



Users' Willingness to Adopt Health Information in WeChat Public Platform of China

**Lifang Tang¹, Hong Sun²*

1. *School of Media and Design, Hangzhou Dianzi University, Hangzhou, China*
2. *School of Humanities and Communication, Zhejiang Gongshang University, Hangzhou, China*

***Corresponding Author:** Email: tlf@hdu.edu.cn

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Abstract

Background: WeChat public platform has become an important source for the public to obtain health information. We aimed to explore the key factors affecting users' willingness to adopt health information and their action mechanisms.

Methods: From April 2023 to May 2023, the users of WeChat public platforms were surveyed via online questionnaires, and the factors influencing users' willingness to adopt health information and their action mechanisms were analyzed using quantitative statistics and structural equation model (SEM).

Results: The influencing factors of users' willingness to adopt health information in WeChat public platforms could be divided into the following three dimensions: health belief, information, and platform. Perceived benefits, perceived threats, information quality, source credibility, and platform atmosphere all have significantly positive effects on information adoption willingness. Among them, information quality also positively affects users' perceived benefits; perceived barriers negatively affect the willingness to adopt information.

Conclusion: Through the analysis of the influencing factors of users' willingness to adopt health information in WeChat public platforms, it could provide reference for enhancing the public health information service capability of WeChat public platforms and elevating the health self-management level of the public.

Keywords: WeChat public platforms; Health information; Adoption willingness; Perceived benefits

Introduction

Internet health information plays an increasingly significant role in improving public health (1). Health WeChat public platforms, serving as a very important part of public health communication, enable users to obtain instant health information services through personal terminals. Health information adoption is a process in which, driven by health needs, users choose,

identify, accept, and adopt health knowledge (2), highlighting the importance of the subjective willingness of health information receivers. Therefore, examining users' willingness to adopt health information under the environment of WeChat public platforms will have realistic significance. Scholars have explained the current health information adoption behavior using individual



attitudes and beliefs from the angle of Health Belief Model (HBM) (3). Generally, individuals will decide whether to adopt specific health information and health behavior based on the result expectation and threat evaluation in the cognitive process. From the perspective of result expectation, perceived benefits embody individual perception of the benefits brought by adopting specific health behavior. Studies have generally found that the higher the perceived benefits of individuals, the higher the possibility for them to adopt the corresponding health behavior. Mou et al (4) explored the adoption willingness of consumers for online health information, and the results manifest that perceived benefits positively affect users' willingness to adopt health information. When users perceive the greater benefits from adopting the health information in WeChat public platforms, they will be inclined to adopt health information. On this basis, Hypothesis 1 (H1) is proposed: Perceived benefits positively affect users' willingness to adopt health information. The perceived barrier, which is another variable in the process of result expectation, highlights the individual perception of barrier and resistance that may be encountered in the process of adopting health behavior (5). Previous studies have proven that when individuals have to input a large amount of time, energy, and money or encounter resistance from others, they will be less willing to adopt the recommended behavior (6). Users' willingness to adopt QR code is negatively affected by their perceived barrier in identity verification via QR code (7). This study asserts that health information contains several professional terms, and it may require considerable efforts and costs to adopt the recommended health behavior. In addition, individuals will be less willing to adopt health information when perceiving greater barriers in adopting the health information in WeChat public platforms. Therefore, Hypothesis 2 (H2) is put forward: Perceived barriers negatively affect users' willingness to adopt health information. From the angle of threat evaluation, perceived threats play a key role in shaping users' attitudes, intention, and behavior (8). Perceived disease threats positively influence users' adop-

tion of telemedicine (9). In this study, perceived threats are concretely reflected in users' perception of the possibility and severity of their diseases. When perceiving the higher possibility to perceive disease threats due to the absence of the corresponding health measures, individuals will tend to protect their own health by adopting the health information in WeChat public platforms. Hence, Hypothesis 3 (H3) is raised: Perceived threats positively affect users' willingness to adopt health information.

From the perspective of health information, the health information of WeChat public platforms is the action object of users' behaviors such as searching, adopting, and disseminating health information. In the research on information adoption, two variables, namely, information quality and source credibility, are generally introduced into the research model. Information quality reflects the persuasiveness of the information resources provided by the system. In this study, it refers to users' perception of the quality of various health information resources provided by WeChat public platforms. Through empirical research, stimulating the behavioral intention of system users via high-quality information content is easier than low-quality information content (10). When studying the willingness to adopt the health information in mobile social media, Information quality positively affects users' adoption willingness for health information (11). On this basis, Hypothesis 4 (H4) is put forward: Users' willingness to adopt health information is positively influenced by information quality. In addition, information quality has been proven in the existing studies to be an important factor influencing perceived benefits. The quality of persuasive information significantly affects perceived benefits, and perceived benefits play a key role in employees' attitude toward information adoption (12). Therefore, Hypothesis 5 (H5) is put forward: Information quality positively affects users' perceived benefits. Source credibility is the degree to which users think the information source is credible, authoritative, and reliable, which is irrelevant to the quality of information itself (13). It reflects the relationship between information

disseminators and information sources in the process of information dissemination. Jin et al (14) found through research that the willingness to adopt and share health information in WeChat public platforms is primarily linked with the credibility of the source. When studying the willingness to adopt tourism information, a highly reliable information source means that the information it publishes is reliable and authentic, thereby rendering it is easier to gain the trust and recognition of users (15). Owing to the particularity of online health information, users have higher requirements for the source and accuracy of online health information. If health information is published or audited by experts and scholars in the medical field, users will show higher adoption willingness. Therefore, Hypothesis 6 (H6) is put forward: Source credibility positively influences users' adoption willingness for health information.

From the perspective of the platform, the platform atmosphere is formed through the interaction between users, which embodies an interactive social relation. Social relations will be stronger because of the common emotions of the group

(16). A good sense of organizational atmosphere is helpful to stimulate users' willingness to share information and behavior (17). The platform atmosphere in WeChat public platforms is formed in the communication and interaction between users, which is the perception of users on their WeChat environment and interpersonal influence. Additionally, their information behavior will also be largely influenced by the platform atmosphere. Tan et al (18) analyzed the information behavior in the circle of WeChat friends and thought that the sharing atmosphere is an important factor affecting the willingness and behavior of users to accept information in their circle of friends. In the harmonious atmosphere of WeChat public platforms, users tend to support and trust members to actively adopt the health information recognized by other members. Accordingly, Hypothesis 7 (H7) is put forward: Platform atmosphere positively affects users' willingness to adopt health information. Based on the above analysis, Fig. 1 displays a theoretical hypothesis model for the factors influencing users' willingness to adopt health information in WeChat public platforms:

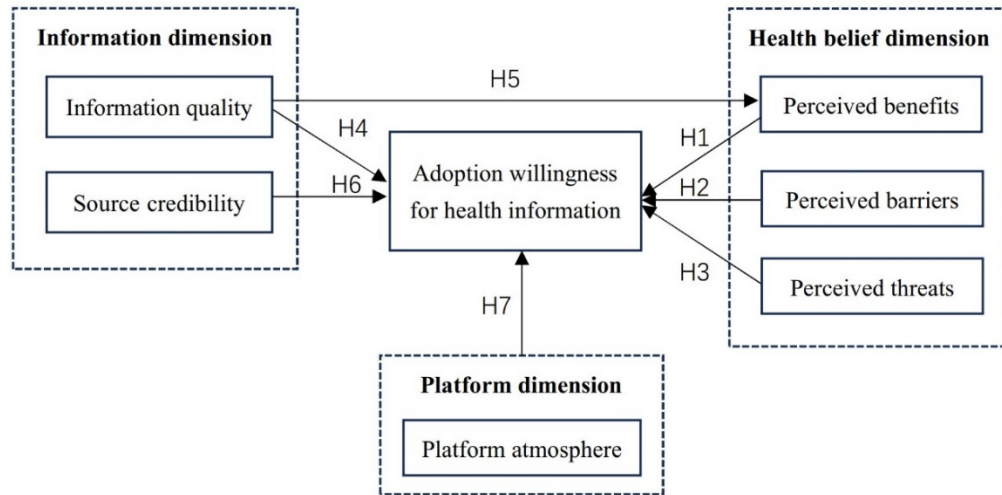


Fig. 1: Structure of the proposed theoretical hypothesis model

Methods

Data collection

Based on the empirical research method, the formal questionnaire survey was conducted pri-

marily online, and questionnaires were distributed via the following two platforms: WeChat and wxj.cn. Specifically, a total of 500 questionnaires were distributed from April to May, 2023, of which 416 cases were recovered, those with in-

complete filling were excluded, and 371 valid ones were finally recovered. In sample size, the latter aligned with the relevant research requirements such as descriptive statistical analysis and structural model analysis.

Research variables

This study derived the measurement items from mature scales in the previous studies, which were improved by combining the specific research scenarios. The variable “Adoption Willingness” (AW) was measured using 3 questions with reference to the scale established already (13,19). In the health belief model, the variable “Perceived Benefits” (PBE) was measured by referencing the scale constructed by Yoon and Kim (20); the variable “Perceived Barriers” (PBA) was measured using the scales established by Mo and Mak (21) and Lee (22), containing 4 questions. The variable “Perceived Threats” (PT) was measured via the scale established by Guo et al (23) with 6 questions in total. The two variables “Information Quality” (IQ) and “Source Credibility” (SC)—in the health information dimension were measured with 4 questions in the scales established by Wixom and Todd (24) and Huo et al (25). The health platform dimension was expressed by “Platform Atmosphere” (PA), which was measured through 4 questions in the scale constructed by Yang (26). The items in the questionnaire were measured using the 5-point Likert scale method. After the initial questionnaire was planned, a pre-survey was implemented; the items with low reliability

were excluded, and a small-scale expert interview was carried out. In addition, specific minor adjustments of such items were made to ensure scientific and reasonable questionnaire items. Finally, a formal questionnaire consisting of 29 items was determined.

All study participants gave their informed consent for inclusion before they participated in the study.

This study processed the collected data via SPSS 22.0 (IBM Corp., Armonk, NY, USA) and AMOS23.0 statistical analysis software; the reliability and validity of the variable measuring scale were tested, and the research hypotheses proposed in the research model were verified.

Results

Reliability and validity tests of variables

Table 1 lists the reliability and validity analysis results of the proposed measurement model. The results showed that the Cronbach’s α coefficient of the scale was consistently above 0.7, indicating its good reliability; from the fit indices of the model, χ^2/df of each variable was between 1 and 3; RMR was kept below 0.05; the values of GFI, AGFI, NFI, IFI, and CFI all exceeded the ideal level of 0.9; and the RMSEA was kept less than 0.08, namely, the confirmatory factor analysis result of each variable fell into the acceptable range, indicating good construct validity.

Table 1: Reliability and validity analysis result of the model

<i>Variables</i>	<i>Cronbach's α</i>	χ^2/df	<i>RMR</i>	<i>GFI</i>	<i>AGFI</i>	<i>NFI</i>	<i>IFI</i>	<i>CFI</i>	<i>RMSEA</i>
AW	0.831	2.239	0.031	0.959	0.949	0.935	0.936	0.943	0.064
PBE	0.823	2.441	0.025	0.945	0.938	0.942	0.941	0.924	0.058
PBA	0.901	2.726	0.037	0.966	0.944	0.954	0.974	0.938	0.051
PT	0.782	2.086	0.029	0.927	0.931	0.942	0.934	0.923	0.069
IQ	0.819	2.314	0.030	0.933	0.941	0.953	0.938	0.928	0.056
SC	0.764	1.941	0.038	0.921	0.927	0.937	0.931	0.923	0.070
PA	0.834	2.372	0.021	0.954	0.948	0.941	0.947	0.932	0.053

Structural model test and results

The fit measure of the established hypothesis model on the factors influencing the adoption willingness for health information was verified via the structural equation model (SEM). Table 2 shows the fit indices. The absolute fitting index

χ^2/df of the model was less than 3, meeting the strict standard; the values of GFI, AGFI, NFI, IFI and CFI were all above than the ideal level of 0.9, and RMSEA was below than the ideal standard of 0.05. This result revealed the relatively satisfactory degree of fitting in this study.

Table 2: Fit indices of the model

Statistical value		χ^2/df	GFI	AGFI	NFI	IFI	CFI	RMSEA
Standard value	or critical value	<3.00	>0.90	>0.90	>0.90	>0.90	>0.90	<0.05
Test result data		2.381	0.929	0.931	0.944	0.952	0.947	0.041
Model judgment	adaptation	Y	Y	Y	Y	Y	Y	Y

With the help of AMOS23.0 software, the valid sample data were substituted into the SEM, and the model was fitted, adjusted, and tested. Fig. 2 shows the standardized coefficients, and Table 3 shows the final model test results. Perceived benefits ($\beta = 0.509, P < 0.01$) positively affected the adoption willingness for health information; information quality ($\beta = 0.238, P < 0.01$) positively affected the adoption willingness for health information; perceived barriers ($\beta = -0.192, P < 0.05$) negatively affected the adoption willingness for health information; perceived threats ($\beta = 0.438, P < 0.01$) positively affected the adoption willingness

for health information; information quality ($\beta = 0.238, P < 0.01$) positively affected the adoption willingness for health information; information quality ($\beta = 0.254, P < 0.01$) positively affected the perceived benefits; source credibility ($\beta = 0.181, P < 0.05$) positively affected the adoption willingness for health information; platform atmosphere ($\beta = 0.311, P < 0.01$) positively influenced the adoption willingness for health information. H1–H7 were effectively supported by the verification results.

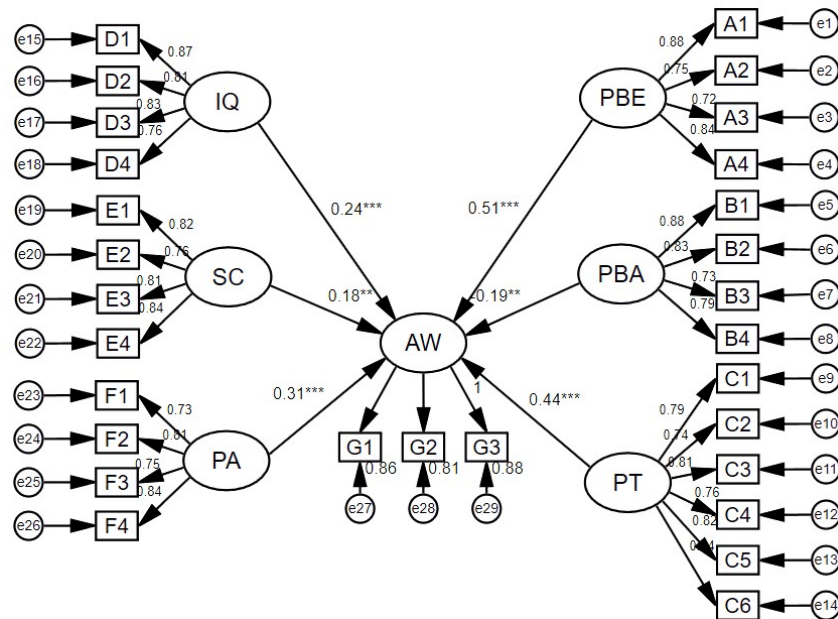


Fig. 2: SEM analysis results

Table 3: Regression analysis of path coefficient

<i>Hypothesis</i>	<i>Path</i>	<i>Estimate</i>	<i>S.E.</i>	<i>C.R.</i>	<i>P</i>	<i>Test re- sult</i>
1	AW ← PBE	0.509	0.042	10.159	***	Supported
2	AW ← PBA	-0.192	0.034	-4.181	**	Supported
3	AW ← PT	0.438	0.041	7.124	***	Supported
4	AW ← IQ	0.238	0.029	4.992	***	Supported
5	PBE ← IQ	0.254	0.025	5.86	***	Supported
6	AW ← SC	0.181	0.034	3.187	**	Supported
7	AI ← PA	0.311	0.039	7.120	***	Supported

Notes: ** significant at the 0.05 level, and *** significant at the 0.01 level

Discussion

This study constructed a model of users' willingness to adopt health information in WeChat public platforms and subsequently discussed the factors affecting the users' willingness to adopt health information in WeChat public platforms and their action mechanisms through empirical research. According to the data analysis results, the following conclusions were drawn:

Influence of health belief dimension on adoption willingness for health information

According to the health belief model, users' health behavioral intention depends on their attitudes toward and beliefs in health behavior. The study results reveal that users' willingness to adopt health information is significantly affected by the three variables of the health belief dimension. Therein, perceived benefits ($\beta = 0.509$, $P < 0.01$) positively influence users' willingness to adopt health information, reaching the highest influencing degree. The most critical force driving users' willingness to adopt health information lies in perceiving the benefits brought by health information. Most of the previous studies have proven that perceived benefits significantly influence individuals' protective behavioral intention (7). For instance, perceived benefit is a factor influencing users' willingness to use tracking-type

Apps most significantly (27). Therefore, operators of WeChat public platforms can, from the angle of users' perceived benefits, accurately analyze users' demands for health information and provide useful and superior health information for users according to the different health problems faced by different groups.

Perceived threats ($\beta = 0.438$, $P < 0.01$) positively affect users' willingness to adopt health information, which plays a key role in shaping users' attitudes, intentions, and behaviors. Ajzen (28) found in similar research that the magnitude and severity of perceived threats are the key factors somewhat influencing the willingness and behavior of risk reduction. This study defines perceived threats as the magnitude and severity of health risks perceived by individuals who have not adopted the health information in WeChat public platforms. When individuals think that the threat is serious if not taking the corresponding measures, they will be motivated to protect their own health and willing to adopt the health information in WeChat public platforms. In addition, perceived barriers ($\beta = -0.192$, $P < 0.05$) also constitute an important factor influencing users to adopt health information. This study refers to perceived barriers as all the barriers perceived by users in the process of adopting the health information in WeChat public platforms. The individual perceived barriers in health behav-

iors include time and economic costs, physical and mental barriers, behavioral complexity and availability, and so on (29). At a lower cost spent in adopting health information, users will be more willing to adopt the health information in WeChat public platforms. Moreover, solving perceived barriers is helpful to facilitate the adoption willingness for health information.

Influence of information dimension on adoption willingness for health information

The information quality ($\beta = 0.238, P < 0.01$) exerts a stronger influence on adoption willingness for health information than the source credibility ($\beta = 0.181, P < 0.05$), indicating that the information quality is one of the key factors affecting users' willingness to adopt health information. On health-type WeChat public platforms, information quality is specifically manifested by the diversified content and forms of health information, accurate and reliable health information content, timely updating of health information, the strong correlation between health information and health problems faced by users, and so on (30). This study finds that users' perceived benefits are positively affected by information quality ($\beta = 0.254, P < 0.01$). Under the environment of health-type public platforms, information quality plays a significant role in the usefulness of users' perceived information (12). Therefore, it reflects that the health information quality of WeChat public platforms will affect users' willingness to adopt health information and their judgment of perceived benefits: the higher the information quality, the higher the user perceived usefulness, and the more the users' information acceptance intention will be promoted. In the new media era, the principle of "content is the top priority" is particularly important in the dissemination of health information. Updating the latest health medical information in time and constantly providing high-quality health information services are the foundation for the sustainable development of health-type WeChat public platforms.

The source credibility of health information emphasizes whether the information sources are

credible, authoritative, and reliable. The source credibility of health information has a significantly positive impact on users' willingness to adopt health information. As seen from previous research literature, the quality of information sources is often regarded as one of the factors that affect information adoption willingness. When studying the perceived information usefulness of health-type short videos, some scholars have verified the positive effect of information source credibility on information adoption willingness (31). Given the particularity of online health information, users show higher requirements for the source and accuracy of such information, such as whether the information disseminators are doctors or medical workers in professional fields. The higher professionalism indicates the stronger authoritative in the health field and contributes to the higher health information adoption willingness of users.

Influence of platform dimension on adoption willingness for health information

Platform atmosphere ($\beta = 0.311, P < 0.01$) has a significantly positive impact on users' willingness to adopt health information. As scholars have found, in a harmonious platform interaction atmosphere, users will choose to follow the crowd on the purpose of gaining support and likes from others and actively adopt the health information recognized by public platform users (32). Therefore, the atmosphere of WeChat public platforms exerts an important effect on user group identity and group preference. Creating a good platform atmosphere not only can enhance users' sense of belonging and identification within the group to form the active adoption willingness for health information but also hasten the convergent group preference and further promote the dissemination of health information.

Conclusion

This study established a factors model of influencing users' willingness to adopt health information in WeChat public platforms on the basis

of health belief theory. Through theoretical and empirical research, the following analysis conclusions were drawn: 1) All the three variables of the health belief dimension significantly affect users' willingness to adopt health information. Therein, perceived benefit is the most important positive influencing factor; perceived threat is a positive influencing factor, while perceived barrier exerts a significantly negative impact on users' willingness to adopt health information. 2) Users' information adoption willingness is significantly positively influenced by both the quality and source credibility of health information, of which the former will also positively influence the perceived benefits of users. 3) Platform atmosphere has a significantly positive influence on users' adoption willingness for health information. This study chose WeChat public platform users as the study objects. In the process of online sample collection, young people showed positive intentions of accepting the interview and thus became the main subjects of this study. The follow-up study can expand the sampling range to add persuasiveness to our conclusions.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/ or submission, redundancy, etc.) have been completely observed by the authors.

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Conflicts of Interest

The authors declare no conflicts of interest.

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