The Relationship Between Network Fraud and Network Security Awareness: The Mediation Role of Network Social Self-efficacy

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Abstract. This To explore how college students' awareness of network security affects the possibility of network fraud, and the mechanism of network social self-efficacy. A survey was conducted among 387 college students using the College Students' Network Fraud Scale, the Network Security Awareness Scale and the Network Self-efficacy Scale. The results show that there is a significant negative correlation between network fraud and network security awareness; network fraud and network social self-efficacy have a significant negative correlation; network security awareness and network social self-efficacy have a significant positive correlation; It has a direct impact, and it can also act on network fraud through network social self-efficacy. The consciousness of network security can affect college students' network fraud through their sense of network social self-efficacy, and college educators can reduce the possibility of being cheated by promoting college students' sense of network social self-efficacy.

Keywords: college students · network fraud · network security awareness · network social self-efficacy

1 Introduction

This According to the 49th Statistical Report on China's Internet Development released by China Internet Network Information Center (CNNIC), as of December 2021, the number of Internet users in China has reached 1.032 billion, an increase of 42.96 million over December 2020, and the Internet penetration rate has reached 73.0%. The Internet use behavior of Chinese netizens shows new characteristics: First, the average online duration continues to rise. As of December 2021, the average weekly online time of Chinese netizens will reach 28.5 h, 2.3 h more than that of December 2020. The Internet is deeply integrated into people's daily life. The constant popularization, development and utilization of the Internet have increasingly provided convenience for people's work and daily life. Online booking, online shopping, online query, etc. have swept the world,

sweeping China. The Internet has become an indispensable part of Chinese life. However, the Internet has brought convenience to people as well as impact, such as network fraud. According to statistics, in the past 10 years, China's network fraud cases have increased at an annual rate of 20% to 30%. The number of people receiving network fraud information each year has reached 438 million, more than 32% of the total population [1]. At present, the cheated groups are mainly concentrated in the post-90s and post-00s, accounting for 38.7% and 29.5% respectively, most of which are college students. College students are the main users of the Internet and the main target of network fraud. In today's university campus, the frequent occurrence of network fraud cases has brought property losses to more and more students and families, and even some students have paid the price of their lives. It is urgent to prevent campus network fraud. Therefore, it is of great practical significance to explore the influencing factors and mechanisms of college students' network fraud, and to strengthen college students' awareness of network fraud and their ability to prevent being cheated.

Network fraud is defined as the act of obtaining money through deception by using network communication technology [2, 3], or the act of defrauding public and private property by fabricating truth or concealing facts by making full use of Internet crime means for the purpose of illegal possession [4]. Due to their lack of social experience, single living environment and relatively low ability to distinguish authenticity [5], college students are often easily deceived. However, some college students are aware of some network crimes and still step into minefields, all of which are due to their weak awareness of network security [6, 7].

Network security awareness refers to people's awareness of cyberspace in cyberspace activities and their sensitivity to possible security hazards, mainly including their understanding of the network environment, but also including their ability to respond to specific security events and risks, assess the threat, and effectively prevent or manage such hazards [8]. More than half of the conventional network security problems are caused by human factors, and only about 3% are caused by external factors. These human factors, when people's awareness of network security is high enough, the vast majority of online fraud incidents can be avoided [9, 10]. If college students lack the awareness of network security, they will be more vulnerable when facing the problem of network fraud. They lack the basic understanding of network security incidents and the ability to identify the possible results of various security accidents, which will cause their personal privacy, property, and even personal safety to suffer serious harm.

The sense of self-efficacy refers to a subjective belief and judgment about the ability and possible level that an individual has before implementing a certain behavior [11]. A large number of scientific studies have shown that [12, 13], as a universal intermediary factor of social psychological influence, self-efficacy is an important driving force for individual activities. It can not only predict the difference in action caused by different control factors, but also predict the difference in action and the success or failure of individual behavior under the same factors. Bandura believes that compared with general self-efficacy, domain self-efficacy is more targeted and can better predict and explain individual behavior. As far as individuals are concerned, for the same person, their self-efficacy is also different in different domains, which needs to be discussed in combination with specific domains [14].

Network social self-efficacy refers to the self-efficacy in the field of social communication, which refers to the belief that individuals are good at communicating with others and maintaining good interpersonal relationships by using the network and network social software, as well as being accepted and recognized by peer groups [15]. The role of network social self-efficacy on individual mental health is mainly reflected in the role of individual emotions, attitudes, behaviors, etc. In cyberspace activities, college students' social cognition will have a direct impact on their network security awareness and behavior, and their network environment and social environment will have a direct impact on their thinking and behavior. The emotions and abilities of college students in cyberspace restrict their online activities. For example, college students with strong self-control can correct their words and deeds when surfing the Internet, and thus obtain positive social information to achieve self network effectiveness [16]. Network social self-efficacy and network use are mutually reinforcing processes. On the one hand, the more network experiences, the better personal network self-efficacy; on the other hand, the network self-efficacy also affects the behavior choices of network users [17–19]. Research shows that [20], the elderly's sense of network social self-efficacy has a direct predictive role in network fraud. This suggests that the sense of social self-efficacy may play a mediating role between network security awareness and network fraud. Based on this, this study proposes hypothesis H1: network social self-efficacy plays a mediating role between network security awareness and network fraud.

To sum up, this paper mainly takes college students as the research object. By exploring the mechanism of network security awareness on network fraud, and studying the intermediary role of network social self-efficacy between the two, it aims at more targeted prevention and intervention of college students' network fraud, so as to improve their mental health ability.

2 Research Objects and Methods

2.1 Objects

In March 2022, this study investigated college students from five universities in Guangdong Province. The questionnaire was distributed through the questionnaire star network platform in the form of stratified cluster sampling according to grades. 420 college students participated in answering the questionnaire, and 33 invalid questionnaires were excluded, a total of 387 valid questionnaires. Among them, 159 boys (41.09%), 228 girls (58.91%), aged 1822, 109 freshmen (28.17%), 78 sophomores (20.16%), 57 juniors (14.73%), and 143 seniors (36.95%). There were 86 only children (22.22%) and 301 non only children (77.78%). 238 (61.50%) in urban areas and 149 (38.5%) in rural areas.

2.2 Scales

1) Network Fraud Scale for College Students
The risk perception scale compiled by Plateau and the fraud situation questionnaire compiled by Diao Chunting were selected to be adapted into the network fraud scale for

college students [21]. The Likert5-level scoring method was used, from "1 = completely unqualified" to "5 = completely qualified". The scale has 14 sub questions, including 3 parts: ① the possibility of being cheated after imagining the situation; ② Whether they are more negative towards the network after being cheated; ③ After experiencing fraud, the higher the score, the greater the possibility of being cheated. *Cronbach'α* of the scale 0.781, the questionnaire has good reliability.

2) Network self-efficacy scale
The network self-efficacy questionnaire [22] compiled by Yang Xiaoxiao was used, and the Likert5-level scoring method was used, from "1 = completely inconsistent" to "5 = completely consistent". The scale included four different dimensions: interpersonal communication, self-expression, self-control and self-protection, with five items for each dimension, totaling 20 items. The higher the score of the scale, the stronger the network self-efficacy. Cronbach'α of the scale 0.843, the questionnaire has good reliability.

3) Network security awareness scale
The safety awareness scale [7] prepared by Zhong Xiangshan in 2020 was selected, and the Likert5-level scoring method was adopted. There are 12 items in the scale, from "1 = completely unqualified" to "5 = completely qualified". The higher the score of the scale, the higher the level of safety awareness. Cronbach'α of the scale 0.828, the questionnaire has good reliability.

2.3   Methods

1) Statistics Processing
In this study, SPSS26.0 was used for basic analysis of data, and the process plug-in compiled by Hayes [23] was used to test the mediation effect. The bootstrap method was used, with 95% confidence interval, bootstrap sample size = 500 times, and the test level was 0.05.

2) Test method of mediating effect
The mediating effect is whether when studying the influence of X on Y, whether it will first pass through the mediating variable M, and then affect Y; that is, whether there is a relationship such as X->M->Y, if there is such a relationship, it means that there is a mediation effect [24]. Assuming that network security awareness (X) will affect network social self-efficacy (M), and then affect the final network fraud (Y), then network social self-efficacy becomes a mediating variable in this causal chain. Assuming that all variables have been centered, the following equations can be used to describe the relationship between variables:

$$Y = cX + e_1 \tag{1}$$

$$M = aX + e_2 \tag{2}$$
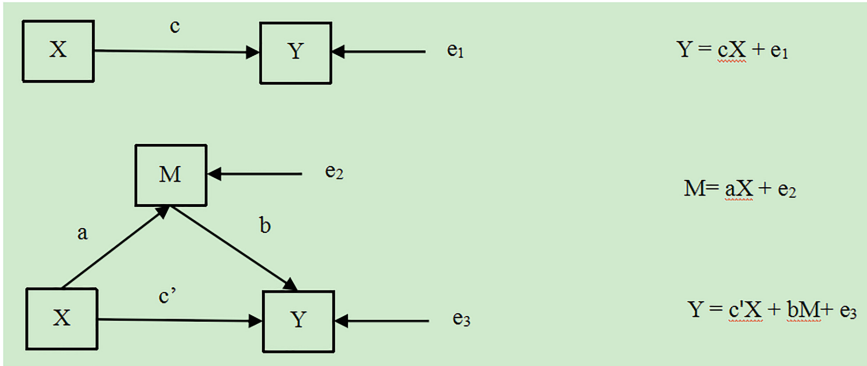
$$Y = c'X + bM + e_3 \tag{3}$$

Fig. 1. Mediation Model Path Diagram

In the above equation, c is the total effect of the independent variable X on the dependent variable Y; a is the effect of the independent variable X on the mediating variable M; b is the effect of the mediating variable M on the dependent variable Y after controlling the effect of the independent variable X; c' After controlling for the effect of the mediator variable M, the direct effect of the independent variable X on the dependent variable Y; e_1, e_2, e_3 are the regression variance [25]. Figure 1 shows the path diagram of the mediation model.

According to the term of effect decomposition in path analysis [26], the mediating effect is judged to be an indirect effect. When there is only one mediator variable, the relationship between direct and indirect effects is as follows [27]:

$$c = c' + ab \qquad (4)$$

Use the bootstrap method to test the mediating effect, and the specific steps are as follows (Fig. 2) [28]:

3) Common method bias test
In this study, the questionnaire method was used to measure the same group of research objects, and there may be common method biases, so it is necessary to test the data for common method biases. The research mainly adopts program control and data management to avoid common method deviation. First, the research problem adopts a unified introduction and systematic testing, and the researchers have carried out corresponding training in advance to make the research process fully standardized; then, the Harman single factor test is used to carry out the research [29]. Statistical research [30], using all the original items for factor analysis, exploratory factor analysis showed that there were 6 common factors with eigenvalues greater than 1, of which the first factor explained 28.25% of the variance, less than 40% of the critical The data obtained by the questionnaire method in this research method are relatively less disturbed by the common method bias, and the data can be further analyzed.
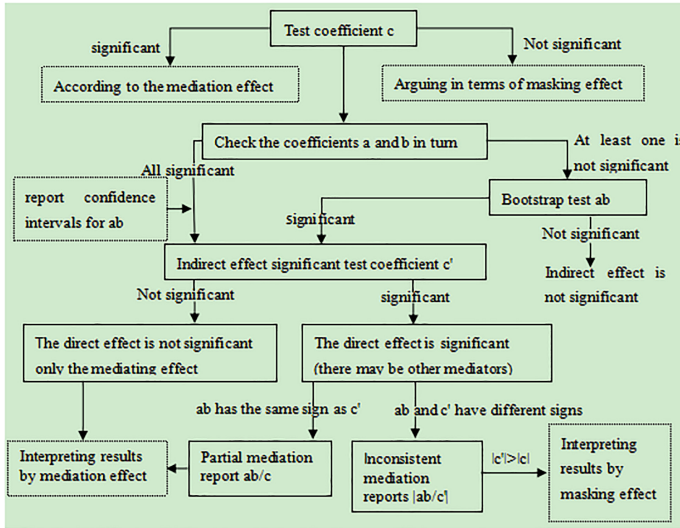
Fig. 2. Flow chart of mediation effect analysis

3 Results

3.1 Demographic Variables Difference Test of College Students' Network Fraud

In order to explore the correlation between demographic variables and college students' network fraud, gender, grade, place of origin, and whether the only child was an only child were used as independent variables, and network fraud was used as a dependent variable to conduct a one-way ANOVA. The results are shown in Table 1. It can be seen from Table 1 that there are differences in network fraud among college students by gender, grade, and student origin, which are statistically significant. In order to deeply understand the differences between different grades for network fraud, the LSD method was used to conduct multiple comparisons of different grades. It can be seen from Table 2 above that all grades showed significant differences in network fraud (F = 3.355, p = 0.019), which means that there are differences in network fraud in different grades, and the comparison results of the average scores of the groups with obvious differences are "freshman > senior; freshman > senior", see Table 2.

3.2 Correlation Analysis of Network Fraud, Network Security Awareness, and Network Social Self-efficacy

Use correlation analysis to study the correlation between network fraud and network security awareness, network social self-efficacy and its four dimensions, and use the Pearson correlation coefficient to indicate the strength of the correlation. Correlation analysis shows that there is a significant negative correlation between network fraud and the six items of network security awareness, network social self-efficacy, self-disclosure, self-control, self-protection, and interpersonal communication. showed a significant positive correlation, the specific results are shown in Table 3.

Table 1. Comparison of variable differences

Variables		Network fraud(M ± SD)	F	p
Gender	Male(n = 159)	1.92 ± 0.97	5.80	0.016*
	Female(n = 228)	1.70 ± 0.73		
Grade	Freshman(n = 109)	2.00 ± 1.03	3.35	0.019*
	Sophomores(n = 78)	1.93 ± 1.01		
	Junior(n = 57)	1.69 ± 0.75		
	Senior(n = 143)	1.69 ± 0.71		
Origin	Urban(n = 238)	1.46 ± 0.37	46.98	0.00**
	Rural(n = 149)	2.06 ± 1.03		
Only child or not	No(n = 301)	1.84 ± 0.90	0.19	0.66
	Yes(n = 86)	1.79 ± 0.86		

* $p < 0.05$, ** $p < 0.01$

Table 2. Post hoc multiple comparison results

Dependent variable	(I)Name	(J)Name	(I)mean	(J)mean	Difference(I-J)	p
Network fraud	Freshman	Sophomores	2.002	1.929	0.073	0.577
	Freshman	Junior	2.002	1.693	0.309	0.032*
	Freshman	Senior	2.002	1.692	0.310	0.006**
	Sophomores	Junior	1.929	1.693	0.237	0.124
	Sophomores	Senior	1.929	1.692	0.237	0.056
	Junior	Senior	1.693	1.692	0.001	0.996

* $p < 0.05$ ** $p < 0.01$

3.3 The Relationship Between Network Fraud and Network Security Awareness: An Analysis of the Mediation Effect of Network Social Self Efficacy

According to the relevant literature and theories, this paper constructs a mediation model that network security awareness affects network fraud through network social self-efficacy. According to the difference analysis results, gender, grade and origin with statistical differences will be used as control variables, network security awareness will be used as independent variables, and network social self-efficacy will be used as mediating variables, and the process program will be used to test the mediating effect.

It can be seen in Table 4: the prediction effect of network security awareness on network fraud is significant ($\beta = -0.202$, $P < 0.01$), when the mediator variable network social self-efficacy is added, the predictive effect of network security awareness on the prediction of network fraud Still significant ($\beta = -0.089$, $P < 0.01$);Significant positive prediction of network security awareness on network social self-efficacy ($\beta = 0.635$,

Table 3. Correlation analysis

Variables	M ± SD	1	2	3	4	5	6	7
1 Network fraud	1.82 ± 0.88	1						
2 Network security awareness	1.71 ± 0.45	-0.20**	1					
3 Network social self-efficacy	2.05 ± 0.41	-0.25**	0.63**	1				
4 Self-disclosure	2.25 ± 0.54	-0.14**	0.39**	0.82**	1			
5 Self control	2.09 ± 0.55	-0.21**	0.51**	0.76**	0.48**	1		
6 Self protection	1.75 ± 0.50	-0.19**	0.63**	0.74**	0.40**	0.66**	1	
7 Interpersonal communication	2.03 ± 0.47	-0.12*	0.33**	0.70**	0.51**	0.24**	0.36**	1

$* p < 0.05 ** p < 0.01$

$P < 0.01$); The predictive effect of network social self-efficacy on network fraud is significantly negative ($\beta = -0.178$, $P < 0.01$). The bootstrap 95% confidence interval analysis of the mediation path shows that (see Table 5): the upper and lower limits of the bootstrap 95% confidence interval of the direct effect of network security awareness on network fraud and the mediation effect of network social self-efficacy do not include 0, indicating that network security awareness can not only directly predict network fraud, but also predict network fraud through the mediation of network social self-efficacy. Specifically, the path of mediation effect is: network security awareness => network social self-efficacy => network fraud. The bootstrap 95% confidence interval is -0.193– -0.035, it means that the mediation is significant and shows a full mediation effect. The mediation effect model is shown in Fig. 3.

4 Discussion

4.1 Personal Factors Affecting College Students' Network Fraud

In this study, the average score of college students' network fraud probability was 1.82, which was lower than the median value, indicating that they were generally well affected by network fraud. This study also found that gender, grade and origin were the influencing factors of college students' network fraud.

In terms of gender, there are significant gender differences in college students' network fraud scores, and boys are significantly higher than girls, consistent with previous studies [31]. Compared with girls, boys use Internet social services more frequently, and their uncertainty about the Internet is lower than girls', so they have a good sense of security [32]. Therefore, when socializing online, girls will have higher self-protection awareness than boys, and pay more attention to self-protection. According to the Report

Table 4. Results of mediation analysis

	Network fraud		Network social self-efficacy		Network fraud	
	t	β	t	β	t	β
Gender	-1.52	-0.071	-1.323	-0.053	-1.733	-0.081
Origin	6.893	0.322	-1.992	-0.079	6.626	0.308
Grade	2.644	0.124	-0.07	-0.003	2.661	0.123
Network security awareness	-4.333	-0.202	16.09	0.635	-1.489	-0.089
Network social self-efficacy					-2.975	-0.178
R^2	0.17		0.4		0.19	
F value	20.365**		65.747**		18.398**	

* $p < 0.05$ ** $p < 0.01$

Table 5. Results of mediating effect size

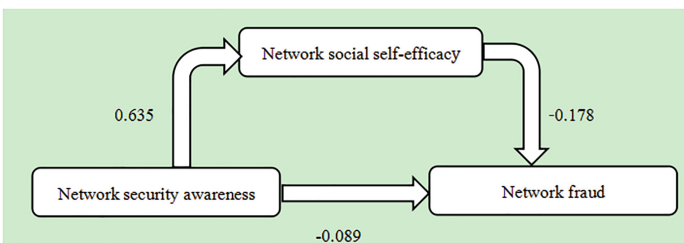| Path	Total effect	a	b	Boot SE	95% Boot CI	Direct effect
Network security awareness => Network social self-efficacy => Network fraud	-0.392**	0.577**	-0.380**	0.042	-0.193–-0.035	-0.173

*$p < 0.05$ **$p < 0.01$

Fig. 3. Mediating effect model

on Mobile Phone Safety in China in the First Quarter of 2021, male victims accounted for 68.5%, and female victims accounted for 31.5%. The proportion of male victims was higher than that of female victims. The reason why male college students are easy to be defrauded is that they usually like the Internet and have a curiosity. They love to pursue visual impact, are easy to indulge in online games, and make friends online without defense.

In terms of grades, there are significant differences in the total scores of network fraud among college students of different grades, and the lower grades are significantly higher than the higher grades, which is consistent with domestic and foreign studies [33–36]. Compared with other grades, freshmen are easier to be cheated, because their main tasks in high school are concentrated on learning, which leads to a serious lack of social experience. In addition, they have just entered colleges and universities, and everything is very new to them. They are full of strange things in colleges and universities, so that they lack vigilance against network fraud, and are easy to fall into the trap carefully designed by the fraudsters. Compared with lower grade students, higher grade students get more ideological education from schools and society, cultivate their anti fraud awareness, enrich their social experience, and prevent fraud in essence [37]. After going to university, the scope of activities is basically limited to the university campus, lacking understanding of the complexity of society, and prone to panic when threatened by lawbreakers, thus making irrational judgments.

In the place of origin, the scores of rural college students are significantly higher than those of urban college students, which is consistent with domestic and foreign research [38]. Although the rural network penetration rate is getting higher and higher, and the penetration rate between rural and urban areas is gradually shrinking, compared with urban college students, rural college students started to contact the network late, used the network for social networking less time, and lived in an isolated environment since childhood, with less contact with things outside, and poor comprehensive knowledge. At the same time, they are honest and easy to trust others. Poor economic conditions, eager to make money to repay their parents, and rural parents are busy giving birth to poor quality, resulting in insufficient attention to the safety awareness education of family online fraud. This is the most favorable breakthrough for the network fraudsters. Compared with college students in rural areas, urban college students have more knowledge, access to more and faster information, and they may have more requirements for network security. They have a better awareness of network security.

4.2 The Relationship Between Network Security Awareness, Network Social Self-efficacy and Network Fraud

This study found that there is a significant negative correlation between network security awareness and network fraud. The higher the network security awareness of college students, the lower their probability of being subjected to network fraud, which is consistent with previous research results [39]. According to the theory of psychological model [40], the higher the individual's awareness of network security, the stronger his critical thinking ability, the more rational he will be in making decisions, and the less likely he will be subject to online fraud. College students' network security consciousness determines their network security behavior, and their network security behavior affects whether network fraud occurs. College students generally have the characteristics of intuitive thinking mode, impulsive decision-making style, high level of general trust and poor emotional control [41]. They tend to look at things simply and one-sided and lack rational analysis. They often make unrealistic behaviors to meet their own needs and psychological aspirations. The results of this research show that 21.09% of college students have personally experienced online fraud, all of which are caused by human

factors, which also indicates that these students lack network security awareness, lack experience in preventing being cheated, and cannot correctly analyze things and problems. After students enter a university campus with relatively loose living conditions, with the needs of study, work, social networking, entertainment, etc., students frequently contact the Internet, increasing the possibility of information leakage. In addition, college students generally have the characteristics of social curiosity, unstable values and psychology, lack of experience in life, weak awareness and ability to prevent, fluke psychology, and easy to trust others, which provide conditions for criminals to cheat [42]. Among Chinese college students, due to some college students' lack of correct security awareness in the development of Internet applications, negligence of online login, information collection and other network behaviors, and relaxation of information protection ability, a large amount of information is inadvertently leaked, and their ability to identify, judge and screen online information is weak, and their self-control ability is low, resulting in online unsafe incidents from time to time.

In this study, there is a significant negative correlation between network social self-efficacy and network fraud. The stronger the network social self-efficacy of college students, the less likely they are to be subject to network fraud, which is consistent with previous research results [43]. Liaw believes that network self-efficacy is not the ability and technology itself, but the evaluation and judgment of its own ability to use the network. The sense of self-efficacy has a significant predictive effect on individual network behavior [38]. Individuals with strong sense of self-efficacy in online social networking have the ability to identify and assess network security risks. When faced with security risks and potential security risks in the network, they will take effective precautions to ensure their safe use of the network. For example, individuals are good at communicating with others through network social software, expressing their emotional feelings in a timely manner, and have good self-control and self-protection awareness. The more confident they are in using the Internet, the more alert they are, the less vulnerable they are to be deceived [44]. In daily life, college students with a strong sense of self-efficacy in the network society are often familiar with the scenes of fraud events and the means of criminals, and have been alert and have made judgments about situations that may lead to network fraud. Therefore, even when fraud events occur, they have the corresponding ability to deal with them afterwards.

4.3   The Intermediary Role of Network Social Self-efficacy Between Network Security Awareness and Network Fraud

This study found that network social self-efficacy plays a mediating role between network security awareness and network fraud, and verified hypothesis 1, that is, college students' network security awareness affects network fraud, and can also affect network fraud through the mediating variable of online social self-efficacy. College students' awareness of network security has a significant positive impact on their sense of network social self-efficacy. The stronger their awareness of network security, the higher their sense of network social self-efficacy, so that they have more confidence, ability and awareness to ensure the use of network security, thus avoiding the occurrence of network fraud. According to Maslow's hierarchy of needs theory, security needs are people's basic needs, which are directly related to the survival of individuals, so people will constantly

improve their security awareness to meet security needs as much as possible. People with higher network security ability can continuously enhance their awareness of using the Internet, and therefore have more courage, skills and awareness to ensure the application of the Internet and avoid being deceived.

5   Conclusion

Understanding certain network security knowledge is the premise of forming information security awareness. Only when users actively and correctly view the knowledge they have acquired can they independently think about the knowledge, transform the knowledge from explicit to implicit, and from superficial dogma to personal subconsciousness, thus guiding behavior and influencing information security awareness. For social network users, they should always pay attention to their own social behaviors in daily social networking and avoid some practices that may cause information security problems. If possible, don't disclose your real name, ID number and other privacy to strangers; When using social software, open personal privacy settings and restrict the access to the software; For social accounts, it is not allowed to set a simple password at will, nor should all social software accounts be set to the same password; It is better to update the password regularly, and do not use the same password for a long time.

References

1. Liu Chutao. Research on Internet Fraud Prevention Methods Based on the Characteristics of Colleges and Universities [J]. Legal Expo, 2022(05): 139–141.
2. Whitty, M.T.Mass-marketing fraud: a growing concern[J]. IEEE Security & Privacy, 2015,13(4), 84–87.
3. Whitty, M.T. Predicting susceptibility to cyber-fraud victimhood [J]. Journal of Financial Crime, 2019, 26(1), 277–292.
4. Deng Chaojie. Research on the legal regulation of Internet fraud crimes in my country [D]. Suzhou University, 2020.
5. Li Yijun, Qiu Mingyue. Analysis of relevant characteristics of college students' Internet fraud cases. Legal Expo, 2020(27), 5–8.
6. Liang Rongyin. Research on the education of college students' network security awareness [D]. Guangxi Normal University, 2017, 35–40.
7. Zhong Xiangshan. Research on the influencing factors of information security awareness of social network users [D]. Shandong University, 2020.
8. Liu Caixia. Research on the education of college students' network security awareness in the new era [D]. Northeast Normal University, 2021, 43–46.
9. Huo Mingkui, Zhu Jiaqi, Tan Jingping. Analysis of Influencing Factors of Civil Servants' Information Security Behavior and Research on Guarantee Countermeasures Based on Grounded Theory [J]. Information Science, 2019(03): 49–54.

10. Wu Yuxing. Research on the influencing factors of social network userinformation security [D]. Heilongjiang: Heilongjiang University, 2018, 61–65
11. Bandura A. Self-efficacy: toward a unifying theory of behavioral change. Psychological Review, 1977, 191–215.
12. Yan Jiamei. Research on the relationship between harmonious interpersonal relationships, perception of social support and self-efficacy among high school students. Fujian Normal University. 2008, 42–51.
13. Meng Hui, Liang Qiaofei, Shi Yanyang. The relationship between goal orientation, self-efficacy and subjective well-being. Psychological Science, 2010, 33(1), 96–99.
14. Bandura A. Self-efficacy pathways to childhood depression personality. Journal of Personality and Social Psychology, 2001, 76(2), 258–269.
15. Qi Jiangdan, Huang Dawei, Liu Xiao, Yin Tianzi.The status quo of suicidal ideation among junior high school students and the role of online social self-efficacy and loneliness [J]. China Health Education, 2020, 36(05): 450–454.
16. Wang Rui. A Study on Influencing Factors and Promotion Strategies of Youth Group Network Security Awareness in Linfen City [D]. Shanxi Normal University, 2020.
17. Eastin MS, Larose R. Internet self-efficacy and the psychology of the digital divide [J]. J Comp Med Commun, 2000, 6(1): 1.
18. Liang Xiaoyan, Wei Lan, Zhang Jingsi. Review of Internet Self-efficacy Research [J]. Educational Research and Experiment, 2007, (2): 52–5.
19. Rains SA. Seeking health information in the information age: the role of internet self-efficacy[J]. Western J Commun, 2008, 72(1):1–18.
20. Diao Chunting, Zeng Meina. The relationship between online self-efficacy and coping with online fraud in the elderly [J]. Chinese Journal of Gerontology, 2020, 40(10): 2204–2206.
21. Gao Gao. Influencing factors of college students' susceptibility to online fraud [D]. Zhejiang University, 2021.
22. Yang Xiaoxiao. Compilation and related research of college students' online social self-efficacy scale [D]. Southwest University, 2016, 45–55.
23. Hayes A F. An index and test of linear moderated mediation[J]. Multivariate Behavioral Re-search, 2015, 50(1):1–22.
24. Fang Jie, Wen Zhonglin. Analysis of Moderated Mediating Effect Based on Structural Equation Model [J]. Psychological Science, 2018, 41(02): 453–458.
25. Zhao Leilei, Liu Fang, Han Jinfang, Zhang Tingting. Mediation test procedure and its application [J]. World of Biotechnology, 2014, 84(11):216.
26. Bollen K A. Structural equations with latent variables. New York: Wiley, 1989.
27. en Zhonglin. Zhang Lei, Hou Jietai, Liu Hongyun. Mediation test procedure and its application [J]. Acta Psychologica Sinica, 2004(05):614–620.
28. Wen Zhonglin, Ye Baojuan. Analysis of Mediating Effect: Method and Model Development [J]. Advances in Psychological Science, 2014, 22(05):731–745.
29. Fang Jie, Zhang Minqiang, Qiu Haozheng. Test method and effect measurement, review and prospect of mediation effect [J]. Psychological Development and Education, 2012, 28(1):105–111.
30. Lv Ling, Zhou Zongkui. Research on the measurement and characteristics of college students' cybersecurity sense [C]. Collection of abstracts of the 12th National Psychology Academic Conference. [Publisher unknown], 2009, 202–204.
31. Hao Enhe. The relationship between college students' personality, network communication and social creativity: Analysis of sequential mediation effect [D]. Central China Normal University, 2014, 67–75.
32. Bai Siyan, Li Haoyan, Xu Chunling.Analysis and Countermeasures of Internet Fraud of College Students [J]. Information and Computer (Theoretical Edition), 2022, 34(03):243–245.

33. Wu Yuxing. Research on the influencing factors of social network user information security [D]. Heilongjiang University, 2018, 32–45.
34. Liu Caixia. Research on the education of college students' network security awareness in the new era [D]. Northeast Normal University, 2021.
35. Jones BH, Heinrichs L R. Do Business Students Practice Smartphone Security [J]. Journal of Computer Information Systems, 2012(02): 22–30.
36. Zhang Fan. Research on the construction of college campus fraud prevention system from the perspective of collaborative governance [D]. Ningbo University, 2018,56–75.
37. Liu Jianping. Reflections on a group of college students' cyber fraud crime [J]. People of the Times, 2020(35):0080.
38. Rice S, Robinson J, Bendall S, et al. Online and social media suicide prevention interventions for young people a focus on implementation and moderation [J]. Journal of the Canadian Academy of Child and Adolescent Psychiatry, 2016, 25(2):80.
39. Zheng Meiling. The influence of mental models on college students' cybersecurity awareness: the role of questioning style and critical thinking ability [D]. Hunan Normal University, 2021, 73–76.
40. Zhao Lei, Huang Xuemei, Chen Hongmin. Trust formation and psychology of young and middle-aged telecommunication fraud victims: Based on the qualitative analysis of 9 post-90s telecommunication fraud victims [J]. Chinese Youth Studies, 2020(3): 49–54.
41. Chen Yi, Zhang Zhiyang, Liu Mengwei. Research on the prevention of network telecommunication fraud cases among teachers and students in colleges and universities [J]. Legal Expo, 2020(33): 107–108.
42. Li Xiaoran, Jiang Yongzhi, Zhang Bin. The effect of loneliness on problematic mobile social network use among adolescents:The role of interpersonal distress and positive self-presentation [J]. Psychological Science, 2018, 41(5): 1117–1123.
43. Liang Xiaoyan, Wei Lan, Zhang Jingsi. Review of Internet Self-efficacy Research. Educational Research and Experiments, 2007,52–55.
44. Zhu Jing. Research on the trust of teenagers in online interpersonal communication [D]. Huazhong Agricultural University, 2004, 35–41.