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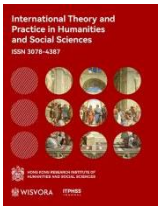

Factors Influencing the Intention to Use ECNY and Its Driving Mechanisms: Based on the Theory of Planned Behavior and Technology Acceptance Model

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Abstract

Central banks across major economies are actively engaging in research, pilot programs, and the implementation of central bank digital currencies (CBDCs). Despite these efforts, consumer interest in digital currencies such as ECNY (Digital Yuan) issued by the People's Bank of China remains relatively low within the personal consumption market. To address this, the study examines key factors shaping residents' willingness to adopt ECNY.The research introduces a conceptual framework incorporating Policy Driving, Service Quality, Trust, Satisfaction, Perceived Usefulness, and Use Intention as critical variables. By applying theories of planned behavior and technology acceptance, it delves into how these elements influence the intention to use ECNY. Findings indicate that all the identified factors, including Policy Driving, Service Quality, Trust, Satisfaction, and Perceived Usefulness, significantly impact users' willingness to adopt ECNY. Among these, Policy Driving emerged as the most influential determinant.

Additionally, the analysis highlights interrelations among Service Quality, Satisfaction, Trust, and Perceived Usefulness, demonstrating their interconnected roles in shaping user adoption behavior. These insights contribute substantial theoretical value by illuminating the dynamics underlying ECNY adoption, offering actionable strategies for enhancing its implementation. Furthermore, this study extends its relevance by providing practical recommendations for accelerating the adoption of CBDCs globally, underscoring their potential for advancing digital financial ecosystems worldwide.

1. Introduction

In recent years, the global economy has been plagued by the ongoing epidemic and intensifying conflicts, revealing structural issues that demand attention. The international currency and settlement system faces significant challenges, necessitating corresponding strategies. Moreover, the shortcomings of the monetary and financial system have become a topic of concern across all

sectors. In response, private encrypted digital currencies such as Bitcoin have emerged, aided by advancements in information and communication technology (ICT) and cryptography theory. Nevertheless, these currencies lack credit endorsement, experience violent fluctuations, and suffer from weak supervision, making it challenging for countries to prevent financial crimes and maintain financial stability. Addressing issues such as financial crime prevention and ensuring monetary stability necessitates the advancement of legal digital currency issuance systems led by central banks. Within this framework, central banks across major global economies are actively engaged in research and pilot programs related to legal digital currencies. According to a 2021 survey conducted by the Bank for International Settlements (BIS), approximately 90% of central banks in 25 developed nations and 56 emerging markets, collectively accounting for 76% of the global population and 94% of the world's GDP, are progressing in the development of central bank digital currencies (CBDCs).Of these institutions, 62% have entered the technical testing phase, while 26% have launched pilot initiatives. China stands out in this field, securing a leading position in advancing the issuance framework for legal digital currencies. The People's Bank of China, in particular, has implemented ECNY pilot programs across multiple regions. As of August 31, 2022, these pilots spanned 15 provinces and cities, resulting in over 360 million transactions and an aggregate value of 1,000.4 billion yuan. Furthermore, the ECNY system is now supported by more than 5.6 million merchant outlets.

Digital currency is an important innovation in the field of currency issuance that has attracted widespread attention from academic and financial institutions. Previous research has demonstrated the significant research value of ECNY in future financial innovation, governance, and supervision. Building on this, scholars have put forth various suggestions for the development of ECNY. For instance, Du Fei has argued that the ECNY can create new international business opportunities for Chinese companies and bolster China's influence in emerging market economies(Duffie, 2021). However, the issue of financial supervision is a crucial aspect that must not be overlooked in the development of digital currency. To this end, Tao Limin has suggested improving the digital RMB supervision system, financial ecological environment system, and cross-border payment and settlement system, and strengthening the construction of the digital currency international cooperation system [4].

Research on the willingness to adopt digital currencies has employed a variety of methods and analytical models, spanning both domestic and international contexts. For example, Ozturkcan et al. (2022) investigated the potential of digital currencies to enhance consumption tendencies during the COVID-19 pandemic. German scholars Tronnier, Harborth, and Hamm utilized the partial least squares structural equation modeling (PLS-SEM) method to demonstrate that trust significantly influences individuals' willingness to use digital currencies. Furthermore, they identified perceived benefits as the most critical factor driving adoption (Tronnier et al., 2022).In parallel, Chinese scholars Ma, Jin, and Mei applied structural equation modeling (SEM) techniques to their studies and identified perceived trust as a crucial determinant of both interest and intention to adopt digital currencies. Additional factors such as perceived privacy, perceived security, and perceived system quality also emerged as influential components shaping consumer behavior (Ma et al., 2022). These findings underscore the multifaceted nature of adoption, revealing how technical, emotional, and cognitive considerations interplay to influence decisions.

Given these insights, it becomes clear that the operational mechanisms underlying central bank digital currencies demand further exploration, particularly in areas related to governance, financial innovation, and oversight. While existing studies have confirmed the pivotal role of trust, gaps remain in understanding the broader influencing factors and identifying specific target groups for ECNY adoption.Consequently, this research seeks to delve deeper into the

determinants affecting the willingness to use ECNY, with a particular focus on examining the interplay of policy incentives, trust, perceived system quality, and privacy concerns.

2. Theoretical background and research model

2.1 Willingness to use ECNY

With the rapid expansion of mobile internet technologies and the growing emphasis on user-centric approaches, increasing attention has been devoted to understanding consumer behavior in the information and communication technology domain. Scholars highlight the importance of initial adoption and continuous engagement in ensuring the success of digital systems. As Bhattacherjee (2001) pointed out, the key challenge lies not only in facilitating initial usage but also in maintaining user engagement over time. For the central bank's ECNY system, promoting trial adoption while enhancing user stickiness is vital for its sustained success in the consumer market.Building on a comprehensive review of the existing literature, this paper proposes a conceptual framework for analyzing willingness to use ECNY. The model integrates elements from the Theory of Planned Behavior (TPB), the Technology Acceptance Model (TAM), the Stimuli-Organism-Response (S-O-R) framework, and Trust Theory. By organizing factors into three dimensions—external stimuli, subjective experiences, and resulting behaviors—the framework examines the effects of variables such as Policy Driving, Service Quality, Trust, Satisfaction, and Perceived Usefulness on users' willingness to adopt ECNY. A schematic representation of this structure is provided in Figure 1.

The Theory of Planned Behavior, developed by Ajzen (1991), identifies attitudes, subjective norms, and perceived behavioral control as critical determinants of behavioral intentions. Meanwhile, the Technology Acceptance Model, proposed by Davis (1989), emphasizes the dual role of Perceived Usefulness and Perceived Ease of Use in shaping user behavior. Together, these models provide a foundation for exploring the psychological and behavioral underpinnings of digital adoption.Over time, scholars have expanded on these foundational models, introducing frameworks such as the Technology Acceptance Expansion Model and the Integrated Technology Acceptance Model. Although these models independently offer valuable insights, their explanatory power is significantly enhanced when applied in combination. For instance, research has demonstrated that integrating TAM and TPB creates a more robust predictive framework for understanding user adoption behavior. This integrated perspective is particularly relevant in the context of ECNY, where user willingness is influenced by complex interactions between technological, psychological, and contextual factors.

Originally lied in sociology and psychology, Trust Theory has become more active in the fields of economics and organizational behavior due to its multi-attribute characteristics. Initially, researchers incorporated the Trust factor into the TAM model to explain the positive impact of Trust on e-commerce Use Intention (Tao, 2022). With the in-depth study of Trust Theory, scholars have found that Trust not only directly affects behavior, but also plays an indirect role by reducing perceived risk. Once consumers understand and Trust new things, they can effectively reduce their perceived risk, which can then influence their willingness to behave (Martin et al., 2015).

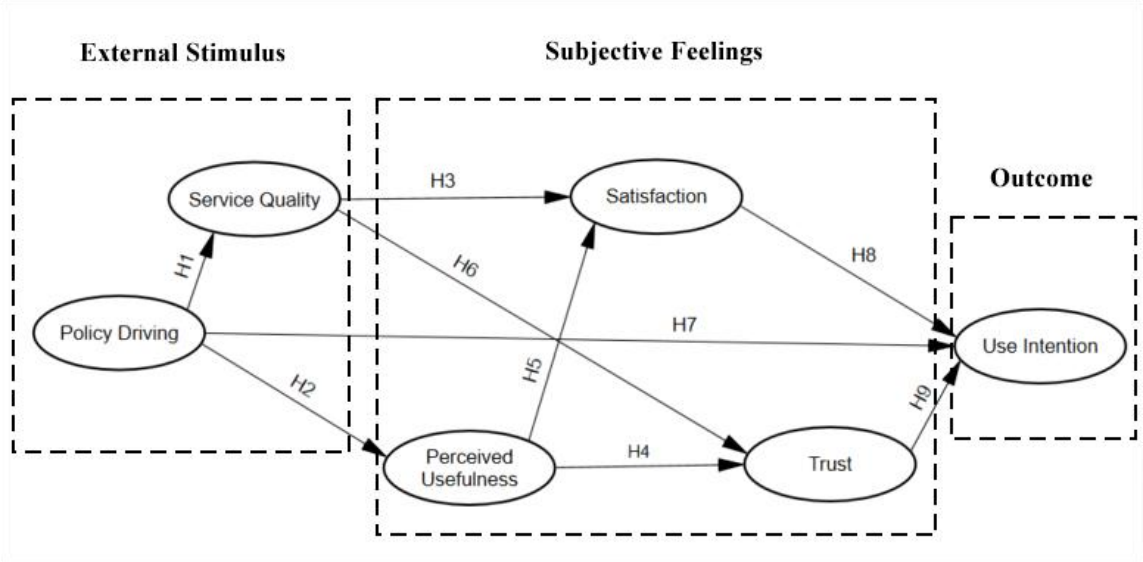

Fig. 1 Research model and hypotheses

3. Hypotheses

3.1. Service Quality

Service quality refers to users' perceptions of the level of service delivered by the central bank's ECNY system. It encompasses five key dimensions: visibility, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 2005). These aspects highlight the necessity for operators to provide services that are prompt, efficient, and tailored to user needs, enabling users to identify and appreciate high service quality. Superior service quality not only enhances users' willingness to continue usage but also strengthens their trust and satisfaction with the provided services.DeLone and McLean (2004) identified service quality as one of the primary factors influencing users' adoption of information systems within their updated information system success model. According to their framework, service quality significantly impacts user satisfaction and contributes to the overall success of a system. Similarly, Kuo et al. (2009) demonstrated that service quality profoundly affects user satisfaction and the willingness to adopt mobile value-added services. Providing precise solutions, timely responses, and resolving user concerns are practical manifestations of service quality in action.For the ECNY system, service quality is particularly vital as it influences not only users' continued engagement but also their trust and satisfaction with the operator. To further explore this relationship, we propose the following hypotheses:

H1: Service Quality has a significantly positive impact on the willingness to use the ECNY.

H2: Service Quality has a significant positive impact on Trust.

H3: Service Quality has a significant positive impact on Satisfaction.

3.2 Trust

Trust reflects consumers' expectations of a merchant's future behavior, including the merchant's competence, honesty, and goodwill. Competence indicates that the merchant has the necessary knowledge and skills to complete the task; honesty indicates that the merchant will keep its promises and not deceive customers; and goodwill indicates that the merchant will not prioritize its own interests over those of customers (Kim et al., 2008). In the current ECNY operation process, due to the potential system security and financial risks, consumers are more likely to be skeptical, which can negatively affect their willingness to use the ECNY. Conversely, a higher level of Trust in operators can reduce consumers' risk perception. Zhou Tao and others have noted that Trust is one of the important factors that affect consumers' actions in the mobile commerce environment. Empirical research has also demonstrated that Trust has a positive impact on Use Intention. Furthermore, studies on Trust and continued use intention have also been conducted (Zhou et al., 2009). In the process of using the ECNY, consumers must provide personal privacy information (such as their name, bank card number, mobile phone number, etc.). If this information is leaked, consumers will feel unsafe, and an increase in Trust in operators can help reduce this perception and enhance consumer loyalty. Based on these considerations, we propose the following hypothesis:

H4: Trust has a significant positive impact on the willingness to use the ECNY.

3.3 Satisfaction

The Expectation Confirmation Theory (ECT) posits that user satisfaction is a key determinant of continued usage or repurchase behavior (Oliver, 1980). This theory defines satisfaction as a psychological state reflecting the degree to which users' uncertain expectations are met both before and after usage. Numerous studies in the domain of information systems have integrated satisfaction into models examining users' continued use intentions.For instance, Bhattacherjee (2001) applied ECT alongside the Technology Acceptance Model (TAM) to explain the sustained usage intentions of information system users. Empirical analysis revealed that satisfaction significantly influences users' intentions to continue using a system. Similarly, research by Hong et al. (2006) in the mobile network environment demonstrated that users with higher satisfaction levels are more inclined to maintain continued usage.Further supporting these findings, studies on mobile commerce in domestic contexts align with prior research, emphasizing satisfaction as a critical factor in determining continued use behavior. Zhou et al. (2010) highlighted how satisfaction exerts a substantial and positive impact on usage intentions, offering consistent empirical evidence.

Building on this foundation, we propose the following hypothesis:

H5: Satisfaction has a significant positive impact on the willingness to use the ECNY.

3.4. Perceived Usefulness

The concept of "Perceived Usefulness" originates from the Technology Acceptance Model (TAM) introduced by Davis (1989). It describes the degree to which individuals believe that

using a specific technology will enhance their performance. Numerous studies have validated the significant positive influence of perceived usefulness on the initial intention to adopt various mobile applications.When users perceive the ECNY system as beneficial, it can foster higher levels of trust and satisfaction with the operator, as this perception reflects the system's value in facilitating payment processes.Therefore, we propose the following hypotheses:

H6: Perceived Usefulness has a significant positive impact on the continued Use Intention of the ECNY.

H7: Perceived Usefulness has a significant positive impact on Trust.

H8: Perceived Usefulness has a significant positive impact on Satisfaction.

3.5. Policy-driven

Policy-driven strategies involve leveraging administrative authority to issue directives that foster industrial development and innovation. Such measures are designed to mobilize resources and promote the growth of strategic sectors, including energy conservation, environmental protection, information technology, biotechnology, high-end equipment manufacturing, new energy, and advanced materials.From the perspective of the Stimulus-Organism-Response (S-O-R) theory, policy initiatives serve as a significant external stimulus that shapes individual behavior and elicits specific responses. This conceptual framework underscores the ability of well-structured policies to influence societal outcomes, highlighting their critical role in guiding behavior and decision-making. The Chinese government has prioritized digital currency innovation as part of its broader policy agenda. In the "14th Five-Year Plan and 2035 Long-Term Goals," the government emphasized the "steady advancement of digital currency research and development" to strengthen the nation's competitive edge in the global financial ecosystem. Such initiatives aim to enhance the role of China's central bank digital currency (CBDC) in international transactions and cross-border payment systems, while simultaneously promoting ECNY adoption within the domestic retail market.As a result of this policy focus, significant progress has been made in digital RMB infrastructure. According to Gong (2022), the government has actively expanded pilot areas, introduced new functions to ECNY, and increased the issuance of red envelopes to encourage adoption. Similarly, Hu (2021) noted that these measures reflect a deliberate strategy to establish a robust ecosystem for digital currency implementation.

Based on this analysis, we propose the following hypotheses:

H9: Policy Driving has a significant positive impact on the willingness to use the ECNY.

H10: Policy Driving has a significant positive impact on the Service Quality of the ECNY.

H11: Policy Driving has a significant positive impact on consumers' Perceived Usefulness of the ECNY.

4. Research methodology

4.1 questionnaire design

This study utilizes the questionnaire survey method to collect data. All variables are adapted from mature scales to suit the characteristics of the research subjects, and ultimately result in the formation of a questionnaire. The research model comprises six variables, with a total of 18 items, and uses a Likert 5-point scale for measurement. Please refer to Table 1 for detailed information regarding the specific items of each variable.

Table 1. Measurement Scale

Latent variables	Items	Sources
Satisfaction (CS)	CS1 I was very satisfied with my experience with the ECNY CS2 My experience with the ECNY has been erypleasant CS3 I am very happy with the ECNY	Hong et al. (2006)
Service Quality (SQ)	SQ1 The ECNY's serviceis very timely SQ2 The ECNY is very responsive SQ3 The ECNY provides professional services	Kuo et al. (2009)
Perceived Usefulness (PU)	PU1 The ECNY offers a discount PU2 The information provided by the ECNY is very useful PU3 The service provided by the ECNY is "excellentvalue"	Ma et al. (2022)
Trust (TR)	TR1 The ECNY operator keeps its promise TR2 The ECNY operatortakes customer'sinterestsinto consideration TR3 This ECNY operator can ensure the quality of its products and ser	Zhou et al. (2009)
Policy-Driving (PD)	PD1 The ECNY gives out "red envelopes" PD2 The ECNY provides specific bankings ervices PD3 The ECNY must to be used some times	Hu et al. (2021)
Use Intention (UI)	UI1 The ECNY is interested UI2 I am willing to use and understand the functions of this ECNY UI3 I will use this ECNY continuosly	Yang et al. (2015)

4.2 Data collection and sample characteristics

This study employed an online survey to collect data. The questionnaire was distributed across 26 pilot areas for the central bank's ECNY and was available for responses fromFebruary 2024 to June 2024. A total of 415 questionnaires were returned. To ensure the authenticity and reliability of the survey data, the researchers screened the responses and eliminated eight invalid questionnaires from non-pilot regions, resulting in 407 valid questionnaires. Regarding gender distribution, there were 212 males and 195 females, accounting for 52.0% and 47.9%, respectively. Concerning age, respondents aged 20-30 accounted for 38.3% (156 people), those aged 31-40 accounted for 25.0% (102 people), those aged 41-50 accounted for 21.6% (88 people),

and those aged 51 and over accounted for 14.9% (61 people). Regarding educational background, 38.6% (157 people) had a junior college degree or below, 43.7% (178 people) had a bachelor's degree, 11.3% (46 people) had a master's degree, and 6.4% (26 people) had a doctoral degree. It can be observed that the sample structure is highly consistent with high-quality young people who currently use the central bank's ECNY more frequently, making it suitable for empirical analysis.

5. Data analysis and results

The data analysis in this paper is divided into two main parts, as recommended by Anderson and Gerbing [27]. Firstly, confirmatory factor analysis (CFA) was conducted to examine the reliability and validity of the data, with reliability being measured by Cronbach's α coefficient and validity by the Average Variance Extracted (AVE) and Composite Reliability (CR) values. Secondly, structural equation modeling (SEM) was employed to analyze the overall model and test the hypotheses. All data analysis was conducted using AMOS24 software.

5.1 Reliability and validity analysis.

In this paper, the stability and reliability of the measurement are tested using Cronbach's α coefficient. Generally, a value greater than 0.70 indicates good reliability of the survey data. As shown in Table 1, the Cronbach's α values for Satisfaction, Service Quality, Perceived Usefulness, Trust, policy-driven, and willingness to use are all greater than 0.70, indicating good reliability of each data. Furthermore, this paper uses confirmatory factor analysis to test convergent validity and discriminant validity to evaluate the extent to which the measurement tool accurately measures the traits to be measured. As shown in Table 2, the AVE of each item is greater than 0.7 and ranges between 0.737 and 0.879, indicating good convergent validity of the variables. The internal consistency of each measurement item is good, and the combined reliability (CR) value of each factor is greater than 0.7. It can be observed from Table 2 that the square value of the correlation coefficient between each variable and other variables is smaller than the AVE value of the variable, indicating good convergent validity and combination reliability for each dimension.

Table 2. Reliability and validity analysis

Construct	Item	Nonstandardized regression coefficient	Standard error	Z-value	P-value	Standardized Coefficients	Cronbach α	CR	AVE
Satisfaction	CS1	1				0.903	0.942	0.942	0.846
	CS2	1.005	0.032	31.786	***	0.936			
	CS3	0.975	0.032	30.357	***	0.92			
Service Quality	SQ1	1				0.934	0.948	0.948	0.858
	SQ2	1.004	0.028	35.987	***	0.935			
	SQ3	0.987	0.03	32.939	***	0.911			

Perceived Usefulness	PU1	1				0.885			
	PU2	1.006	0.036	28.143	***	0.913	0.927	0.927	0.808
	PU3	1.003	0.037	27.202	***	0.9			
Trust	TR1	1				0.925			
	TR2	1.004	0.028	36.43	***	0.947	0.956	0.956	0.879
	TR3	0.98	0.027	35.685	***	0.941			
Policy Driving	PD1	1				0.851			
	PD2	1.083	0.043	24.917	***	0.92	0.91	0.909	0.771
	PD3	1.002	0.045	22.348	***	0.862			
Use Intention	UI1	1				0.872			
	UI2	1.025	0.064	16.098	***	0.847	0.801	0.893	0.737
	UI3	1.008	0.062	16.348	***	0.857			

Note: * : p<0.05, **: p<0.01; ***: p<0.001

To test the discriminant validity of the scale, the value after taking the square root of AVE is compared with the Pearson correlation coefficient among the latent variables. It is generally believed that the former should be greater than the latter for better discriminant validity, and vice versa. The diagonal values in Table 3 represent the values after taking the square root of AVE, while the remaining values are Pearson correlation coefficients. As presented in Table 3, the values after taking the square root of AVE are all greater than the Pearson correlation coefficient, indicating that the scale's discriminant validity satisfies the requirements for estimating the structural equation model [18]. In general, the scale has good validity, and analyzing the data using the structural equation model is feasible.

Table 3. Discriminative validity test

Factor	Use Intention	Policy Driving	Trust	Perceived Usefulness	Service Quality	Satisfaction
Use Intention	**0.858**					
Policy Driving	0.824	**0.878**				
Trust	0.816	0.831	**0.938**			
Perceived Usefulness	0.854	0.848	0.897	**0.899**		
Service Quality	0.835	0.797	0.894	0.917	**0.927**	
Satisfaction	0.832	0.788	0.836	0.903	0.915	**0.920**

Note: Bolded diagonal elements are the square root of AVE for each construct, off-diagonal elements are the correlations between constructs.

The structural equation model was analyzed using Amos24 software. As shown in Table 4, the path model had a chi-square value of 522.827 and 124 degrees of freedom, resulting in a ratio of chi-square to degrees of freedom of 4.216, which largely meets the standard for model fitting. Additionally, the model fitting degree was evaluated using indicators such as GFI, CFI, NFI, and RMSEA. The fitting results for GFI=0.924, CFI=0.975, NFI=0.968, and RMSEA=0.064 were all within a reasonable range, indicating that the model had a good degree of fit.

Table 4. Model fitting index

Evaluation index	Reference standards	Results
X^2 /df	<3	4.216
IFI	>0.90	0.983
TLI	>0.90	.979
CFI	>0.90	.983
RMSEA	<0.08	0.064

After conducting hypothesis testing, the path coefficient analysis results in Table 5 confirm all assumptions. Specifically, the impact of policy-driven on Service Quality and Perceived Usefulness showed significant positive effects (β=0.765, p<0.001; β=0.786, p<0.001), indicating the establishment of H1 and H2; Perceived Usefulness had positive effects on Trust and Satisfaction, showing significant positive effects (β=0.499, p<0.001; β=0.393, p<0.001), indicating the establishment of H4 and H5; Service Quality had a significant positive effect on Satisfaction (β=0.516 , p<0.001), indicating the establishment of H3; and Service Quality had a significant positive impact on Trust (β=0.449, p<0.001). Furthermore, policy-driven, Satisfaction, Trust, Service Quality, and Perceived Usefulness all had positive effects on willingness to use (β=0.202, p<0.01; β=0.176, p<0.05; β=0.106, p<0.01; β=0.156, p<0.05; β=0.108, p<0.01), indicating the establishment of H7, H8, H9, H10, and H11.

Table 5. Results of hypotheses testing

H	Path	Nonstandardized regression coefficient	Standard error	C.R.	p value	Standardized regression coefficient	Accept/Reject
H1	SQ→UI	0.156	0.042	3.720	***	0.201	Accept
H2	SQ→TR	0.449	0.029	15.712	***	0.472	Accept
H3	SQ→CS	0.516	0.027	19.000	***	0.564	Accept
H4	TR→UI	0.106	0.042	2.423	**	0.137	Accept
H5	CS→UI	0.176	0.045	3.945	***	0.207	Accept
H6	PU→UI	0.108	0.047	2.287	**	0.165	Accept
H7	PU→TR	0.499	0.030	16.887	***	0.507	Accept
H8	PU→CS	0.393	0.028	13.981	***	0.415	Accept
H9	PD→UI	0.202	0.040	5.024	***	0.249	Accept
H10	PD→SQ	0.765	0.035	21.800	***	0.734	Accept
H11	PD→PU	0.786	0.031	25.136	***	0.780	Accept

*： p<0.05, **: p<0.01; ***: p<0.001

6. Conclusion and discussion

The empirical analysis revealed that Service Quality, Trust, Satisfaction, Perceived Usefulness, and policy-driven all have a significant positive impact on the willingness to use ECNY. In particular, policy-driven had the most prominent positive impact, followed by Trust, Service Quality, Perceived Usefulness, and Satisfaction. During the initial stage of the ECNY

trial, the government distributed financial funds and corporate sponsorship in the form of consumer red envelopes to stimulate the consumer market. Moreover, the central bank's ECNY, which was endorsed by the state and developed by the Digital Currency Research Institute of the People's Bank of China, was implemented by major banks in China, ensuring the quality of service, response speed, and operation of the ECNY. Furthermore, the study found that policy-driven has a significant positive impact on Service Quality and Perceived Usefulness, indicating that the promotion of national policies will enhance consumers' recognition and experience of the ECNY. Service Quality has a significant positive impact on user Satisfaction and Trust, indicating that the timeliness and professionalism of the service directly improve users' Satisfaction and Trust in the ECNY. Perceived Usefulness has a significant positive impact on both Trust and Satisfaction, showing that consumers are satisfied and recognize the ECNY after experiencing its content service, which increases their willingness to continue using it. In summary, the significance of this study lies in its identification of the significant factors influencing residents' willingness to use ECNY, and its exploration of the relationships between these factors.

First and foremost, the Policy Driving of the national central bank is a direct influencing factor for consumers to use the central bank's ECNY. Prior to its official implementation, ECNY had been ECNYlied in multiple scenarios across 23 regions in China, and the red envelope policy was used for payment and settlement. The ECNY ECNY is a personal electronic wallet issued by the central bank[28]. Therefore, it is necessary to explore the factors that promote or inhibit consumers' willingness to use it during the trial stage. The function and service improvements prior to the official launch provide valuable insights.

Secondly, the research findings of this paper suggest that ECNY developers should focus on the product itself, improving Service Quality, user Satisfaction, and product usability, adding more distinctive features, promoting the further development of digital RMB, and gradually increasing its international presence. The payment and settlement function accelerates the pace of RMB internationalization, providing a theoretical basis and empirical support for the development of digital RMB, and serving as a reference for the research of digital currencies worldwide.

This study has conducted empirical verification of the theoretical model and holds significant research value for both theory and practice. However, some limitations exist due to our limited research capacity. Firstly, the ECNY is currently in its trial stage in specific regions, which may have resulted in biased data samples. As the ECNY becomes more widely used, future research should expand to other regions to improve its generalizability. Secondly, this study did not conduct an in-depth analysis of the demographic characteristics of the sample, such as gender and age. Different groups may have different conclusions, thus requiring further empirical analysis in future research. Thirdly, there may be other factors that affect consumers' willingness to use the ECNY, such as personal privacy and other issues. Future research could delve into these issues to increase the popularity and usage of the ECNY.

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