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Analysis of Willingness Factors of Digital RMB Acceptance Based on PEST Perspective and TAM-SEM Model

Yiming Liang[1, *], Shuyang Ma[1]

[1]School of Statistics and Applied Mathematics, Anhui University of Finance and Economics, Bengbu 233030, China

[*] Corresponding author E-mail: yiming0427@foxmail.com

Abstract: In the context of the comprehensive promotion of the pilot work of digital RMB, clarifying the factors that affect the public's acceptance and use of digital RMB is conducive to the in-depth promotion and popularization of digital RMB. Based on the PEST perspective and TAM model theory, a research model on the influencing factors of the acceptance and use of digital RMB was constructed. A questionnaire survey was conducted to obtain 1105 pieces of data, and the structural equation (SEM) model was used to verify the hypothesis and the net effect of variables, exploring the path of the influence of acceptance intention. The results show that the higher the practicality and security of digital RMB, the higher the willingness of the public to use digital RMB; If digital RMB can continue to leverage its advantages of simplicity and convenience, optimizing the relevant payment experience, it will be of great help in increasing the willingness of the public to use it; And the public is more concerned about the feedback service channels for digital RMB; The most influential factor among the willingness to use is the recommendation of others. Based on this, it is proposed to promote the application of digital renminbi by promoting application scenario development and ecological construction, enhancing user stickiness, cultivating citizen digital literacy, improving user experience and effectiveness, strengthening security and legislative supervision, and implementing publicity work.

Keywords: Digital RMB; Willingness to accept; Impact path analysis; PEST; TAM.

1. Background

The development and application of a new generation of information technology represented by cloud computing, big data, artificial intelligence, and blockchain, while promoting the development of the digital economy, has also spawned virtual currencies such as Bitcoin and Libra, accelerating the digitization process of money. In order to occupy the commanding heights of the development of the digital economy, safeguard monetary sovereignty and maintain the stability of the financial system, many central banks in the world have launched the research and development program of digital currency. The digital currency launched by the People's Bank of China, the digital renminbi, has many advantages such as "payment as settlement", traceability, unlimited legal compensation, "double offline" payment, controllable anonymity and zero fees. It is of great significance in improving the convenience and security of residents' payment, reducing issuance and circulation costs, combating crimes such as money laundering, improving the effectiveness of monetary policy, and promoting the internationalization of RMB. China has included the "prudent promotion of digital currency research and development" in the "14th Five-Year Plan", and has continued to carry out and promote the pilot work of digital renminbi in many cities across the country, and fully support the innovation and landing of various digital renminbi application scenarios.

The digital RMB pilot has covered seven regions in North China, East China, South China, Central China, Southwest, Northwest and Northeast China, with application scenarios covering diverse fields such as food, clothing, housing and transportation, government services and cross-border settlement. Digital yuan technology has made its mark at major events such as the 14th Games of the People's Republic of China and the 2022 Beijing Winter Olympics. However, on the whole, the scale of the digital RMB pilot is still not wide enough, the test scene is relatively closed, and the promotion mainly relies on the red envelope reward form, and it is still difficult to cultivate users' habits of using digital RMB under the current situation that mobile payment methods such as wechat and Alipay occupy the mainstream, and there is still a long way to achieve the official landing of the national scale. Relevant research points out that the main challenge of the current digital RMB is the promotion, and improving consumers' willingness to use digital RMB is the focus of the promotion of digital RMB. It is necessary to explore the factors that affect users' willingness to accept and use digital RMB from the perspective of users, and take targeted measures to meet the specific needs and expectations of the public for digital RMB[1].

At present, there are still relatively few researches on the influencing factors of the acceptance and use of digital RMB. Existing literatures only analyze the influencing factors of the acceptance intention of digital RMB, ignoring the use behavior variables, failing to consider the relationship and difference between the intention and behavior, and failing to include important factors such as individual innovation characteristics in the analysis model. The existing studies have not involved the joint effects among various influencing factors, and the exploration of the influencing mechanism and path of the acceptance and use of digital RMB is not comprehensive and in-depth.

2. Research Review

2.1. Factors affecting the acceptance and use of digital RMB

In terms of the empirical research on the factors affecting

the acceptance and use of digital RMB, Li et al.[2] used K-Means clustering method to classify the survey group according to their attitude towards digital RMB, and used structural equation to analyze that security, dual offline payment and legal compensation are the main factors affecting the acceptance willingness of digital RMB. Li Pengze et al.[3] combined the neural network model and structural equation model to verify that the borrowing and privacy security are the main factors affecting the acceptance willingness of digital RMB. Wu et al.[4] adjusted the integration theory model of technology acceptance and use by combining the perceived risk theory, and adopted the structural equation model to prove that perceived fairness, habits, social influence and national identity have significant positive effects on the acceptance intention of digital RMB, while perceived risk has significant negative effects. National identity has a moderating effect on the relationship among perceived fairness, habit, perceived risk and willingness to use.

The aforementioned literature only analyzed the factors affecting the willingness to accept digital RMB, and did not include the use behavior into the model. However, according to the Rational behavior theory (TRA)[5] and the planned behavior theory (TPB)[6], there is a significant causal relationship between the acceptance willingness and the use behavior, and this relationship has been proved in relevant studies. Therefore, this paper intends to integrate the theoretical research on the influencing factors of technology acceptance and use, and fully consider the characteristics of digital RMB itself, to build a relatively comprehensive research model on the influencing factors of digital RMB acceptance and use.

2.2. The theory of influencing factors of technology acceptance and use

The prerequisite for a technology to show its utility is to be widely accepted and used by the public. The research on the influencing factors of users' acceptance and use of technology is an important subject in the field of technology application. Many theories such as technology acceptance model (TAM) and innovation diffusion theory (IDT) have been proposed and used to explain and predict users' attitudes and behaviors about technology. In order to enhance the explanatory ability of the model, Venkatesh et al[7]. integrated eight models including TAM, IDT, TRA and TPB to build a UTAUT model, which included four factors (performance expectation, effort expectation, social influence and convenience) and four moderating variables (gender, age, experience and voluntary use). Based on the consideration of consumer habits and pleasure, hedonic motivation, price value and habit are added, and voluntary use of the regulating variable is deleted. A UTAUT2 model is proposed to further improve the explainability of the model. At present, UTAUT2 model has become one of the most powerful models to explain users' technology acceptance and usage behavior, and has been widely used in user research in many technical fields[8-10]. Digital RMB is a digital form of currency, and its essential carrier is information technology such as blockchain. It is suitable for using UTAUT2 model to study the influencing factors of its acceptance and use.

However, due to the differences in research objects, some scholars use other theories to extend the UTAUT2 model to better explain specific user behaviors in their respective research contexts. According to the theory of perceived risk, when it is impossible to determine whether the results produced by their behavior meet the expectations, the possibility that consumers subjectively perceive that some unpleasant results may be produced is called perceived risk.[11] Users' attitudes and behaviors toward digital RMB may be influenced by perceived risks due to a lack of understanding of the technology or concerns about potential threats to privacy and security. The correlation between perceived risk and willingness to accept digital RMB has been verified[12], and existing literatures have combined the perceived risk theory and UTAUT2 model and applied them to the research on user behavior of new technologies[13]. Therefore, this paper incorporates the perceived risk theory into the research model.

In addition, the attitude towards innovation and learning ability are also important reasons for the differences in individual acceptance and use of technology. This trait is defined as individual innovation in the theory of innovation diffusion, that is, "the degree to which individuals or other receptive units accept new ideas relatively earlier than other members of the system"[14]. Groups with high individual innovation will be more interested in cutting-edge technologies such as digital RMB, have a stronger tendency to understand and master its related knowledge and use methods, and are easier to become the audience of digital RMB. Although the UTAUT2 model integrates the comparative advantage, ease of use, compatibility and other elements of innovation diffusion theory, it lacks relevant variables like individual innovation. Some scholars have extended the UTAUT2 model by using perceived risk and individual innovation when studying the acceptance of e-banking services[15]. Therefore, individual innovation can also be used as a component of the model in this paper.

3. Model Theory and Data Source

3.1. Model theory

3.1.1. PEST model

PEST analysis[16] refers to the analysis of the macro environment, the macro environment, also known as the general environment, refers to all the macro factors that affect the industry and enterprise. Analysis of macro environmental factors, different industries according to their own characteristics and business needs, the specific content of the analysis will be different. However, it is generally necessary to analyze the four major external environmental factors affecting the industry: Political, Economic, Social and Technological.

3.1.2. TAM model

In 1989, Davis[17] proposed the technology acceptance model (TAM), which constructed the relationship between individual use behavior, perceived usefulness, perceived ease of use, use attitude and external influence. Perceived usability refers to the degree to which users perceive that a certain technology or system is easy to use; perceived usefulness refers to users' expectation of benefits from using information systems; usage attitude refers to users' subjective positive or negative feelings when using information systems; external variables will indirectly affect users' intentions or behaviors through perceived usability and usefulness.

3.1.3. SEM model

SEM structural equation model[18] is a kind of model based on factor analysis and linear regression method, which is used to analyze the path relationship between complex

variables. SEM structural equation model can be used to explore the relationship between variables. It analyzes data by incorporating causal relationships between variables and measurement errors into a unified analytical framework, so that the relationship between multiple variables can be evaluated simultaneously. These variables can be observational data (such as the indicators in a questionnaire) or latent variables (such as cognition, emotion, beliefs, etc., which are difficult to observe directly).

3.2. Data source

Based on the current promotion of digital RMB, pilot cities and pilot commercial banks are the main promotion channels, so the data collection method mainly adopts the combination of online and offline questionnaires. The online questionnaire takes into account the differences of pilot cities, and limits the users participating in the questionnaire by region. The offline questionnaire survey selects 4 representative branches of a commercial bank, which are located in the commercial community, residential community, university community and comprehensive community respectively. These 4 branches have the characteristics of large passenger flow, rich customer levels and strong customer group representation, which effectively meet the needs of research and are typical and representative. A total of 1200 customers were investigated, and 1105 valid questionnaires were collected, with a comprehensive effective rate of 92.08%.

4. Mechanism Analysis of Influencing Factors Based on PEST

Whether from the macro or micro level, or from the central banks' policy analysis of digital currency, there are more research results on the promotion and operation mechanism of digital RMB. However, there are fewer studies on the relevant factors affecting users' use of digital RMB and the corresponding impact degree of these factors. Therefore, this paper analyzes the influencing factors of the use of digital RMB from the following four perspectives based on PEST model.

4.1. Politics

Policy promotion and institutional guarantee. At present, China's digital yuan has entered the trial operation stage, as a typical representative of digital assets, digital yuan contains huge social wealth, but also represents the direction of technology development. The establishment of a guarantee system for digital RMB has both theoretical and practical significance. Combining the technical basis and circulation system of China's digital RMB issuance, it is necessary to introduce the concept of smart contract and complete the construction of digital RMB secured transaction framework. Due to its natural publicity and technical support, the information contained in the digital RMB can be traced and almost cannot be tampered with. These characteristics make the digital RMB have strong credibility. Therefore, the external influence brought by the government and social development will inevitably affect the willingness to use the digital RMB.

4.2. Economy

Digital RMB is increasingly rich in application scenarios. At present, the application scenarios of digital RMB are mainly concentrated in small-scale and retail-oriented scenarios. The digital RMB activities in the pilot areas basically focus on the daily life of consumers, covering scenes such as clothing, food, housing and transportation, and the types of merchants include shopping malls and supermarkets, retail department stores, catering chains, subway recharge, garden scenic spots, etc. This kind of small and high-frequency consumption scenario is conducive to the use and acceptance of digital RMB by the public. Some merchants have also provided targeted preferential benefits, that is, the use of digital renminbi to pay for goods to enjoy exclusive benefits, this initiative can be described as a win-win situation for merchants and consumers. In addition to the above common retail scenarios, the application scenarios of government and enterprises are gradually expanding. For example, some companies have tried to use digital yuan to pay employees' salaries, and government units can use digital yuan to pay taxes and grant subsidies. Some commercial banks have also launched ATM digital RMB deposit and deposit functions, which guide consumers to adapt to the digitalization of cash, and also have a reference significance for large amounts of public transfers between enterprises. It can be predicted that the application trend of digital RMB in the future is from small amounts and retail to large-scale C-end users and then to B-end large-value fields. In the future, the digital renminbi will accelerate towards the B-end scenario, showing huge application potential, and at the same time, it should be realized that the current technical conditions are still immature and the risk control is difficult. Behind the use of digital RMB by businesses and consumers with almost no threshold is China's years of research and development of digital RMB, and the progress of blockchain and other underlying technologies provides a guarantee for the application of digital RMB. Only by accelerating the innovative research on the functions of the digital RMB and enriching the application of online and offline scenarios can the digital RMB truly penetrate into all aspects of life.

4.3. Society

Security of digital RMB. Digital RMB not only has high security, but also can load smart contracts related to currency functions. Digital RMB has the characteristics of controllable anonymity, that is, "small amounts of anonymity and large amounts of traceability according to law". Current payment tools, whether bank cards, wechat or Alipay, are bound to the bank account system, bank account opening is a real-name system, unable to meet the demand for anonymity, and digital RMB does not rely on bank accounts, its loose coupling characteristics make payment more able to protect the privacy of users. In addition, it is worth noting that the development of cryptocurrencies, especially global stablecoins, is one of the research and development backgrounds of the central bank's digital yuan. In addition to the needs of the development of the digital economy, as well as the changes in the function of cash and its use environment, cryptocurrencies have also become a must-do topic to promote the research and development of central banks' digital currencies. The White paper on the Progress of Digital RMB Research and Development released by the central bank pointed out that since the advent of Bitcoin, the private sector has launched various so-called cryptocurrencies. According to incomplete statistics, there are currently more than 10,000 influential cryptocurrencies with a total market value of more than $1.3 trillion. Digital currency will bring many risks and challenges to the international monetary system, payment and clearing

system, monetary policy, cross-border capital flow management, etc., so security has become one of the factors affecting the willingness to use digital RMB.

4.4. Technology

The technical route of digital RMB. Different from traditional payment methods, the research and development of digital human RMB has no preset technical route. Because it is positioned to replace cash in circulation, that is, to replace M0, it has natural value characteristics and legal compensation compared with the traditional payment system, which focuses on M1 and M2. Therefore, on the technical route, the digital RMB more encourages the relevant middle and downstream industrial chain to carry out technological innovation, specifically providing the interface of the technical route in intelligent computing, transaction communication, payment technology, transaction terminals and security, and giving the participants enough space for innovation.

5. Influence Path Analysis Based on TAM-SEM Model

5.1. Factor analysis

There are 25 indicators that can affect the recognition degree of digital RMB. The reliability and validity and factor analysis in this paper show that the KMO value is 0.982>0.7 and the p value is 0.000. Therefore, the variables are not independent, the correlation between variables is strong, and the cumulative variance contribution rate is 77.518%.

Table 1. Digital RMB recognition degree rotation orthogonal factor table

Index	Factor					Name
	1	2	3	4	5	
Simple operation	0.504	0.369	0.400	0.330	0.274	Perceived ease factor
For all groups	0.537	0.341	0.258	0.401	0.357	
Be open to new things	0.577	0.292	0.224	0.484	0.264	
Have the conditions to use the digital RMB	0.292	0.398	0.375	0.495	0.333	
No need to wait for the tedious process	0.327	0.700	0.218	0.214	0.369	Perceived usefulness factor
Reduce the risk of carrying large amounts of currency	0.412	0.185	0.501	0.349	0.376	
Fast and convenient payment	0.575	0.374	0.295	0.248	0.431	
Avoid fake money	0.628	0.330	0.390	0.317	0.242	
Highly integrated with life	0.102	0.536	0.548	0.286	0.378	
Good for financial planning	0.394	0.296	0.566	0.297	0.346	
Relevant laws and regulations are not perfect	0.299	0.569	0.321	0.398	0.250	Perceived risk factor
Privacy information is easy to leak	0.208	0.218	0.346	0.433	0.610	
Network communication security needs to be strengthened	0.336	0.615	0.187	0.445	0.264	
Loss of mobile terminal results in loss	0.296	0.443	0.300	0.288	0.552	Feedback mechanism factor
Affect personnel employment	0.410	0.583	0.385	0.256	0.220	
Be able to find feedback channels	0.574	0.400	0.393	0.198	0.280	
Problems can be solved in time	0.337	0.352	0.525	0.454	0.190	
Doubts can be answered	0.458	0.331	0.222	0.129	0.646	
The solution to the problem is desired	0.212	0.316	0.355	0.699	0.261	
The process of solving the problem is satisfactory	0.467	0.283	0.160	0.638	0.296	
The digital RMB is worth using	0.504	0.233	0.261	0.425	0.460	Use willingness factor
Willing to use digital RMB	0.317	0.259	0.746	0.196	0.273	
Willing to support the development of digital RMB	0.438	0.504	0.344	0.301	0.188	
Complementary with other payment methods	0.254	0.324	0.323	0.361	0.601	
Willing to recommend digital RMB to others	0.469	0.487	0.313	0.229	0.390	

According to the results in the table above, this paper divides the factors affecting the recognition of digital RMB into five parts, namely, perceived risk, perceived ease of use, perceived usefulness, willingness to use, and feedback mechanism.

Table 2. Statistical table of effect index of digital RMB impact factor

Index	Factor loading	weight	Mean value	Population mean value	Name
Simple operation	0.734	0.407	3.12	3.198	Perceived ease factor
For all groups	0.759	0.410	3.48		
Be open to new things	0.772	0.400	3.05		
Have the conditions to use the digital RMB	0.740	0.406	3.21		
No need to wait for the tedious process	0.826	0.398	3.13		
Reduce the risk of carrying large amounts of currency	0.718	0.391	3.45	3.314	Perceived usefulness factor
Fast and convenient payment	0.805	0.418	3.63		
Avoid fake money	0.814	0.415	3.19		
Highly integrated with life	0.822	0.396	3.21		
Good for financial planning	0.771	0.408	3.09		
Relevant laws and regulations are not perfect	0.737	0.398	3.36	3.156	Perceived risk factor
Privacy information is easy to leak	0.770	0.385	3.19		
Network communication security needs to be strengthened	0.794	0.401	3.21		
Loss of mobile terminal results in loss	0.762	0.404	3.13		
Affect personnel employment	0.770	0.404	2.89		
Be able to find feedback channels	0.762	0.402	3.21	3.122	Feedback mechanism factor
Problems can be solved in time	0.755	0.399	3.05		
Doubts can be answered	0.802	0.386	3.09		
The solution to the problem is desired	0.827	0.392	3.15		
The process of solving the problem is satisfactory	0.819	0.398	3.11		
The digital RMB is worth using	0.768	0.405	3.31	3.197	Use willingness factor
Willing to use digital RMB	0.837	0.384	3.44		
Willing to support the development of digital RMB	0.690	0.387	3.11		
Complementary with other payment methods	0.765	0.397	3.12		
Willing to recommend digital RMB to others	0.760	0.410	2.96		

According to the results in the table above, it can be seen that all factors have a high degree of recognition. The perceived usefulness factor is the highest, and the perceived ease factor is the second. By placing the remaining three factors in descending order, the order can be obtained as willingness to use, perceived risk, and feedback mechanism.

5.2. The preliminary construction of the model

In this paper, the factors and variables obtained in the previous paper are introduced into the model, and the structural equation model of digital RMB recognition can be obtained. For this model, we make the following assumptions:

H1: Feedback mechanism factors can directly affect perceived ease of use factors.

H2: Perceived ease of use factor can directly affect perceived usefulness factor.

H3: The perceived ease of use factor can directly affect the willingness to use factor.

H4: Perceived risk factors can directly affect feedback mechanism factors.

H5: Perceived risk factors can directly affect the use of willingness factors.

H6: Perceived usefulness factor can directly affect the use of willingness factor.

Based on the above assumptions, a model of factors influencing the recognition degree of digital RMB is established.

The fitting results are shown in the following table: Chi Square/df=2.673 < 3, good fitting, GFI value less than 0.9, IFI value less than 0.9, and RMSEA value greater than 0.08, we need to revise the model.

Table 4. Preliminary fitting results of digital RMB

Fitted statistics	Value	Reference value
Chi Square/df	2.671	<3
CFI: Index of goodness of fit	0.879	>0.9
NF: Gauge fit index	0.902	>0.9，the closer the value is to 1, the better
IFI: NFI adjusted with degrees of freedom	0.893	>0.9
RFI: Relative fit index	0.927	>0.9
CFI: Comparison fit index	0.911	>0.9，the closer the value is to 1, the better
RMSEA: Approximate error to root mean square	0.081	<0.08，the smaller the better.

5.3. Model revision and testing

In this paper, the correlation path is added by the correction index, and the causal path method is also used to modify the model. The fitting results are shown in the table below. According to the results in the table, the modified model has

a good goodness of fit.

Table 5. Fitting results of digital RMB revised model

Fitted statistics	Value	Reference value
Chi Square/df	2.593	<3
CFI: Index of goodness of fit	0.957	>0.9
NF: Gauge fit index	0.931	>0.9，the closer the value is to 1, the better
IFI: NFI adjusted with degrees of freedom	0.940	>0.9
RFI: Relative fit index	0.933	>0.9
CFI: Comparison fit index	0.940	>0.9，the closer the value is to 1, the better
RMSEA: Approximate error to root mean square	0.076	<0.08，the smaller the better.

Table 6. SEM path coefficient estimation table of digital RMB

X	—	Y	Non-standardized path coefficient estimation	S.E.	C.R.	p	Standardized path coefficient estimation
Feedback mechanism factor	—	Perceived ease factor	0.812	0.025	33.041	0.000	0.999
Perceived ease factor	—	Perceived usefulness factor	1.148	0.036	31.943	0.000	0.995
Perceived ease factor	—	Use willingness factor	2.287	1.357	1.685	0.092	1.880
Perceived usefulness factor	—	Use willingness factor	-0.385	0.564	-0.684	0.494	-0.366
Perceived risk factor	—	Feedback mechanism factor	1.070	0.031	34.623	0.000	0.997
Perceived risk factor	—	Use willingness factor	-0.551	0.988	-0.558	0.577	-0.520
Feedback mechanism factor	—	No need to wait for the tedious process	0.928	0.027	34.468	0.000	0.820
Feedback mechanism factor	—	The use of digital RMB is required	0.901	0.025	35.469	0..000	0.834
Feedback mechanism factor	—	Be open to new things	0.917	0.026	34.716	0.000	0.823
Feedback mechanism factor	—	For all groups	0.975	0.026	36.396	0.000	0.847
Feedback mechanism factor	—	Simple operation	1.000	-	-	-	0.838
Perceived ease factor	—	Good for financial planning	1.215	0.037	33.202	0.000	0.839
Perceived ease factor	—	Highly integrated with life	1.120	0.036	31.528	0.000	0.809
Perceived ease factor	—	Avoid fake money	1.176	0.034	34.304	0.000	0.858
Perceived ease factor	—	Fast and convenient payment	1.272	0.037	34.694	0.000	0.864
Perceived ease factor	—	Reduce the risk of carrying large amounts of currency	1.000	-	-	-	0.800
Perceived usefulness factor	—	Affect personnel employment	0.999	0.029	34.269	0.000	0.863
Perceived usefulness factor	—	Loss of mobile terminal results in loss	1.016	0.030	34.107	0.000	0.833
Perceived usefulness factor	—	Network communication security needs to be strengthened	1.030	0.030	33.945	0.000	0.831
Perceived usefulness factor	—	Privacy information is easy to leak	0.913	0.029	31.271	0.000	0.787
Perceived usefulness factor	—	Relevant laws and regulations are not perfect	1.000	-	-	-	0.822
Perceived risk factor	—	Be able to find feedback channels	1.000	-	-	-	0.832
Perceived risk factor	—	The process of solving the problem is satisfactory	1.025	0.030	34.077	0.000	0.821
Perceived risk factor	—	The solution to the problem is desired	0.991	0.030	32.941	0.000	0.804
Perceived risk factor	—	Doubts can be answered	0.956	0.030	32.224	0.000	0.792
Perceived risk factor	—	Problems can be solved in time	0.989	0.029	34.105	0.000	0.822
Use willingness factor	—	Willing to recommend digital RMB to others	0.993	0.027	36.315	0.000	0.850
Use willingness factor	—	Complementary with other payment methods	0.963	0.028	33.977	0.000	0.816
Use willingness factor	—	Willing to support the development of digital RMB	0.906	0.028	32.739	0.000	0.797
Use willingness factor	—	Willing to use digital RMB	0.848	0.026	32.097	0.000	0.787
Use willingness factor	—	Think the number RMB is worth using	1.000	-	-	-	0.836

5.4. Model conclusion

The following conclusions can be drawn from the above analysis:

(1) The relationship between latent variables

Perceived usefulness, perceived risk, and perceived ease of use positively influence willingness to use. It shows that if the digital RMB can highlight its own role, constantly improve its own functions, and enhance its practicality and security, the more people support the digital RMB, the higher their willingness to use the digital RMB. In addition, although perceived risk affects people's willingness to use digital RMB to a lesser extent, it can influence the willingness to use by influencing other factors.

(2) The relationship between observed variables and latent variables

According to the standardized load factor, among the perceived ease of use factors, "for all groups" has the greatest impact, which indicates that when using digital RMB, people pay more attention to whether this payment method is practical and applicable to a certain extent. Moreover, "simple operation" and "I have the conditions to use digital RMB" also have a certain impact on the public's recognition, indicating that if digital RMB can continue to play its advantages of simplicity and convenience, optimize the relevant payment experience, it will be of great help to improve the public's willingness to use.

The most influential factor of perceived usefulness is "payment speed and convenience". Among the perceived risk factors, the most important indicator that has an impact on the recognition of digital RMB is "affecting people's employment", followed by "loss of mobile terminals resulting in loss". The most influential feedback mechanism factor is "being able to find feedback channels". It can be seen that people are more concerned about the feedback service channels of digital RMB. The most influential use of willingness factors is "I would recommend the digital yuan to others."

6. Conclusion and Suggestion

6.1. Conclusion

6.1.1. Publicity and science popularization are not in place, and the public does not understand and pay no attention to the digital RMB

(1) The publicity channels are narrow

According to the survey, most people understand the digital RMB through TV news, accounting for 24.8%, and 23.30% of people understand the digital RMB through the information of people around them. Research on the Internet, social media and social networks only accounted for 17.9%. Only 4.60 percent of students learned science through community publicity and school teachers. Less of the population is known through other channels of communication.

(2) People pay less attention to digital tokens

In the questionnaire survey, 51.8% of the public showed that they basically did not know or did not know much about the digital RMB, and 59.2% of the people believed that the digital RMB had the same nature as Alipay and wechat Pay or could not distinguish the difference between the two. The above data shows that the public's attention and understanding of the digital RMB related information is not high, resulting in a low degree of recognition.

(3) People's low understanding of the functions of digital RMB leads to low willingness to use it

Through the questionnaire survey, it can be found that nearly half of the people do not know the features and functions of digital RMB. According to the interview, the people do not know that digital RMB has dual offline functions, adopts a two-tier delivery system of "central bank-agent commercial institution" and can protect the privacy of the people. Due to the lack of understanding of the functions, the people have some misunderstandings about digital RMB. It is not understood that the convenience and convenience of the digital yuan has reduced people's willingness to use it.

6.1.2. People are used to using third-party mobile payment, and some are reluctant to accept new things

(1) The habit of using mobile payment leads to the frustration of people's willingness to use digital RMB

Most people are more willing to use mobile payment rather than digital RMB. According to the questionnaire survey, people are already familiar with the use of mobile payment, up to 99% of the people use mobile payment, 65.5% of the people use mobile payment very frequently or relatively frequently.

(2) Unwilling to accept the use of new things and special people

Through the analysis, it can be seen that being willing to accept new things is an important indicator, and some people are unwilling to accept new things, which makes it difficult to promote digital RMB. According to the actual interview, some people are not willing to change their living habits and re-learn new payment methods, and some elderly people say that it is difficult to learn new payment methods, and they are more willing to use mobile payment that is already familiar with the operation.

6.1.3. There are some factors that lead to low public recognition and low willingness to use, which hinder development

(1) Immature technical foundation, imperfect regulatory system and laws and regulations

According to the data, 47.1% of the people believe that the immature technical foundation and unclear application scenarios are the main obstacles to the issuance of digital RMB. The lack of sound laws and regulations and incomplete supporting facilities are also considered to be a big obstacle.

(2) The impact on people's employment hinders the development of digital RMB

"Affecting people's employment" has become an important indicator affecting the recognition of digital RMB. The government should pay attention to such problems, and propose corresponding measures and policies to solve such employment problems in terms of personnel's employment, so as to ensure people's livelihood, enhance people's sense of happiness, satisfaction and gain, and promote the normal development of the national economy.

(3) The problem of imperfect digital RMB service channels needs to be solved urgently

Among the feedback factors, "being able to find feedback channels" has the greatest impact. It can be seen that people are more concerned about the feedback service channels of digital RMB. If the government can strengthen the construction of feedback channels and strive to solve the problems of users, it will be able to effectively expand the scope of people and enhance the cohesivity of people.

(4) Perceived usefulness and perceived ease of use factors can greatly affect the willingness to use digital RMB

From the above analysis, it can be seen that perceived usefulness and perceived ease of use can positively affect people's willingness to use digital RMB. Banks should give full play to the effectiveness of digital RMB, constantly improve their functions, improve practicality and security, and the public will support and use digital RMB more strongly.

(5) The central bank issued, easy to operate, anonymous payment makes digital RMB more recognized

People's willingness to use digital RMB is generally high, and the number of people willing to use digital RMB is not small compared with integrating into life and using mobile payment habits. From the sentiment analysis, it is also easy to find that the public's recognition of digital RMB is close to completely positive. The analysis believes that the digital RMB issued by the central bank, simple and convenient operation, and can protect privacy to a large extent are the main reasons for the trust of the public. In the correlation analysis, we can know that the group that believes that the digital RMB improves the convenience and transparency of economic transactions has a higher degree of recognition, and the further development of the digital RMB can start from these two aspects.

(6) Limitations of application scenarios lead to decreased willingness to use

According to the data analysis, there are currently 250,000 people participating in the digital RMB, and the test area is only ten cities. The test scenario is mainly catering retail and other consumption areas suitable for small amounts of consumption, and the consumption mode is wired online, offline, cold wallet and offline wallet. The consumption scenario is designated merchants or hospitals, which has greater limitations. In order to better develop the digital RMB, more use scenarios should be added, the scope of the pilot should be expanded, and the development of the digital RMB should be effectively driven on the basis of increasing the number of people.

6.2. Suggestion

6.2.1. Policy level

(1) Explore new regulatory models and formulate standardized laws and regulations

The issuance and promotion of digital RMB cannot be separated from a sound circulation and circulation of the new regulatory model. It is necessary to innovate and change the old policy and regulatory system, establish a unique regulatory body, clarify the existing problems, use blockchain, cryptography and other technologies to improve the tracking of the circulation of funds by digital RMB, formulate a unique regulatory system, and protect the rights and interests of the public in all aspects. Strengthen the protection of privacy and the security of the digital economy.

The digital RMB is in the early stage of issuance, and there is no sound and complete legal system. Therefore, the problem of imperfect laws and regulations is the first thing to be solved in the current wide circulation of digital RMB. Therefore, it is necessary to formulate a special law and regulation with a high legal level for the widespread popularization and circulation of digital RMB, so that the public can feel more secure when using digital RMB. Meanwhile, digital RMB is also a new form of currency and payment method, and there will inevitably be shortcomings in application and promotion. It is necessary to constantly adjust and revise relevant laws and regulations.

(2) Increase technology research and development efforts and strengthen key links

At present, the digital RMB has just been issued, facing many technical problems, we should continue to pay attention to and try other security technologies, trusted technologies, actively integrate various technologies and innovation, increase research and development efforts, and change the situation of a single technology. Establish a specialized technical support institution, cooperate with colleges and universities to build an industry-university-research cooperation model, specifically solve the technical problems in the issuance and promotion of digital RMB, and accelerate the transformation of scientific and technological achievements and knowledge diffusion.

6.2.2. Bank level

(1) Cooperate with third-party payment platforms to increase application scenarios to facilitate the circulation of digital RMB

One of the most important obstacles in the introduction of the central bank's digital RMB is the unclear application scenario, so China's banks have an important task is to increase and clarify the application scenario of digital RMB. When the digital RMB is widely popularized, due to the lack of various application scenarios, the public will be unwilling or unable to use the digital RMB when conducting money transactions, which will have a great impact on the widespread popularity of the digital RMB.

According to the survey, most people's understanding of mobile payment is far greater than that of digital yuan, and the use rate of mobile payment is also higher than 90 percent. Therefore, banks can cooperate with third-party payment platforms, increase the payment interface of digital RMB in third-party payment platforms, and increase the application scenarios and usage rates of digital RMB in daily life. Mobile payment platforms could also add pages to promote the digital yuan. Mutual benefit and win-win cooperation with mobile payment, expanding the application scenarios of digital RMB and increasing its usage rating can promote the development and circulation of digital RMB.

(2) Launch a series of measures to popularize the digital RMB

According to the survey, people generally have a low understanding of the functions of digital RMB. In order to better popularize the functions and use methods of digital RMB to the public, we can cooperate with communities and schools to popularize digital RMB through a series of measures such as holding lectures, recruiting volunteers and distributing leaflets to improve the utilization rate of digital RMB.

According to the survey and analysis, TV news and the Internet are important channels to understand digital RMB, so the introduction of digital RMB through TV news should continue to be strengthened, and the central bank can cooperate with TV stations to launch corresponding advertising. In the Internet era, the Internet platform is used to spread news very quickly, and the Internet is also one of the main channels for people to understand. Therefore, the government can publish tweets and popular science articles on the Internet platform.

(3) Increase pilot work and focus on the use of special groups

It is suggested to add more pilots, in addition to first-tier cities, some second-tier cities and less developed areas can be

added

Because only economically backward areas can be promoted, in order to better promote in the country. If we want to popularize the digital RMB, we should better solve the technical obstacles of the elderly in the use of digital RMB, and focus on the free use of currency for people with difficulties.

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