Public Risk Perception and Continuous Vaccination Intention Against COVID-19 In the Post-Epidemic Era

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Abstract: The Chinese Center for Disease Control and Prevention (China CDC) has suggested that more than 1 billion people need to be vaccinated against COVID-19 to establish an effective immune barrier in China. According to the National Health Commission of the People's Republic of China 's website (National Health Commission, PRC), until 14 March 2022, the total number of COVID-19 vaccines in China had reached 122,537 million, and 1,239,171,000 people had been vaccinated with the coronavirus vaccine. Although the status of COVID-19 vaccination has met the requirements of an effective immune barrier, building the effective immune parclose still needs to be considered because of the characteristics of solid transmission, high viral load and high pathogenicity of Delta and Omicron strains, and continuous vaccination is still needed to cope with the virus mutation. Based on the expectation confirmation theory and risk perception, our study accurately evaluates the evolution of public risk perception and the influencing factors of public behavioral decisions on continuous vaccination under the post-epidemic situation, which is of great significance for the government to promote COVID-19 vaccination effectively.

1. Introduction

In July 2021, a new round of COVID-19 outbreaks broke out in Nanjing. The Delta strain, which has spread across more than 10 provinces, has sparked a fierce public debate about the efficacy of vaccines due to its high transmissibility, high viral load and high pathogenicity [1]. The vaccination intention and speed of Chinese people are closely related to the epidemic risk [2]. Before May 2021, due to China's excellent epidemic prevention and control capabilities, there had been without new local cases for a long time. When there is no perceived threat from the epidemic, the public feel little urgency to get vaccinated [3]. Since May, the epidemic spread throughout the country, and people began to pay more attention to vaccination, which significantly accelerated the speed of immunization. On average, up to 20 million people have been vaccinated against COVID-19 every day since June [4]. From 0:00 to 24:00 on 12 March, 2022, there were 1,412 new cases of epidemic confirmed in Jilin Province, with a new round of epidemic spreading in Jilin, Guangdong, Shandong and Shanghai, it is imperative to continue vaccination against the virus in the face of the threat of mutation.

Studies at home and abroad have provided many possible results for identifying cognitive factors that affect vaccination intention. Based on existing conclusions, our study, combined with the expectation confirmation theory, focuses on the original achievements at the same time, also the pursuit of more effective solutions is put forward. Therefore, it may provide a decision-making basis for epidemic prevention and control.

2. Literature Review

Scholars at home and abroad have made a lot of achievements in exploring the cognitive factors affecting vaccination intention. For example, Kourlaba G. et al. demonstrated that people's vaccination intention would significantly increase with the epidemic's recurrence through the stratified sampling

of social surveys [5]. In the symptoms, transmission, and the prevention and control measures of the higher knowledge score, respondents' vaccination intention is higher, and think it is necessary for public health officials to take steps to improve vaccine cognitive level [6]. As Wang Zhiwei, et al. uses multinomial logistics regression analysis in detail, compares the different aspects of the cognitive factors and the strength of the correlation between vaccination intention [8]. The researchers also explored signaling mechanisms between vaccination intentions and information channels such as education, media contact, and publicity. In terms of education, KabambaNzaji M. et al. systematically demonstrated the need for education among health care workers to increase vaccination against coronavirus vaccines [9]. Alley SJ. Et al. comprehensively summarized the different characteristics of people with different educational levels in vaccination against COVID-19 through a questionnaire survey (N=730) [10].

So far, researchers have used expectation confirmation theory to explore panic buying behavior under COVID-19: 《Consumer Panic Buying Behavior during COVID-19 Pandemic: Studying the Effects of Uncertainty, Perceived Severity, Perceived Scarcity, and anxiety》[11]. With the widespread use of Internet tools and mobile payment software, scholars, based on different research objects, have rapidly increased the research on the continuous using intention of users of network equipment and payment software in the field of sharing economy [12]. Based on the existing research, this paper applies the expectation confirmation theory to the study of the public's continuous vaccination intention against the COVID-19 vaccine. This paper analyzes the internal logical relationship between the evolution trend of public risk perception and vaccination, to study the countermeasures for the government to regulate the public risk perception and guide the vaccination, providing a theoretical basis and decision-making reference for the government to soothe the public's irrational risk perception effectively.

3. Hypotheses

Expectation confirmation, perceived usefulness and satisfaction are essential factors in studying users' behavioral intention. Existing studies generally show that expectation confirmation, perceived usefulness and satisfaction all impact on the public's continuous vaccination intention.

3.1 Expectation confirmation model

With the in-depth development of the expectation confirmation model in various fields, this theory has been extended to the research field of shared bike user's intention, and confirmation has a positive impact on user's intention to continue using [13]. COVID-19 vaccine provided free of charge for the whole people, belongs to the public product, its voluntary vaccination is more substantial, the public before and after their vaccination will form a kind of expectation to confirm. Therefore, the expectation confirmation model is also suitable for studying the public's continuous vaccination intention. The confirmation developed after vaccination will directly promote the public's continuous vaccination intention.

Concerning the role of confirmation, the term confirmation refers to the extent to which products or services meet the consumer's expectations [14]. Hence, confirmation can be evaluated by comparing original expectations with experience [15]. If the expectations are identified, their perceived usefulness and satisfaction will be strengthened correspondingly [16]. Users' behaviors to continue using tend to be shaped by the extent of their satisfaction and the level of their perceived usefulness of actually adopting products or services [14]. Hence, satisfaction tends to positively impact the user's continuance intentions to adopt products or services. Consumers who detect products or services useful are likely to be satisfied with them and adopt them continually. Previous studies have underpinned a positive association between perceived usefulness and continuance intentions, and between perceived usefulness and satisfaction [16].

The public's perceived usefulness is an important variable in determining whether the public will continue to receive the COVID-19 vaccine. Expect to confirm contributes to the public perception of the usefulness of the COVID-19 vaccine and vaccination will continuously. Perception of vaccine's

usefulness after vaccination can significantly increase public satisfaction with the vaccine and thus promote the continuous vaccination of the COVID-19 vaccine. Therefore, this study used perceived usefulness and satisfaction as a mediating variable affecting the relationship between confirmation and continuous vaccination intention.

3.2 Risk perception

As previous studies stated in the research of behavioral intention, risk perception refers to the extent of an individual's subjective evaluation of uncertainty and adverse consequences of adopting and using a new product or a novel service [17]. The article defines risk perception to the public in the process of COVID-19 vaccination objective of subjective risk perception and psychological feelings. Therefore, this study took risk perception as a single moderating variable, and combined with the characteristics of the COVID-19 vaccine, and it assumed that once the public risk perception, the relationship between confirmation and public continuous vaccination intention would be alleviated.

Following this logic, in the context of continuous vaccination intention, we hypothesize the following:

Hypothesis 1. The confirmation is positively related with the continuous intentions toward the COVID-19 vaccine.

Hypothesis 2. The confirmation is positively related with the perceived usefulness toward the COVID-19 vaccine.

Hypothesis 3. The confirmation is positively related with the satisfaction toward the COVID-19 vaccine.

Hypothesis 4. The satisfaction is positively related with the continuous intentions toward the COVID-19 vaccine.

Hypothesis 5. The perceived usefulness is positively related with the satisfaction toward the COVID-19 vaccine.

Hypothesis 6. The perceived usefulness is positively related with the continuous intentions toward the COVID-19 vaccine.

Hypothesis 7a. The perceived usefulness mediates the relationship between confirmation and public willingness to continue vaccination.

Hypothesis 7b. The satisfaction mediates the relationship between confirmation and public willingness to continue vaccination.

Hypothesis 7c. The perceived usefulness and satisfaction mediate the relationship between confirmation and public willingness to continue vaccination.

Hypothesis 8. The risk perception negatively moderates the relationship between confirmation and public willingness to continue vaccination. (See Fig. 1).

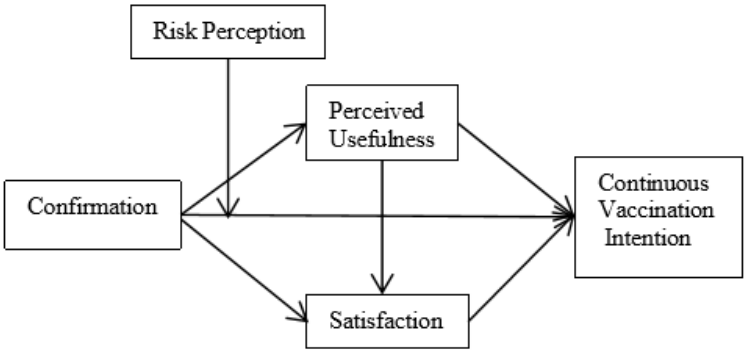

Fig. 1 Hypothesized model.

4. Data and methods

4.1 Sample and data collection

This paper relies on a professional survey website to issue questionnaires and collect relevant data. Research in Jiangsu province as the research context, mainly adopts snowball way of convenience sampling technique. Ultimately, 202 questionnaires were distributed to the respondents, and 181 valid questionnaires were returned, thereby leading to a response rate of approximately 89.6%. Demographic descriptions in Table 1 demonstrate that the proportion of male respondents is 55.8%, where 56.9% of the respondents are aged between 18 and 30, and 42.7% are aged between 31 and 60. Approximately 26.0% of all respondents have an annual household income between RMB 30,000 and RMB 70,000, whereas 26.5% have that between RMB 70,000 and 120,000. Moreover, most of the respondents are well-educated. More than 61.7% of them have a college degree. According to the survey, 65.7% of respondents had completed their second dose of vaccine.

Table 1 Demographic profile of respondents

	Variable	Frequency	Percentage (%)
Gender	Male	101	55.8%
	Female	80	44.2%
Age	18-25	60	33.1%
	26-30	43	23.8%
	31-40	35	19.3%
	41-50	32	17.7%
	51-60	9	5.0%
Education	Less than high school	15	8.3%
	High school	35	19.3%
	Vocational school	21	11.6%
	College graduate	56	30.9%
	Master's degree or PhD	54	29.8%
Annual household income	Less than ¥30,000	22	12.2%
	¥30,000–¥70,000	47	26.0%
	¥70,000–¥120,000	48	26.5%
	¥120,000–¥200,000	35	19.3%
	¥200,000–¥400,000	20	11.0%
	Over ¥400,000	9	5.0%
Number of injections received	The first needle	25	13.8%
	The second needle	119	65.7%
	The third needle	37	20.4%

4.2 Measures

The questionnaire of this study's main primary content includes two parts. The first part is the personal information of respondents; the second part is the study of variables measuring item. We measured all variables with several items adopted from the existing literature. Using a five-point Likert scale, we measured all terms from 1 (Strongly disagree) to 5 (Strongly agree). Five scales were involved in this study: confirmation, perceived usefulness, risk perception, satisfaction, and continuous vaccination intention (see Table 2).

Table 2 Constructs and measurement items.

Confirmation (Bhattacherjee,2001 Liao et al.,2009, Weng et al.,2017)	
CON1	My experience with my last COVID-19 vaccine was better than I expected.
CON2	The service provided during my last vaccination was better than I expected.
CON3	Overall, most of my expectations about getting vaccinated against COVID-19 have been confirmed.
Perceived Usefulness (Cheng, et al.,2006)	
PU1	I think the COVID-19 vaccine will protect me from infection.
PU2	I think the vaccine will make me less susceptible to infection.
PU3	I think vaccination against COVID-19 is useful.
PU4	Overall, I think it is beneficial to be vaccinated against COVID-19.
Risk Perception (Daily, 2015, Jung et al., 2013)	
RP1	I am worried about adverse reactions after continuous vaccination against COVID-19.
RP2	It makes me anxious to see continued adverse reactions after vaccination.
RP3	Continuing to be vaccinated when it is not completely safe poses a threat to my health.
RP4	I am concerned about the negative impact of continued vaccination against COVID-19 on my future health.
Satisfaction (Bhattacherjee,2001, Liao et al., 2009, Weng et al., 2017)	
SA1	I am very pleased with the overall experience of the COVID-19 vaccination.
SA2	I am very satisfied with the service of the COVID-19 vaccination.
SA3	I feel safe after getting the COVID-19 vaccine.
SA4	I was very happy with the overall experience of being vaccinated against COVID-19.
Continuous vaccination intention (Scherer et al.,2016, Zeithaml,Berry,& Parasuraman, 1996	
CVI1	I would like to commend the vaccination campaign for COVID-19
CVI2	I will continue to get new vaccines against COVID-19.
CVI3	I would encourage others around me to get new vaccines against COVID-19.

5. Results

5.1 Reliability and validity assessment

The overall KMO value of the questionnaire was 0.756, and the significance was Sig. It was 0.000 less than 0.01, which passed the Bartlett sphericity test ($P < 0.001$), indicating that the overall reliability of the data was outstanding. We first test the reliability and validity of the constructs. The factor loading of all the items is higher than 0.8. Thus, it is neglected. The values of composite reliability range from 0.881 to 0.920, and the Cronbach's alpha values of the constructs range from 0.872 to 0.919, all of which are greater than 0.70. Thus, the construct reliability is acceptable.

Then, we test the construct validity using average variance extracted (AVE). The AVE scores range from 0.711 to 0.775, above the benchmark value of 0.50. Thus, the convergent validity is reached. Moreover, the discriminant validity requires testing. Therefore, we can conclude that the measurement model fits the data well.

We also conduct a confirmatory factor analysis (CFA) by using AMOS. The CFA shows a good model fit. The normed $\chi 2$ ($\chi 2$ to df, $\chi 2 = 226.694$, $df = 125$) is 1.814, which is below the desired cutoff value of 3.0. The SRMR is 0.059, which is below the desired cutoff value of 0.10. RMSEA is 0.067, which is lower than 0.08, indicating a good fit. The NFI = 0.914 , IFI=0.960 and CFI = 0.959 are greater than 0.90. The structural model has a good fit (see Table 3 and Table 4).

Table 3 Means, standard deviation, and correlations.

	M	SD	CON	PU	RP	SA	CVI
CON	3.186	.953	1				
PU	3.646	.987	.384**	1			
RP	3.383	1.070	.146*	.304**	1		
SA	3.507	1.201	.354**	.490**	.184*	1	
CVI	3.731	0.991	.447**	.414**	.230**	.529**	1

Note: N=181, **. $p < 0.01$, *. $p < 0.05$

Table 4 Confirmatory factor analysis results for measurement model.

Item	Factor loading	S.E.	C.R.	p	Composite reliability	Cronbach's Alpha	AVE
CON1	.862	-	-		.881	.872	.711
CON2	.857	.075	13.297	***			
CON3	.812	.094	12.582	***			
PU1	.860	-	-		.916	.916	.733
PU2	.847	.069	14.442	***			
PU3	.839	.069	14.207	***			
PU4	.878	.067	15.334	***			
RP1	.841	-	-		.920	.919	.743
RP2	.795	.078	12.853	***			
RP3	.866	.070	14.744	***			
RP4	.939	.070	16.614	***			
SA1	.872	-	-		.920	.919	.741
SA2	.836	.066	14.562	***			
SA3	.841	.064	14.706	***			
SA4	.893	.061	16.357	***			
CVI1	.815	-	-		.912	.904	.775
CVI2	.932	.086	15.040	***			
CVI3	.887	.102	14.298	***			

Note: ***. $p < 0.001$, **. $p < 0.01$, *. $p < 0.05$

5.2 Regression analysis

We use structural equation modeling to evaluate the models and conduct path analysis to examine the 10 hypotheses. The relationships among the variables can be displayed using the visual tools provided by AMOS. The P-value of the relationship between perceived usefulness and continuous vaccination intention is 0.168, which means that the relationship between the outcome variable is not significant. Still the relationship between other variables is significant. As shown in Table 5 and Fig. 2, hypotheses 6 are inconsistent with the expectations.

Table 5 Model coefficient evaluation table.

path	Estimate	S.E.	C.R.	P
Usefulness <--- Confirmation	.457	.091	5.030	***
Satisfaction <--- Usefulness	.485	.087	5.595	***
Satisfaction <--- Confirmation	.213	.095	2.247	*(.025)
Intention <--- Usefulness	.090	.066	1.378	.168
Intention <--- Confirmation	.255	.069	3.681	***
Intention <--- Satisfaction	.319	.064	5.003	***

Note: ***. $p < 0.001$, **. $p < 0.01$, *. $p < 0.05$

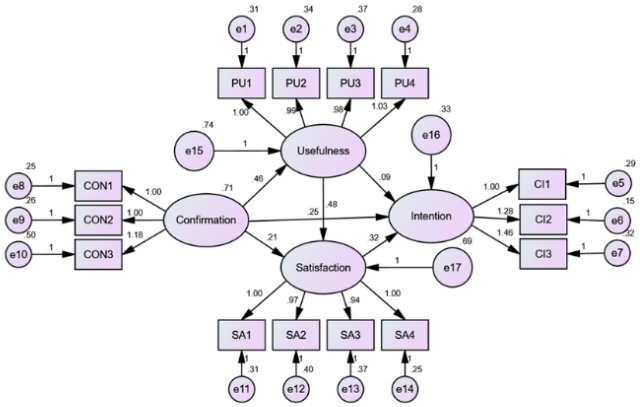

Fig. 2 Result of the testing of the model

5.3 Mediating effect test

To analyze the mediating role of perceived Usefulness and Satisfaction between Confirmation and Continuous vaccination intention, AMOS was used to repeat sampling 5000 times by bootstrap method, and the 95% confidence interval of each coefficient and the mediation effect were calculated. The analysis results of mediating effects show that (as shown in Table 6 and Figure 3): The direct effect value of confirmation on continuous vaccination intention was 0.255, and the mediating effect value of perceived usefulness and satisfaction was 0.180, accounting for 41.47% of the total effect of confirmation on continuous vaccination intention (0.434). Specifically, the mediating effect was composed of indirect effects generated by three pathways: through indirect effect 1 (0.071): confirmation → perceived usefulness →satisfaction →continuous vaccination intention; Indirect effect 2 (0.041): confirmation → perceived usefulness →continuous vaccination intention; By indirect effect 3 (0.068): confirmation → satisfaction → continuous vaccination intention. The data in Table 6 show that the three indirect effects account for 16.36%, 9.45% and 15.67% of the total effect respectively. Indirect effect Bootstrap95% confidence interval of 2 shall contain 0, showed no significant indirect effect 2, indirect effect the Bootstrap95% confidence interval 1 and 3 are not contain 0, shows that the two indirect effects are reached significant level. A pairwise comparison of indirect effects between different paths indicates no considerable difference between indirect effect 1 and indirect effect 2. Comparison 2 showed no significant difference between indirect effects 1 and 3. Comparison 3 showed no significant difference between indirect effect 2 and indirect effect 3.

Table 6 Mediating effects of perceived usefulness and satisfaction

	value	Boot CI(Upper)	Boot CI (lower)	Relative mediating effect
Total indirect effect	.180	.087	.315	41．47％
Indirect effect 1	.071	.033	.148	16.36%
Indirect effect 2	.041	-.014	.145	9.45%
Indirect effect 3	.068	.005	.186	15.67%
Direct effect	.255	.101	.445	
The total effect	.434	.269	.619	
Diff 1	.029	-.054	.136	
Diff 2	.003	-.101	.096	
Diff 3	-.026	-.170	.101	

Note: Boot CI lower limit and Boot CI upper limit refer to the lower limit and upper limit of 95% confidence interval of indirect effects estimated by Bootstrap method respectively. Keep all data to three decimal places.

5.4 Moderating effect test

In this study, a linear regression equation model was used to test the moderating effect of risk perception, controlling gender and age. The test results are shown in Table 7. Among them, confirmation has a significant impact on continuous vaccination intention (F=13.071; P=0.000), and R2 was 0.229, indicating that confirmation could explain 22.9% variation of the public's continuous vaccination intention, and confirmation had a positive impact on continuous vaccination intention. Based on the above analysis, the moderating variable risk perception and its interaction with confirmation were added. The data in the table showed that the regression equation model was still significant (F=14.048; P=0.000), R2 of the model was 0.266, indicating that confirmation, risk perception and their interaction could explain 26.6% variation of the public's continuous vaccination intention. Among them, the change of value of R2 is 5.4%, and the interaction term of risk perception and confirmation can explain 5.4% of the model change.

Table 7 Moderating effect test.

	CVI		CVI		CVI	
	β	t	β	t	β	t
Gender	-.047	-.632	-.015	-.223	-.025	-.395
Age	-.023	-.312	-.031	-.473	-.009	-.146
CON			.421	6.250***	.397	6.084***
RP			.171	2.550*	.140	2.151*
Interaction					-.244	-3.752***
R^2	.003		.229		.286	
F	.252		13.071***		14.048***	

Finally, a simple slope analysis method was used to draw the moderating effects of risk perception variables, as shown in Figure 3. In the case of low-risk perception, the confirmation positively affected the public's continuous vaccination intention. However, for subjects with high-risk perception, confirmation had little positive predictive effect on the public's continuous vaccination intention. The data analysis results indicated that the hypothesis that risk perception had a negative moderating effect between confirmation and continuous vaccination intention was valid.

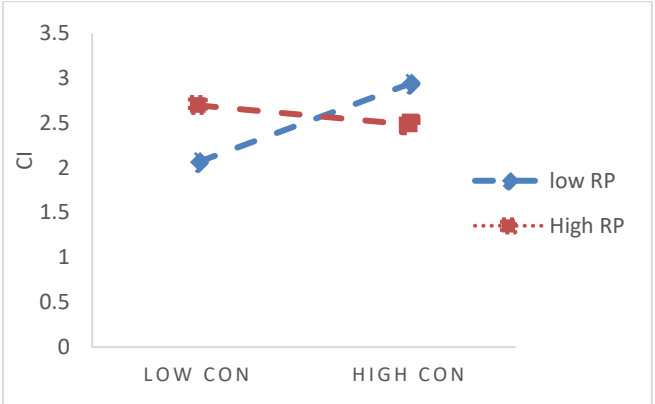

Fig. 3 The picture of moderating effect.

6. DISCUSSION AND CONCLUSIONS

The study established a model affecting the public's continuous vaccination intention. According to the test results (table 8), 8 null hypotheses were verified and 2 were not. The results showed that perceived usefulness and satisfaction partially mediated the relationship between confirmation and public continuous vaccination intention. In contrast, satisfaction partially mediated the relationship between confirmation and public continuous vaccination intention. Once confirmed, the expectation will promote the formation of perceived usefulness. The public will not blindly vaccinate just because of its perceived usefulness, but will still choose to vaccinate again based on their satisfaction with

the overall experience of vaccination. Therefore H6 and H7a are not supported. Risk perception has a significant negative moderating effect on the relationship between public' confirmation and their continuous vaccination intention, and hypothesis 8 is supported. According to the entire data analysis section, the expectation confirmation model(ECM) is applicable when studying the impact of the public's continuous vaccination intention.

Table 8 Path analysis results

Hypothesis	Path	Finding
H1	Intention <--- Confirmation	supported
H2	Usefulness <--- Confirmation	supported
H3	Satisfaction <--- Confirmation	supported
H4	Intention <--- Satisfaction	supported
H5	Satisfaction <--- Usefulness	supported
H6	Intention <--- Usefulness	Not supported
H7a	Intention <--- Usefulness <--- Confirmation	Not supported
H7b	Intention <---Satisfaction <--- Confirmation	supported
H7c	Intention <---Satisfaction <--- Usefulness <--- Confirmation	supported
H8	Intention <--- Risk perception<--- Confirmation	supported

6.1 Discussion

Building upon existing research on the ECM model, we suggest that confirmation and perceived usefulness are critical antecedents to satisfaction. As expected, in line with prior research by Bhattacherjee (2001), Chen et al. (2014), and Hossain and Quaddus (2013), perceived usefulness exerts a positive and statistically significant impact on satisfaction [18]. As a result, enhancing the extent of COVID-19 vaccination services usefulness perceived by individuals tends to be a critical consideration for the Vaccination against COVID-19 service providers. The mediating analysis showed that confirmation was a direct predictor of continuous vaccination intention, while perceived usefulness and satisfaction were indirect factors. These results further confirm the strong association between confirmation and continuous vaccination intention. The independent mediating effect of satisfaction suggests that confirmation influences public satisfaction with vaccination, which in turn affects public continuous vaccination intention. The higher the public's expectations for the COVID-19 vaccine are, the more confirmed they are, the higher the public's overall satisfaction with the vaccine, which increases the continuous vaccination intention. It should be noted that, different from previous studies, the direct prediction effect of perceived usefulness on continuous vaccination intention as well as the mediating effect of perceived usefulness on confirmation and continuous vaccination intention were not verified in this paper. The main reason is that perceived usefulness predicts the continuous vaccination intention through the mediating effect of satisfaction. When the public perceives that vaccination is beneficial, they will not continue vaccination because of its usefulness. However, they will further evaluate the satisfaction of the overall vaccination experience and consider whether to continue vaccination.

To further promote the continuous vaccination of COVID-19 vaccine in China, this study proposed the following suggestions based on the hypothetical results: first, actively publicizing the progress of vaccine research and development to improve the public's perception of its usefulness; Second, optimizing service and improving vaccination satisfaction; Third, considering various risk factors to improve the quality of COVID-19 vaccination services.

6.2 Limitations and future research

This study has several limitations that need to be addressed in future research. The ECM appears to be a proper framework to predict continuous vaccination intentions. However, future research needs to examine whether this ECM can be used to advance other vaccines services such as COVID-19

booster shot, e.g., the HPV vaccine. Moreover, future studies should also test different versions of the ECM framework incorporated with additional variables, e.g., subjective norm, possibly improving the predictive power of the ECM framework. In addition, due to the epidemic's impact, this study's investigation conditions are limited, so offline interviews and other methods can be adopted to expand future research. Finally, the current research is conducted in China, which is at the forefront of COVID-19 vaccination rates. However, our results should be generalizable to other countries that have witnessed the development and promotion of COVID-19 vaccines (e.g., the United States and the United Kingdom). Hence, future research should test the robustness and boundary conditions of the current findings in other countries.

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References

[1] Xu Ziyan, Chen Jing, Chen Xiaoyu, et al. Thinking and countermeasures of the change of vaccination willingness -- based on the case study of Nanjing Epidemic in July [J]. Communication of Science and Technology, 2021, 13(20): 30-34.

[2] Lin Zhiye, Hao Chun, Wu Shaolong. Current situation of novel Coronavirus vaccine vaccination in the world and countermeasures in China [J]. South China Preventive Medicine, 2021, 47(9): 1151-1154.

[3] Gan L,Chen Y,Hu P,et al.Willingness to receive SARS‐CoV-2 vaccination and associated factors among Chinese adults:Across sectional survey [J]. Int J Environ Res Public Health, 2021, 18(4): 1993.

[4] S Mallapaty. China is vaccinating a staggering 20 million people a day [J]. Nature, 2021.

[5] Kourlaba G., Kourkouni E., Maistreli S., Tsopela CG., Molocha NM., Triantafyllou C., Koniordou M., Kopsidas I., Chorianopoulou E., Maroudi-Manta S., Filippou D., Zaoutis TE. Willingness of Greek general population to get a COVID-19 vaccine. [J]. Global Health Research and Policy, 2021, 6(1): 3.

[6] Wang Zhiwei, Li Zhi, Huang Huimin, et al. Investigation on the cognition and willingness of novel Coronavirus vaccine in Guangzhou residents [J]. Modern Preventive Medicine, 2021, 48(4): 732-737.

[7] M. Young, The Technical Writer’s Handbook. Mill Valley, CA: University Science, 1989.

[8] Nzaji Michel Kabamba; Ngombe Leon Kabamba; Mwamba Guillaume Ngoie. Acceptability of Vaccination Against COVID-19 Among Healthcare Workers in the Democratic Republic of the Congo. [J]. PRAGMATIC AND OBSERVATIONAL RESEARCH, 2020(11).

[9] Alley SJ; Stanton R; Browne M; To QG;Khalesi S; Williams SL; ThwaiteTL;Fenning AS; Vandelanotte C. As the Pandemic Progresses, How Does Willingness to Vaccinate against COVID-19 Evolve ?[J]. International Journal of Environmental Research and Public Health, 2021.

[10] N. Omar, M. Nazri, MohdHelmi Ali, Syed Shah Alam. The panic buying behavior of consumers during the COVID-19 pandemic: Examining the influences of uncertainty, perceptions of severity, perceptions of scarcity, and anxiety. [J]. Journal of Retailing and Consumer Services, 2021, 62: 102600.

[11] Xie Xiaoling. Research on influencing factors of willingness to continue use of shared electric vehicles based on Expectation Confirmation Model [D]. Chongqing University of Technology, 2021.

[12] Liu Jiaqi, KE Wan, Liu Chun. Study on the Influencing factors of Continuous Use intention of Bike-sharing Users based on TAM ECM Model [J]. Soft science, 2019, 33 (7): 116-121

[13] Bhattacherjee, A., 1998. Managerial influences on intraorganizational information technology use: A principal–agent model. Decision Sci. 29 (1), 139–161.

[14] Bhattacherjee, A., 2001. Understanding information systems continuance: an expectation-confirmation model. MIS Quarterly 351–370.

[15] Bøe, T., Gulbrandsen, B., Sørebø, Ø., 2015. How to stimulate the continued use of ICT in higher education: Integrating information systems continuance theory and agency theory. Comput. Hum. Behav. 50, 375–384.

[16] Weng, G.S., Zailani, S., Iranmanesh, M., Hyun, S.S., 2017. Mobile taxi booking application service's continuance usage intention by users. Transportation Res. Part D: Transport Environ. 57, 207–216.

[17] Lee, M.C., 2010. Explaining and predicting users' continuance intention toward e-learning: An extension of the expectation–confirmation model. Comput. Educ. 54 (2),506–516.

[18] Wang, Y., Wang, S., Wang, J., Wei, J., Wang, C., 2018. An empirical study of consumers' intention to use ride-sharing services: using an extended technology acceptance model. Transportation 1–19.