack of research on the influence mechanism of the vulnerability of college students. However, college students who are vulnerable to fraud tend to have a high level of irrational belief, and they are more likely to produce distorted, unreasonable views and views and high levels of negative emotions in the face of stress events, thus prompting them to invest more sunk costs in the process of fraud.

Cognitive emotion regulation, also known as cognitive coping, refers to the cognitive efforts made by individuals to process life events that come from within or outside and exceed the burden of their own resources. At present, there are few studies related to cognitive emotion regulation strategies and online fraud, but through the research of domestic scholars on online fraud, it can be learned that the victims often produce a lot of negative emotions in the process of fraud. In the case of stress response, more affected by tension, thinking consciousness, the ability to doubt decreased. Including cheaters in the network fraud to the victim to "persuade", to reduce the difficulty of fraud. These all involve the participation of cognitive emotion regulation strategies.

In conclusion, this paper will test the predictive role of cognitive emotion regulation strategies and irrational beliefs on the vulnerability to online fraud among college students through questionnaires. Through the interview method and coding analysis, the characteristics of the cognitive emotion regulation strategies and irrational beliefs of the cheated college students are explored. In order to comprehensively explore the psychological mechanism and characteristics of college students cheated, to assist colleges and universities and relevant departments to carry out more targeted anti-fraud education for college students, so as to reduce the rate of college students network fraud.

## **2. Study 1: Study on the Relationship Between Susceptibility to Online Fraud and Cognitive Emotion Regulation Strategies and Irrational Beliefs Among College Students**

### **2.1. Study subjects**

By random sampling method, 97 college students from a university in Suzhou were selected as the research group. After excluding invalid questionnaires such as regular answers, 66 valid questionnaires were obtained, with an effective rate of 68.04%. Among them, 41 were male, accounting for 62.12%, and 25 were female, accounting for 37.88%.

### **2.2. Research tools**

Questionnaire:

(1) the questionnaire of college students' susceptibility to online fraud

The scale, compiled by Li Meng, has 19 items, including four dimensions: personal information disclosure, open network use, lack of anti-fraud knowledge and easy to be persuaded. Five points are used (1= very disagree, 5= very agree). The higher the score, the higher the susceptibility to online fraud. In the present study, its Cronbach's  $\alpha$  coefficient was 0.88.

(2) Cognitive Emotion Regulation Questionnaire, CERQ

The scale was compiled by Dutch scholar N.Garnefski and revised by Wei Yimei et al., with 36 items, including eight dimensions: self-blame, tolerance, meditation, positive adjustment, positive thinking, self-comfort, catastrophizing and blame others, with five points (1= never, 5= always). Higher scores on the subscale indicate the more often individuals adopt this cognitive emotion regulation strategy. In the present study, its Cronbach's  $\alpha$  coefficient was 0.92.

(3) Irrational belief scale of college students

The scale compiled by Liu Fuhan, a total of 22 items, contains five dimensions: F1 low self efficacy, F2, F3 low absolute self evaluation, F4 absolute desire of environment, F5 absolute to others, contains two secondary factors, secondary factors a "absolute desire" (F2, F4, F5), secondary factor two "depressive self concept (F1, F3), using five points (1= completely disagree, 5= completely agree), two for reverse score, the higher the score represents the higher the degree of irrational belief. In the present study, its Cronbach's  $\alpha$  coefficient was 0.84.

Statistical analysis: data entry and correlation analysis using SPSS26.0, and  $P < 0.05$  was considered as statistically significant.

### 2.3. Analysis of the study results

#### 2.3.1. Correlation analysis of various dimensions of online fraud vulnerability and cognitive emotion regulation strategies

As shown in Table 1, there is a significant positive correlation between college students and the tolerance, meditation, catastrophization and blame of cognitive emotion regulation strategies.

**Table 1.** Results of the analysis of online vulnerability and cognitive emotion regulation strategies

	1	2	3	4	5	6	7	8	9
1 Internet fraud vulnerability total score	1								
2 Self-blame	0.116	1							
3 Tolerance	.341**	.414**	1						
4 Musical meditation	.366**	.499**	.346**	1					
5 Positive adjustment	0.225	.352**	.556**	.270*	1				
6 Positive vision	0.007	.389**	.417**	.402**	.533**	1			
7 Self comfort	0.154	.338**	.314*	.318**	.256*	.420**	1		
8 Disaster	.327**	.466**	0.227	.546**	0.089	0.098	.396**	1	
9 Reprove others	.353**	.360**	0.110	.576**	0.170	0.185	.499**	.694**	1

Note: \* indicates that the  $P < .05$ , \*\* representation  $P < .01$ , \*\*\* representation  $P < .001$ .

#### 2.3.2. Correlation analysis of college students 'online fraud vulnerability and college students' irrational beliefs

As shown in Table 2, the susceptibility to fraud of college students on the Internet is significantly positively correlated with their total score of irrational beliefs, low self-efficacy, absolute desire for self and absolute desire for the environment.

### 2.4. Discussion

#### 2.4.1. There is a significant positive correlation between college students and the tolerance, meditation, catastrophizing and blame of cognitive emotional regulation strategies

In the correlation analysis of college students' Internet fraud vulnerability and cognitive emotion regulation strategies, there is a significant positive correlation between the vulnerability and tolerance, meditation, catastrophizing, blame of others, or non-adaptive emotion regulation strategies. Garnefski et al. studied the characteristics of cognitive emotion regulation and found that people often adopt non-adaptive emotion regulation strategies after

experiencing negative life events can lead to an increase of depression and anxiety symptoms. The results confirm Garnefski's view that college students with a high level of susceptibility to network fraud tend to adopt non-adaptive emotion regulation strategies. We can speculate that easily cheated college students are more difficult to cope with pressure, so as to face the intimidation, persuasion and threats in fraud situations, they are more likely to generate stress reactions and become the victims of online fraud.

**Table 2.** Analysis results of college students 'vulnerability to online fraud and college students' irrational beliefs

	1	2	3	4	5	6	7
1. Total score of vulnerability to fraud	1						
2 The total score of irrational beliefs	.376**	1					
3. Low perceived self-efficacy	.292*	.727**	1				
4. Absolute desire for the self	.408**	.631**	.312*	1			
5 Low self-evaluation	0.148	.654**	.804**	.266*	1		
6. Absolute desire for the environment	.271*	.633**	0.157	.264*	0.114	1	
7 Absolute desire for others	0.091	.584**	0.138	.336**	0.141	.395**	1

Note: \* indicates that the  $P < .05$ , \*\* representation  $P < .01$ , \*\*\* representation  $P < .001$ .

#### 2.4.2. The susceptibility to college students 'online fraud is significantly positively related with the total score of college students' irrational beliefs, low self-efficacy, absolute desire for self and absolute desire for the environment

In the correlation analysis of college students 'susceptibility to online fraud and college students' irrational beliefs, there is a significant positive correlation between college students 'vulnerability to online fraud and irrational beliefs' total score, low self-efficacy, absolute desire to self and absolute desire to the environment. The results show that college students with high susceptibility to Internet fraud usually have distorted and unreasonable views and views in cognitive activities. In addition, the results also show that gullible college students are usually prone to adopt irrational beliefs such as low self-efficacy, absolute desire for self-improvement, and absolute desire for the environment. The absolute desire for the self and the environment of the self is reflected in the unreasonable absolute belief for the self and the environment. The long-term frustration of the absolute desire will form the negative and pessimistic evaluation, confidence and expectation pointing to the self. This is embodied in this study by low self-efficacy, that is, a lack of confidence in their ability, which will lead to persistent negative emotions after being cheated.

Through study 1, we can see that college students are related to cognitive emotion regulation strategies and irrational beliefs. However, the questionnaire study can only prove the correlation among the three, and can not explain the process factors. In order to further study how the cognitive emotional regulation strategy and irrational cognition affect the behavior of the fraud, and the understanding of the "cheated experience" after being cheated, it is necessary to follow up the cheated parties involved.

### 3. Research 2: The Process Model of College Students Cheated By The "Damage Avoidance Type" Network Fraud

#### 3.1. Study on the difference between cheated group and not cheated group in the context of "damage avoidance type" network fraud

To further explore the fraud susceptibility questionnaire predictive validity of deceived behavior, and easy and not deceived cognitive emotion regulation strategy, irrational cognitive

level differences, choose has been cheated college students and experienced fraud but not cheated college students questionnaire survey, to analyze the deceived susceptibility, cognitive emotion regulation strategy, the difference in irrational cognitive level.

### 3.1.1. Study subjects

Cheated group: choose the college students who have been "avoid type" fraud as the cheated group. In the list of three college students in Suzhou, Jiangsu Province, collected in the early visit, 45 of them were randomly selected through the form of online questionnaires. After eliminating invalid questionnaires such as regular answers, 33 valid questionnaires were obtained, with an effective rate of 73.33%. Among them, 24 were male, accounting for 72.73%, and 9 were female, accounting for 27.27%.

Uncheated group: the college students who have experienced the "damage avoidance" scam but were not cheated are the uncheated group. A total of 52 questionnaires were distributed online through the questionnaire star, campus forums and other channels, and selected the college students who had experienced the damage avoidance fraud but were not defrauded. Finally, 33 valid questionnaires were obtained, with an effective rate of 63.46%. Among them, 17 were male, accounting for 51.52%, and 16 were female, accounting for 48.48%.

### 3.1.2. Research tools

Questionnaire: The questionnaire used is the same as section 2.2, which is the online fraud vulnerability questionnaire of college students, the cognitive emotion regulation scale, and the college students' irrational belief scale.

Statistical analysis: SPSS26.0, and  $P < 0.05$  was considered as statistically significant.

### 3.1.3. Results of the statistical analysis

(1) Whether the vulnerability of college students

As shown in Table 3, there was no significant difference between the total scores and the cheated and undeceived groups.

**Table 3.** Analysis table of the differences of college students and the vulnerability of college students

	total points	Personal information leakage	Open network use	Lack of knowledge of fraud	Easy to be persuaded
Impaired fraud	29.45±8.50	9.73±3.70	7.60±2.90	6.42±1.80	5.70±2.96
No avoidance fraud	30.39±11.17	9.85±4.68	8.21±3.69	6.24±1.71	6.09±3.09
t	-.39	-.12	-.74	.42	-.53
p	.41	.237	.21	.49	.89

Note: \* indicates that the  $P < .05$ , \*\* representation  $P < .01$ , \*\*\* representation  $P < .001$ .

(2) Analysis of the differences between the dimensions of being cheated and college students' cognitive emotion regulation strategies

As shown in Table 4, there are significant differences between the positive assumption dimension of whether college students suffer from damage avoidance network fraud and the positive assumption dimension of college students' cognitive emotion regulation strategies. The college students in the cheated group scored significantly higher in the positive assumption dimension than that of college students in the uncheated group. There were no significant differences in the dimensions of self-blame, tolerance, meditation, positive adjustment, self-comfort, catastrophizing, and blame for others.

**Table 4.** Analysis table of the differences between the dimensions of college students 'damage avoidance network fraud and college students' cognitive emotion regulation strategies

	self-accusation	tolerate	be in a brown study	Positive adjustment	Actively imagine	Self comfort	Disaster	Reprove others
Impaired fraud	8.48±2.81	13.39±3.10	7.94±2.34	13.09±3.33	29.39±4.50	5.55±1.83	7.18±2.70	8.58±2.53
No avoidance fraud	7.79±2.64	11.36±3.50	8.70±2.59	11.60±3.10	26.39±7.45	5.93±1.56	9.36±3.20	10.33±3.21
t	1.04	2.50	-1.25	1.88	1.92	-.94	-3.00	-2.47
p	.59	.57	.77	.60	.05*	.26	.18	.31

Note: \* indicates that the  $P < .05$ , \*\* representation  $P < .01$ , \*\*\* representation  $P < .001$ .

(3) Analysis of the differences between whether cheated and the irrational beliefs of college students

As shown in Table 5, there is no significant difference between whether college students suffer from damage avoidance network fraud and the total score of irrational beliefs and various dimensions.

**Table 5.** Statistical analysis of network fraud and various dimensions of college students' irrational beliefs

	Total score of irrational beliefs	Low self-efficacy	Absolute desire for the self	Low self-evaluation	Absolute desire for the environment	Absolute desire for others
Impaired fraud	58.09±11.85	7.79±3.61	9.88±2.34	8.24±3.09	10.76±2.87	8.91±2.32
No avoidance fraud	61.85±10.17	9.18±3.09	10.94±2.25	9.12±3.04	10.61±2.56	8.67±2.07
t	-1.38	-1.69	-1.88	-1.16	.23	.45
p	.30	.44	.94	.61	.66	.87

Note: \* indicates that the  $P < .05$ , \*\* representation  $P < .01$ , \*\*\* representation  $P < .001$ .

### 3.1.4. Discussion

Through the avoidance type network fraud and not avoidance network fraud differences of college students research found that cheated college students and not cheated college students network cheated vulnerability and irrational beliefs level have no significant difference, this shows that after experiencing fraud, college students' fraud vulnerability, cheated experience makes them no longer easy to cheat.

The study found that the "positive assumption" ability of college students who suffered from the damage avoidance network fraud and the college students who did not suffer from the damage avoidance network fraud are significantly different, that is, the positive assumption ability of college students is significantly improved after the damage avoidance network fraud. Positive vision is one of the cognitive emotion regulation strategies, which means the positive planning and reevaluation of negative events. This factor is formed by the combination of the concern plan and the Positive Reevaluation factors. "Attention plan" mainly refers to the idea of what actions to take in response to negative life events, while "positive reevaluation" mainly refers to giving positive meaning to negative life events based on personal development experience. College students are more inclined to adopt adaptive cognitive emotion regulation strategies after experiencing loss-avoidance network fraud, that is, they have a positive reflection on their own experience of being cheated, which may also make them produce more positive results when facing similar situations later.

### 3.2. Interview and research of college students with avoidance network fraud

To better verify college students network deceived susceptibility and cognitive emotion regulation strategy of unadaptive regulation strategy and irrational belief level is significant positive correlation, after the "avoid" network fraud of college students' positive ability improved significantly, to interview has been cheated, to understand has cheated after cheated the cognition of fraud and cognitive emotion regulation strategy.

The purpose of the interview is to make the victims recall the process of the "damage avoidance" fraud, so as to better study the psychological mechanism of the cheated college students in the whole process of being cheated.

#### 3.2.1. Study subjects

After contacting with Suzhou Yuanhe police station, 9 students of network fraud were selected to conduct semi-structured telephone interviews.

#### 3.2.2. Interview outline

Through literature review and preliminary test, the interview outline was finally determined as follows, including five questions.

- (1) Please roughly describe the overall process of being cheated.(Cross-examine up: how did the cheater contact you?)
- (2) How do you judge the credibility of others?
- (3) What's your first thought after receiving the message? Do you consider the want to avoid loss or fear? How did you feel about it back then?(Cross-examine: how did you find yourself cheated?)
- (4) How likely do you think college students will be defrauded by online fraud? Subjectively judge how many of the chances of being cheated?
- (5) Some people do not want to mention this matter after being cheated, and some people are more willing to share to others after being cheated. What do you think?

#### 3.2.3. Data collection process

The interview lasted was 5-8 minutes, and the form of telephone recording.

The interview recording of 9 college students who were protected by the network fraud was transcribed into a total of 11,788 words. According to the basic principles of rooted theory, Nvivo plus11 software was used to assist the original data with open coding, associated coding and core coding.

#### 3.2.4. Coding analysis results of the tracking research of network fraud based on grounded theory

Regarding group intervention activities, feedback on the following aspects:

- (1) Open network use: the use of open network refers to that cheated college students tend to participate in some network activities and lack vigilance against the security of these activities.
- (2) Lack of awareness of fraud prevention: lack of awareness of anti-fraud means that the cheated college students do not understand the means of fraud or do not know how to identify fraud information, in this study, the respondents' trust for fraud, as well as their own overconfidence.
- (3) Negative emotional impact: negative emotional impact refers to the cheated college students have a lot of negative emotions when being cheated and after being cheated.
- (4) Positive assumption: positive assumption refers to the cheated college students after suffering from loss avoidance network fraud for their own experience made a new reflection and have a positive expectation, specifically in timely help, timely stop loss, vigilance awareness and sharing of cheated experience.

**Table 6.** Three-level code of the tracking study of network fraud

Core code	Affiliate encoding	Open coding	The number of mention
		Part-time online fraud	3
	Online money trading	Online trading is cheated	3
		An acquaintance is cheated by borrowing money	3
		Social Media Contact	9
Open network use	Regular platform contact	Conference platform contact	1
		Trading platform contact	1
		Entertainment software contact	2
		Browser advertising delivery	1
	Illegal platform contact	Home-made platform contact	4
		Fever in the head	4
	be credulous	It looks real and believable	10
Lack of awareness of fraud prevention		The police intervened before responding	5
		Cheats have a good attitude luckily	3
	overconfidence	College students are not very easy to be cheated	3
		worry	2
		take offence	2
	Have negative emotions when being cheated	regret	2
		fear	5
Negative emotional impact		self-accusation	2
		sad	2
		feel oneself inferior	5
	Have negative emotions after being cheated	complain	3
		ashamed	10
		sad	2
		tired out	2
	Help in time	To report	7
		Contact relatives and friends	2
	cut loss in time	After knowing after feeling	7
		That college students are more likely to be cheated	6
Actively imagine	Be alert	It is not easy to be cheated after that	7
		More alert	7
		There is reflection	3
	Share the experience of fraud	Willing to share	8
		Willing to help others	5

### 3.2.5. Discussion

Through the coding analysis results of qualitative research based on rooted theory, the theory is obtained: usually due to the use of open Internet and the lack of awareness of fraud prevention, and college students are vulnerable to the negative emotions in the process of fraud.

After being cheated, the scam has the ability to actively imagine (Figure 1). This assisted in the validation of the empirical studies in Study 1 and in Study 2.

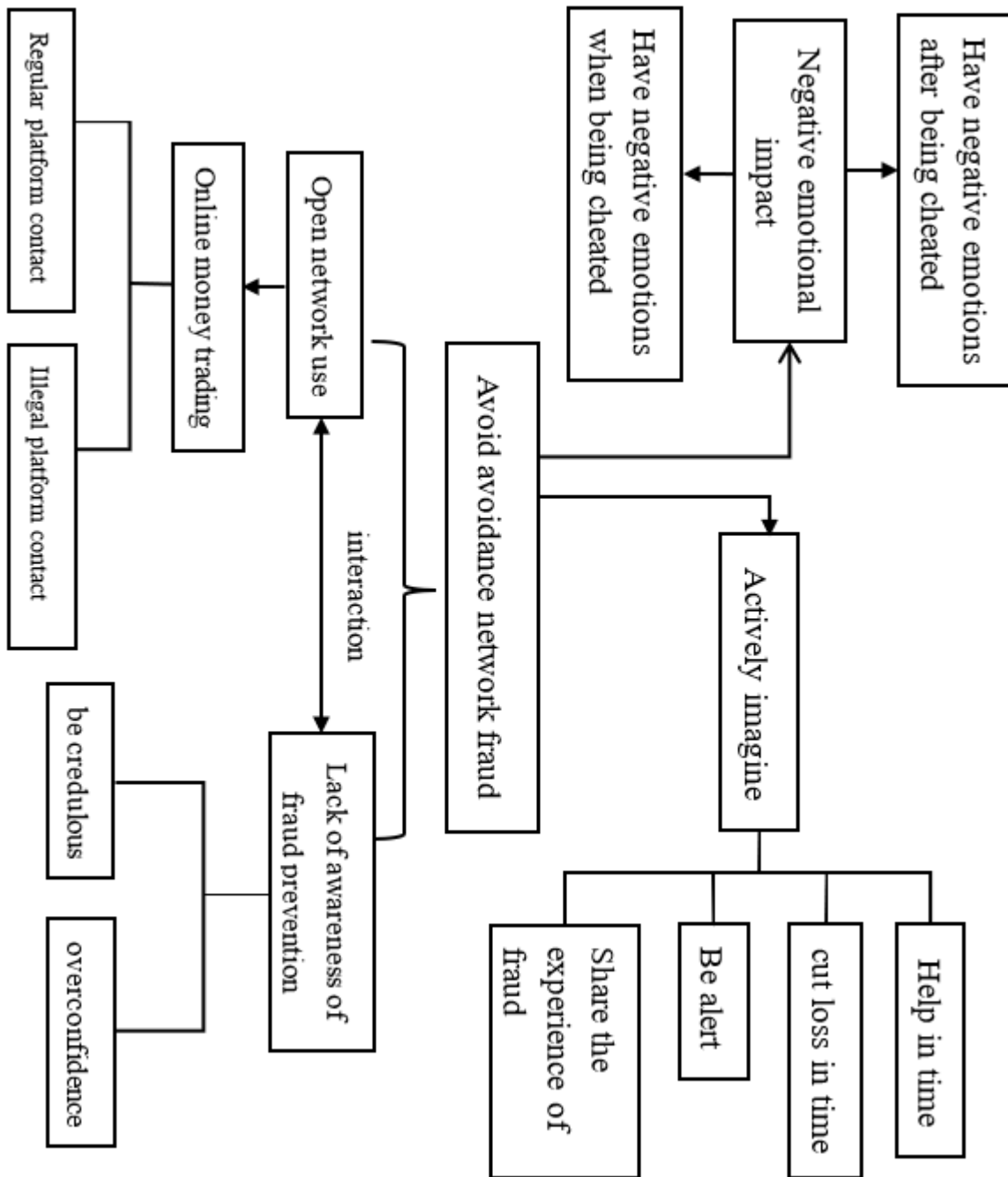


Figure 1. The process mechanism of network fraud college students

## 4. Conclusion and Discussion

### 4.1. Conclusion

(1) There is a significant positive correlation between college students' online vulnerability to fraud and the dimensions of tolerance, meditation, catastrophizing and blaming of others in the cognitive emotional regulation strategies;

(2) The susceptibility to online fraud of college students is significantly positively related with the total score of college students' irrational beliefs and low self-efficacy, the absolute desire for self and the absolute desire for the environment;

(3) There is no significant difference between the level of online fraud susceptibility and irrational belief level of cheated college students and uncheated college students;

(4) Usually due to the open use of the network and the lack of awareness of fraud, college students suffer from fraud, and are vulnerable to negative emotions in the process of being cheated, and their ability to actively imagine after being cheated.

## 4.2. Discussion

The results show that the cognitive factors of college students are effectively related to their susceptibility to deception, and college students with high susceptibility to fraud tend to adopt non-adaptive cognitive emotion regulation strategies. In this regard, the author believes that in the subsequent anti-fraud education carried out by universities and public security departments, relevant activities can be carried out for the "cognitive" factors. In view of the impact of negative emotions in the process of college students and after the fraud, the psychological departments and counselors should also pay attention to the subsequent mental health of the cheated college students. Using various forms of psychological counseling and group counseling activities. Although the network students' vulnerability and irrational belief level reduced, but fraud means emerge in an endless stream, universities and public security departments in addition to the "response simulation" education accident, but also need to timely follow up the "anti-fraud" propaganda education, carpet publicity and introduce all the old and new fraud means.

## 5. Limitations and Prospects

Due to the limitations of researchers' knowledge, experience, skills, time and energy, there are still many shortcomings in this study, which need to be further discussed in the future. Because fewer college students are subject to "damage avoidance" network fraud, and the police can not provide more information due to privacy security, the number of subjects is small and underrepresented. The interviewees will have some retention conditions during the interview process, resulting in insufficient interview data.

In the literature review and data survey, it is noted that cognitive factors also have great reference value for the prevention of "damage avoidance" scams in non-student adults. Because working adults have more financial resources and more complex social relationships than students, they can involve greater and more losses in loss-avoidance scams, leading to greater negative emotional reactions. This deserves further exploration in the subsequent studies. Finally, more research methods can be used in the study. In this paper, the questionnaire survey method and the interview method are adopted. In the subsequent research, the experimental method can also be used to simulate the situation of the damage avoidance network fraud, so as to further understand the psychological mechanism of the victim damage avoidance network fraud.

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