Advances in Economics, Business and Management Research, volume 214
Proceedings of the 2022 International Conference on Creative Industry and Knowledge Economy (CIKE 2022)

# Attitudes and Behaviors of Internet Users towards Chinese Medicine Popularization Knowledge:

## —ELM Model-based Empirical Analysis

Jia-Yi Lin[1], Shu-Yi Dong[2], *Ni Yan[3]

[1]School of Management, Hubei University of Chinese Medicine; Wuhan, China
[2]School of Management, Hubei University of Chinese Medicine; Wuhan, China
[3]School of Management, Hubei University of Chinese Medicine; Wuhan, China
*Email: Yan219@hbtcm.edu.cn

**ABSTRACT**
To figure out factors affecting internet users' acceptance of traditional Chinese medicine popularization knowledge and improve their corresponding attitudes and behaviors, this paper conducts researches based on the Elaboration Likelihood Model (ELM). Spss software processed data through constructing a theoretical model and questionnaire analysis. Online users' attitudes and behaviors are positively correlated with emotion, cognition, information quality, credibility of source, and information environment, indicated the study.

***Keywords:*** *Chinese medicine popularization knowledge, ELM model, attitude, behavior*

## 1. INTRODUCTION

Popularization knowledge, an essential way for public to learn about scientific knowledge, interprets intricate concepts in a straightaway manner [1]. ELM, officially raised by Petty and Cacioppo in the 1980s, describes the process of forming and changing the attitudes of individual consumers. The model dissects the effectiveness of information on persuading its audiences on different paths through the level of ELM [2]. On the basis of sorting out and analyzing relevant literature, this paper takes the knowledge of traditional Chinese medicine as the breakthrough point, and takes the fine processing possibility model as the research framework to analyze the influencing factors of users' attitudes and behaviors towards the knowledge of traditional Chinese medicine, to promote the knowledge of traditional Chinese medicine more effectively. The popular science propaganda provides development suggestions for reference.

## 2. THEORETICAL BASIS AND RESEARCH MODEL

### *2.1 ELM*

ELM is one of the most important models for individuals to change their attitudes in the process of information persuasion. This theoretical model holds that people's attitude changes depend on the degree of their processing of information, and based on the possibility of fine processing of disseminated information, people's attitude changes generally pass through the central path and the peripheral path [2]. According to his point of view, under the central path, users think more deeply about information, understand more thoroughly, and change their attitude more lasting and stable. Under the marginal path, users only consider marginal cues related to them, and attitude changes are often temporary [3]. So far, the fine processing possibility model has been applied in many fields such as information dissemination, commercial advertising, e-commerce, and website design [4].

### *2.2 Research Model*

Based on the ELM model, combined with the dissemination of traditional Chinese medicine popularization knowledge, through a large number of literature analysis and summary, we believe that factors such as emotion, cognition, information quality, source credibility, and information environment have certain influences on people's attitudes and behaviors. regulating effect. According to the degree of influence, the audience can choose two paths. Finally, a research model based on

 

the ELM model for the dissemination of traditional Chinese medicine science knowledge is established, as shown in Figure 1.

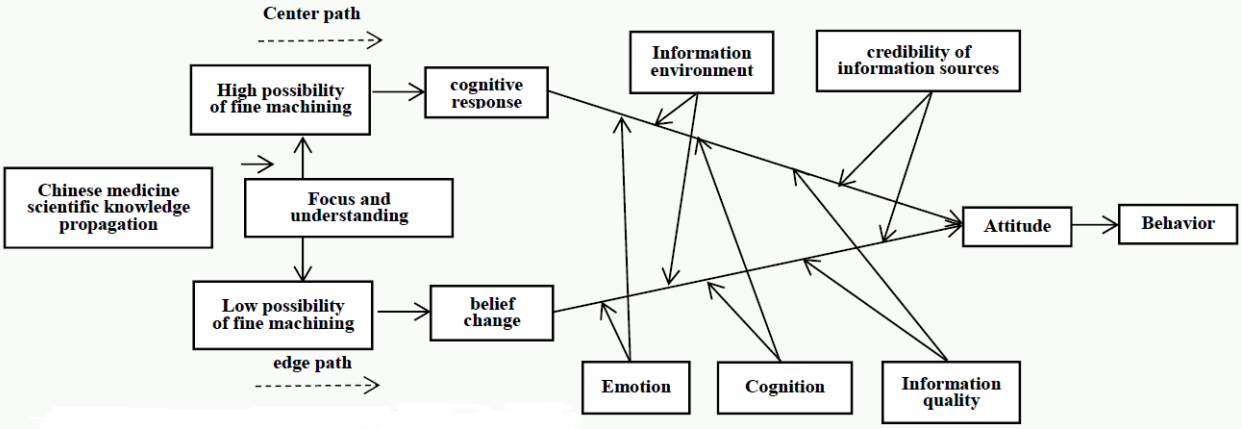


**Figure. 1** Effect model of traditional Chinese medicine popularization knowledge dissemination based on ELM model

## 3. DATA INVESTIGATION AND ANALYSIS

This study designed the questionnaire and collected data on the basis of the classical scale. The questionnaire mainly consists of three parts, namely: understanding the basic situation of users about traditional Chinese medicine, influencing factors, and basic personal information. Each question is measured on a 5-level Likert scale. The basic personal information part mainly involves the age, gender, education level and occupation of the respondents. Taking general Internet users as the research object, the questionnaires were distributed through the Internet. The distribution time was from January 10, 2022 to February 10, 2022, and a total of 167 copies were recovered. From the recovered sample data, it can be found that 13.17% of people need to know about the frequency of Chinese medicine popularization knowledge every day, 22.16% of people need to know about it every week, 42.51% of people need to know about it every month, 22.16 % of people do not understand. Questionnaire software was used for the distribution and recovery of questionnaires in this study, SPSS software was used for data analysis and processing, and the inspection standard was mainly based on official standards.

### *3.1 Reliability and validity test*

Using SPSS26.0 software to process the sorted data, the reliability test results of the scale are shown in Table 1. The results show that the Cronbach's alpha coefficient of each variable in this study is close to 0.8 except for the information environment (0.765), and all other variables are greater than

0.8, indicating that the reliability of each variable in this study is good and meets the research requirements. In this study, KMO value and Bartlett sphericity test were used to verify the validity. It can be seen from Table 2 that the KMO test value is 0.914, and the Bartlett sphericity test has a significant P of 0.000， indicating that the questionnaire has good structural validity and is suitable for subsequent analysis.

**Table 1** Reliability test of measurement scales

| KMO | Bartlett sphericity test | | |
|---|---|---|---|
| | Approximate chi-square | degree of freedom | P |
| 0.914 | 5,149.178 | 820 | 0.000 |

**Table 2** Validity analysis

| Variable | Number of terms | Cronbach's a Coefficient |
|---|---|---|
| Emotion | 4 | 0.894 |
| Cognition | 9 | 0.871 |
| Information quality | 7 | 0.846 |
| Credibility of information sources | 9 | 0.882 |
| Information environment | 5 | 0.765 |

### *3.2 Relationship between influencing factors and attitudes and behaviors towards Chinese medicine popularization knowledge*

Correlation analysis can show the closeness of the relationship between variables. Attitude was significantly positively correlated with the five factors of the respondents' emotion, cognition, and information quality.

**Table 3** Variable correlation analysis results

| Item | Mean value | Standard deviation | Attitude | Emotion | Cognition | Information quality | Credibility of information sources | Information environment |
|---|---|---|---|---|---|---|---|---|
| Attitude | 4.04 | 0.928 | 1 | - | - | - | - | - |
| Emotion | 3.92 | 0.985 | 0.750** | 1 | - | - | - | - |
| Cognition | 3.74 | 0.991 | 0.498** | 0.371** | 1 | - | - | - |
| Information quality | 3.77 | 0.915 | 0.440** | 0.531** | 0.522** | 1 | - | - |
| Credibility of information sources | 3.69 | 0.889 | 0.378** | 0.410** | 0.286** | 0.518** | 1 | - |
| Information environment | 3.63 | 0.995 | 0.293** | 0.477** | 0.534** | 0.417** | 0.317** | 1 |

Note: ** indicates a significant difference at the 0.01 level

To understand the influencing factors of attitudes and behaviors, a regression analysis was conducted with emotion, cognition, information quality, credibility of information sources, and information environment as independent variables, and respondents' attitudes and behaviors toward Chinese medicine popularization knowledge as dependent variables. , see Table 4 for specific analysis. The results show that each factor has an impact on the respondents' attitudes and behaviors towards traditional Chinese medicine (except for the quality of information, the significance values of other factors are all less than 0.05). The credibility of information sources and the information environment have a positive impact on the respondents' attitudes and behaviors towards Chinese medicine popularization knowledge. The quality of information has little effect on attitudes and behaviors. It may be because some people today have limited reading and comprehension capabilities for popular science knowledge of traditional Chinese medicine and behavior [5].

**Table 4** Regression analysis results of influencing factors and attitudes and behaviors

| Independent variable | Non-standardized coefficient | | Standardized coefficient | t value | p | $R^2$ |
|---|---|---|---|---|---|---|
| | B | Standard error | Beta | | | |
| Constant | 0.102 | 0.364 | | 0.280 | 0.780 | |
| Emotion | 0.309 | 0.112 | 0.270 | 2.774 | 0.007 | |
| Cognition | 0.352 | 0.112 | 0.330 | 3.133 | 0.002 | |
| Information Quality | 0.187 | 0.100 | 0.162 | 1.874 | 0.063 | 0.481 |
| Credibility of Information Sources | 0.241 | 0.099 | 0.206 | 2.435 | 0.016 | |
| Information Environment | 0.220 | 0.095 | 0.194 | 2.325 | 0.021 | |

## 4. RESEARCH CONCLUSIONS AND INSPIRATION

Based on ELM, this paper constructs a research model for the adoption of TCM popularization knowledge by network users from the perspective of TCM popularization knowledge, and discusses the influencing factors and mechanism of TCM popularization knowledge dissemination. The results of the study found that emotion, cognition, credibility of information sources, and information environment all positively affect users' attitudes and behaviors toward Chinese medicine popularization knowledge. There are two main theoretical contributions of this paper. First, by applying the Elaboration Likelihood Model (ELM) to the dissemination of TCM popular science knowledge, the application of the ELM is expanded, and the spread of TCM culture is inspired from a new perspective. Second, the influencing factors of users' adoption of TCM popular science knowledge are verified.

From a practical point of view, this paper can provide the following enlightenment for the publishers of TCM popularization knowledge, the TCM culture dissemination platform, and the government. First, this paper finds that emotional positivity has a very significant impact on the attitudes and behaviors of knowledge recipients. It is suggested that the publishers of traditional Chinese medicine science knowledge can use humor, amazement, excitement and other emotional factors to render emotions when preparing the content of traditional Chinese medicine popularization knowledge [6], and induce the perceptual factors of knowledge receivers. Second, cognition affects the interpretation of knowledge by knowledge recipients, and positively affects their attitudes and behaviors towards TCM popularization knowledge. It is recommended that the traditional Chinese medicine popularization knowledge dissemination platform use big data algorithms to accurately push users, provide more theoretical and in-depth knowledge for users with strong cognitive ability, and provide more interesting and easy-to-understand knowledge for users with weak cognitive ability. Third, the credibility of current health knowledge is more important than the credibility of other knowledge, and the credibility of the source of traditional Chinese medicine popularization knowledge has a significant impact on the attitude of knowledge recipients. Therefore, the TCM popularization knowledge dissemination platform can improve the transparency and credibility of information dissemination by strictly examining the qualifications of authors, introducing third-party evaluation agencies, and giving professionals corresponding professional certificates [7]. Fourth, because a good information environment is beneficial to knowledge recipients' attitudes towards traditional Chinese medicine popularization knowledge. It is suggested that the government should increase the cultural promotion of Chinese medicine and the implementation of corresponding policies, create an environment for the whole people to learn Chinese medicine popularization knowledge [8], and improve the public's attitude towards Chinese medicine culture.

There are certain limitations in this study. On the one hand, the coverage of the subjects in this study is limited. Most of the respondents in the study are young and middle-aged groups between the ages of 20 and 60, and there is a lack of data on adolescents and the elderly. Adolescents are in a period of rapid development, and the knowledge acquired during this period has a certain influence on the establishment of values [9]. With the deepening of the aging of the population, the demand of the elderly group for knowledge of traditional Chinese medicine is constantly increasing [10]. The needs and behaviors of the elderly and adolescents have certain particularities, and future research can be carried out on adolescents and the elderly. On the other hand, this study uses a questionnaire survey method to collect data, focusing on the subjective thoughts and behavioral tendencies of users, which has certain limitations for real

behavioral research. Future research can combine second-hand data or experiments for further research and development.

Fund: Communication Mechanism of Traditional Chinese Medicine Culture under the Background of Media Convergence - Research Based on ELM Theory, "Young Crop Program" Project of Hubei University of Chinese Medicine

## REFERENCES

[1] Xu, S., Jin, Q., Wang, H., Li, Z., Jiang, X., Lv, M. & Tan, W., (2015) A Survey of Chinese Public Knowledge about Traditional Chinese Medicine. Journal of Beijing University of Traditional Chinese Medicine, 38(06):413-419.

[2] Petty, R.E., Cacioppo, J.T., (1984) Source Factors and the Elaboration Likelihood Model of Persuasion. Advances in Consumer Research. J. Advances in Consumer Research ,11(1):668-672.

[3] Wu, X., (2014) Persuasion Path and Attitude Change of Crisis Communication from the Perspective of ELM. Journal of Minnan Normal University (Philosophy of the Social Sciences), 28(01):126-131.

[4] Zhang, M., Wang, X., (2018) Analysis of Research Status and Application Fields of the Fine Processing Possibility Model. J. Library and Information Research ,11(04):73-79+85.

[5] Zhao, X. & Li. J., (2016) On the Current Situation about Popular science of Traditional Chinese Medicine. Journal of Shaanxi University of Chinese Medicine, 39(04):111-114.

[6] Jin, X., Zhou, Z., Yin, M. & Yu, X., (2021) Understanding Antecedent Differences across Online Users' Like and Comment Behaviors: The Case of Healthcare Enterprise WeChat Public Platform. Journal of Management Sciences in China, 24(04): 54-68.

[7] Sun, X.& Li, D., (2020) Research on Influencing Factors of Health Information Credibility in Mobile Social Media: Case Study of WeChat. Information Research, (06): 1-12.

[8] Ai, Q., Lan, Z., Li, Q., Liu, X., Lian, Y., Jiang, G. & Lu, X., (2017) The Present Situation of the Development of Traditional Chinese Medicine Science Popularization. Asia-Pacific Traditional Medicine ,13(23): 3-7.

[9] Liu, G., Su, X. & Lin, S., (2016) Practice and Experience of Using Traditional Chinese Medicine Herbarium for Popular Science Education of Traditional Chinese Medicine to Teenagers. Health Vocational Education, 34(22): 20-21.

[10] Hou, X., Chen, J. & Wang, J., (2020) A Study on the Characteristics of Elements and Paths of Information Processing Behavior in Traditional Chinese Medicine of the Elderly. Library and Information Service ,64(19):80-88